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## NEW SPECIES OF CRANE-FLIES FROM SOUTH AMERICA. PART VI<sup>1</sup>

(Tipulidae: Diptera)

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The present paper is based almost solely upon extensive series of crane-flies taken in Brazil and Paraguay by Mr. Francisco Schade, and by Dr. John G. Myers in Venezuela and on Mount Roraima in northern Brazil. A few scattered specimens were included in materials secured by Dr. Ogloblin in Argentina and by Mr. Raymond C. Shannon in Peru. With the exception of the latter material, all of the species discussed herewith are preserved in my collection through the continued friendly interest of the entomologists mentioned.

### **Macromastix** Osten Sacken

#### **Macromastix (Macromastix) brasiliae** sp. n.

General coloration of notum brownish yellow, the praescutum with four stripes of the ground-color that are further bordered by dark brown; mediotergite with two large brownish black areas; antennae (male) longer than body, the vestiture short and inconspicuous; wings yellowish brown, the costal border broadly darker; basal abdominal tergites yellow, the outer segments passing into black.

*Male*—Length, about 13 mm.; wing, 14 mm.; antenna, about 18 mm.

Frontal prolongation of head brownish yellow, lined dorsally and laterally with brown; nasus stout; palpi dark brown. Antennae (male) elongate, exceeding the body; scape enlarged, obscure yellow; pedicel small, yellow; flagellum black; flagellar segments with short, inconspicuous pale pubescence and tiny verticils that are scarcely longer than the pubescence. Head brownish yellow; vertical tubercle very large and conspicuous.

<sup>1</sup>Contribution from the Entomological Laboratory, Massachusetts State College.

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Mesonotal praescutum brownish yellow, with four areas of the ground-color that are conspicuously bordered by dark brown; an additional capillary black median line extends backward from the cephalic border of the sclerite for a short distance; scutal lobes brown, variegated by darker brown; scutellum dark brown; mediotergite obscure yellow, with two large, oval, brownish black areas. Vestiture of mesonotum short and inconspicuous. Pleura obscure grayish yellow, variegated by brownish clouded areas. Halteres dark brown, the base of the stem restrictedly pale. Legs with the coxae brownish gray, more or less variegated by brown; trochanters obscure yellow; femora obscure yellow; tibiae obscure yellow, the tips narrowly dark brown; tarsi black. Wings tinged with yellowish brown, the stigma, costal and prearcular regions more infuscated to provide a dark anterior border; veins brownish black, *Cu* and *2nd A* more yellowish. Venation: *Sc*<sub>1</sub> preserved; *Rs* subequal to *R*<sub>2+3</sub>; *R*<sub>3</sub> nearly straight; cell *M*<sub>1</sub> with petiole shorter than *m*; cell *2nd A* of moderate width.

Basal abdominal tergites yellow, broadly margined laterally and more narrowly on caudal margins with blackish, the ground-color becoming more obscured and restricted on the succeeding segments, on the fifth and remaining tergites uniformly blackened; sternites more extensively yellow. Male hypopygium with the eighth sternite large and sheathlike.

Habitat: Brazil. *Holotype*, ♂, Campo Bello, Minas Geraes, September 26, 1930 (F. Schade).

*Macromastix brasiliae* is very different from the other Neotropical species of the genus. It is most generally similar to *M. paulseni* Philippi, differing most evidently in the short vestiture of the body and the relatively short antennae of the male sex.

### Habromastix Skuse

#### Habromastix decolorata sp. n.

General coloration of thorax brownish yellow, the praescutal stripes slightly darker; nasus distinct; antennae (male) shorter than body; wings brownish yellow, the stigma slightly darker.

*Male*—Length, about 15–16 mm.; wing, 14–15 mm.; antenna, about 11–12 mm.

*Female*—Length, about 16 mm.; wing, 14 mm.; antenna, about 2.8 mm.

Frontal prolongation of head yellow; nasus distinct; palpi chiefly pale, the basal segment and apical portion of terminal segment, infuscated. Antennae (male) 13-segmented, only a little shorter than the body; scape and pedicel yellow; flagellum dark brown; base of first flagellar segment and incisures of succeeding three segments restrictedly pale; flagellar segments elongate-cylindrical, the basal enlargements small; besides the usual basal verticils, the segments with two other elongate setae, one before and one beyond midlength

of the segment, these verticils unilaterally arranged on the upper face; in addition to the verticils, the segments are clothed with a dense erect pale pubescence; pedicel with a group of short black setae on mesal face; terminal segment reduced. Antennae (female) shorter than thorax. Head without vertical tubercle, light brown; anterior vertex approximately twice as wide as diameter of scape at base.

Mesonotum light brownish yellow to faintly pruinose, the praescutum with scarcely indicated, slightly darker stripes; scutum somewhat more pruinose; scutellum paler testaceous brown; postnotum brownish gray. Pleura chiefly pale yellow, with a vague pruinosity. Halteres relatively long, pale, the knobs infuscated. Legs with the coxae and trochanters yellow; femora obscure yellow; tibiae and tarsi passing into brown. Wings with a strong brownish yellow tinge, cell *Sc* clearer yellow; stigma pale brown, only a trifle darker than the ground; veins yellowish brown. Venation: *Rs* relatively short and straight, a little longer than  $R_{2+3}$ ;  $R_2$  relatively long; inner ends of cells  $R_3$  and  $R_5$  in transverse alignment; petiole of cell  $M_1$  shorter than *m*.

Abdominal tergites with the ground-color yellow, brightest on the basal segments, more obscure outwardly; three brownish black tergal stripes, the median one paler on basal segments, the lateral pair more distinct; sternites more bicolorous, dark-colored, their apices conspicuously obscure yellow; subterminal segments uniformly black; hypopygium yellow. Ovipositor with the valves relatively short and fleshy, the cerci broadly compressed, the hypovalvæ very small.

Habitat: Paraguay. *Holotype*, ♂, Santa Barbara, October 17, 1925 (F. Schade). *Allotopotype*, ♀. *Paratopotypes*, 2 ♂ ♂.

I am referring this fly to *Habromastix* rather than to *Tipula*, despite the presence of a distinct nasus. The only other species of the genus so far described from South America is *H. lemni-scata* Alexander, readily told by the handsomely patterned wings.

### Tipula Linnæus

#### *Tipula paraguayensis* sp. n.

General coloration of mesonotum opaque reddish brown, the praescutum with the median stripe polished; antennae short, 12-segmented, the basal two segments yellow, the remainder brownish black; wings with a strong brown tinge; macrotrichia of veins very scanty; cell 2nd *A* narrow; male hypopygium with the basistyle produced caudad into spinous points that are setiferous to their tips.

*Male*—Length, 10–11 mm.; wing, 10.5–11.5 mm.

*Female*—Length, about 10–11 mm.; wing, about 11–12 mm.

Frontal prolongation of head of moderate length, light brown, darker outwardly; nasus distinct; palpi brownish black. Antennae 12-segmented, unusually short in both sexes, being shorter than the entire head; scape and pedicel pale yellow; flagellum brownish black; flagellar segments oval, gradually decreasing in size outwardly; terminal

segment small; verticils of basal segments less than the segments in length. Head light brown, the posterior vertex with a narrow brown median vitta; vertical tubercle entire.

Mesonotum opaque reddish brown, the median stripe polished. Pleura opaque, pollinose, almost glabrous. Halteres yellow, the knobs dark brown. Legs with the coxae pale yellow, pollinose; trochanters yellow; femora obscure yellow, the tips narrowly blackened; tibiae obscure yellow, the tips broadly brownish black; tarsi black; tibial spur formula 1-2-2. Wings with a strong brownish tinge, the prearcular and costal regions more yellowish; stigma strongly yellow, the posterior portion more brownish yellow; outer radial field narrowly infumed along margin; a narrow brown cloud on anterior cord; veins brown. Macrotrichia of veins very scanty, including a very restricted series on distal section of  $R_{4+5}$ ; squama naked. Venation:  $R_s$  short, arcuated, shorter than  $R_{2+3}$ ; vein  $R_3$  long and nearly straight, about one-half to three-fourths longer than  $R_{2+3}$ ; cell *2nd A* very narrow.

Abdomen reddish brown, in male with a conspicuous black sub-terminal ring; hypopygium fulvous. Male hypopygium with a U-shaped median notch, the lateral lobes obtusely rounded. Basistyle produced caudad into a slender spinous point that is densely covered with short setae to apex. A single complex dististyle; at apex strongly bent into a long pale point; near base on outer face with a flattened lobe, its apex obtusely rounded.

Habitat: Paraguay. *Holotype*, ♂, Villarica, October 14, 1925 (F. Schade). *Allotopotype*, ♀, August 16, 1924. *Paratopotypes*, 3 ♂♂, 1 ♀, September 24, 1924–October 24, 1925 (F. Schade).

*Tipula paraguayensis* is quite distinct from all other small species of the genus having the antennae 12-segmented. The narrow cell *2nd A* and the spinous basistyle of the male hypopygium serve to separate the fly from all other generally similar forms.

### Holorusia Loew

#### *Holorusia ringens* sp. n.

Close to *lævis*; wings brownish, the costal region darker brown; a dark area at midlength of cell *M*; bases of cells *R* and *M* dark brown; male hypopygium with the tergite lacking a median lobe; outer dististyle with a small lobelike flange at near midlength.

*Male*—Length, about 12 mm.; wing, 13 mm.; antenna, about 3.7 mm.

Frontal prolongation of head brown; palpi dark brown. Antennae with basal flagellar segments weakly bicolorous, the apices of the segments vaguely brownish yellow; outer segments uniformly dark brown. Head brown, the posterior orbits narrowly pale, the median region of vertex narrowly blackened.

Mesonotal praescutum reddish brown, with feebly indicated darker

stripes, best indicated by narrow darker margins to the stripes and by a capillary brown median vitta; scutellum and mediotergite testaceous to brownish testaceous. Pleura brownish yellow. Halteres infuscated, the knobs more strongly so. Legs with the coxae and trochanters obscure yellow; femora brownish yellow, the tips narrowly and weakly infuscated; tibiae and tarsi darker brown. Wings brownish, the costal region darker brown; bases of cells *R* and *M*, together with a conspicuous spot at midlength of cell *M*, darker brown; stigma dark brown; narrow brown clouds at origin of *Rs* and on *m-cu*; more whitish areas in cell *M* on either side of the dark spot; a triangular pale area in outer end of cell *R*<sub>3</sub>; veins dark brown. A few macrotrichia on vein *R*<sub>3</sub>. Venation: Vein *R*<sub>3</sub> gently arcuated, cell *R*<sub>3</sub> being feebly constricted at midlength; distal section of vein *R*<sub>4+5</sub> only weakly sinuous at near midlength.

Abdominal tergites reddish brown, variegated by a broken dorso-median brown vitta; subterminal segments uniformly blackened; hypopygium yellow. Male hypopygium with the tergite lacking a median lobe, as is present in most other species of the genus. Outer dististyle long and slender, with a small, triangular, lobelike flange at near midlength. Apical beak of inner dististyle very short and blunt.

Habitat: Paraguay. *Holotype*, ♂, Villarica, December 22, 1924 (F. Schade).

This small species is allied and generally similar to *Holorusia laevis* Alexander, differing especially in the hypopygial characters, notably the structure of the tergite and outer dististyle.

#### ***Holorusia tarda* sp. n.**

Antennal flagellum weakly bicolorous, the apices of the basal segments obscure yellow; femoral tips not darkened; wings with a brownish tinge, the usual dark area in cell *M* nearly obsolete; male hypopygium with the outer dististyle bearing a lateral lobule beyond midlength.

*Male*—Length, about 12–13 mm.; wing, 13.5–14 mm.; antenna, about 5.5–5.8 mm.

Frontal prolongation of head brownish yellow; nasus distinct; palpi light brown. Antennae (male) a little less than one-half the entire body; scape and pedicel yellow; first flagellar segment brown, obscurely yellow at both ends; succeeding segments dark brown, with the apical fourth or less yellow, the amount decreasing on the outer segments; beyond the seventh segment uniformly dark brown; flagellar segments with a slight basal enlargement. Head fulvous yellow, without vertical tubercle.

Mesonotal praescutum almost uniformly fulvous yellow, without distinct stripes; interspaces with setae almost lacking, there being a few just before suture; posterior sclerites of mesonotum more buffy, with abundant short yellow setae. Pleura pale yellow, glabrous. Halteres pale, the knobs infuscated. Legs with the coxae and trochanters yellow; remainder of legs obscure yellow, the terminal tarsal segments a little darker. Wings with a brownish tinge, the prearcular and costal regions, together with stigma, slightly darker brown; a very

small, scarcely apparent dark cloud at near midlength of cell *M*; no darkened area in base of cell *R*; cells *M*<sub>1</sub> and 2nd *M*<sub>2</sub> with an extensive, more nearly hyaline area; veins brown. Macrotrichia of veins almost lacking, except on *R*, *R*<sub>1</sub> and *Sc*<sub>2+R</sub><sub>1</sub>. Venation: Cell *R*<sub>3</sub> only moderately constricted at near midlength; cell 1st *M*<sub>2</sub> small, irregularly hexagonal, the two sections of *M*<sub>3+4</sub> shortest; petiole of cell *M*<sub>1</sub> nearly twice *m*.

Abdominal tergites light brown, dark brown medially, except on basal two segments; sublateral portions of tergites narrowly dark brown; subterminal segments uniformly brownish black; hypopygium yellow. Male hypopygium with the suture between tergite and sternite obsolete on cephalic half or less. Median lobe of tergite distinct, apices of lateral lobes with conspicuous spinous setae. Outer dististyle with a lateral lobule beyond midlength. Spines of inner dististyle short and blunt.

Habitat: Paraguay. *Holotype*, ♂, Villarica, March 26, 1926 (F. Schade). *Paratopotype*, ♂, February 16, 1926.

The present fly is allied to *Holorusia laevis* Alexander, and certain related species, differing in the great reduction of the dark area in cell *M*, together with hypopygial details.

#### ***Holorusia subtarda* sp. n.**

Close to *tarda*; antennae shorter, the individual segments about two-thirds as long as in *tarda*; mesonotal praescutum olive brown, without evident stripes; abdominal tergites dark brown medially, more yellowish laterally; male hypopygium with the outer dististyle elongate, at about two-thirds the length slightly dilated and here provided with abundant setae.

*Male*—Length, about 13 mm.; wing, 15 mm.; antenna, about 4.4 mm.

Frontal prolongation of head yellow; basal segments of palpi pale brown, the terminal segment yellow. Antennae much shorter than in *tarda*, the basal flagellar segments slightly less than two-thirds as long as in that species; flagellar segments weakly bicolorous, with a little more than the basal half brown, the remainder obscure yellow; outer segments more uniformly darkened. Head brown.

Mesonotum olive brown, the praescutum without evident stripes; posterior sclerites of mesonotum a little darker brown. Pleura yellow. Halteres pale, the knobs infuscated. Legs with the coxae and trochanters pale yellow; remainder of legs obscure yellow, passing through pale brown to brown, the tips of the individual segments not darkened. Wings almost as in *tarda*, the brown spot in cell *M* similarly small and indistinct, so the wing at first sight appears almost unicolorous.

Abdominal tergites broadly dark brown medially, pale yellow laterally; basal sternites somewhat reddish brown, the subterminal segments blackened; hypopygium yellow. Compared with *tarda*, the male hypopygium shows the following differences: Median lobe of tergite larger and more conspicuous; vestiture of lateral lobes replaced by short, blackened, spinous setae. Outer dististyle elongate, at about two-thirds the length slightly dilated and here provided with abundant

long dark-colored setae, but without a distinct lateral lobe. Blackened spicules of inner dististyle much more numerous and covering a greater area.

Habitat: Paraguay. *Holotype*, ♂, Caraveni, September 3, 1925 (F. Schade).

The chief distinctions between the present fly and the very similar *Holorusia tarda* sp. n. are indicated in the above diagnosis.

### Limonia Meigen

#### *Limonia* (*Neolimnobia*) *immaculipes* sp. n.

Allied to *diva*; antennal flagellum pale; femora obscure yellow, without distinct dark annuli; wings yellowish, with a reticulate dark pattern; male hypopygium with the rostral prolongation of the ventral dististyle relatively long and slender, with three short spines at near midlength; dorsal dististyle with the tip acute.

*Male*—Length, about 7.5 mm.; wing, 9.2 mm.

Rostrum brownish black; palpi small, obscure dark brown, the terminal segment pale. Antennae with the scape and pedicel black; flagellum obscure yellow, the outer segments somewhat darker; basal flagellar segments subglobular to short-oval, the outer segments more elongate, the verticils exceeding the segments. Head brownish black, the narrow anterior vertex and the very narrow posterior orbits yellowish gray.

Pronotum brown, medially above narrowly pale. Mesonotal praescutum almost covered by three brown stripes that are strongly suffused with blackish before the suture, the surface of these stripes with a sparse pollen; extreme lateral margin of sclerite brownish black, bordered internally by chestnut-brown; scutal lobes obscure yellow, variegated by dark brown; scutellum light brownish testaceous; mediotergite blackened on cephalic half, more yellowish brown on posterior half. Pleura yellow, with a black longitudinal stripe extending from the propleura, across the ventral anepisternum, pteropleurite and pleurotergite to the mediotergite, as described; ventral sternopleurite a little darkened. Halteres yellow, the stem tinged with greenish. Legs with the coxae yellow, variegated at near midlength with blackish; trochanters obscure yellow; femora yellow, vaguely to insensibly darkened before the tips; remainder of legs obscure yellow, the terminal tarsal segments narrowly darkened. Wings yellowish, with a muscose-reticulate pattern of brown, as in the *diva* group; veins brown, including those of the cord and radial field, not light yellow as in *diva*. Venation: Cell *1st M*<sub>2</sub> subequal to or shorter than the veins beyond it; vein *2nd A* gently sinuous, the cell at outer end not so pointed as in *diva*.

Abdominal tergites obscure yellow, the sternites clearer yellow. Male hypopygium with the rostral prolongation of the ventral dististyle relatively long, with three short stout spines that are closely grouped at near midlength of the prolongation. Dorsal dististyle acute at apex.

Habitat: Brazil. *Holotype*, ♂, Campo Bello, Minas Geraes, December 20, 1930 (F. Schade).

*Limonia* (*Neolimnobia*) *immaculipes* is closely allied to *L. (N.) diva* (Schiner) and a group of closely allied forms, as *L. (N.) muscosa* (Enderlein) and *L. (N.) tricincta* (Alexander). The almost immaculate legs of the present fly will readily separate it from the species above listed.

***Limonia* (*Neolimnobia*) *hypocrita* sp. n.**

General coloration gray; praescutum with the stripes poorly defined, especially the lateral pair; fore femora with tips blackened, middle and hind femora with a narrow, subterminal, brownish black ring; wings with a conspicuous, loosely reticulate, brown pattern; male hypopygium with the rostral spines short and stout, the outer a little shorter.

*Male*—Length, about 6.5 mm.; wing, 7.8 mm.

*Female*—Length, about 6.5 mm.; wing, 8.5 mm.

Rostrum and palpi black. Antennae with scape and pedicel black, the flagellum brownish black; basal flagellar segments short-oval, the outer segments more elongate-oval; terminal segment about one-third longer than the penultimate. Head gray; anterior vertex at narrowest point a little narrower than the diameter of scape.

Mesonotum gray, the praescutum with stripes poorly indicated, including a median pair that become confluent before the suture; lateral stripes obsolete or nearly so; scutellum and mediotergite clearer silvery gray, the latter with a median, dark brown vitta. Pleura gray. Halteres relatively short, dark brown, the base of stem light yellow; in female, the stem more extensively pale. Legs with the coxae darkened and pruinose basally, the apices yellow; trochanters yellow; femora yellow, the tips of the fore femora narrowly blackened; middle and hind femora with a narrower and less distinct subterminal ring; remainder of legs obscure yellow, the tips of tibiae and the outer tarsal segments darkened. Wings whitish subhyaline, with a conspicuous, loosely reticulate, brown pattern, including about six or seven dashes in cell *C*, with additional transverse lines in all other cells excepting *1st M*<sub>2</sub>; in the basal field, these areas in approximate alignment across the wing-disk; veins brown, costa more yellowish. Venation: *Sc*<sub>1</sub> ending opposite origin of *Rs*; the supernumerary crossvein in cell *R*<sub>3</sub> at or beyond midlength of cell; *m-cu* shortly before fork of *M*.

Abdomen chiefly dark brown, the caudal margins of tergites very narrowly pale. Male hypopygium with the caudal margin of tergite with a deep U-shaped notch. Rostral spines of ventral dististyle short and stout, the outer about one-fourth shorter than the inner, placed close together on basal half of prolongation. Gonapophyses with the mesal-apical lobe strongly curved. Ovipositor with the cerci short and slender; genital segment obscure yellow, the hypoalvae darkened basally.



Habitat: Brazil. *Holotype*, ♂, Campo Bello, Minas Geraes, October 27, 1930 (F. Schade). *Allotopotype*, ♀, October 12, 1930.

*Limonia* (*Neolimnobia*) *hypocrita* is conspicuously different from all other described members of the subgenus in the gray coloration of the head and thorax and in the pattern of the legs. Despite the reticulate wing-pattern, it appears to be somewhat closer to *L. (N.) translucida* (Alexander) than to members of the *diva* group.

### *Limonia* (*Dicranomyia*) *mutata* sp. n.

Belongs to the *tristis* group; general coloration gray, the praescutum with a median brown stripe; halteres pale, the knobs infuscated; tibiae and tarsi black; wings whitish, without stigma; abdomen black, the hypopygium brightened; male hypopygium with the tergite transverse, the caudal margin gently emarginate; rostral prolongation unblackened, the spines arising close together.

*Male*—Length, about 5.5 mm.; wing, 7 mm.

*Female*—Length, about 6.5 mm.; wing, 7 mm.

Rostrum dark gray; palpi black. Antennae black throughout; flagellar segments oval. Head gray.

Mesonotum gray, the praescutum with a median stripe that is slightly more brownish. Pleura dark gray. Halteres pale, the knobs infuscated. Legs with the coxae and trochanters brown, the former more pruinose; femora brownish black, the bases of the middle and hind pairs somewhat paler; tibiae and tarsi black. Wings whitish, without stigma; axillary region weakly darkened; veins pale brown. Venation:  $Sc_1$  ending opposite or just beyond origin of  $R_s$ ,  $Sc_2$  close to its tip; cell *1st*  $M_2$  long, subequal to or longer than vein  $M_{1+2}$  beyond it; *m-cu* shortly before fork of  $M$ .

Abdomen black, the hypopygium brightened. Male hypopygium with the tergite transverse, the caudal margin weakly emarginate. Basistyle with a single small lobule, additional to the ventromesal lobe. Ventral dististyle small, the rostral prolongation stout; two spines placed close together a short distance back from the tip of the prolongation; spines pale, subequal in length, without conspicuous basal tubercles. Dorsal dististyle moderately curved, the tip acute. Gonapophyses with the mesal-apical lobe blackened.

Habitat: Brazil. *Holotype*, ♂, near Mount Roraima, sweeping in the savannah along the course of the Arabopo River, altitude near 3,500 feet, November 16, 1932 (J. G. Myers). *Allotopotype*, ♀. *Paratopotypes*, 5 ♂ ♀; *Paratypes*, 1 ♀, slopes of Roraima, altitude about 6,000 feet, November 19, 1932; ♀, same slopes, altitude about 7,000 feet, November 19, 1932 (J. G. Myers); Collector's Nos. 3213, 3218, 3227, 3246, 3251.

This distinct species was one of several that were taken on and near Mount Roraima by my friend, Dr. John G. Myers. The detailed notes on the botanical components of the various stations above mentioned will presumably be published in detail by Dr. Myers and will add materially to the descriptions of novelties provided in this report. *Limonia* (*Dicranomyia*) *mutata* is very different from *L. (D.) knabi* (Alexander) of Mexico and Central America.

### **Helius** St. Fargeau

#### **Helius** (**Helius**) **myersiellus** sp. n.

Mesonotum brown, the pleura black; antennae black, the basal five flagellar segments snowy white; femora yellowish brown, the tips snowy white, subequal in width to the similarly colored tibial bases; tibial tips narrowly white; tarsi yellowish white; wings creamy, variegated with brown washes; male hypopygium with the median region of tergite produced into a quadrate flattened plate; outer dististyle with a conspicuous lateral spine on outer margin at near two-thirds the length.

*Male*—Length, about 4 mm.; wing, 4.5 mm.

Rostrum black, not exceeding one-half the length of remainder of head; palpi black. Antennae with scape and pedicel dark; basal five flagellar segments snowy white, the remaining segments passing into brown; longest verticils nearly twice the segments. Head black.

Mesonotum of the type crushed, chiefly dark yellowish brown, contrasting with the black pleura. Halteres with the stems blackened, except at extreme bases; knobs broken. Legs with the coxae black; trochanters dark brown; femora yellowish brown, before tips passing into black, the tips narrowly and abruptly snowy white; tibiae, at bases, subequally snowy white, beyond which point the segment is narrowly blackened, soon paling to light brown, the outer end again narrowly dark brown, with the extreme tip equally narrowly snowy white; tarsi yellowish white. Wings with the ground-color creamy, chiefly suffused with brown, the ground-color persisting in the costal field and as extensive areas before and beyond stigma; central portion of disk, along vein *M* and the cord similarly of the ground-color; stigma oval, dark brown; slightly suffused brown areas at origin of *Rs*, on anterior cord and outer radial field; veins pale, a little darker in the clouded areas. Venation: *Sc*<sub>1</sub> ending about opposite three-fourths the length of *Rs*, *Sc*<sub>2</sub> at tip of *Sc*<sub>1</sub>; *Rs* long; basal section of *R*<sub>4+5</sub> reduced; *m-cu* shortly beyond fork of *M*.

Abdomen, including the hypopygium, black. Male hypopygium with the median region of tergite produced into a quadrate flattened plate, its margin truncate. Basistyle with a slender lobe on mesal face beyond midlength. Outer dististyle fleshy, bearing a conspicuous lateral spine on outer margin at near two-thirds the length. Inner dististyle much shorter and very slender, appearing as a simple glabrous

rod. Interbase appearing as a slender, gently curved, simple rod, the tip obtuse.

Habitat: Brazil. *Holotype*, ♂. Stretch of bush within sight of Mount Roraima, altitude about 3,000 feet; Maurukau to Arabopo, November 15, 1932 (J. G. Myers); Collector's No. 3205.

*Helius (Helius) myersiellus* is named in honor of the collector, Dr. John G. Myers, to whom I am greatly indebted for invaluable cooperation in my studies on the Tipulidae from many parts of the world. The present species is so distinct from all other species that it requires no comparison with any other so far made known.

### **Limnophila** Macquart

#### **Roraimomyia** subgen. n.

Characters as in *Limnophila* s.s. but with wings and halteres totally lacking.

Type of subgenus: *Limnophila (Roraimomyia) permonstrata* sp. n.

The group is undoubtedly close to *Limnophila*, the structure of the male hypopygium being much like that of *Limnophila roraima* Alexander, likewise from Mount Roraima. The total loss of both the wings and halteres marks the extreme tendency in this direction in the Tipulidae, though approached by the genus *Alexandrella* Tonnoir (Rec. Canterbury Mus., Christchurch, 3: 27-30, Pl. 3; 1926) of New Zealand, where both wings and halteres are represented by rudiments.<sup>2</sup> The present fly is one of several unusually interesting Tipulidae taken by Dr. Myers on Roraima. The only other previous records from this "Lost World" mountain are contained in a paper by the writer (Amer. Mus. Novit., No. 491: 1-6, Figs. 1-18; 1931).

#### **Limnophila (Roraimomyia) permonstrata** sp. n.

Without wings or halteres; general coloration brownish gray; legs black.

*Male*—Length, 3 mm.

Rostrum black, pruinose; palpi black. Antennae black throughout; flagellar segments short and crowded. Head black, sparsely pruinose; anterior vertex relatively wide.

Mesonotum flattened, entirely brownish gray. Distinctions between individual sclerites of mesonotum scarcely evident. Pleura restricted in area, gray. Halteres and wings lacking. Legs with the

<sup>2</sup>The name *Alexandrella* Tonnoir being preoccupied, I take this opportunity to propose the new term, *Tonnoiraptera* n. n., for the group in question.

coxae elongate, black, sparsely pruinose; remainder of legs black, moderately hairy.

Abdomen dark gray. Male hypopygium with the outer dististyle slightly bifid at tip, the outer surface with long erect pale setae. Aedeagus spiraliform, inside a broad-based sheath.

Habitat: Brazil. *Holotype*, ♂, Summit of Mount Roraima, altitude about 8,500 feet, November 20, 1932 (J. G. Myers). *Paratopotypes*, 3 ♂♂; Collector's No. 3269.

"Running very actively over the ground, in the lower places, especially sandy spots near the lagoons. Not uncommon, but patchy in distribution.—*J. G. Myers.*"

### **Shannonomyia** Alexander

#### **Shannonomyia roraimensis** sp. n.

General coloration of entire body dark brown or brownish black; antennae black throughout, flagellar segments short and crowded; front and narrow posterior orbits gray; wings with a strong brown tinge, the stigma and a vague clouding along cord somewhat darker; *Rs* and its branches unusually glabrous; *m-cu* more than one-half its length beyond fork of *M*; cerci very slender.

*Female*—Length, about 7.5 mm.; wing, 6 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments short and crowded, the whole antennae only about one-half longer than the head. Head dark gray, the broad front and very narrow posterior orbits silvery gray.

Prothorax and mesothorax dark brown, the surface slightly pollinose, the pleura a trifle more pruinose. Halteres dusky. Legs dark brown, relatively stout. Wings with a strong brown tinge, the stigma and a vague clouding along cord somewhat darker; veins brown. Macrotrichia of veins beyond cord unusually sparse, being lacking on *Rs* and its branches, excepting the distal section of *R*<sub>5</sub> where there are about 55 distributed the entire length of the vein; on *M* with series on distal ends of outer sections of veins *M*<sub>1+2</sub> and *M*<sub>3</sub>; a few trichia near outer end of vein *2nd A*. Venation: *Sc*<sub>1</sub> ending at near three-fourths the length of *Rs*, *Sc*<sub>2</sub> not far from its tip; *R*<sub>2</sub> subequal to *R*<sub>1+2</sub>, immediately before the fork of *R*<sub>3+4</sub>; *m-cu* more than one-half its length beyond the fork of *M*.

Abdomen brownish black, the ovipositor with very slender cerci that are darkened at bases, the tips horn-colored.

Habitat: Brazil. *Holotype*, ♀, Mount Roraima, summit, altitude about 8,500 feet (D. Vesey-FitzGerald); Myers' No. 3308.

*Shannonomyia roraimensis* is very different from the other regional species of the genus in the uniformly dark coloration of the body and appendages, the strongly suffused wings, and the glabrousness of the veins beyond the cord, which here is

more marked than in any others of the more than a score of Neotropical species of the genus. In its general appearance, the present fly resembles *S. jaffueli* Alexander, of Chile, yet is very different in the features diagnosed.

### Hexatoma Latreille

#### Hexatoma (*Eriocera*) *roraimella* sp. n.

Allied to *kaieturensis*; femora yellow, the tips narrowly and very weakly darkened; wings pale brown, with indications of a pale, diffuse yellow band before the level of cord; macrotrichia of veins usually sparse, with none on  $R_3$  or  $R_4$ ;  $R_2$  at fork of  $R_{3+4}$ .

*Male*—Length, about 17 mm.; wing, 14 mm.

Rostrum dull orange; palpi dark brown. Antennae with scape orange; pedicel dull yellow; flagellum brownish black, the proximal end of the first segment paler. Head orange; vertical tubercle entire.

Mesonotal praescutum golden-yellow, with four more brownish stripes, the intermediate pair divided by a narrow brown line; posterior sclerites of notum chiefly testaceous-yellow, the scutal lobes somewhat darker. Pleura brownish yellow, the dorsal pleurites darker. Halteres with the stem pale yellow, the knob brown. Legs with the coxae and trochanters brownish yellow; femora yellow, the tips narrowly and very weakly darkened; tibiae yellow, the tips very narrowly darkened; tarsal segments one and two yellow, the tips narrowly darker; outer segments more uniformly darkened. Wings pale brown, with indications of a pale, diffuse yellowish band before level of cord; stigma oval, brown; veins yellow. Macrotrichia of veins unusually sparse, there being none on  $R_{1+2}$ ,  $R_3$ ,  $R_4$  or  $R_{2+3+4}$ ; a scattered series of about eight or nine trichia on distal section of  $R_5$ . Venation:  $R_2$  at fork of  $R_{3+4}$ ;  $R_{1+2}$  about one-half  $R_{2+3+4}$ ; *m-cu* just beyond fork of *M*.

Abdominal tergites reddish, somewhat darker brown laterally; sternites more yellowish.

Habitat: Brazil. *Holotype*, ♂, Slopes of Roraima, altitude about 5,000 feet, November 19, 1932, near small stream (savannah) edged with coarse ferns (J. G. Myers).

The nearest ally of the present fly is *Hexatoma* (*Eriocera*) *kaieturensis* (Alexander) which differs in the larger size, the differently colored femora with a distinct darkening at near midlength, and the venation, with  $R_2$  equal in length to  $R_{2+3}$ . In both of these species, the trichia of the veins of the radial field are unusually sparse.

#### Hexatoma (*Eriocera*) *ogloblini* sp. n.

Body and appendages entirely deep black, with the exceptions of the light brown basal flagellar segments, and the abruptly bright yellow wing-bases.

*Female*—Length, about 17 mm.; wing, 13 mm.

Rostrum and palpi black. Antennae with scape and pedicel black; flagellar segments one and two, together with base of three, light brown; remaining antennal segments black; antennae (female) apparently only 7-segmented, the penultimate segment twice as long as the last and probably resulting from the fusion of two segments. Head black.

Thorax, including legs and halteres, entirely dull, deep black. Wings black, with a conspicuous, bright yellow band at base, including the entire prearcular region excepting the extreme base, as well as the very narrow bases of cell *C* and the Anal cells; this bright color is more extensive along the costal border, thence crossing the wing obliquely to the axillary region; Anal cells and centers of cells *R* and *R*<sub>1</sub> a trifle paler; veins black. Venation: Cell *M*<sub>1</sub> lacking; vein 2nd *A* sinuous on outer third.

Abdomen, including ovipositor, black.

Habitat: Argentina. *Holotype*, ♀, Experiment Station, Loreto, Misiones, April 18, 1932 (A. Ogloblin). *Paratype*, ♀, with the type; in the Bruch Collection.

This striking fly is named in honor of the collector, Dr. Alejandro Ogloblin. I owe this material to the continued friendly interest of my old friend, Dr. Carlos Bruch. By my key to the Neotropical species of *Eriocera* (Psyche, 21: 34-37; 1914), the present fly runs to *nigra* (Wiedemann) of Brazil. I have seen the types of the latter species and have found the yellow color at the wing-base, indicated in the original description, is so limited as to be barely evident. In the present fly, this color is broad and very conspicuous. There is no other described *Eriocera* closer to the present species than *nigra*.

### Ischnothrix Bigot

#### *Ischnothrix brevisector* sp. n.

General coloration dark brown, the mediotergite and pleura more pruinose; antennae black; wings with a strong yellowish brown tinge, the narrow stigma slightly darker brown; *Sc* short; *Rs* very short, angulated at near midlength; *R*<sub>3</sub> oblique; abdominal sternites conspicuously dimidiate, black, the incisures broadly yellow.

*Female*—Length, about 8 mm.; wing, 7.5 mm.

Rostrum obscure yellow; palpi black. Antennae with scape and pedicel brownish black, the flagellum black; flagellar segments elongate-cylindrical, with short setae and verticils. Head gray.

Mesonotum chiefly dark brown, very sparsely dusted with a yellowish gray pollen, the median region of praescutum still darker brown; posterior sclerites of mesonotum somewhat clearer gray. Pleura dark, heavily gray pruinose. Halteres brownish yellow, the knobs dark brown. Legs with the coxae brownish gray; trochanters brownish yellow; remainder of legs passing through brown to black on the tarsi. Wings with a strong yellowish brown tinge, the narrow stigma slightly

darker brown; veins dark brown. Venation:  $Sc$  short,  $Sc_1$  ending just beyond origin of  $R_s$ ,  $Sc_2$  lying an equal distance before this origin;  $R_s$  very short for a member of this group, being about one-half longer than the basal section of  $R_5$ , strongly angulated at near midlength;  $R_3$  oblique, approximately one-half the petiole of cell  $R_3$ ; veins issuing from cell  $1st M_2$  long;  $m-cu$  at or just before midlength of cell  $1st M_2$ . Both wings of type show an adventitious (or possibly supernumerary) crossvein in cell  $Sc$  near outer end.

Abdominal tergites brownish black, the caudal margins of the segments narrowly pale; sternites conspicuously dimidiate, black and obscure yellow, the former color occupying the central portion of the segments, the latter the broad incisures. Ovipositor with the cerci blackened basally, the tips reddish horn color; hypovalvae compressed, yellow, narrowly darkened basally.

Habitat: Venezuela. *Holotype*, ♀, Silla de Caracas, altitude 1,900 meters, in cloud forest, December 21, 1930 (J. G. Myers).

The only regional species of *Ischnothrix* is *I. lloydi* (Alexander) of Colombia (Andes, Santa Marta), which is very distinct from the present fly in the venation of the radial field, notably the short subtransverse  $R_3$  and the much shorter  $R_4$ . The generally similar Chilean species *I. ignithorax* Alexander and *I. mesocera* Alexander are very distinct in the elongate  $Sc$  and  $R_s$ .

### Teucholabis Osten Sacken

#### *Teucholabis (Teucholabis) retusa* sp. n.

General coloration black, including the antennae, legs and knobs of halteres; wings narrow, faintly grayish, the oval stigma pale brown; male hypopygium with the lobe of the basistyle obtusely rounded, without spine.

*Male*—Length, about 3.5 mm.; wing, 3.8 x 1.1 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments oval, the verticils long and conspicuous. Head opaque dark gray.

Pronotum and anterior lateral pretergites testaceous-yellow. Mesonotum and pleura brownish black. Halteres obscure, the knobs infuscated. Legs black throughout, the segments with long erect setae. Wings much narrower than in *parishiana*, with a faint grayish tinge; stigma oval, pale brown; veins dark brown. Venation:  $R_2$  subequal to  $R_{2+3+4}$  and  $R_{1+2}$ ; last section of  $M_{1+2}$  arched where it leaves cell  $1st M_2$ ;  $m-cu$  at fork of  $M$ .

Abdomen, including hypopygium, black. Male hypopygium with the lobe of basistyle obtusely rounded, without an acute spine, as in *parishiana*. Outer dististyle unusually long and slender.

Habitat: Peru. *Holotype*, ♂, Iquitos, March–April 1931 (R. C. Shannon).

The nearest described ally of the present fly is undoubtedly *Teucholabis* (*Teucholabis*) *parishiana* Alexander, likewise from Iquitos, which is readily told by the broader wings and different structure of the hypopygium.

### Gonomyia Meigen

#### Gonomyia (*Lipophleps*) *schadeana* sp. n.

Belongs to the *cinerea* group; rostrum black; thoracic pleura yellow, with two brown lines; wings with stigma small but distinct; *Sc* short, *Sc*<sub>1</sub> ending before origin of *Rs* a distance greater than the length of the latter; male hypopygium with the outer dististyle provided with a blackened basal spine; dorsal style a simple spine that is about twice as long as a similar spine on the inner dististyle.

*Male*—Length, about 3.5 mm.; wing, 3.8 mm.

Described from an alcoholic specimen.

Rostrum and palpi black. Antennae with scape and pedicel yellow, darkened beneath; flagellum pale brown, the verticils elongate. Head yellow, the center of the vertex extensively infuscated.

Pronotum yellow, lined with brown on lateral portion. Lateral pretergites pale yellow. Mesonotum dark brown, the praescutum margined with paler brown; scutal lobes dark brown, the median area yellow with a further median brown dash; scutellum infuscated, margined caudally with yellow; mediotergite dark brown, variegated with obscure yellow at near midlength. Pleura yellow, with two narrow, dark brown, longitudinal stripes, the more ventral one broader. Halteres yellow, the knobs weakly infuscated. Legs with the coxae pale, the apex of fore coxa and base of midcoxa darkened; trochanters yellow; remainder of legs broken. Wings with a yellowish tinge, the basal portions slightly more infuscated; costal region yellowish white; stigma small, oval, darker brown; a scarcely indicated dark seam along cord; veins pale brown, more yellowish in the basal and costal portions. Venation: *Sc*<sub>1</sub> ending before origin of *Rs* a distance slightly greater than the length of the latter; *Rs* less than one-half the length of its anterior branch.

Abdominal tergites dark brown, the caudal margins of the intermediate segments paler. Male hypopygium with the outer dististyle bearing a blackened basal spine that is more than one-third the length of the paddlelike outer arm of the style, the latter further provided with a single small spine in the axil. Inner style a hemispherical fleshy mass, prolonged caudally into a strong, thornlike spine that is about one-half longer than the basal spine of the outer dististyle. Dorsal style a slender, simple spine, curved at base, about twice the length of the thorn of the inner dististyle.

Habitat: Paraguay. *Holotype*, alcoholic ♂, Villarica, 1931 (F. Schade, through Dr. G. C. Crampton).



I take great pleasure in naming this fly in honor of my friend, Mr. Francisco Schade. The species is allied to *Gonomyia* (*Lipophleps*) *aquispinosa* Alexander (Paraguay), differing in the darker wing-stigma, shorter *Sc* and in the details of the male hypopygium. In *aquispinosa*, the spines of the dorsal dististyle and the inner style are both small and subequal in size, while the outer dististyle is a simple, elongate, unarmed blade.

### **Trentepohlia** Bigot

#### **Trentepohlia** (*Paramongoma*) *roraimicola* sp. n.

General coloration of thorax light brown; antennae black throughout; legs brown, the tarsi slightly paler; wings with a dusky tinge, restrictedly patterned with darker brown, including the stigma and a seam at origin of *Rs*; vein *R*<sub>3</sub> unusually erect, so cell *R*<sub>2</sub> is longer than wide at costa; cell 1st *M*<sub>2</sub> elongate, the basal section of *M*<sub>3</sub> long and arcuated.

*Male*—Length, about 6.5 mm.; wing, 7.5 mm.

Rostrum dark brown; palpi black. Antennae black throughout; flagellar segments oval to subcylindrical, with inconspicuous verticils. Head dark brown, sparsely pruinose; anterior vertex narrow.

Mesonotum and pleura almost uniformly light brown, the dorso-pleural region a little darker. Halteres dirty white. Legs with the coxae light brown; trochanters testaceous; remainder of legs brown, the tarsi slightly paler. Wings with a dusky tinge, the stigma and a seam at origin of *Rs* darker brown; narrower and less evident clouds along cord and on vein *m*; veins brown. Macrotrichia of veins very sparse, beyond cord with a restricted series on vein *R*<sub>4+5</sub> + *M*<sub>1+2</sub> and on the distal section of *R*<sub>4+5</sub>. Venation: *Sc*<sub>1</sub> ending shortly before *R*<sub>2</sub>, the latter at fork of *R*<sub>3+4</sub>; *R*<sub>3</sub> unusually erect, longer than the distance on costa between veins *R*<sub>1+2</sub> and *R*<sub>3</sub>; vein *R*<sub>4</sub> long-extended; cell 1st *M*<sub>2</sub> elongate, the upper face (vein *R*<sub>4+5</sub> + *M*<sub>1+2</sub>) longer than *R*<sub>2+3+4</sub>; basal section of *M*<sub>3</sub> elongate, arcuated, about one-third longer than *m-cu*.

Abdominal tergites brown, the sternites obscure yellow, the outer sternites with the caudal borders weakly darkened.

Habitat: Brazil. *Holotype*, ♂, Mount Roraima, summit, altitude about 8,500 feet (D. Vesey-FitzGerald); Myers' No. 3307.

*Trentepohlia* (*Paramongoma*) *roraimicola* is abundantly distinct from all other species in Tropical America, the most conspicuous features being the combination of unvariegated legs, slightly patterned wings, and the venation, especially the erect vein *R*<sub>3</sub> and the elongate cell 1st *M*<sub>2</sub>.

**Cryptolabis** Osten Sacken**Cryptolabis (Cryptolabis) schadei** sp. n.

Mesonotum brown, the praescutum lined with blackish, including median and sublateral stripes of this color; antennal flagellum chiefly obscure yellow; halteres pale yellow; legs yellow, the tips of the femora and tibiae, and all of tarsi excepting proximal ends of basitarsi, dark brown; wings tinged with grayish yellow, the linear stigmal seam and an axillary area brown; macrotrichia of cells abundant;  $R_s$  elongate, in alignment with  $R_5$ ;  $R_2$  longer than  $R_{2+3}$ .

*Female*—Length, about 4 mm.; wing, 5 mm.

Rostrum and palpi brown. Antennae with scape and pedicel dark brown, the flagellum obscure yellow; flagellar segments subcylindrical to somewhat oval, with long conspicuous verticils that exceed the segments in length. Head pale brownish testaceous.

Pronotum and lateral pretergites yellowish white. Mesonotum brown, the praescutum with a narrow blackish median line and less distinct sublateral stripes of the same color, the latter crossing the suture onto the lateral margins of the scutal lobes; centers of scutal lobes brown; posterior sclerites of mesonotum infuscated. Pleura chiefly blackened, the dorsopleural region testaceous, the ventral sternopleurites paling to light testaceous brown. Halteres pale yellow. Legs with the coxae brownish testaceous; trochanters yellow; femora yellow, the tips narrowly dark brown; tibiae obscure yellow, the tips narrowly darkened; tarsi dark brown, the proximal end of basitarsus yellow. Wings tinged with grayish yellow, the prearcular and costal regions clearer yellow; an elongate stigmal seam and an axillary area brown; veins brownish yellow. Macrotrichia of cells numerous, especially beyond the cord and in outer ends of cells *Cu*, *1st A* and *2nd A*. Venation:  $R_s$  elongate, sinuous on distal half;  $R_2$  oblique, a little longer than  $R_{2+3}$ ;  $R_s$  in direct alignment with  $R_5$ ; cell  $M_3$  deep, its petiole shorter than *m-cu*.

Abdomen brown, the ovipositor paler.

Habitat: Brazil. *Holotype*, ♀, Campo Bello, Minas Geraes, October 5, 1930 (F. Schade).

*Cryptolabis (Cryptolabis) schadei* is named in honor of the collector. It is most nearly allied to species such as *C. (C.) chilota* Alexander and *C. (C.) spatulata* Alexander in the elongate  $R_s$  in perfect alignment with vein  $R_5$ , differing from all described species in the pattern of the thorax, legs and wings.

**Toxorhina** Loew**Toxorhina (Toxorhina) mendosa** sp. n.

General coloration buffy brown, the praescutum with three, narrow, dark brown stripes; halteres pale yellow; legs yellow, the tips of the tibiae conspicuously blackened; male hypopygium with the basistyle

produced at apex on mesal face into a flattened, dark-colored lobe; arms of aedeagus short, obtuse.

*Male*—Length, excluding rostrum, about 7 mm.; wing, 5.5 mm; rostrum, 4.2 mm.

Rostrum elongate, dark brown. Antennae black throughout. Head brownish gray.

Pronotum black. Mesonotal praescutum buffy brown, with three, narrow, dark brown stripes; scutal lobes conspicuously marked with brown; posterior sclerites of mesonotum more pruinose. Pleura brown, the dorsal sclerites darker, the ventral sternopleurite a little darker than the dorsal portion. Halteres pale yellow. Legs with the coxae dusky basally, more yellowish at tips; trochanters yellow; femora obscure yellow; tibiae obscure yellow, the tips conspicuously blackened; tarsi pale brown, the outer segments blackened. Wings subhyaline; axillary region weakly darkened; veins dark brown, the prearcular region and veins *Sc* and *R* more yellowish. Venation: *Sc*<sub>1</sub> ending opposite origin of *Rs*; *m-cu* before fork of *M*.

Abdomen brownish yellow, the caudal and sublateral portions of the segments restrictedly darkened; outer segments, including hypopygium, more uniformly darkened. Male hypopygium with the apex of basistyle on mesal face produced into a flattened, dark-colored lobe, much as in *fragilis*. Dististyle much as in *fragilis*, the base terminating in two blunt blackened spinulose points, the rostral blade flattened and bearing a conspicuous toothed flange near base. Aedeagus with the arms short, obtuse.

Habitat: Brazil. *Holotype*, ♂, Campo Bello, Minas Geraes, January 16, 1931 (F. Schade).

*Toxorhina* (*Toxorhina*) *mendosa* is most nearly allied to *T. (T.) fragilis* Loew (Greater Antilles) in the general coloration and blackened tips of the tibiae, differing in the structure of the male hypopygium, especially the details of the dististyle and the obtuse arms of the aedeagus, in *fragilis* these being longer, lyriform, with each arm drawn out into an acute point.