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RECORDS AND DESCRIPTIONS OF TIPULIDAE FROM  
SOUTH AMERICA (DIPTERA)

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Extensive collections of crane-flies (Tipulidae) from several countries of South America have come to hand during recent years and it is proposed to publish a series of reports that will describe the various novelties and at various intervals to record the distributional data concerning rare and little-known species. At this time I am treating various Tipulidae that were collected in Ecuador and Peru by Señor Luis A. Peña, outstanding entomologist and collector. Most of the species here considered were taken at Quincemil, Cuzco Department, Peru, along the Marcapata River, at altitudes between 750 and 780 meters. Fewer species were collected at Libertad, 6 km southeast of Tena, Napo-Pastaza, Ecuador (see F. Martin Brown, A Gazetteer of Entomological Stations in Ecuador. *Ann. Ent. Soc. America* 34: 848; 1941). I wish to express my sincere thanks to Señor Peña for many species of Tipulidae from several of the South American republics. All types are preserved in my personal collection of World Tipulidae.

***Austrolimnophila (Limnophilella) mantissa*, sp. n.**

Generally similar to *inquieta*, differing chiefly in the presence of a supernumerary crossvein in cell R<sub>4</sub> of the wings, additional to the one in cell R<sub>3</sub>.

Female. Length about 12 mm; wing 10 mm; antenna about 2 mm.

Rostrum buffy; palpi black. Antennae with scape black, pedicel buffy, flagellum light yellow. Head chiefly buffy.

Pronotum dark brown, paling to white on sides. Mesonotal praescutum yellowish brown, the anterior third dark brown, humeri and lateral margins yellowed; scutum brown, the anterior and lateral portions of each lobe darker; scutellum testaceous yellow; mediotergite brown, central portion paler, pleurotergite yellow. Pleura, including the dorsopleural region, clear light yellow. Halteres very long and slender, stem yellow, knob infuscated. Legs with coxae and trochanters light yellow; femora yellow, tips nar-

rowly blackened; tibiae and tarsi snowy white. Wings whitened, with a conspicuous brown pattern, distributed much as in *inquieta*, the costal border being dark brown, interspersed by conspicuous whitened areas beyond arculus and before fork of Sc, these areas smaller than in *inquieta*; a heavy brown pattern elsewhere on disk, including the postarcular area, origin of Rs, all crossveins, and areas in cells beyond the cord, including a subterminal series in outer medial cells. Venation: Much as in *inquieta*, including a supernumerary crossvein in cell R<sub>5</sub>; a further supernumerary vein in cell R<sub>4</sub>, lying just proximad of the former vein; m-cu more than its own length before the fork of M.

Abdomen elongate, tergites dark brown, posterior borders of the more proximal segments vaguely obscure yellow; sternites clear yellow; dorsal genital segment black. Ovipositor with cerci strongly upcurved on outer third, tip subacute.

Holotype, ♀, Quincemil, Cuzco, Peru, 750 meters, November 16, 1962 (Luis A. Peña).

Although it is generally similar to *Austrolimnophila (Limnophilella) inquieta* Alexander, of Ecuador, the present fly differs evidently in the supernumerary crossvein in cell R<sub>4</sub> of the wings, and in minor details of coloration.

#### ***Polymera (Polymerodes) leucostropha*, sp. n.**

Size medium (wing of male 4.8 mm); antennae longer than the body or wing; flagellar segments conspicuously bicolored, black, the incisures of all but the outer four segments whitened; thorax light brown with a very conspicuous black dorsopleural stripe; legs and wings brown; Sc, ending opposite fork of Rs; R<sub>2</sub> + 3 + 4 and R<sub>2</sub> + 3 subequal; male hypopygium with outer dististyle terminating in a single curved spine.

Male. Length about 5.5 mm; wing 4.8 mm; antenna about 6.5 mm.

Rostrum and palpi black. Antennae of male longer than body or wing; black, the incisures of proximal and intermediate flagellar segments whitened, more extensively so at the apices, outer four segments uniformly blackened; flagellar segments binodose, the more proximal segments with long outspreading setae, the longest exceeding the segments, vestiture of outer segments shorter and stouter. Head grayish brown.

Pronotum brownish testaceous. Mesonotum light brown. Pleura with a very conspicuous black longitudinal dorsal stripe, extending from propleura to abdomen, including nearly the dorsal half of pleura, narrowed on the pleurotergite. Halteres light brown. Legs with coxae and trochanters brownish yellow; remainder of legs brown, tarsi somewhat paler brown. Wings broad, light brown, unpatterned; veins pale brown. Venation: Sc relatively long, Sc, ending opposite fork of Rs, 3 + 4 and R<sub>2</sub> + 3 subequal, a little shorter than R<sub>1</sub> + 2; cell M<sub>2</sub> a little shorter than its petiole; m-cu at fork of M.

Abdomen brownish black. Male hypopygium with outer dististyle glabrous, terminating in a single curved spine.

Holotype, ♂, Quincemil, Cuzco, Peru, November 10, 1962 (Luis A. Peña).

The subgenus *Polymerodes* Alexander includes species with cell M<sub>2</sub> of the wings lacking and with tibial spurs absent. Other

species include *P. (P.) conjuncta* Alexander, *P. (P.) conjunctoides* Alexander, *P. (P.) parishi* Alexander, *P. (P.) minutissima* Alexander, and some others. The most similar of these species is *parishi* of Amazonian Brazil, which has similarly annulated antennae, differing in the still broader pleural stripe and the somewhat narrower wings with distinct venation, as the shorter Sc which terminates some distance before the fork of Rs and the relative proportions of the outer radial veins,  $R_{2+3+4}$  being about twice  $R_{2+3}$ , with  $R_{1+2}$  approximately four times  $R_{2+3}$ .

***Atarba (Ischnothrix) brevilyra*, sp. n.**

Thoracic dorsum dark brown, pleura brownish yellow; antennae of male longer than the wing, flagellar segments with very long outspreading setae; wings strongly tinged with brown, stigma still darked; male hypopygium with both dististyles slender, outer style with numerous small appressed spines; apex of aedeagus divided into two short points.

Male. Length about 5-5.5 mm; wing 5.2-5.5 mm; antennae about 6.5-7 mm.

Rostrum yellowish brown, palpi black. Antennae of male black throughout; flagellar segments elongate-cylindrical, with very long outspreading setae, the longest subequal to the segments; in addition there are numerous shorter delicate erect setae and short scattered stout bristles. Head dark brown, slightly paler behind, surface sparsely pruinose.

Thoracic dorsum dark brown, nitidous; pleura brownish yellow. Halteres brownish black, knobs large. Legs with coxae and trochanters brownish yellow; remainder of legs dark brown to brownish black; tibial spurs very small. Wings strongly tinged with brown, stigma still darker brown; veins brown. Abundant macrotrichia on veins basad almost to the arculus. Venation: Sc variable in length, in cases ending shortly beyond midlength of  $R_s$ , in one paratype much shorter, ending just beyond origin of  $R_s$ ;  $Sc_1$  alone subequal to or longer than r-m; vein  $R_3$  sinuously oblique, distance on costa between veins  $R_{1+3}$  and  $R_3$  subequal to vein  $R_3$ ; m-cu at from about one-third to one-half  $M_{3+4}$ .

Abdominal tergites dark brown, sternites somewhat paler. Male hypopygium with a small slender tubercle on mesal face near outer end, base of style with a large pale setiferous cushion. Outer dististyle slender, with numerous small appressed spinules on outer face, extending almost to base, more numerous and evident on outer two-thirds; inner style subequal in length, slender, a trifle wider than the outer style, narrowed gradually to the tip. Apex of aedeagus divided into two short points; gonapophyses appearing as broad flattened plates. Spines of the ninth sternite long and slender.

Holotype, ♂, Quincemil, Cuzco, Peru, August 1962 (Luis A. Peña). Paratopotypes, 3 ♂♂, August - October 1962.

*Atarba (Ischnothrix) brevilyra* is readily told from other regional small-sized species having elongated male antennae by the very long flagellar setae and the details of structure of the male hypopygium, especially the aedeagus. The most nearly allied species appear to be *A. (I.) capitella* Alexander and *A. (I.) digitifera* Alexander.

**Atarba (Atarba) bipendula, sp. n.**

Allied to *megaphallus*; general coloration of thorax brownish yellow; antennae of male long, more than one-half the wing, flagellar segments with the vestiture relatively short, about one-third the longest verticils, the segments brown with narrow yellow incisures; legs yellow; wings brownish yellow, prearcular and costal fields clearer yellow; male hypopygium with aedeagus large, expanded outwardly, divided into two recurved arms or blades with truncated apices.

Male. Length about 6 mm; wing 5.2 mm; antenna about 3.2 mm.

Rostrum light brown; basal segment of palpus testaceous, remainder darker. Antennae of male elongate, more than one-half the wing; scape and pedicel yellow, flagellum dark brown, the incisures restrictedly yellowed to produce a slight bicolored appearance; erect setae of segments very abundant but relatively short, about one-third the longest verticils. Head brownish yellow.

Thoracic dorsum brownish yellow, pleura clearer yellow. Halteres with stem yellow, knob dark brown. Legs with coxae and trochanters light yellow; remainder of legs obscure yellow, extreme tips of femora and outer tarsal segments vaguely more infuscated. Wings faintly brownish yellow, prearcular and costal fields clear light yellow, stigma scarcely differentiated; veins brownish yellow. Venation:  $Sc_1$  ending just beyond origin of  $R_s$ , the latter subequal to basal section of  $R_s$ ;  $m-cu$  about one-half its length beyond the fork of  $M$ .

Abdominal tergites brown, sternites more yellowed, subterminal segments darker brown to form a broad ring; hypopygium light yellow. Male hypopygium with the outer dististyle blackened, outer margin with about 6 or 7 spines additional to the very short more obtuse apex; inner style a little longer, slender, narrowed to the obtuse tip. Aedeagus large, greatly expanded outwardly, at apex divided into two recurved arms or blades with truncated apices.

Holotype, ♂, Quincemil, Cuzco, Peru, November 9, 1962 (Luis A. Peña).

The most similar species are *Atarba (Atarba) cucullata* Alexander, of Ecuador, and *A. (A.) megaphallus* Alexander, of Amazonian Brazil, both having a somewhat comparable aedeagus that is greatly modified and expanded outwardly, all differing among themselves in the structure of this organ. The male antennae of the present fly are longer and more slender than in *cucullata* but somewhat shorter than in *megaphallus*.

**Atarba (Atarba) biproducta, sp. n.**

General coloration of mesonotal praescutum obscure fulvous, posterior sclerites and the pleura more testaceous yellow; antennae of male very long, exceeding the body or wing, flagellum yellow, the segments with very long outspreading setae that are longer than the segments; legs yellow; wings brownish yellow, prearcular and costal fields clearer yellow, cord and outer end of cell 1st  $M_2$  weakly darkened; male hypopygium with posterior border of tergite produced into two obtusely rounded lobes; outer dististyle

on distal third with 4 or 5 appressed spines; aedeagus very long, about one-half longer than the basistyle, the outer half profoundly divided.

Male. Length about 6.5 - 7 mm; wing 5.4 - 5.6 mm; antenna about 7 - 7.5 mm.

Rostrum yellow; palpi dark brown. Antennae of male very long, exceeding the body or wing, as shown by the measurements, yellow throughout; flagellar segments elongate-cylindrical, with abundant very long outspreading setae that are longer than the segments. Head brownish yellow.

Mesonotal praescutum obscure fulvous, posterior sclerites of notum and the pleura more testaceous yellow, unpatterned except for a vague dorsopleural darkening. Halteres with stem yellow, knob infuscated. Legs yellow, tibiae and tarsi a trifle darker. Wings brownish yellow, prearcular and costal fields clearer yellow; restricted pale brown seams over cord and outer end of cell 1st  $M_2$ ; veins brownish yellow, clearer yellow in the brightened fields, darker in the clouded areas. Venation: Sc long,  $Sc_1$  ending about opposite four-fifths Rs; branches of Rs extending generally parallel to one another. cell  $R_2$  at margin more than twice that of cell  $R_4$ ; cell 1st  $M_2$  rectangular, subequal to vein  $M_4$ ; m-cu at near midlength of  $M_{3+4}$

Abdominal tergites pale brown, sternites yellow, subterminal segment slightly darker. Male hypopygium with posterior border of tergite produced into two obtusely rounded lobes. Outer dististyle slender, with four or five appressed spines on outer margin of distal third; inner style subequal in length. Aedeagus very long, about one-half longer than the basistyle, profoundly divided on about the outer half.

Holotype, ♂, Libertad, 6 km southeast of Tena, Napo-Pastaza, Ecuador, May 9 - 12, 1963 (Luis A. Peña). Paratopotypes, 4 ♂♂.

Other regional species of the subgenus having the aedeagus of the male hypopygium profoundly divided and with the antennae more or less elongate include *Atarba (Atarba) dasycera* Alexander and *A. (A.) dinematophora* Alexander which differ in all details of antennal and hypopygial structure and in the wing coloration.

#### ***Atarba (Atarba) dilatistyla*, sp. n.**

Mesonotum brown, paler behind, pleura light yellow; antennae of male moderately long, flagellar segments with abundant long erect delicate setae; legs yellow; wings tinged with pale brown, prearcular and costal fields light yellow; male hypopygium with outer dististyle stout, outer margin with numerous small spines; inner style strongly dilated at near midlength; phallosome large, the base narrowed, apex dilated into an irregular head.

Male. Length about 5.5 mm; wing 4.4 mm; antenna about 3.8 mm.

Rostrum brown; palpi brownish black. Antennae of male relatively long, exceeding four-fifths the wing, dark brown; flagellar segments elongate-cylindrical, with numerous long erect delicate setae that are a little shorter than the segments. Head brown.

Mesonotal praescutum, scutal lobes and scutellum brown, lateral margins of praescutum narrowly blackened; remainder of mesonotum more brownish yellow. Pleura light yellow, weakly more darkened beneath the wing root. Halteres pale brown, knobs very

large. Legs with coxae and trochanters pale yellow; remainder of legs yellow, the outermost tarsal segments a trifle darker. Wings tinged with pale brown, prearcular and costal regions light yellow; veins pale brown, paler in the brightened fields, the cord slightly darker. Veins beyond cord with abundant macrotrichia, with a few further trichia at ends of both Anal veins. Venation:  $Sc_1$  ending about opposite two-thirds  $Rs$ , the latter long, nearly four times r-m, its branches slightly divergent near outer ends, cell  $R_2$  at margin about one-third more extensive than cell  $R_1$ ; m-cu at near one-third  $M_{3+4}$ .

Abdomen brown, subterminal segments brownish black to form a ring, hypopygium more yellowed. Male hypopygium with outer dististyle stout, distal third strongly narrowed and decurved, outer margin with numerous small appressed spines; inner style distinctive, longer than the outer style, very strongly dilated at near midlength, the width at this point exceeding one-third the length of the style, apex obtuse. Phallosome very large and conspicuous, base narrowed, outwardly dilated into an irregular complex head.

Holotype, ♂, Quincemil, Cuzco, Peru, October 15-20, 1962 (Luis A. Peña).

In the structure of the male hypopygium, especially the phallosome, the present fly is most like *Atarba (Atarba) bipendula*, sp. n., differing evidently in the antennae and in other structures of the hypopygium, including both dististyles.

#### *Atarba (Atarba) lyriformis*, sp. n.

Mesonotum light chestnut, pleura paling to testaceous yellow ventrally; antennae of male elongate, subequal to the body or wing, flagellar segments with very long outspreading setae; abdomen yellow with a conspicuous dark brown subterminal ring; male hypopygium with aedeagus extended into two slender filaments that are from three-fifths to two-thirds as long as the basistyle.

Male. Length about 5.5 - 5.6 mm; wing 5.2 mm; antenna about 5.5 mm.

Rostrum obscure yellow; palpi brown, terminal segment slender, nearly twice the penultimate. Antennae of male elongate, subequal to the body or wing; flagellar segments elongate-cylindrical, with very long outspreading setae, the longest subequal in length to the segments. Head light brown.

Pronotum dark brown. Mesothorax light chestnut above, pleura weakly infuscated dorsally, more testaceous yellow. Halteres with stem obscure yellow, knob dark brown. Legs with coxae and trochanters testaceous yellow; remainder of legs obscure yellow, outer tarsal segments infuscated. Wings pale brownish yellow, unpatterned, prearcular and costal regions clearer yellow; veins pale brown. Venation:  $Sc_1$  ending about opposite three-fifths  $Rs$ , outer branches of the latter extending generally parallel to one another; m-cu at near one-third to one-half  $M_{3+4}$ .

Abdomen yellow with a conspicuous dark brown subterminal ring that involves segment eight and posterior half of seven; hypopygium light yellow. Male hypopygium with posterior border of tergite produced into a low rounded lobe provided with several margin of distal fifth with about four or five appressed spines, long setae. Outer dististyle slightly widened outwardly, outer

additional to the terminal point; inner style a little longer, gently curved, tip obtuse. Phallosome with base of aedeagus expanded, beyond this narrower with the filaments contiguous, at near mid-length forking into two slender free filaments that are about three-fifths to two-thirds as long as the basistyle, the whole organ appearing lyriform.

Holotype, ♂, Quincemil, Cuzco, Peru, November 10, 1962 (Luis A. Peña). Paratopotype, ♂, October 30, 1962.

Other regional species of the genus that have the aedeagus divided into two slender filaments include *Atarba (Atarba) biproducta*, sp. n., *A. (A.) dasycera* Alexander, and *A. (A.) dinematorphora* Alexander, all of Peru, and *A. (A.) laddeyana* Alexander, of Ecuador. The general structure of the hypopygium is most as in *laddeyana* which differs in other details of hypopygial structure and conspicuously in the structure and coloration of the antennae.

#### **Hexatoma (Eriocera) pervia, sp. n.**

Size small (wing of male less than 6 mm); general coloration of entire body intensely black; appendages, including the wings, black; antennae relatively short, about one-third the body, all flagellar segments dorsally with abundant long coarse setae; wings with  $R_2$  far before the fork,  $R_{3+4}$  subequal to  $R_{1+2}$  cell  $M_{1+2}$  open by atrophy of basal section of  $M_2$ .

Male. Length about 6 mm; wing 5.8 mm; antenna about 2 mm.

Rostrum and palpi black. Antennae of male 7-segmented, relatively short, about one-third the body; scape and pedicel brown, flagellum black; flagellar segments gradually decreasing in length outwardly, terminal segment relatively long, about one-third the penultimate; dorsal surface of all flagellar segments with abundant long coarse setae. Head polished black.

Thorax uniformly polished black. Halteres black. Legs with coxae and trochanters brown; remainder of legs black. Wings strongly blackened, unpatterned; veins dark brown. Longitudinal veins of outer half of wing with strong macrotrichia, lacking on both Anals. Venation:  $R_2$  far before radial fork,  $R_{3+4}$  subequal to  $R_{1+2}$ ; cell  $M_2$  open by atrophy of basal section of  $M_2$ ; m-cu at fork of  $M$ .

Abdomen black, hypopygium slightly paler, brownish black.

Holotype, ♂, Libertad, 6 km southeast of Tena, Napo-Pastaza, Ecuador, May 11, 1963 (Luis A. Peña).

The only closely allied regional species is *Hexatoma (Eriocera) patens* Alexander, likewise from Ecuador, which differs in the pale wings and elongate antennae, with the flagellar vestiture quite different.

#### **Toxorhina (Toxorhina) phoracaena, sp. n.**

General coloration of mesonotal praescutum cinnamon brown with three poorly indicated darker brown stripes, pleura and pleurotergite testaceous yellow; legs very light brown; wings pale brown, prearcular and costal regions light yellow; abdomen obscure yellow, posterior borders of segments dark brown to produce a conspicuous banded appearance; seventh segment dark brown; male hypopygium with a long spine on outer mesal face of basis-

tyle; dististyle long and slender, outer basal angle produced into an elongate slender blackened lobe, its surface microscopically roughened; branches of aedeagus short.

Male. Length, excluding rostrum, about 7 mm; wing 5 mm; rostrum about 5.5 mm.

Rostrum dark brown, elongate, exceeding the wing. Antennae black. Head light gray.

Pronotum and cervical region brownish black. Mesonotal praescutum cinnamon brown with three poorly indicated darker brown stripes, lateral borders broadly gray; scutum light brown medially, lobes darker brown; scutellum dark brown, sparsely pruinose; mediotergite brownish yellow, central part darker. Pleura and pleurotergite testaceous yellow. Halteres infuscated. Legs with coxae and trochanters yellow; remainder of legs very light brown, outer tarsal segments a little darker. Wings pale brown, prearcular and costal regions light yellow; veins pale brown. Veins chiefly glabrous, distal half of outer section of  $M_{1+2}$  with a series of trichia. Venation:  $Sc_1$  ending opposite origin of Rs; m-cu at or shortly before fork of M.

Abdomen conspicuously patterned, segments obscure yellow, their posterior borders dark brown to produce a banded appearance, seventh segment uniformly darkened; hypopygium brownish yellow. Male hypopygium with basistyle bearing conspicuous blackened setae; apical part of mesal face produced caudad into a long slender straight spine. Dististyle terminal, long and slender, tip subacute; outer basal angle produced into an elongate slender blackened lobe, the surface microscopically roughened or tuberculate. Branches of aedeagus short, slightly divergent.

Holotype, ♂, Libertad, 6 km southeast of Tena, Napo — Pastaza, Ecuador, May 10 - 12, 1963 (Luis A. Peña). Paratopotypes, 2 ♂♂, pinned with type.

*Toxorhina (Toxorhina) phoracaena* is told readily by the conspicuously banded abdomen in conjunction with the hypopygial structure, particularly the basistyle and dististyle. Spines on the basistyle likewise are found in *T. (T.) curvata* Alexander and *T. (T.) trilobata* Alexander, which otherwise are quite different.

#### ***Toxorhina (Toxorhina) scapania*, sp. n.**

General coloration of thorax and abdomen almost uniformly dull orange, head light gray; halteres clear light yellow; wings very faintly brownish yellow, base and costal border clear light yellow, veins beyond cord virtually glabrous; male hypopygium with a single terminal dististyle, its outer basal lobe large, blackened, provided with abundant short acute spinoid points; phallosome including a broadly depressed-flattened central plate, at apex expanded into flaring blades that are farther produced cephalad into long flattened extensions.

Male. Length, excluding rostrum, about 7 mm; wing 6 mm.

Rostrum of type broken beyond base. Head light gray.

Mesonotum almost uniform obscure orange, posterior ends of scutal lobes and the scutellum clearer yellow, disk of scutellum and the mediotergite weakly darkened. Pleura yellow. Halteres clear light yellow. Legs yellow, outer tarsal segments a little darker.



Wings very faintly brownish yellow, base and costal border clear light yellow; veins light brown, brighter in the yellowed parts. Veins cord virtually glabrous; a few scattered trichia on Rs and about two on distal section of vein  $M^{1+2}$ . Venation:  $Sc_1$  ending opposite origin of Rs; cell 1st  $M_2$  elongate, the inner end pointed;  $M_{3+4}$  about one-third longer than  $M_1$ ; m-cu shortly before fork of M.

Abdomen uniformly dull orange. Male hypopygium with basistyle unarmed. Dististyle single, terminal in position, including a long yellow blade, its tip obtuse, with a small hairy lobule near base and a powerful blackened outer lobe, broad, set with abundant short acute spinoid points. Phallosome distinctive, including a broadly depressed-flattened central plate, at apex expanded into flaring blades that are farther produced cephalad into long flattened extensions.

Holotype, ♂, Quincemil, Cuzco, Peru, August 1962 (Luis A. Peña).

*Toxorhina (Toxorhina) scapania* is distinguished by the uniformly dull orange coloration of the body and the very distinctive male hypopygium, particularly the dististyle and phallosome. There is no similar regional species.

