

## RECORDS AND DESCRIPTIONS OF NEOTROPICAL CRANE-FLIES (TIPULIDÆ, DIPTERA), XVI

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The preceding part under the above general title was published in September, 1942 (JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, 50: 251-262). The very interesting species discussed herewith are all from Ecuador, where they were collected by Mr. David Laddey in the Provinces of Manabi and Santiago-Zamora (southern Oriente). I wish to express my deep thanks to Mr. Laddey for his conscientious collecting of these flies, the types of which are preserved in my personal collection.

### Genus *Brachypremna* Osten Sacken

#### *Brachypremna quasimodo* new species.

Mesonotal præscutum unusually high and gibbous to produce a hump-backed appearance; mesonotum handsomely patterned with dark brown on an obscure yellow ground; femora obscure brownish yellow, the tips broadly and conspicuously blackened; wings brownish yellow, patterned with darker brown and whitish subhyaline, the latter occurring as a conspicuous submarginal band in the outer medial field; veins  $R_{4+5}$ ,  $M_1$  and  $M_2$  all strongly decurved at margin; a strong spur of a vein from  $R_{4+5}$  jutting into cell  $R_5$  at near two-thirds the length.

MALE.—Length about 15-16 mm.; wing 19-20 mm.

Frontal prolongation of head unusually deep and conspicuously bulbous, pale yellow, with a narrow dark line on side; nasus distinct; palpi with basal three segments and proximal end of fourth yellow, the remainder of fourth black with the exception of the very restricted orange tip. Antennæ with scape yellow; pedicel and basal two or three flagellar segments white, the outer segments passing into dark brown. Head buffy yellow, the posterior vertex with a brown line back from each eye on either side of a slightly wider median ground line.

Cervical sclerites conspicuously dark brown. Pronotum grayish yellow, narrowly infuscated above and on sides. Mesonotal præscutum very conspicuously gibbous to produce a strong hump-backed appearance; obscure yellow, conspicuously patterned with dark brown, including two intermediate stripes that are best-delimited at the cephalic margin and on posterior half of sclerite, and two transverse brown lines, one near the pseudosutural foveæ, the other closer to the suture, the ends of the two areas more or less

united on the sides of the sclerite to form a more or less distinct U-shaped marking; median area of præscutum behind clearer yellow, crossing the suture and becoming wider on the mid-area of the scutum; scutal lobes conspicuously dark brown, somewhat paler toward the wing-root; scutellum and mediotergite testaceous, with a nearly continuous median brown stripe; pleurotergite pale, more or less darkened above and the suture between it and the mediotergite. Pleura yellow, restrictedly but conspicuously patterned with dark brown on the various sclerites, including the anepisternum, sternopleurite, pteropleurite and meron. Halteres elongate, stem and apex of knob yellow, base of knob dark brown. Legs with coxæ testaceous, patterned at and near apex on outer face with black; trochanters yellow; femora obscure brownish yellow, the tips broadly and conspicuously blackened; tibiæ dark brown, the extreme bases narrowly whitened; tarsi brown, the terminal segments paling to obscure yellow. Wings brownish yellow, patterned with darker brown and whitish subhyaline; prearcular and costal fields more uniformly darkened; wing-apex and cells beyond cord strongly infuscated; a conspicuous whitish stripe involving the central portion of cell  $R_3$  and adjoining part of  $R_2$ ; a conspicuous stripe extending from cell  $1st M_2$  across the bases of cells  $2nd M_2$  and  $M_1$  into the subapical portion of cell  $R_5$ ; cells  $M$ ,  $Cu$  and  $1st A$  somewhat whitened, interrupted by a continuous brown seam in cell  $M$  adjoining vein  $Cu$ ; cell  $2nd A$  somewhat uniformly darkened; veins brown. Venation: Compared with the normal venation of the genus, vein  $R_3$  more strongly upeurved at apex and veins  $R_{4+5}$ ,  $M_1$  and  $M_2$  more strongly decurved; in virtually all specimens, vein  $R_{4+5}$  at near two-thirds the length sends a short spur into cell  $R_5$ .

Abdominal tergites chiefly light brown, the segments with a relatively narrow subbasal dark brown ring; basal ring of second tergite with a conspicuous oblique black dash near lateral margin; sternites brownish yellow, each with an oval black median dash, these more elongate on the outer segments; subterminal segments more uniform medium brown; hypopygium brownish yellow.

Holotype, ♂, Mayaico, Rio Nanganitza, Santiago-Zamora, altitude 1000 meters, November 20, 1941 (Laddey). Paratopotypes, 3 ♂♂. Paratype, 1 ♂, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, November 4, 1941 (Laddey).

The name, *quasimodo*, is from the hero of the same name in Victor Hugo's, "Notre Dame de Paris." The strongly hunch-backed condition of the fly is not even approached in the approximately 15 other regional species so far made known.

#### Genus *Tipula* Linnaeus

***Tipula* (*Nephrotomodes*) *intemperata* new species.**

Allied to *temperata*; general coloration brownish gray, the mesonotal præscutum with four darker brownish gray stripes; antennæ (male) elongate,

bicolored, yellow with the basal enlargements of segments black; wings heavily patterned with brown; *r-m* short; male hypopygium with the apical armature of ninth tergite consisting of elongate black setæ; appendage of ninth sternite a broad flattened spatula, its apex weakly pointed.

MALE.—Length about 11 mm.; wing 11 mm.; antenna about 6 mm.

Frontal prolongation of head brown, with abundant black setæ; nasus stout; palpi obscure testaceous yellow. Antennæ (male) exceeding one-half the length of wing; basal three segments yellow; flagellar segments beyond the first conspicuously bicolored, yellow, with the basal enlargement black; verticils relatively short. Head brownish gray, the front clearer gray; orbits with conspicuous black setæ.

Pronotum brownish gray. Mesonotal præscutum and scutum dull gray, the former with four darker brownish gray stripes, the narrow intermediate pair widely separated by a poorly indicated pale median area; scutum almost uniformly brown; scutellum and mediotergite abruptly testaceous yellow, parascutella darker. Vestiture of mesonotal præscutum reduced to numerous microscopic setulæ on the interspaces. Pleura and pleurotergite, including dorsopleural membrane, testaceous yellow. Halteres weakly infuscated. Legs with the coxæ yellow, very sparsely pruinose; trochanters yellow; remainder of legs yellow, the outer tarsal segments passing into brown. Wings with basal cells weakly tinged with brown, the outer cells more whitish hyaline; membrane heavily and conspicuously patterned with dark brown, including a broad costal darkening that involves the prearcular field, cells *C* and *Sc*, with more than the cephalic half of *R*, and the outer radial field; stigma short-oval, even darker brown; narrow but conspicuous dark brown seams on anterior cord, *m-cu*, outer end of cell 1st *M*<sub>2</sub> and fork of *M*<sub>1+2</sub>, the darkening continued as even narrower seams on the outer medial veins; dark area on *m-cu* conspicuous, especially on posterior portion, sending a more or less distinct seam along the distal section of *Cu*<sub>1</sub> to the margin; veins yellow, darker in the clouded areas. Squama with one or two strong setæ. Venation: *R*<sub>1+2</sub> preserved; *Rs* short, angulated and weakly spurred near origin; basal section of *R*<sub>4+5</sub> long, *r-m* correspondingly reduced; cells *M*<sub>1</sub> and 2nd *A* wide.

Basal abdominal tergites obscure yellow, the lateral margins broadly darkened, the outer segments more uniformly dark brown; incisures of more basal tergites narrowly but conspicuously yellow; sternites yellow; subterminal segments blackened; hypopygium yellow. Male hypopygium with the tergite slightly narrowed apically, the caudal margin very shallowly bilobed by a median emargination; lobes set with elongate black setæ, directed caudad and slightly mesad; ventral tergal lobe stout. Basistyle with the basal caudal portion produced dorsad into a conspicuous lobe. Both dististyles heavily blackened apically, the outer style subacute at apex, with a low black flange near midlength; inner style with the entire posterior half provided with abundant long coarse setæ. Lobe of ninth sternite spatulate, gently pointed at apex, the length about one-half greater than the width; surface with abundant pale setæ, longer and more conspicuous at apex. Eighth ster-

nite relatively short, the caudal border gently convex, with three groups of elongate setæ, the median group more numerous, separated from the lateral pair by glabrous sublateral spaces.

Holotype, ♂, Palmar, Rio Maizito, Manabi, altitude 200 meters, May 5, 1941 (Laddey).

*Tipula* (*Nephrotomodes*) *intemperata* is well-distinguished from the very numerous regional species of the subgenus by the structure of the male hypopygium. The nearest ally is the Mexican *T. (N.) temperata* Alexander, which differs in the body-coloration, stouter antennæ of male, details of wing-pattern, and the details of the hypopygium, as the broader tergal lobes that are armed with abundant blackened pegs, the dististyles, and the even broader and more spatulate appendage of the ninth sternite.

***Tipula* (*Nephrotomodes*) *jivaronis* new species.**

Allied to *parishi*; general coloration of mesonotum reddish brown, the præscutum and scutum with darker brown interspaces; antennæ (male) elongate, approximately two-thirds the length of body; proximal flagellar segments bicolored, yellow with small darkened basal swellings; legs yellow, the outer tarsal segments darkened; wings conspicuously patterned with dark brown, grayish subhyaline and whitish areas, the darkest color including the costal border and outer radial field, with narrower seams on certain of the veins; the white markings very conspicuous, forming a major area in the vicinity of the cord and in the outer medial field; *Rs* square and spurred at origin, cell  $M_1$  short and broad; abdomen yellow, the basal segments patterned with dark brown; a conspicuous black subterminal ring; hypopygium yellow; male hypopygium with the tergal region produced into a median lobe that is distinctly furcate at apex, the shallow fork provided with conspicuous black setae.

MALE.—Length about 9 mm.; wing 10 mm.; antenna about 6 mm.

Frontal prolongation of head brown, darker medially at base; nasus apparently lacking; palpi black, the second segment a little paler; terminal segment broken. Antennæ (male) elongate; scape, pedicel and first flagellar segment pale yellow; succeeding flagellar segments bicolored, yellow, the small basal enlargements a little darker; on the outer segments the dark color becomes more and more extensive, the distal two or three segments uniformly darkened; verticils shorter than the segments. Head brown, the front and very narrow orbits gray; anterior vertex narrow, only a little more than twice the diameter of scape, without a vertical tubercle.

Pronotum dark testaceous brown. Mesonotal præscutum and scutum chiefly reddish brown, the former with indications of darker lines occupying the usual interspaces, leaving four poorly indicated reddish brown stripes; scutum darkened, the centers of the lobes similarly reddened; scutellum brown; mediotergite more yellowish brown, pleurotergite darker. Pleura

behind chiefly brownish testaceous, the anterior sclerites clearer yellow. Halteres with stem pale, knob weakly darkened. Legs with coxæ and trochanters yellow; femora, tibiæ and basitarsi yellow, the outer tarsal segments more darkened; claws with a conspicuous tooth. Wings relatively broad, conspicuously patterned with dark brown, grayish subhyaline, and whitish areas; the darkest pattern occupies the entire costal border, prearcular field and outer radial field, the first area continued caudad to involve the cephalic portion of cell *R*, cell *Sc* being somewhat more yellowish than cell *C*; conspicuous dark brown seams on cord, outer end of cell *1st M*<sub>2</sub> and the veins beyond cord, being largest and most conspicuous along *m-cu* and in outer end of cell *M*; the grayish areas include almost all of basal half of wing behind the costal border, as well as marginal and central darkenings in all outer medial cells; the white areas are unusually conspicuous and form an almost continuous marking in the outer fourth of cell *R*, cell *R*<sub>1</sub> before the stigma, cell *1st M*<sub>2</sub>, and adjoining portions of cells *R*<sub>5</sub> and all outer medial cells, as well as a slightly less distinct whitening in cell *M* just basad of the dark mark at *m-cu*; stigma scarcely darker than the remainder of costa; outer third of cell *R*<sub>3</sub> a little more yellowish; bases of cells *M*, *Cu*, *1st A* and *2nd A* a little brightened; veins brown. Venation: *Rs* square and long-spurred at origin; *r-m* obliterated by fusion of *R*<sub>4+5</sub> with *M*<sub>1+2</sub>; cell *M*<sub>1</sub> short and wide; *m-cu* more than two-thirds the length of *Rs*, placed before midlength of *M*<sub>3+4</sub>; cell *2nd A* relatively wide.

Abdomen obscure yellow, the tergites conspicuously patterned with dark brown, especially laterally; sternites less distinctly patterned with brown; conspicuous subterminal black ring that involves both the tergites and sternites; hypopygium yellow. Male hypopygium with the tergal region produced into a relatively narrow median lobe that is distinctly but shallowly furcate at apex, the outer margin of fork with numerous strong black setæ; ventral tergal appendage entirely pale, strongly compressed, its more slender dorsal lobe densely provided with pale setæ. Dististyles complex; outer dististyle a flattened pale blade, subrectangular in outline, the outer margin narrowly bordered by a blackened rim; inner dististyle with the main body suboval, densely provided with moderately long yellow setæ and a few long black bristles near the beak; rostrum blackened, long and slender, exceeding twice the length of the irregular blackened subventral lobe that is truncated at apex. Median appendage of ninth sternite a depressed pale plate that is densely covered with setæ, the appendage slightly widened outwardly and produced laterad into weak horns; caudal border subtruncate or with a very shallow median notch. Gonapophyses unusually appressed to the ædeagus, the small free caudal portion obtuse at apex; penis exceedingly long and filiform.

Holotype, ♂, Zumbi, Rio Zamora, altitude 700 meters, October 30, 1941 (*Laddey*).

Most similar to species such as *Tipula* (*Nephrotomodes*) *intemperata* Alexander, *T. (N.) smithi* Alexander, and *T. (N.) tem-*

*perata* Alexander, differing in the structure and pattern of the antennæ, the pattern and venation of the wings, and, especially, in the very different structure of the male hypopygium.

### Genus *Limonia* Meigen

***Limonia* (*Limonia*) *somnifica*** new species.

General coloration brown; antennæ (male) conspicuously nodulose, the basal swellings of the flagellar segments heart-shaped, the apical pedicels abrupt; wings with a strong brown tinge, stigma small, a little darker; *Sc* very long, cell 1st  $M_2$  small, about one-half as long as vein  $M_3$  beyond it; male hypopygium very complex in structure, especially the basistyle and dististyle; caudal margin of tergite with a deep U-shaped notch.

MALE.—Length about 5.5 mm.; wing 6 mm.

Rostrum brownish black; palpi black. Antennæ black throughout, relatively long; flagellum very conspicuously nodulose, the individual segments expanded into subtriangular or heart-shaped enlargements that are wider outwardly, the glabrous apical pedicels abruptly narrowed; pedicels unusually long, exceeding two-thirds the segments. Head dark brown; anterior vertex reduced to a linear strip that is only about as wide as a single row of ommatidia.

Thorax almost uniformly brown, the pleura a trifle darker, the lateral portions of the præscutum slightly more yellowish. Halteres dark brown, the base of stem restrictedly pale. Legs with the coxæ pale brown, the fore pair darkened; trochanters obscure brownish yellow; remainder of legs broken. Wings with a strong brown tinge, the costal border and small stigma a trifle darker brown; veins and macrotrichia dark brown. Venation: *Sc* very long,  $Sc_1$  ending opposite fork of *Rs*,  $Sc_2$  at its tip; *Rs* nearly twice the basal section of  $R_{4+5}$ ; cell 1st  $M_2$  small, rectangular, about one-half of vein  $M_3$  beyond it; *m-cu* at or very close to fork of *M*; cell 2nd *A* wide.

Abdominal tergites and hypopygium brownish black; sternites, especially the more basal ones, yellowish. Male hypopygium with the caudal border truncate, with a deep U-shaped notch; subapically with a dusky ridge provided with unusually abundant and elongate setæ, those on the lateral ends of row on more or less distinct tubercles. Basistyle with ventro-mesal lobe relatively large, at apex with several very strong and powerful setæ of unusual length, the innermost setæ with their margin transversely ridged or provided with low denticles on basal half; on inner margin of lobe at near midlength with a further dense group of shorter setæ; extreme apex of basistyle with another complicated outgrowth of lobes and blades, one of the latter bilobed at apex and here provided with about ten flattened spinous blades, three on one arm, seven on the other. Dististyle very complex, the entire mesal face blackened and microscopically corrugated, the posterior portion produced caudad into a relatively slender, free lobe that is similarly corrugated to the very apex; main body of style a relatively small yellow lobe, shorter than the blackened mesal face; rostral portion of style a

darkened cultrate blade that terminates in an acute point; just caudad of base of rostrum with a more slender elongate blackened lobe. Gonapophyses with mesal-apical lobe relatively stout, blackened. *Ædeagus* long and slender.

Holotype, ♂, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, October 30, 1941 (Laddey).

*Limonia (Limonia) somnifica* is entirely different from all other regional members of the subgenus. The relatively long, strongly nodulose antennæ are somewhat as in certain Old World species of *Limonia* but entirely distinct from the Neotropical forms hitherto made known. Furthermore, the unusually complicated male hypopygium is very different from that of other members of the subgenus *Limonia*, more suggesting that of approximately a score of species in the allied subgenus *Dicranomyia* yet very different in all details.

***Limonia (Rhipidia) turritella* new species.**

Allied to *punctoria*; mesonotal præscutum produced dorsad into a strongly developed cone, the cephalic and lateral portions of which are brownish yellow, the posterior portion and most of the posterior sclerites of the notum, as well as the pleura, abruptly blackened; legs chiefly yellow; wings brownish yellow, sparsely spotted with dark brown and with abundant paler brown dots in all the cells; *Sc*<sub>1</sub> ending about opposite two-thirds the length of *Rs*; *m-cu* close to the fork of *M*; abdomen dark brown, the outer segments somewhat brighter brown.

FEMALE.—Length about 7 mm.; wing 7.8 mm.

Rostrum small, yellow; palpi brown. Antennæ with scape, pedicel and first flagellar segment yellow; flagellum with basal swellings of remaining segments dark brown, the glabrous apical pedicels yellow; flagellar segments subtriangular in shape, slightly more produced on the lower face. Head buffy yellow, darker behind.

Pronotum buffy. Mesonotum with præscutum produced dorsad into a strongly developed conical point, about intermediate in height between the normal condition in the subgenus and the very strongly developed spinous point found in *conica* and allies; cephalic and lateral portions of præscutum brownish yellow, the entire posterior surface, as well as the scutum, scutellum and cephalic portion of the mediotergite uniformly brownish black, unpatterned; remainder of mediotergite reddish brown. Propleura light brown; mesopleura, metapleura and pleurotergite conspicuously and abruptly blackened. Halteres with stem yellow, knob weakly darkened. Legs with fore coxæ brown, middle and hind coxæ brownish black; trochanters obscure yellow; remainder of legs yellow, the terminal two tarsal segments, with the apex of the third segment, abruptly blackened; a scarcely evident subterminal darkening on femora. Wings with the ground color

brownish yellow, with a conspicuous dark brown and pale brown spotted and dotted pattern; the darker brown areas occur as larger spots at origin of *Rs*, fork of *Sc*, the restricted stigmal area at *R*<sub>2</sub>, in cell 1st *A* near outer end of vein 2nd *A*, and as narrow seams along cord and outer end of cell 1st *M*<sub>2</sub>; the dots occur in all cells, small but abundant, in part confluent; axillary region clouded with brown; prearcular and costal fields somewhat more saturated yellow than the remainder of ground; veins yellow, darker in the infuscated portions. Venation: *Sc* relatively long, *Sc*<sub>1</sub> ending about opposite two-thirds the length of *Rs*, *Sc*<sub>2</sub> at its tip; *Rs* angulated at origin; inner ends of cells *R*<sub>3</sub> and 1st *M*<sub>2</sub>, especially the former, arcuated, lying conspicuously more basad than cell *R*<sub>5</sub>; cell 1st *M*<sub>2</sub> relatively long, subequal to or longer than vein *M*<sub>1+2</sub> beyond it; *m-cu* at or just beyond the fork of *M*, subequal in length to distal section of vein *Cu*<sub>1</sub>; vein 2nd *A* near outer end weakly angulated or with indications of a weak spur jutting into cell 1st *A* at the place of the dark spot above described.

Abdomen dark brown, the sides of the first tergite slightly brightened; outer segments light brown; both cerci and hypovalvæ reddish, their tips acute.

Holotype, ♀, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, October 28, 1941 (Laddey).

Mr. Laddey informs me that the present fly, as well as rather numerous interesting species discussed in this and other papers, were taken in a very restricted area near the military outpost of Zumbi in Jivaro Indian country. It was particularly noted that although crane-flies were unusually numerous in this small area that other apparently identical locations were quite devoid of these flies. It is further to be noted that there is a station "Zumba," likewise in the Province of Santiago-Zamora, that is entirely distinct from the present one. This latter is described and figured (Map 9) in Brown's paper on "Entomological Stations in Ecuador" (Ann. Ent. Soc. America, 34: 809-851; 1941).

The closest relative of the present fly is *Limonia* (*Rhipidia*) *punctoria* Alexander, which has the development of the præscutal tubercle about the same but which differs very conspicuously in the pattern of the body and wings, the latter lacking the abundant dots in all the cells as found in the present fly.

### Genus *Austrolimnophila* Alexander

*Austrolimnophila* (*Austrolimnophila*) *nympha* new species.

General coloration of mesonotum pale brown, the præscutum with four more or less distinct darker brown stripes; antennæ with scape yellow;

halteres elongate, brownish black; femora pale brown, tips of tibiae and the tarsi yellowish white; wings narrow, whitish subhyaline, very restrictedly patterned with pale gray;  $R_{2+3+4}$  more than twice  $R_{1+2}$ ; cell 1st  $M_2$  narrow; *m-cu* more than one-half its own length beyond the fork of  $M$ ; abdominal tergites dark brown, the extreme posterior borders pale; a conspicuous subterminal brownish black ring, remainder of hypopygium chiefly pale; male hypopygium with the ninth tergite notched and lobed on posterior border; basistyle with blade of interbase conspicuously twisted; inner dististyle with outer margin of basal half densely set with short dense setae.

MALE.—Length about 8 mm.; wing 8.2 mm.

Rostrum yellow; palpi pale brown. Antennae with scape yellow, pedicel light brown; flagellum broken. Head dark brown, more pruinose in front and on orbits, obscure yellow on genae; anterior vertex wide, approximately three times the diameter of the scape.

Pronotum brown medially, paling to yellow on sides. Mesonotal praescutum pale brown, sparsely pruinose, with four more or less distinct darker brown stripes, the intermediate pair narrowly confluent at cephalic border; scutal lobes brownish black; scutellum pale brown, darker behind; postnotum testaceous yellow. Pleura obscure testaceous yellow, more pruinose on dorsal and posterior portions. Halteres very long and slender, brownish black. Legs with the coxae and trochanters testaceous yellow; femora pale brown, lighter basally; tibiae restrictedly pale brown basally, paling to yellow, the latter pattern narrowest on fore legs, very extensive on posterior tibiae; tarsi yellowish white. Wings narrower than in *persessilis*; whitish subhyaline, very restrictedly patterned with pale gray clouds at origin of  $Rs$ , along cord and at fork of  $R_{2+3+4}$ ; stigma small, oval, only a trifle darker than the remaining pattern; veins dark brown. Venation:  $Sc_1$  ending about opposite two-thirds  $Rs$ ,  $Sc_2$  much longer, near the extreme tip of  $Sc_1$ ;  $Rs$  long, weakly angulated at origin;  $R_{2+3+4}$  more than twice  $R_{1+2}$ ; cell 1st  $M_2$  narrow; cell  $M_1$  very short-petiolate; *m-cu* more than one-half its own length beyond the fork of  $M$ .

Abdominal tergites dark brown, the extreme posterior borders pale; sternites obscure yellow; segment eight and tergite nine conspicuously brownish black, the basistyles of the hypopygium again conspicuously pale. Male hypopygium with the tergite conspicuously notched medially, the lateral lobes narrowly obtuse at tips. Basistyle with interbases produced into a long blade that is conspicuously twisted, the tip acute. Outer dististyle relatively narrow, the apex a strongly curved black hook; surface with scattered strong setae, some of unusual length. Inner dististyle longer, strongly curved to feebly angulate at near midlength; basal half wider, its outer margin densely set with short setae.

Holotype, ♂, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, November 2, 1941 (Laddey).

The most similar species is *Austrolimnophila* (*Austrolimnophila*) *persessilis* Alexander, which is well-distinguished by the

broader wings, different body-coloration, and in the details of structure of the male hypopygium, more especially of the tergite, interbase and inner dististyle.

**Austrolimnophila (Limnophilella) inquieta** new species.

General coloration of notum brownish yellow, the anterior portion of præscutum more darkened; pleura uniformly pale yellow; halteres with stem pale yellow, knob brownish black; femora pale yellow, the tips narrowly blackened; wings subhyaline, heavily patterned with brown; a supernumerary crossvein in cell  $R_5$  at near midlength; male hypopygium unusually complex in structure.

MALE.—Length about 9 mm.; wing 9 mm.

FEMALE.—Length about 10 mm.; wing 11 mm.

Rostrum and palpi brownish black. Antennæ with scape and pedicel brownish black, flagellum much paler, brownish yellow; flagellar segments long-cylindrical, with very long conspicuous verticils. Head with front, anterior vertex and posterior orbits light brown, remainder of head pale brown, pruinose; eyes large in both sexes, the anterior vertex unusually narrow, not exceeding two-thirds the diameter of scape.

Pronotum dark brown medially, paling to yellow on sides. Mesonotal præscutum brownish yellow, the anterior portion more darkened; scutum and adjoining portion of præscutum slightly infuscated; scutellum testaceous yellow; mediotergite testaceous yellow, narrowly infuscated on lateral portions. Pleura uniformly pale yellow. Halteres elongate, stem pale yellow, knob brownish black. Legs with coxæ and trochanters pale yellow; femora pale yellow, the tips rather narrowly but conspicuously blackened, the amount subequal on all legs; remainder of legs white. Wings subhyaline, heavily and handsomely patterned with brown, as follows: A very extensive area in cells  $C$  and  $Sc$ , including approximately one-half the length of the cells; pre-areolar field and an adjoining cloud at arculus; major areas in outer radial and medial fields, subequal in degree to the pale interspaces, cell  $1st M_2$  and base of  $R_5$  of this latter color; extensive darkenings in cells  $M_4$  and  $Cu$  immediately behind cell  $1st M_2$  and in cell  $Cu$  immediately behind  $m-cu$ , further extended to margin at end of vein  $2nd A$ ; veins brown, the costal interspaces more yellow. In the allotype, the central portions of the dark areas in outer radial field paler, narrowly bordered by dark brown. Venation:  $R_{1+2}$  longer than  $R_{2+3+4}$ ; a supernumerary crossvein in cell  $R_5$  at near midlength of cell, behind connecting with vein  $M_1$  shortly beyond the origin; cell  $M_1$  short-petiolate;  $m-cu$  from one to one and one-half times its own length before the fork of  $M$ .

Abdominal tergites dark brown, the posterior borders of the segments narrowly but conspicuously pale; basal sternites obscure yellow, more or less distinctly ringed subbasally by dark brown; in male, the subterminal segments more uniformly pale, the eighth and ninth segments black. Male hypopygium complex in structure; ninth tergite deeply notched medially,

each adjacent angle produced into a conspicuous bispinous structure, one spine directed caudad, the other cephalad. Basistyle bearing a large conspicuous fleshy lobe on face; also on mesal face with a shorter lobe provided with a dense brush of yellow setæ; interbasal hooks very strong and powerful, directed cephalad. Outer dististyle conspicuously bilobed, the lobes very unequal, the outer ones shorter and digitiform, provided with very long yellow setæ that are conspicuously scabrous, inner lobe much larger, bulbous, with shorter, more normal setae. Inner dististyle broad at base, the lower basal margin bearing a low cushion set with abundant microscopic spines; a somewhat similar but higher crest or flange on outer face of style back from apex, set with abundant microscopic spinules and short setæ. Phallosome a broad subquadrate structure produced into several spinous points.

Holotype, ♂, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, October 28, 1941 (Laddey). Allotopotype, ♀, October 31, 1941.

On the basis of structure of the unusually complex male hypopygium, the present fly is closest to *Austrolimnophila* (*Limnophilella*) *multipicta* Alexander, of southeastern Brazil. It is very different from all known members of the genus, not only in the structure of the male hypopygium, but also by the presence of a supernumerary crossvein in cell  $M_1$  of the wings.

***Austrolimnophila* (*Limnophilella*) *inquieta retractior* new subspecies.**

FEMALE.—Length about 10 mm.; wing 10.5 mm.

Like the typical form but with *m-cu* lying far basad, about opposite the proximal fifth or sixth of *Rs*, the dark seam along *m-cu* thus in transverse alignment with the area at origin of *Rs*. In the typical form this area lies closer to the darkened seam along the cord of wing.

The degree of retraction of *m-cu* in the present fly represents the extreme condition so far found in the Hexatomini, *m-cu* lying approximately four times its own length before the fork of *M* or before two-thirds of the total length of vein *M*. It scarcely seems possible to me that such a range in venation can lie within the restricted field of the species and I prefer to consider the present fly to represent a subspecies.

Holotype, ♀, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, October 30, 1941 (Laddey).

Genus *Ctenolimnophila* Alexander

***Ctenolimnophila* (*Campbellomyia*) *severa* new species.**

General coloration of mesonotum brown, the præscutum more reddish brown, more blackened laterally; antennæ short, black throughout; thoracic pleura yellow with a conspicuous black longitudinal stripe; legs brownish black; wings with a very strong blackish suffusion; *Rs* long, arcuated at

origin, fully three times  $R_{2+3+4}$ ; cell *1st M*<sub>2</sub> long and narrow; male hypopygium with the interbasal rods very long and slender, strongly curved, with setæ at and near their tips.

MALE.—Length about 5.5 mm.; wing 5.5 mm.; antenna about 0.85 mm.

Rostrum and palpi black. Antennæ black throughout, unusually short; flagellar segments short-oval, the outer ones more elongate and provided with much longer verticils, these exceeding twice the length of the segments. Head brownish black, the front and narrow posterior orbits more pruinose.

Pronotum obscure yellow above, blackened on sides. Mesonotal præscutum obscure reddish brown, restrictedly patterned with blackish, especially evident as a broad lateral border; posterior sclerites of notum somewhat darker brown. Pleura light yellow, with a conspicuous longitudinal black stripe extending from the cervical region and propleura, reaching the abdomen, passing beneath the root of the halteres; dorsopleural area, including the wing-root and parts of the pleurotergite and mediotergite, similarly yellow, more obscure behind. Halteres infuscated, the extreme base of stem obscure yellow. Legs with the coxæ and trochanters obscure yellow; remainder of legs brownish black; tibial spurs small but distinct; claws long and simple. Wings with a very strong blackish suffusion, the prearcular and costal fields, together with the stigma and a seam along vein *Cu*, a trifle darker; veins brown. Veins basad of cord without trichia or virtually so. Venation:  $Sc_1$  ending about opposite one-third the length of  $R_{2+3+4}$ ,  $Sc_2$  at its tip; *Rs* long, arcuated at origin, fully three times  $R_{2+3+4}$ ;  $R_{2+3+4}$  subequal to or a little longer than  $R_{2+3}$ ;  $R_{1+2}$  about one-half  $R_{2+3+4}$ ; cell *1st M*<sub>2</sub> long and narrow, subequal in length to vein  $M_3$  beyond it; *m* shortened; *m-cu* about opposite one-third the length of cell *1st M*<sub>2</sub>.

Abdomen, including hypopygium, black. Male hypopygium with the outer dististyle short and compact, curved at apex, the outer face of distal half with long subappressed spines. Interbasal rods very long and slender, strongly curved, the distal half and apex with microscopic pale setulæ; apex decurved to an acute point, the setæ longer and more conspicuous.

Holotype, ♂, Zamora, Santiago-Zamora, altitude 1,000 meters, December 20, 1941 (Laddey).

*Ctenolimnophila* (*Campbellomyia*) *severa* is entirely distinct from the other described species of the subgenus, differing conspicuously in the coloration of the body and wings, and in the venation.

#### Genus *Gonomyia* Meigen

***Gonomyia* (*Lipophleps*) *ramus* new species.**

Belongs to the *manca* group; antennæ black throughout; mesonotum plumbeous gray, the posterior border of scutellum obscure yellow; legs brownish black; wings with a pale brown tinge, the diffuse stigma a very little darker;  $Sc_1$  ending about opposite the origin of *Rs*; male hypopygium

with the basistyle produced caudad beyond the apex of the dististyle as a fleshy lobe; dististyle a yellow blade, on outer margin bearing a long strong rod; phallosome complex, produced into two blackened points and two paler blades.

MALE.—Length about 3.3–3.5 mm.; wing 3.8–4 mm.

Rostrum obscure yellow to testaceous; palpi black. Antennæ black throughout; flagellar segments elongate, with very long erect setæ and the usual longer verticils. Head gray.

Pronotum dark; pretergites pale yellow. Mesonotal præscutum and scutum uniformly dark plumbeous gray, the median area of scutum obscure yellow; posterior margin of scutellum broadly obscure yellow; postnotum paler brown, darker posteriorly. Pleura brown, with a longitudinal whitish stripe, the sclerites above this band darker than the ventral ones. Halteres brownish black. Legs with the coxæ pale brown, the fore pair a trifle darker; trochanters obscure brownish yellow; remainder of legs brownish black. Wings with a pale brownish tinge, the diffuse stigma a very little darker; preareolar and costal regions slightly more yellow; veins pale brown. Venation:  $Sc_1$  ending approximately opposite the origin of  $Rs$ ,  $Sc_2$  a short distance back from its tip;  $m-cu$  close to fork of  $M$ .

Abdominal tergites dark brown, sternites and hypopygium more yellowish. Male hypopygium with the basistyle produced beyond the level of apex of dististyle as a long fleshy lobe that is easily broken. Dististyle a yellow blade that terminates in a blackened spinous point; on outer margin at near midlength with a long, strong, dark-colored rod, the tip acute; a more or less well-developed spinule at base of rod; lower margin of blade with a series of strong setae, the two outermost longer and stronger but scarcely fasciculate. Phallosome complex, including two blackened points and two paler blades; longest element pale, flattened, the margin incised; second pale element much shorter and more slender; longest blackened point slender, curved to the acute point; shortest element a small blackened spine that terminates a broadly flattened yellow blade.

Holotype, ♂, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, November 2, 1941 (Laddey). Paratopotype, ♂, October 28, 1941.

The present fly is most similar to species such as *Gonomyia* (*Lipophleps*) *anduzeana* Alexander and *G. (L.) tribulator* Alexander, differing conspicuously in the structure of the male hypopygium.

#### Genus *Toxorhina* Loew

***Toxorhina* (*Ceratocheilus*) *atritarsis* new species.**

General coloration of thorax reddish brown, without evident markings; halteres with brownish black knobs; legs black, including all tarsi; wings with a strong blackish tinge; anterior branch of  $Rs$  elongate; cell 1st  $M_2$

rectangular; male hypopygium with the basistyle simple at apex; a conspicuous interbasal plate that is produced into a single powerful spine; outer dististyle terminating in two slightly unequal spines; aedeagus with the arms elongate.

MALE.—Length, excluding rostrum, about 6.5 mm.; wing 6.5 mm.; rostrum about 3.9 mm.

Rostrum black throughout, exceeding one-half the length of remainder of body. Antennæ black, the short scape a little paler. Head dull grayish black; anterior vertex relatively narrow, a trifle less than the diameter of scape.

Pronotum reddish brown. Mesonotum reddish brown, without evident markings, the sides of the mediotergite a trifle darker. Pleura uniform reddish brown, unpatterned except for a very slight darkening on the anepisternum and adjoining portions of the dorsopleural region. Halteres with stem obscure brownish yellow, knob brownish black. Legs with coxæ reddish brown; trochanters yellowish brown; remainder of legs, including all tarsi, black. Wings with a strong blackish tinge, the preareolar field restrictedly more whitened; cells *C* and *Sc* still deeper in color; veins brownish black. Venation: *Sc*<sub>1</sub> ending a short distance before the fork of *Rs*, *Sc*<sub>2</sub> some distance from its tip, about opposite two-fifths the length of *Rs*; anterior branch of *Rs* elongate, for more than one-half its length extending nearly parallel to the posterior branch; cell 1st *M*<sub>2</sub> rectangular, nearly equal in length to vein *M*<sub>3</sub> beyond it; *m-cu* a short distance beyond fork of *M*.

Abdominal tergites dull black, the extreme posterior borders of the segments pale; basal sternites more dimidiate, the proximal half of each segment dark brown, the outer portion obscure brownish yellow, on the intermediate sternites the segments uniformly darkened; hypopygium chiefly pale, the basistyles a trifle darker. Male hypopygium with the basistyle simple at apex, without terminal spine; conspicuous interbasal structures appear as flattened pale blades, each terminating in a powerful spine. Outer dististyle broad-based, rapidly narrowed to apex which terminates in two curved, slightly unequal, darkened spines; outer margin of style on distal half with a group of long erect setæ. Inner dististyle a little longer, appearing as a uniformly pale yellow cultrate blade. Aedeagus with the two arms elongate, each a little expanded and pale on distal portion.

Holotype, ♂, Zumbi, Rio Zamora, Santiago-Zamora, altitude 700 meters, November 4, 1941 (Laddey).

*Toxorhina* (*Ceratocheilus*) *atrirtarsis* is most similar in venation and in general appearance to *T. (C.) leucostena* Alexander and *T. (C.) niveitarsis* (Alexander), both of which are well-distinguished by the snowy white tarsi.



Alexander, Charles P. 1943. "Records and Descriptions of Neotropical Carne-Flies (Tipulidæ, Diptera), XVI." *Journal of the New York Entomological Society* 51, 199–212.

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