



UNDESCRIBED SPECIES OF SOUTH AMERICAN
TIPULIDAE (DIPTERA), PART I

BY

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The novelties discussed in this report were collected in southern Brazil by Messrs. Fritz Hoffmann and Fritz Plaumann, and in the Oriente of Ecuador by Mr. William Clarke - Macintyre. The types of the species are preserved in my collection of these flies through the kindly interest of the entomologists above mentioned.

***Tipula profuga*, n. sp.**

Belongs to the *glaphyoptera* group; antennae short, flagellum bicolorous; mesonotum with a nearly continuous brownish black median vitta; three entire praescutal stripes; femora obscure yellow, the tips narrowly blackened, preceded by a narrow yellow subterminal ring; wings pale yellow, the costal portion more intensely so; wing-surface variegated by light and dark brown and by whitish subhyaline areas; a dark area extending from vein *h* across the extreme bases of

cells *R* and *M*; male hypopygium with the caudal margin of the tergite bearing a median lobe; appendage of eighth sternite simple, about four times as long as wide, truncated at apex.

Male. Length, about 15 mm.; wing, 19 mm.; antenna, 3.2 mm.

Frontal prolongation of head brown; nasus distinct; palpi black. Antennae relatively short, as shown by the measurements; scape and pedicel yellow; succeeding segments yellowish brown, intermediate segments bicolorous, the basal enlargement black, the apex obscure chiefly yellow pollinose, the vertex with a conspicuous median brown vitta that is narrowed at either end.

Mesonotal praescutum yellow, with four dark brown stripes, the central area between the intermediate stripes a little paler and divided by a capillary darker median vitta; lateral stripes entire; humeral region and lateral borders less distinctly darkened, brown; scutum yellowish gray, each lobe with two brown areas, the anterior end of the more mesal darkened area extending to the suture in front; median area of scutum darkened; scutellum gray with a median dark line, parascutella brownish black; mediotergite gray, with a capillary brownish black median vitta. Pleura yellowish gray, vaguely marked with brown on the dorsal anepisternum and extreme cephalic sternopleurite; pleurotergite somewhat more silvery. Halteres with stem obscure yellow, the knob darkened. Legs with the coxae brownish gray; trochanters yellow; femora obscure yellow, the tips narrowly blackened, the amount subequal on all legs, the darkening preceded by a narrow, clearer yellow, subterminal ring; tibiae yellowish brown to light brown, the tips narrowly darkened; tarsi brownish black. Wings with the ground-color pale yellow, the prearcular and costal regions deeper yellow; wing-disk variegated with light and dark brown and whitish subhyaline areas; the darker brown markings include a common subbasal spot involving *h* and the bases of cells *R* and *M*; cell *Sc* with three additional dark brown areas, the last at end of cell; paler brown areas appearing as extensive clouds and marblings, the cells beyond cord almost uniformly darkened or with darker central streaks; a narrow broken pale fascia beyond stigma; more whitish areas before stigma, in base of cell *R*₂, across cell 1st *M*₂ and at near two-thirds the length of a cell *M*; veins dark. Venation: *R*₁₊₂ entire; cell 1st *M*₂ small.

Abdominal tergites yellow, blackened sublaterally, the extreme borders narrowly gray; vague indications of a much less distinct median tergal stripe; subterminal segments more

extensively darkened; hypopygium chiefly pale. Male hypopygium of the general structure of the *glaphyroptera* group. Ninth tergite with a conspicuous U-shaped emargination, at its base bearing a conspicuous lobe, the apex of latter truncated but produced medially into a small acute point; sublaterally the broad tergal lobes are produced into subacute blades. Dististyle long and narrow, the inner with a dense brush of erect setae before apex. Basistyle with the mesal lobe slender, near its base with a pencil of long reddish setae directed ventrad. Eighth sternite with a single conspicuous median lobe, this fully four times as long as wide, clothed with long setae, the apex truncated; at base, on either side of the lobe, with very small pale cushions. Gonapophyses of unusual shape, at near midlength bent at a right angle into a long slender straight rod, at the point of angulation with a small outer lateral arm or lobule.

Habitat. Brazil (Rio Grande do Sul).

Holotype, male, Nova Teutonia, April 22, 1936 (*Platmann*).

The present fly is quite distinct from all previously described species of the group in the wing-pattern, short bicolorous antennae, and in the structure of the male hypopygium, especially the ninth tergite and eighth sternite.

***Tipula inaequilobata*, sp. n.**

Belongs to the *parishi* group; general coloration testaceous yellow, unmarked; antennae long, in male about one-half the remainder of body; flagellum bicolorous; knobs of halteres brownish black; legs yellow, the terminal tarsal segments brown; wings with a faint brownish tinge, cell *C* and the pre-arcular region brown; cell *Sc* more yellowish; cell *R* and outer radial field more weakly infumed; male hypopygium with the caudal margin of tergite trilobed, the median lobe extended caudad beyond the others, its apex truncated; lateral lobes slender, each tipped with about six setae.

Male. Length, about 11 mm.; wing, 11.5 mm.; antenna, about 5.5 mm.

Frontal prolongation of head brown; nasus distinct; palpi brown, the terminal segment elongate. Antennae (male) relatively long, about one-half the length of the remainder of body; bicolored, yellow, the basal enlargements of the flagellar segments beyond the first darkened; verticils shorter than the segments. Head brown, narrowly more grayish on orbits.

Mesonotal praescutum obscure testaceous-yellow, without evident markings, the interspaces delimited only by series of

microscopic black setae. Pleura pale yellow. Halteres pale, the knobs brownish black. Legs with the coxae and trochanters pale yellow; remainder of legs yellow, the long tarsi passing into brown. Wings with a faint brown tinge; prearcular region and cell *C* brown; cell *Sc* yellow; stigma short-oval, brown; cell *R*, except at outer end, and the outer radial field less evidently infumed; posterior cord, at *Cu*, very narrowly and insensibly darkened; veins brown. Venation: *Sc*₂ ending about opposite midlength of *R*₅, the latter gently arcuated; *R*₁₊₂ present, with out trichia; petiole of cell *M*₁ about one half the cell; *M*₁₊₂ short, subequal to *r-m*.

Abdominal tergites brown, the incisures of the more basal segments and a transverse ring on the second tergite glabrous and yellow; sternites yellow; subterminal segments more uniformly darkened. Male hypopygium with the tergite trilobed, the lobes very unequal; median one broader, projecting beyond the level of the slender lateral lobules, the apex truncated or nearly so and provided with numerous setae; lateral lobules each with about six or seven setae. From the posterior portion of the basistyle juts a yellow pointed appendage, its outer portion with numerous appressed setae. Dististyle single, profoundly bifid, the base with a group of long erect setae. Eighth sternite with caudal margin broadly rounded to subtruncate, with dense setae, sparse or lacking the midline.

Habitat. Ecuador (Oriente).

Holotype, male, Jatun Yagu, Napo Watershed, altitude 2275 feet, January 1937 (*Macintyre*).

Related to *Tipula amoenicornis* Alexander, *T. parishii* Alexander and *T. smithi* Alexander, differing from all in the pattern of the wings and in the structure of the male hypopygium.

Limonia (Rhipidia) laetitarsis, sp. n.

Belongs to the *uniseriata* group; antennae with 11 branched segments, the branches exceeding the segments in length; mesonotal praescutum obscure yellow, with a conspicuous median brown stripe; thoracic pleura yellow, with two approximated brown longitudinal stripes; knobs of halteres blackened; tibiae and tarsi chiefly pale, posterior tarsi with segments two to four clear light yellow, the terminal segment abruptly dark brown; wings whitish subhyaline heavily patterned with brown, including five major costal areas; male hypopygium with the rostral spines short, straight, placed on basal half of rostral prolongation.

Male.—Length, about 5 mm.; wing, 5.5 mm.; antenna, about 1.5 mm.

Rostrum and palpi black. Antennae black, the terminal segment a trifle paler: formula $2+11+1$; flagellar segments one to eleven, inclusive, each with a single branch that exceeds the segment in length, the longest (on the intermediate segments) about one-half longer than the segment itself; terminal segment nearly twice as long as the penultimate. Head gray; anterior vertex narrow.

Mesonotal praescutum obscure yellow, with a conspicuous median brown stripe that is narrowly bordered by slightly darker brown, this color most evident on the anterior half; no evident lateral praescutal stripes; scutum yellow, each lobe with a conspicuous dark brown area, converging behind, virtually confluent on the scutellum; mediotergite dark brown, the lateral portions brightened. Pleura yellow, variegated with dark brown on propleura; mesopleura with two approximated dark brown longitudinal stripes, one extending from behind the fore coxae to beyond the pteropleurite; the more ventral stripe occupies the dorsal sternopleurite and meron. Halteres infuscated, the knobs blackened. Legs with the fore coxae darkened, the remaining coxae and all trochanters yellow; fore femora chiefly dark brown, the base narrowly brightened; middle and hind femora obscure brownish yellow, the tips narrowly darkened; tibiae and tarsi brownish yellow, posterior tarsi with segments two to four, inclusive, clear light yellow, much brighter than on other legs; terminal segment abruptly dark brown. Wings with the ground-color whitish subhyaline, chiefly obscured by extensive brown clouds, five in the costal region somewhat more intense; costal darkened areas much more extensive than the interspaces; remainder of disk before cord almost uniformly suffused with brown, uninterrupted by ground areas at the axilla, outer end of cell *1st A* adjoining vein *2nd A*, a semicircular area surrounding the dark spot at fork of *Sc*; wing-tip and outer radial field chiefly whitened; veins brown, pale in the ground areas. Venation: *Sc*₁ ending about opposite two-thirds *Rs*, *Sc*₂ at its tip; *m-cu* close to fork of *M*.

Abdomen dark brown, the sternites and subterminal segment pale. Male hypopygium with the caudal margin of tergite nearly transverse. Ventral dististyle small, the rostral prolongation relatively short and stout, with two short straight spines inserted on face of basal half; spines subequal in length, placed rather close together on small low tubercles. Gonapophyses with mesal-apical lobes relatively narrow, darkened, at apex abruptly narrowed into cylindrical points.

Habitat.—Brazil (Rio Grande do Sul).

Holotype, male. Nova Teutonia, November 28, 1935 (*Planmann*).

Readily told from allied species of the *uniseriata* group, as *Limonia* (*Rhipidia*) *mystica* Alexander (Colombia) and *L.* (*R.*) *pallatangae* Alexander (Ecuador), by the 11 branched antennal flagellum, brightened posterior tarsi and in slight details of structure of the male hypopygium.

Limonia (*Rhipidia*) *flabelliformis brevifila*, subsp. n.

Male.—Length, about 7.5 mm.; wing, 7 mm.; antenna, about 3.3 mm.

Close to typical *flabelliformis* Alexander (Panamá) and the subspecies *flabelliformis brachynema* Alexander (southern Brazil), differing especially in the length of the flagellar branches and the nature of the trichiation of the wing-veins.

Wing-trichia longer and coarser than in the other subspecies, especially on the longitudinal veins beyond cord where they are nearly if not quite half as long as the width of cells R_5 or 2nd M_2 .

Flagellar branches relatively short, the longest (at about midlength of the organ) a little less than three times the length of the segment; terminal segment not exceeding twice the length of the apical pedicel of the penultimate segment, in the typical form very long, nearly four times this length. Dark wing markings more restricted, smaller than the subcostal interspaces. Femoral tips narrowly but conspicuously infuscated.

Habitat.—Ecuador (Oriente).

Holotype, male, Yunguilla, altitude 5850 feet, November 19, 1936 (*Macintyre*).

***Limnophila hoffmanniana*, sp. n**

General coloration yellowish gray, the mesonotum with a nearly continuous median brown vitta and conspicuous setigerous punctures; femora yellow, the tips narrowly blackened; wings pale yellow, spotted and dotted with dark brown, including major areas at origin of *Rs*, stigma and anterior cord; sparse smaller dots in all cells; abdominal sternites with a broken median brown vitta and conspicuous setigerous punctures.

Female.—Length, about 13 - 16 mm.; wing, 11 - 13 mm.

Rostrum brownish gray; palpi dark brown. Antennae with scape and pedicel brownish black, sparsely pruinose; flagellum with basal segments bicolorous, the proximal portion dark

brown, the remainder yellow; outer segments uniformly darkened. Head gray, prolonged behind; setigerous punctures relatively inconspicuous.

Pronotum massive, yellowish gray, with a capillary dark line and inconspicuous setigerous punctures. Mesonotal praescutum yellowish gray, the median dark stripe relatively well-defined, especially as a capillary on cephalic half of sclerite, subtended on either side by a paler brown, more or less interrupted shading, this latter color becoming paler on posterior portion of sclerite; lateral stripes scarcely indicated; setigerous punctures of interspace large and very conspicuously darkened; no tuberculate pits; pseudosutural foveae large subcircular, pale brown in color; posterior sclerites of notum yellowish gray, each scutal lobe with a semicircular dark area; a nearly continuous median brown line; caudal margin of mediotergite with a V-shaped darkening. Pleura variegated brownish black and obscure yellow, the dark color appearing as more or less distinct longitudinal stripes and less distinct dark dashes in the pale areas. Halteres with stem obscure yellow, knob dark brown. Legs with the coxae grayish yellow pollinose; trochanters obscure yellow; femora yellow, with relatively narrow, nearly apical black rings, these subequal on all legs and including the distal eighth to tenth of the segment; tibiae yellow, the tips narrowly darkened; tarsi yellow, the outer segments brownish black. Wings with the ground-color pale yellow, spotted and dotted with dark brown, including major areas at origin of *Rs* and including stigma and anterior cord; a smaller quadrate area at near one-fourth the length of cell *R*; cells of wing with relatively sparse, smaller brown dots; veins yellowish brown, darker in the clouded areas. Venation: R_{2+3+4} very short, cell R_3 thus sessile or very short-petiolate; cell 1st M_2 short-rectangular, with $m-cu$ at near one-third to one-fourth the length; anterior arcus preserved.

Abdominal tergites dark brown, laterally paler and with brown setigerous punctures; sternites obscure yellow, with a series of median brown spots to form an interrupted median vitta, with additional abundant brown setigerous punctures.

Habitat. - Brazil (Santa Catharina).

Holotype, female, Neu Bremen, Rio Laeiss, October 17, 1936. (*Hoffmann*). Paratopotypes, 2 females, October 17-November 7, 1936,

Limnophila hoffmanniana is named in honor of the collector, Mr. Fritz Hoffmann. It is closely related to *L. schudei* Alexander (Paraguay), which differs most evidently in the smaller size and very abundantly spotted and dotted wings.

The exact affinities of this species, and the one next described as *L. pullipes*, sp. n., remains somewhat in question, since no male specimens have been taken. The possibility is not excluded that the present fly may be found to belong more properly in *Pseudolimnophila* or even in *Paralimnophila*.

***Limnophila pullipes*, sp. n.**

General coloration brown, heavily yellow pollinose; antennae short, basal flagellar segments pale; mesonotal praescutum with an entire capillary black median vitta and conspicuous setigerous punctures; legs black; wings whitish subhyaline abundantly spotted and dotted with dark brown; R_{1+2} about twice R_{2+3+4} ; cell 1st M_2 long - rectangular, with *m-cu* at from one third to one - fourth the length.

Female. Length, about 13 - 14 mm.; wing, 10 - 11 mm.

Rostrum black, sparsely pollinose; palpi black. Antennae short, if bent backward extending about to posterior end of the pronotum; scape and pedicel black; flagellum obscure yellow, the outer segments passing into brown; basal flagellar segments subglobular to short - oval, the outer segments slender, cylindrical, with long conspicuous verticils. Head yellowish gray, with a capillary dark brown median and numerous black setigerous punctures.

Pronotum massive, yellowish brown, with a capillary darker vitta. Mesonotal praescutum with the ground - color brown, heavily yellow pollinose; praescutum with poorly defined stripes, these better indicated by darker cephalic ends, the posterior portions poorly differentiated from the ground; a complete capillary median vitta, at near midlength of the praescutum and opposite the cephalic ends of the lateral stripe with paired dark spot to form a broken transverse girde; interspace with conspicuous, dark brown, setigerous punctures; posterior sclerites of mesonotum yellowish brown, with dark areas on posterior - lateral portions of mediotergite. Pleura variegated brownish gray and more yellowish gray, the later occupying the dorsal sternopleurite; dorsopleura membrane chiefly pale. Halteres yellow. Legs with coxae pruinose; remainder of legs entirely black. Wings with the restricted ground - color whitish subhyaline, with two major dark brown areas, the first at origin of *Rs* and stigma, the second in outer radial field, enclosing a tiny ground spot in outer end of cell R_2 ; remainder of membrane with very numerous, chiefly transverse, brown dots and spots, involving all the cells somewhat larger at origin of *Rs*, base of cell *R*, end of vein 2nd *A* and at midlength of cell 2nd; over most of the

wing the dark spots are subequal in area to the ground - pattern; veins dark, pale in the ground areas. Venation: Sc_1 ending beyond fork of R_{2+3+4} Sc_2 at its tip; Rs elongate; R_{2+3+4} subequal to or slightly longer than the basal section of R_5 ; R_{1+2} about twice R_{2+3+4} ; cell 1st M_2 long-rectangular with $m-cu$ at from one - third to one - fourth its length; anterior arculus preserved.

Abdominal tergites dark brown, sparsely pruinose; sternites paler yellowish brown. Ovipositor with the elongate valves black, the tips of the cerci horn - yellow.

Habitat. Brazil (Santa Catharina).

Holotype, female, Neu Bremen, Rio Laciss, May 15, 1936 (*Hoffmann*). Paratopotypes, 3 females, October 11 - November 1, 1936.

Limnophila pullipes is very distinct from all other generally similar species that have abundantly dotted wings, the uniformly blackened legs providing a strong character. The head is not as conspicuously narrowed and prolonged behind as in some species and the affinities seem to be closer to *Limnophila* s. s. than to certain other groups of the Limnophilini.

Erioptera (Empeda) longisquama, sp. n.

General coloration brown; rostrum light yellow; antennae black throughout; scutellum a trifle brightened; knobs of halteres infuscated; legs brown, the tarsi passing into black; femora with numerous long slender scales; wings almost uniformly tinged with gray, without stigma; Sc_1 ending about opposite two - fifths the length of Rs ; male hypopygium with the outer dististyle trilobed; inner dististyle broad.

Male.--- Length, about 3 mm.; wing, 3.4 mm.

Rostrum light yellow; palpi brownish black. Antennae relatively short, if bent backward not attaining the wing - root, black throughout; basal flagellar segments short and crowded. Head brown.

Pronotum dark brown. Anterior lateral pretergites restrictedly pale yellow. Mesonotum uniformly brown, the scutellum a little brighter, the mediotergite sparsely pruinose. Pleura testaceous brown. Halteres with the knobs infuscated, the base of stem restrictedly brightened. Legs with the coxae and trochanters pale; remainder of legs brown, the tarsi passing into black; legs, especially the femora, with abundant elongate scales, additional to the normal longer setae, these scales fully seven or eight times as long as wide. Wings almost uniformly tinged with gray; stigma lacking; veins brown. Venation: Sc moderately long, Sc_1 ending about oppo-

site two-fifths the length of R_5 , Sc_2 some distance from its tip; R_{2+3+4} a little longer than R_2 ; branches of R_{3+4} nearly parallel to one another.

Abdominal tergites dark brown; sternites and hypopygium more yellowish. Male hypopygium with the outer dististyle trilobed, the outer blade strongly curved. Inner dististyle much broader than in other similar regional species.

Habitat.—Brazil (Santa Catharina).

Holotype, male, Neu Bremen, Rio Laeiss, November 2, 1936 (*Hoffmann*).

The most similar regional species is *Erioptera (Empeda) boliviana* Alexander, of Bolivia, which has somewhat similar elongate scales on the legs, differing conspicuously in the short Sc and especially in the very different structure of the male hypopygium. The presence of scales on the legs in species of *Empeda* is much more common than had formerly been appreciated, although known for some time in numerous oriental and eastern Palaearctic members of the group.

