
NEW OR LITTLE-KNOWN TIPULIDÆ (DIP-
TERA).—LXIII. NEOTROPICAL SPECIES.

New or little-known Tipulidæ (Diptera).—LXIII. Neotropical Species. By CHARLES P. ALEXANDER, Ph.D., F.R.E.S., Massachusetts State College, Amherst, Massachusetts, U.S.A.

THE novelties herewith considered are all from Peru and all belong to the large-sized crane-flies of the subfamily Tipulinæ. Almost all of the species were taken by Mr. Felix Woytkowski, in the Departments of Huanuco and Junin; a few other species were secured by Mr. Pedro Paprzycki in Junin and by Mr. Herbert S. Parish in the Amazonian Department of Loreto. I am indebted to these collectors for their continued interest in saving these fragile flies. All types are preserved in my extensive series of these flies.

Ozodicera (Dihexaclonus) spilophæa, sp. n.

Allied to *triguttata*; general coloration obscure yellow, the præscutum with four poorly indicated darker stripes; basal segments of antennal flagellum brownish yellow, the branches unequal; femora and tibiæ brownish yellow, their tips narrowly infuscated; wings relatively broad, intense brownish yellow, with darker brown areas on anterior cord and on basal section of M_3 ; abdominal tergites brownish yellow, the lateral borders conspicuously dark brown; male hypopygium with the tergal lobes unusually long and narrow, the tips subacute; basistyle not produced at apex; phallosome consisting of a pair of identical rods that are dilated at their outer ends, the gonapophyses shorter, straight.

Male.—Length about 25 mm.; wing 19 mm.; antenna about 6.5 mm.

Female.—Length about 27–30 mm.; wing 19–21 mm.

Frontal prolongation of head elongate, brownish yellow; nasus short and stout; palpi black. Antennæ with the scape brown, pedicel and the branches of flagellar segments brownish yellow; simple terminal segments black; flagellar branches unequal, one being only about one-half the length of the other and arising from its base, the shorter branch of the outer segment even more reduced; in female the branches are even longer and more conspicuous than in male. Head light brown.

Mesonotum with ground-colour obscure yellow or brownish yellow, the præscutum with four poorly indicated darker brown stripes, the intermediate pair reddish brown, the lateral ones a little darker, slightly pruinose; scutal lobes similarly variegated with brown pruinose areas; scutellum and postnotum pale brown with a whitish sericeous pollinosity. Pleura pale with a yellowish bloom. Halteres brown, the knobs a trifle darker. Legs with the coxæ pale, yellowish-grey pollinose; trochanters yellow; femora and tibiæ brownish yellow, the tips narrowly and weakly infuscated; tarsi passing into black. Wings broader than in *triguttata*; ground-colour intense brownish yellow, the prearcular and costal fields even more saturated; stigma scarcely darker than the ground; two darker brown areas, the larger one on anterior cord, the second on basal section of M_3 and adjoining portion of *m-cu*; veins deep yellow, darker in the infuscated areas. Venation: cell M_1 broadly sessile.

Abdominal tergites brownish yellow, the lateral borders conspicuously dark brown; sternites yellow; hypopygium brownish yellow. Male hypopygium (fig. 3) with the tergal lobes, 9 *t*, unusually long and slender, narrowed to the subacute tips, the notch separating them deep U-shaped; lobes with abundant setæ, the apices with additional dense dark setulæ. Basistyle, *b*, not produced at apex. the dististyles terminal in position. Outer dististyle. *od*, short and broad, dilated before mid-length, the greatest width about two-thirds the length. Inner dististyle a simple curved sclerotized rod, the distal half narrowed into a long beak, the outer face of basal half with numerous coarse erect setæ; before apex of beak with a roughened triangle flange. Phallosome, *p*, consisting of two longer paired elements that are dilated at distal ends. subtended on either side by shorter, weakly clavate, straight rods.

Hab. Peru (Junin, Huanuco).

Holotype, ♂, Pumahuasi, Huanuco, altitude 980 metres, August 27, 1939 (*Woytkowski*). *Allotopotype*, ♀, July 21, 1939. *Paratopotypes*, 2 ♀♀, July 9–23, 1939 (*Woytkowski*); *paratype*, 1 ♀, Satipo, Jauja, Junin, altitude 800–900 metres, January 3, 1940 (*Paprzycki*).

Ozodicera (Dihexaclonus) spilophæa is most similar to *O. (D.) triguttata* Alexander, of Amazonian Brazil, which

is well distinguished by the narrow wings and by the very different male hypopygium, especially the broad tergal lobes, the long apical arms of the basistyle, and the very different inner dististyle.

Ozodicera (Ozodicera) phallacantha, sp. n.

General coloration buffy grey, the præscutum with four more reddish-brown stripes that are more or less distinctly bordered by darker; antennal flagellum, with branches, black; wings with a strong brownish tinge; abdominal tergites weakly trivittate with darker brown; subterminal segments brownish grey, forming a subterminal ring; male hypopygium with the tergite very shallowly notched; inner dististyle complex, bearing five spines or sclerotized points; phallosome produced into four spines, the outer pair longer and straighter.

Male.—Length about 21–22 mm.; wing 18–19 mm.; antenna about 5.5–6 mm.

Female.—Length about 29–30 mm.; wing 21–22 mm.

Frontal prolongation of head brown; nasus stout; palpi black. Antennæ with scape, pedicel and narrow base of first flagellar segment obscure yellow, the remainder, including the flagellar branches, black; branches shorter than the segments. Head brownish grey; anterior vertex narrower than the diameter of scape.

Mesonotal præscutum buffy grey, the præscutum with four more reddish-brown stripes that are feebly indicated against the ground, in cases with these stripes narrowly bordered by darker brown; præscutal interspaces with small dark setigerous punctures; posterior sclerites of notum light brown, the scutal lobes slightly darkened. Pleura obscure yellow, the ventral sternopleurite weakly darkened. Halteres infuscated. Legs with the coxæ and trochanters yellow; femora brown, the tips weakly more darkened; tibiæ dark brown, the tips narrowly black; tarsi black. Wings with a strong brown tinge, the stigma feebly darkened; prearcular and costal fields a trifle more saturated; veins brown. One paratype has the ground-colour of most of the wing paling to grey, leaving brown areas in the bases of cells *R* to *Cu* and again near the stigma and anterior cord, producing a weakly-patterned appearance. Venation: cell M_1 broadly sessile.

Abdomen reddish brown, the tergites weakly trivittate with slightly darker brown, including a narrow median stripe that is broken at the posterior border of each segment and continuous lateral stripes on the more basal segments; male with segments seven and eight brownish grey to form a narrow dark subterminal ring; sternites clearer brownish yellow. Male hypopygium (fig. 4) with the caudal margin of tergite, 9 *t*, transverse, with a very shallow median emargination, the lateral lobes thus formed very low and wide. Basistyle, *b*, not produced into a lobe or spine. Inner dististyle, *id*, a complex sclerotized structure bearing five outer spines and points, as shown. Phallosome, *p*, of unique structure in the genus as known; four-spined, including longer straight outer spines directed laterad and caudad, and inner short gently curved spines directed caudad.

Hab. Peru (Huanuco).

Holotype. ♂, Leonpampa, altitude 980 metres, December 30, 1937 (*Woytkowski*). *Allotype*, ♀, Pumahuasi, altitude 980 metres, August 15, 1939 (*Woytkowski*). *Paratypes*, 2 ♂♂, 1 ♀, with allotype, July 20–August 30, 1939 (*Woytkowski*).

The present fly is closest to *Ozodicera* (*Ozodicera*) *multiermis* Alexander and *O.* (*O.*) *trispinifer* Alexander, both of Ecuador, differing conspicuously in the structure of the male hypopygium, notably of the inner dististyle and the phallosome.

Tanypremna (*Tanypremnella*) *perdistincta*, sp. n.

General coloration of mesonotum dark brown; pleura yellow, the mesepisternum darkened to form a transverse girdle; halteres with stem yellow, knob dark brown; legs with femora obscure yellow, the tips narrowly blackened; tibiæ and tarsi white; wings whitish subhyaline, the stigmal area blackened, very large, occupying the area between *R*₁ and *R*₂; *R*₁ very short, oblique, shorter than the basal section of *R*₄₊₅; cell 1st *M*₂ large, irregularly hexagonal, the three longest elements being both sections of *M*₁₊₂ and the basal section of *M*₃; cell 2nd *A* very short and narrow; abdomen orange-yellow, the caudal borders of the segments blackened; hypopygium black; male hypopygium with the beak of the inner dististyle long and slender.

Male.—Length about 7–7.5 mm. ; wing 8.6–9 mm.

Frontal prolongation of head yellow ; palpi broken. Antennæ with scape and pedicel light yellow ; flagellum broken. Head yellow ; anterior vertex relatively wide, approximately twice the diameter of scape.

Pronotum obscure yellow. Mesonotum chiefly uniform dark brown, the præscutal stripes confluent or virtually so ; median area of scutum scarcely brightened ; parascutella, lateral margins of mediotergite and the pleruotergite yellow. Pleura yellow with a conspicuous dark brown

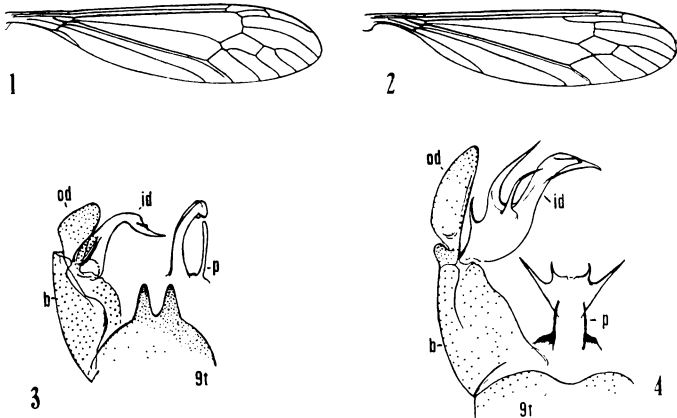


Fig. 1.—*Tanypremna* (*Tanypremnella*) *perdistincta*, sp. n. ; venation.

Fig. 2.—*Tanypremna* (*Tanypremnella*) *antennifera*, sp. n. ; venation.

Fig. 3.—*Ozodicera* (*Dihexaclonus*) *spilophæa*, sp. n. ; male hypopygium.

Fig. 4.—*Ozodicera* (*Ozodicera*) *phallacantha*, sp. n. ; male hypopygium.

(Symbols : *b*, basistyle ; *id*, inner dististyle ; *od*, outer dististyle ; *p*, phallosome ; *t*, tergite.)

girdle on mesepisternum. Halteres elongate, stem yellow, knob dark brown. Legs with the coxæ and trochanters yellow ; femora obscure yellow, the tips rather narrowly but conspicuously blackened, the amount subequal on all legs ; tibiæ white, the tips very narrowly darkened ; tarsi white. Wings (fig. 1) whitish subhyaline, the blackened stigmal area very large and conspicuous, filling the space between R_s and R_2 , with a very restricted dark cloud on basal section of R_{4+5} ; veins brownish black. Venation : R_s very short, oblique, straight,

shorter than the basal section of R_{4+5} ; cell 1st M_2 large, irregularly hexagonal, the basal section of M_{1+2} long, subequal to the second section; basal section of M_3 even longer, weakly sinuous; petiole of cell M_1 and m subequal; Cu_2 relatively distant from Cu_1 , not reaching the posterior margin; cell 2nd A very short and narrow.

Abdomen orange-yellow, the caudal borders of the segments conspicuously black, broadest on tergites one to four, narrower on five to eight, inclusive; sternites similarly patterned, the darkenings of the subterminal segments less conspicuous; hypopygium black. Male hypopygium with the caudal border of tergite broadly rounded, with a small, shallow, median notch. Inner dististyle with the beak long and slender, the outer lobe with long coarse setæ and abundant shorter setulæ.

Hab. Peru (Junin).

Holotype, ♂, Satipo, Jauja, altitude 800–900 metres, September 24, 1939 (*Paprzycki*). *Paratopotype*, 1 ♂, with type.

Tanypremna (Tanypremnella) perdistincta is very different from all other members of the subgenus so far described. It is well distinguished from *T. (T.) crystallina* Alexander and allies by the entirely different wing venation and by the structure of the male hypopygium, notably the long narrow beak of the inner dististyle.

Tanypremna (Tanypremnella) antennifera, sp. n.

General coloration of mesonotum medium brown, unpatterned; antennæ (male) subequal in length to the entire body or wing, the flagellar segments elongate-cylindrical, with long, erect verticils; legs with tips of tibiæ broadly white; tarsi white, the basitarsi dusky on proximal half; wings whitish hyaline, cell Sc and the small stigma dark brown; Rs longer than R_{2+3} ; $r-m$ subequal to the basal section of R_{4+5} ; petiole of cell M_1 shorter than m ; male hypopygium with the beak of inner dististyle stout and obtuse, but conspicuous.

Male.—Length about 10 mm.; wing 10.8 mm.; antenna 10.5 mm.

Frontal prolongation of head yellow, the outer end slightly darkened; palpi black. Antennæ (male) elongate, subequal in length to either the wing or body; scape, pedicel and base of first flagellar segment yellow, the

remainder of organ-black; flagellar segments long-cylindrical, clothed with long erect verticils that are considerably longer than in *transfasciata*. Head fulvous-brown, the anterior vertex relatively narrow, subequal in width to the diameter of scape.

Pronotum and mesonotum medium brown, unmarked or virtually so. Pleura yellow, the mesepisternum dark brown to form a conspicuous transverse girdle. Halteres elongate, dark brown. Legs with the coxæ and trochanters yellow; femora brownish black, the bases yellow; tibiæ black, the tips conspicuously white, involving about the distal fifth; tarsi white, the basitarsi more dusky on proximal half. Wings (fig. 2) whitish hyaline; cell *Sc* and the small stigma dark brown; extreme tip of wing in radial field darkened; veins dark brown. Venation: *Rs* longer than in *transfasciata*, exceeding R_{2+3} ; *r-m* conspicuous, subequal to the basal section of R_{4+5} ; petiole of cell M_1 shorter than *m*: cell 2nd *A* slightly wider than in *transfasciata*.

Abdomen obscure yellow or brownish yellow, the caudal borders of the segments dark brown, more extensive on outer segments; sternites yellow; a narrow, dark brown ring involving segments eight and nine; remainder of hypopygium paling to yellow. Male hypopygium with the tergite large, the caudal margin evenly rounded, without lateral angles. Inner dististyle gradually narrowed into an obtuse lobe or beak; outer margin of style near base with about 10 to 12 small blackened spines. Gonapophyses with blades wider and shorter than in *transfasciata*.

Hab. Peru (Junin).

Holotype, ♂, Satipo, Jauja, altitude 800–900 metres, February 22, 1940 (*Paprzycki*).

Tanypremna (*Tanypremnella*) *antennifera* is readily told from the most similar described species, *T. (T.) transfasciata* Alexander, of Ecuador, by the even longer antennæ of the male and with further distinctions in coloration and venation.

Tipula (*Nephrotomodes*) *myriatricha*, sp. n.

General coloration of thorax fulvous-yellow, without pattern; antennæ (male) elongate, exceeding one-half the length of wing; wings with numerous macrotrichia in outer radial and medial cells; male hypopygium with

the caudal border of ninth tergite convexly rounded, the ventral surface before apex with a group of blackened spinous setæ on either side of the median line.

Male.—Length about 13 mm. ; wing 14 mm. ; antenna about 7.5 mm.

Frontal prolongation of head relatively short and stout, subequal to remainder of head, medium brown ; nasus elongate ; palpi long, especially the terminal segment ;

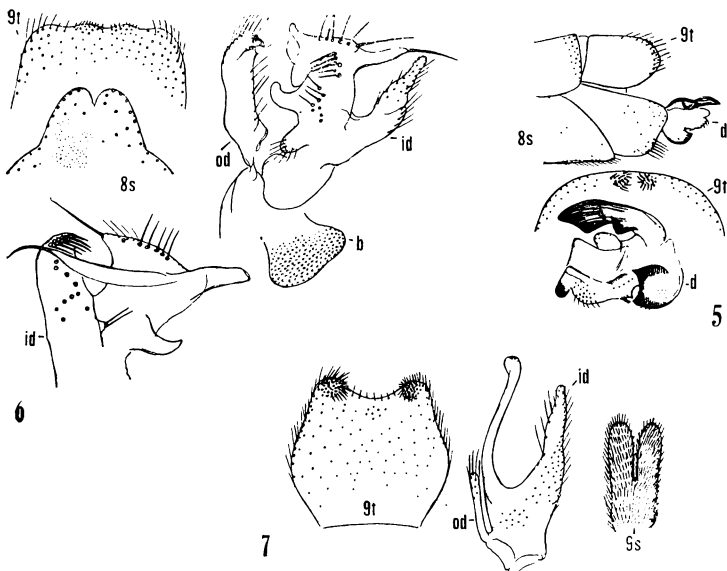


Fig. 5.—*Tipula (Nephrotomodes) myriatricha*, sp. n. ; male hypopygium.

Fig. 6.—*Tipula (Nephrotomodes) languidula*, sp. n. ; male hypopygium.

Fig. 7.—*Tipula (Nephrotomodes) didactyla*, sp. n. ; male hypopygium.

(Symbols : *b*, basistyle ; *d*, dististyle ; *id*, inner dististyle ; *od*, outer dististyle ; *s*, sternite ; *t*, tergite.)

basal segments dark brown, the terminal one paler brown. Antennæ with basal three segments yellow, the remaining ones black, the basal two with incisures restrictedly brightened ; antennæ exceeding one-half the length of wing ; flagellar segments elongate, with small oval basal swellings ; verticils shorter than the segments ; terminal segment small, about equal in length to the basal enlarge-

ment of the preceding one. Head dark cinnamon-brown ; no distinct vertical tubercle.

Mesonotum almost uniform fulvous-yellow without distinct markings. Pleura more yellow ; a faintly indicated darkened area around wing-base, continued caudad to abdomen along the posterior border of pleurotergite. Halteres with stem brownish yellow, knob more darkened. Legs with coxæ and trochanters light yellow ; remainder of legs yellowish brown to pale brown, the tarsi somewhat darker ; legs long and slender ; claws with a single strong spine before mid-length. Wings with a brownish tinge, the prearcular region, costal cell and stigma darker brown ; cell *Sc* more yellowish brown ; a conspicuous white obliterative area before stigma, with fainter such areas across cell 1st M_2 ; veins brown. Numerous macrotrichia in outer halves of cells R_3 , R_5 , and M_1 , with fewer ones in 2nd M_2 and M_3 . Venation : *Rs* moderately long, exceeding *m-cu* ; tip of R_{1+2} abruptly atrophied ; petiole of cell M_1 long, subequal to cell ; cell 1st M_2 small ; M_{3+4} only a little more than one-half the basal section of M_{1+2} ; cell 2nd *A* moderately wide.

Abdominal tergites obscure yellow, the lateral borders brown, the latter colour becoming more extensive and conspicuous on the outer segments, restricting the central ground-pattern ; basal sternites yellow ; subterminal segments blackened ; hypopygium obscure yellow. Male hypopygium (fig. 5) small and simple ; tergite, 9*t*, entirely separated from the sternite ; eighth sternite, 8*s*, moderately sheathing, the caudal margin convexly rounded, very slightly notched medially. Ninth tergite, 9*t*, with the caudal margin convexly rounded, provided with long coarse yellow setæ ; on ventral surface just back from border with a group of short black spinous setæ on either side of median line. Dististyle, *d*, complex, as figured. Margin of basistyle ventrad of point of insertion of dististyle with a few very long, powerful setæ ; mesal face with a flattened plate as is common in members of this subgenus, the surface squamulose.

Hab. Peru (Huanuco).

Holotype, ♂, Piedras Grandes, altitude 3000 metres, November 14, 1937 (*Woytkowski*).

Tipula (*Nephrotomodes*) *myriatricha* is readily told from all other described Neotropical species of the genus, with

the exception of *T. (N.) languidula*, sp. n., by the abundant macrotrichia in the outer cells of the wing. Despite this character there is no question but that the two species should be referred to the subgenus *Nephrotomodes* Alexander, vastly developed in Tropical America.

Tipula (Nephrotomodes) languidula, sp. n.

General coloration of notum uniform orange-fulvous, without distinct præscutal stripes; antennæ of moderate length. the more basal flagellar segments weakly bicoloured; legs yellow, the terminal tarsal segments passing into brown; wings brownish yellow, the prearcular field, cell *C* and the stigma darker brown; relatively numerous macrotrichia in outer ends of cells R_3 to 2nd M_2 , inclusive; R_{1+2} entire; male hypopygium with caudal margin of tergite nearly transverse; dististyles complex.

Male.—Length about 12 mm.; wing 13 mm.; antenna about 4.9 mm.

Frontal prolongation of head of moderate length only, uniform obscure yellow; unusually deep, sloping gradually into the vertex without a well-marked notch; nasus short and stout; palpi yellow throughout. Antennæ of moderate length; basal three segments yellow; succeeding segments very weakly bicoloured, brown, the basal enlargements very slightly darker; flagellar segments elongate, gently incised; verticils shorter than the segments. Head uniform orange-fulvous, without evident vertical tubercle.

Pronotum and mesonotum uniform orange-fulvous, the præscutal stripes not or scarcely differentiated against the ground; præscutum glabrous, the lateral portions of scutal lobes with long erect setæ. Pleura uniform pale yellow. Halteres elongate, stem yellow, knob weakly infuscated. Legs with coxæ and trochanters yellow; remainder of legs yellow, the tarsal segments passing into brown; claws (male) toothed; legs very long and slender. Wings with a brownish yellow tinge, the prearcular field, cell *C* and the stigma darker brown; cell *Sc* deeper yellow; veins brown. *Cu* more yellow on basal portion. Relatively numerous macrotrichia in outer ends of cells R_3 to 2nd M_2 , inclusive. Venation: R_{1+2} entire; petiole of cell M_1 about twice *m*.

Abdominal tergites obscure yellow, the lateral portions and the outer segments more infuscated; a subterminal dark brown ring including segments six to eight; sternites and hypopygium yellow. Male hypopygium (fig. 6) with the caudal margin of tergite; 9 *t*, nearly transverse, on either side of the mid-line with a very low lobe provided with coarse black setæ. Lobe of mesal face of basistyle, *b*, pale, not heavily blackened as in many species of the subgenus. Dististyles complex, as shown; outer style, *od*, blackened and more or less spinous at apex. Eighth sternite, 8 *s*, relatively long, at apex produced into a bilobed median structure that bears a few elongate bristles and abundant close-set shorter setæ.

Hab. Peru (Huanuco).

Holotype, ♂, Piedras Grandes, altitude 3000 metres, November 30, 1937 (*Woytkowski*).

The only near ally of the present fly is *Tipula* (*Nephrotomodes*) *myriatricha*, sp. n., likewise from Piedras Grandes, readily told from this species by the elongate antennæ, distinctive wing-pattern and the very different male hypopygium.

Tipula (*Nephrotomodes*) *didactyla*, sp. n.

General coloration dark plumbeous or leaden, the postnotum and pleura clearer grey; antennal flagellum black; halteres brownish black; legs black, the femoral bases restrictedly yellow; wings dusky, prearcular field and cell *C* pale brown, cell *Sc* and stigma darker brown; cell 2nd *A* very narrow; abdominal tergites black, the lateral borders obscure yellow; male hypopygium with the ninth tergite bilobed; inner dististyle profoundly bifid; appendage of ninth sternite bilobed.

Male.—Length about 12 mm.; wing 11 mm.; antenna about 5 mm.

Female.—Length about 15–16 mm.; wing 12–14 mm.; antenna about 2.4–2.6 mm.

Frontal prolongation of head dark brown above, obscure brownish yellow on sides and beneath; nasus very short and stout. Antennæ (male) elongate; scape and pedicel dark brown, flagellum uniformly black; flagellar segments moderately incised; verticils much shorter than the segments. Head dark brown, the front and very narrow orbits light grey; vertical tubercle lacking.

Pronotum dark grey. Mesonotal præscutum, scutum and scutellum uniform dark plumbeous or leaden, without markings, the postnotum lighter grey pruinose; vestiture of præscutal interspaces very short and sparse. Pleura and pleurotergite grey; dorsopleural membrane weakly darkened. Halteres brownish black. Legs with the coxæ pale, sparsely pruinose, the fore pair more heavily so; trochanters obscure yellow; remainder of legs black, the extreme femoral bases obscure yellow; claws toothed. Wings with a dusky tinge; prearcular field and cell *C* pale brown; cell *Sc* and stigma darker brown; outer radial field more weakly darkened; veins brownish black. Venation: R_{1+2} entire or (type male) with distal end atrophied in one wing only; cell *2nd A* very narrow, a trifle wider in the female.

Abdominal tergites black, the lateral borders on basal half or more of segments obscure yellow; basal sternites yellow; a narrow black subterminal ring; hypopygium obscure yellow. In female the tergites more uniformly blackened; sternites yellow. Ovipositor black; cerci straight, the tips obtuse and slightly bulbous; outer faces of cerci only slightly hairy. Male hypopygium (fig. 7) with the tergite, *9t*, elongate, widest before mid-length; caudal margin with a broad U-shaped emargination, the low lateral lobes with numerous black setæ arranged in a close group, the setæ directed chiefly mesad. Basistyle with lobe on mesal face relatively small, heavily blackened. Outer dististyle, *od*, a very small, long-cylindrical lobe with about seven or eight elongate setæ, all on distal half. Inner dististyle, *id*, much larger, profoundly bifid, the longest arm more slender and nearly glabrous, at apex expanded into an obtuse flattened disk; shorter arm gradually narrowed to the obtuse tip, the surface, especially the outer margin, with abundant long coarse setæ. Appendage of ninth sternite, *9s*, bilobed, each lobe relatively narrow, clothed with numerous setæ. Eighth sternite with posterior margin broadly convexly rounded, the median portion with long scattered setæ.

Hab. Peru (Huanuco).

Holotype, ♂, Pumahuasi, altitude 980 metres, August 27, 1939 (*Woytkowski*). *Allotopotype*, ♀, with type. *Paratype*. 1 ♀, Leonpampa, in jungle, altitude 800 metres, December 26, 1937 (*Woytkowski*).

Tipula (*Nephrotomodes*) *didactyla* is closest to species such as *T. (N.) detecta* Alexander, of Venezuela; *T. (N.) effeta* Alexander, of Amazonian Peru; and *T. (N.) ortonii* Alexander, of Amazonian Bolivia. It differs in the coloration of the body, wings and legs, the details of venation, and in the structure of the male hypopygium. The male sex of *detecta* is still unknown.

Tipula (*Nephrotomodes*) *lyriformis*, sp. n.

General coloration of mesonotum brownish yellow to pale brown, the pleura yellow; antennæ elongate, flagellum black; wings with a brownish tinge, cells *C* and *Sc*, with the stigma, darker brown; cell *2nd A* narrow; abdominal tergites brown, the subterminal segments darker; male hypopygium with the caudal margin of tergite trilobed, the apex of the median lobe truncate, provided with abundant blackened points; appendage of ninth sternite conspicuously lyriform.

Male.—Length about 12 mm.; wing 12 mm.; antenna about 5.2 mm.

Female.—Length about 13 mm.; wing 12.5 mm.

Frontal prolongation of head obscure yellow, relatively short; basal segment of palpus darkened at mid-length, the remainder of organ pale yellow. Antennæ (male) moderately elongate, as shown by the measurements; scape and pedicel yellow; first flagellar segment blackened, vaguely paler at both ends; remainder of flagellum black; flagellar segments very weakly incised, with short verticils. Head brown, the front and narrow orbits pale.

Mesonotum almost uniform brownish yellow to pale brown, the præscutal stripes not or scarcely differentiated. Pleura obscure yellow. Halteres blackened. Legs with coxæ and trochanters obscure yellow; femora obscure yellow to brownish yellow; tibiæ and tarsi dark brown. Wings with a brownish tinge, cells *C* and *Sc*, with the oval stigma, darker brown; a scarcely indicated dark seam on anterior cord; veins brown. Venation: *Rs* a little longer than *m-cu*; petiole of cell *M*₁ a trifle longer than *m*; cell *2nd A* narrow.

Abdominal tergites brown, the more proximal segments paler on their basal rings; subterminal segments darker; sternites and hypopygium yellow. Male hypopygium (fig. 8) with the caudal margin of tergite, *9t*, trilobed, the

lateral pair of lobes longer, their tips obtusely rounded; median lobe truncate at apex and set with abundant blackened points. Basistyle unusually long and slender, with the usual blackened lobe near its base on mesal face. Dististyles *id*, *od*, as shown. Notch of ninth sternite 9s, with a conspicuous lyriform appendage, the long arms provided with coarse setæ.

Hab. Peru (Loreto).

Holotype, ♂, Iquitos, March 10, 1920 (*Parish*). *Allotype*, ♀, March, 1920.

Tipula (*Nephrotomodes*) *lyriformis* is well-distinguished from the other members of the subgenus by the structure of the male hypopygium, especially the lyriform appendage of the ninth sternite.

Tipula (*Nephrotomodes*) *decens*, sp. n.

General coloration of thorax almost uniform orange, the præscutal stripes not or scarcely differentiated from the ground; femora brown, the bases slightly more brightened; wings greyish, cells *C* and *Sc*, with the stigma, dark brown; abdomen reddish brown, with a narrow black subterminal ring; male hypopygium with the ninth tergite extensive, the caudal edge emarginate, with a small truncated median lobe; outer dististyle with a conspicuous blackened tooth before apex; appendage of ninth sternite profoundly bifid, each lobe broadly flattened, with the apex emarginate.

Male.—Length about 12 mm.; wing 12 mm.; antenna about 5.8 mm.

Frontal prolongation of head relatively short, a little less than the remainder of head, shiny yellow; nasus very short and broad; first segment of palpi yellow, succeeding segments brownish yellow, the elongate terminal segment paling to light yellow. Antennæ of moderate length, approximately one-half as long as wing; scape, pedicel, and base of first flagellar segment yellow, the remaining segments black; flagellar segments elongate, gently incised, longer than the verticils. Head orange, more pruinose on anterior vertex; no distinct vertical tubercle.

Pronotum buffy-yellow. Mesonotum almost uniform orange, the præscutal stripes not or scarcely differentiated from the ground; mesonotal vestiture sparse, reduced

to microscopic setæ; pleura a little more yellowish. Halteres with stem obscure yellow, knob dark brown. Legs with coxæ and trochanters yellow; femora brown, the bases slightly more brightened; tibiæ and tarsi brownish black; claws (male) with a single strong flattened spine. Wings greyish, the prearcular field yellowish brown; cells *C* and *Sc*, with the stigma, dark brown; cord, especially the posterior end of *m-cu*, very

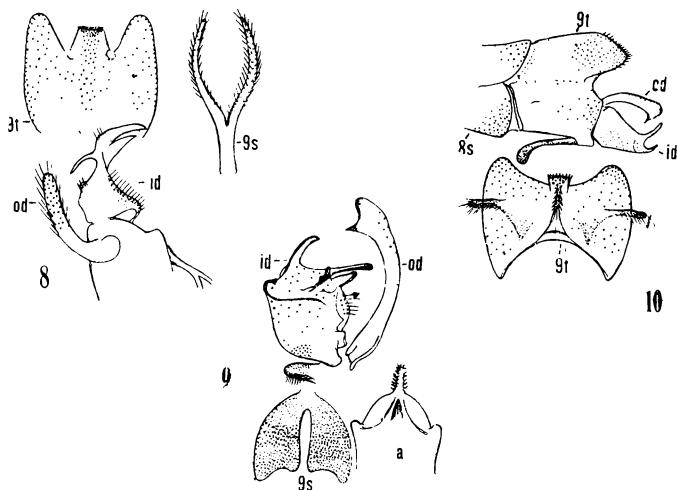


Fig. 8.—*Tipula (Nephrotomodes) lyriformis*, sp. n.; male hypopygium.
Figs. 9, 10.—*Tipula (Nephrotomodes) decens*, sp. n.; male hypopygium.

(Symbols: *a*, ædeagus; *id*, inner dististyle; *od*, outer dististyle; *s*, sternite; *t*, tergite.

narrowly and insensibly darkened; veins brown. Venation: *Sc* relatively short, *Sc*₂ ending about opposite one-fourth to one-fifth the length of *Rs*; *Rs* arcuated, subequal to *m-cu*; petiole of cell *M*₁ a little longer than *m*; cell 2nd *A* relatively wide.

Abdomen reddish brown, with a narrow, black subterminal ring that includes all of segment seven and the base of segment eight, the apex of the latter yellow; tergite six weakly darkened; eighth sternite dark brown with a large yellow area on either side of the posterior border; hypopygium yellow. Male hypopygium (figs. 9,

10) relatively simple in structure. Ninth tergite, 9*t*, extensive, the caudal margin emarginate, its median area with a small truncated lobe set with short black spinous setæ; lateral lobes of tergite obtuse, with long setæ. their tips curved; ventral surface of tergite with flattened lobes bearing long brushes of setæ, one arm directed laterad. the more extensive one mesad to cephalad. Outer dististyle, *od*, with a conspicuous blackened tooth before apex. Inner dististyle, *id*, complex, as shown, the rostrum very slender. Appendage of ninth sternite, 9*s*, profoundly bifid, each lobe broadly flattened, its apex emarginate, the surface densely set with short setæ. Ædeagus, *a*, at apex bearing numerous short spinous points.

Hab. Peru (Huanuco).

Holotype, ♂, Pumahuasi, altitude 980 metres, December 19, 1939 (*Woytkowski*).

In its wing-pattern, the present fly is most similar to *T. (N.) effulta* Alexander and *T. (N.) luctifica* Alexander, both of Ecuador, differing conspicuously in the structure of the male hypopygium.

Tipula (Nephrotomodes) perdelecta, sp. n.

General coloration polished yellow, variegated with polished stripes, the median præscutal stripe reddish with narrow black lateral borders; head uniformly polished yellow, without vertical tubercle; femora yellow, the tips narrowly blackened; wings with the prearcular and costal fields bright yellow, the outer radial field brown; stigma darker brown, provided with a few trichia; no macrotrichia on *M* or its branches; *Sc*₂ ending just beyond origin of *Rs*, *Sc*₁ lacking; *R*₁₊₂ entirely atrophied; abdomen yellow, the tergites trivittate with black, interconnected on caudal borders; ovipositor with fleshy cerci.

Female.—Length about 12 mm.; wing 11.5 mm.

Frontal prolongation of head light yellow, with coarse black setæ; nasus short and stout; palpi with basal three segments obscure yellow, the elongate terminal segment light brown. Antennæ 13-segmented; scape and pedicel yellow; flagellum black, the base and apex of first segment and apices of the succeeding six or seven segments restrictedly yellow to produce a weak bicoloured

appearance; flagellar segments with weakly-developed basal enlargements; verticils a little exceeding the segments; terminal segment small, about one-third the penultimate, but much more slender. Head uniformly polished yellow, without vertical tubercle; anterior vertex wide, fully four times the diameter of scape; sides of vertex with several black setæ.

Pronotum light yellow. Mesonotal præscutum yellow, with three more polished stripes, the median one reddish on the central portion with narrow but conspicuous black lateral borders to produce intermediate black stripes; lateral stripes black, conspicuous, crossing the suture onto the scutal lobes; posterior sclerites of notum yellow, the scutellum a very little darker; caudal border of mediotergite weakly darkened. Pleura and pleurotergite light yellow, variegated with more reddish areas on anepisternum and ventral sternopleurite. Halteres yellow, the base of knob weakly darkened. Legs with coxæ and trochanters yellow; femora yellow, the tips rather narrowly but conspicuously brownish black, the amount subequal on all legs; tibiæ obscure yellow, the tips narrowly and weakly darkened; tarsi black, the proximal ends of basitarsi paler. Wings conspicuously patterned; ground-colour pale yellow, with the pre-arcular field, cells *C* and *Sc*, and the linear cell *Cu*₁ intense yellow; wing-tip in outer radial field infuscated; stigma darker brown, with about eight strong setæ in cell *R*₁; veins brown, in the flavous area paling to yellow. No macrotrichia on *M* or its branches. Venation: *Sc*₂ entering *R*₁ just beyond origin of *Rs*, *Sc*₁ lacking; *Rs* arcuated; *R*₁₊₂ entirely atrophied; *r-m* reduced; cell 1st *M*₂ moderately long; petiole of cell *M*₁ nearly twice the length of *m*; *m-cu* at near one-third the length of cell 1st *M*₂; cell 2nd *A* of moderate width.

Abdomen yellow, the tergites trivittate with black, beyond the first segment forming continuous stripes that are more or less interconnected by dark posterior borders, these latter narrow to lacking on tergites four and five; on tergite six the central black area widely expanded; segment eight uniformly black; genital segment and ovipositor orange; sternites orange-yellow. Ovipositor with cerci somewhat fleshy, finger-like in outline, with long black setæ throughout their length.

Hab. Peru (Huanuco).

Holotype, ♀, Pumahuasi, altitude 980 metres, July 19, 1939 (*Woytkowski*).

Tipula (Nephrotomodes) perdelecta is entirely different from other Neotropical species. In its *Nephrotoma*-like coloration it somewhat resembles the otherwise entirely distinct *Tipula flavopolita* Alexander, of south-eastern Brazil. The wing coloration of the present fly is unusually beautiful.

Tipula novatrix, sp. n.

Belongs to the *glaphyoptera* group; allied to *notoria*; mesonotal præscutum grey, with three conspicuous dark brown stripes, the median one vaguely divided by a central paling; halteres elongate, pale yellow throughout; femora pale brown, with a black subterminal ring that is preceded and followed by yellow annuli, the apical one narrow; wings conspicuously and handsomely patterned with whitish subhyaline, yellow, pale brown and dark brown; cells beyond cord conspicuously variegated with white, including a complete cross-band that further involves most of cell R_5 ; vein R_{1+2} entirely atrophied.

Female.—Length about 11 mm.; wing 13.8 mm.

Frontal prolongation of head dark brown; nasus distinct; palpi brownish black, relatively short. Antennæ with basal three segments yellow; succeeding segments weakly bicoloured, the bases slightly darker than the outer portions; outer six or seven segments uniform brownish black; basal swellings of segments not developed; verticils shorter than the segments. Head buffy yellow on the vertical tubercle, more greyish behind and on the orbits, the posterior vertex infuscated; a capillary median brown vitta extending from the vertical tubercle backwards.

Pronotum brownish grey. Mesonotal præscutum grey, with three conspicuous dark brown stripes, the median one vaguely divided by a central paling; scutum with lobes conspicuously dark brown; scutellum paler brown, sparsely pruinose; parascutella and postnotum dark brown, heavily pruinose. Pleura grey, variegated with darker brownish grey on ventral anepisternum, ventral sternopleurite and on meron. Halteres elongate, pale yellow throughout. Legs with the coxæ light grey; trochanters obscure yellow; femora pale brown, the

extreme bases clearer yellow ; a conspicuous black sub-terminal ring, preceded and followed by yellow, the apical yellow ring only about one-half as extensive as the sub-terminal one ; tibiæ pale brown, the tips darker brown ; tarsi brownish black. Wings much as in *notoria*, but the cells beyond cord conspicuously variegated with white ; ground-colour whitish subhyaline, conspicuously patterned with bright yellow, pale brown and darker brown ; cell *C* uniformly pale brown except for a darkening at *h* ; cell *Sc* bright yellow, with four brown areas that are smaller than the ground interspaces ; a conspicuous yellow area at and before arculus ; the chief white areas include a complete cross-band beyond cord, involving almost all of cells R_5 and 1st M_2 ; further pale areas beyond cord, including outer end of cell R_3 , most of M_1 , base and apex of 2nd M_2 , and the extreme tip of M_4 ; basad of cord the white is very extensive, arranged much as in *notoria*. Venation : R_{1+2} entirely atrophied ; cell 1st M_2 relatively large ; *m-cu* long, at fork of M_{3+4} ; cell 2nd *A* moderately wide.

Abdominal tergites chiefly light brown, discoloured by egg masses inside the body ; sternites similar, the extreme posterior margins of segments buffy grey ; genital segment dark ; cerci long and straight, horn-yellow.

Hab. Peru (Huanuco).

Holotype, ♀, Piedras Grandes. altitude 3000 metres, November 28, 1937 (*Woytkowski*).

Tipula novatrix is close to *T. notoria* Alexander, of Ecuador, differing especially in the coloration, notably of the wings, where the white beyond the cord forms a conspicuous and complete cross-band. Other apparently less closely allied species include *T. consonata* Alexander and *T. fraudulentata* Alexander, both of Ecuador.

Tipula trispilota, sp. n.

Belongs to the *monilifera* group ; size very large (wing, male, over 20 mm. ; antenna 17 mm.) ; general coloration of mesonotum light brown, the præscutum with four grey stripes ; femora obscure yellow with a nearly terminal black ring ; wings reddish brown, conspicuously variegated by darker brown, yellow and whitish subhyaline ; cell *Sc* yellow with three conspicuous dark brown areas ; a whitish obliterative area across base of cell 1st M_2 ;

male hypopygium with the median tergal notch very narrow, the adjoining angles not produced ; lobe of eighth sternite relatively stout, its length about three times the breadth at base.

Male.—Length about 19 mm. ; wing 20·5 mm. ; antenna about 17 mm.

Frontal prolongation of head long, subequal to remainder of head ; brown, darker on sides ; nasus distinct ; palpi brown, the terminal segment brownish black. Antennæ (male) very long, exceeding three-fourths the length of wing ; basal three segments yellow, succeeding segments strongly bicoloured, the globular basal enlargement brownish black, the stem obscure brownish yellow ; longest verticils only a little shorter than the segments ; besides the powerful basal verticils the entire segment is clothed with long erect setæ. Head light yellow pollinose, variegated with brownish spots.

Mesonotal præscutum light brown with four grey stripes, the intermediate pair separated by a capillary dark brown median vitta ; lateral stripes more or less distinctly bordered by a yellow line, especially distinct along outer face ; setigerous punctures inconspicuous ; scutal lobes light grey, with dark grey areas ; scutellum brown, more or less distinctly yellowish brown pollinose ; mediotergite yellowish grey with a dark median vitta. Pleura grey, slightly variegated by darker grey areas, especially on ventral portions ; ventral pleurotergite paler. Halteres elongate, stem yellow, knob darkened. Legs with coxæ grey ; trochanters yellow ; femora obscure yellow, with a nearly terminal black ring, subequal in extent on all legs ; tibiæ reddish brown, the tips narrowly blackened ; tarsi reddish brown, the outer segments dark brown. Wings reddish brown, conspicuously patterned with darker brown, yellowish and whitish subhyaline ; cell *C* uniformly brown ; cell *Sc* yellow, with three conspicuous dark brown areas, the second at origin of *Rs* ; stigma scarcely darker than the costal cell ; the whitish areas include very restricted markings before and beyond stigma ; a conspicuous oblitative area across basal half of cell 1st *M*₂ ; conspicuous areas in cell 1st *A*, including an elongate U-shaped mark at near mid-length of cell ; more yellowish areas include restricted markings in outer medial field and

tip of cell R_5 , and as relatively extensive and conspicuous patterns in cells R and M ; cell $2nd A$ uniformly of the ground-colour. Venation: R_{1+2} pale, but entire; Rs a little less than twice $m-cu$; $m-cu$ on M_4 shortly beyond the perpendicular base; cell $2nd A$ wide.

Abdomen with basal tergites yellowish brown; succeeding two tergites yellow on basal ring, infuscated

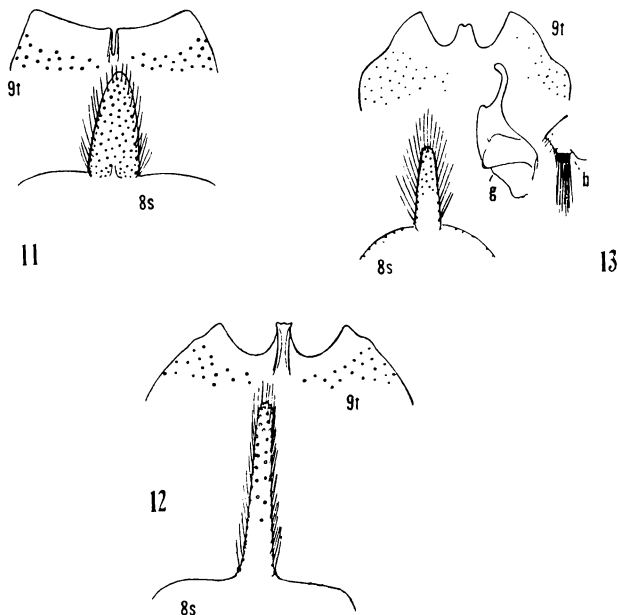


Fig. 11.—*Tipula trispilota*, sp. n.; male hypopygium.

Fig. 12.—*Tipula stenoglossa*, sp. n.; male hypopygium.

Fig. 13.—*Tipula woytkowskiana*, sp. n.; male hypopygium.

(Symbols: *b*, basistyle; *g*, gonapophysis;
s, sternite; *t*, tergite.)

laterally and on the broad posterior portions; outer segments more uniformly dark brown; lateral borders of basal tergites pale; outer portions of hypopygium chiefly obscure yellow. Male hypopygium (fig. 11) with the caudal margin of tergite. $9t$, evenly and gently emarginate, the median portion with a very narrow slit-like notch, the adjacent angles scarcely produced, obtuse; entire

posterior margin of tergite without major setæ. Basistyle entire, with a group of long setæ on ventral portion; ventromesal lobe small, tufted with long setæ. Outer dististyle moderately broad, with long black setæ. Inner dististyle terminating in a relatively stout head; outer margin with long, but delicate scattered setæ. Lobe of eighth sternite, 8s, relatively stout, reddish yellow in colour; length about three times the breadth at base, the setæ long and coarse, reddish brown.

Hab. Peru (Huanuco).

Holotype, ♂, Piedras Grandes, altitude 3000 metres, November 21, 1937 (*Woytkowski*).

Tipula trispilota is the largest and finest species of the *monilifera* group so far discovered. In addition to the great size and unusual length of the antennæ, the fly is well distinguished by the wing-pattern, as the variegated cell *Sc*, and by the structure of the male hypopygium.

Tipula stenoglossa, sp. n.

Belongs to the *monilifera* group; antennæ of moderate length, exceeding one-half the length of wing; mesonotal præscutum reddish brown with four darker stripes; dark setigerous punctures conspicuous; wings strongly infuscated, sparsely patterned with darker brown and cream-coloured areas; cells *C* and *Sc* uniformly darker brown; abdominal tergites yellow, conspicuously trivittate with black; male hypopygium with posterior border of tergite conspicuously emarginate and bearing a long median lobe to form two oval sublateral notches; lobe of eighth sternite unusually long and narrow.

Male.—Length about 15 mm.; wing 16 mm.; antenna about 9.5 mm.

Frontal prolongation of head brownish yellow, a little clearer yellow above, elongate, slightly exceeding the remainder of head; nasus long and conspicuous; palpi brownish black, the terminal segment brightened at extreme tip. Antennæ (male) exceeding one-half the length of wing; basal three segments yellow; succeeding two segments weakly bicoloured, the knot-like basal enlargements black, the remainder yellowish brown to brown, the outer segments uniformly blackened; basal enlargements very prominent; verticils subequal to or longer than the segments. Head reddish brown the

front and anterior portion of vertical tubercle more brightened; a capillary dark brown median vitta extending from the tubercle to the occiput.

Pronotum chiefly dark brown. Mesonotal præscutum with the ground-colour reddish brown, the two intermediate stripes scarcely differentiated in colour except by the narrowly darkened borders, the median dark vitta capillary; lateral stripes brown, entire but narrow; interspaces with large conspicuous setigerous punctures; posterior sclerites of notum reddish brown, the centres of the scutal lobes more darkened; a nearly continuous capillary median vitta extending from the suture to the base of abdomen; mediotergite with sparse but conspicuous setigerous punctures. Pleura reddish brown, vaguely patterned with darker. Halteres infuscated, the extreme base of stem yellow. Legs with coxæ yellow, provided with long conspicuous yellow setæ; trochanters yellow; femora obscure yellow, the tips narrowly brownish black, the amount subequal on all legs; tibiæ and tarsi dark brown, the tibial tips a little darker. Wings with the ground-colour strongly infuscated, only slightly variegated with darker brown and cream-coloured areas; cells *C* and *Sc*, with the stigma, uniform darker brown; very restricted creamy areas before and beyond stigma; in basal third of cell *M*; in bases of both anal cells and as paired areas alternating with dark spots in basal third of cell *Cu*; a single, more whitened oblitative mark across base of cell 1st *M*₂, only slightly involving the ends of cells *R* and *M*₃; veins brown. Venation: *Rs* long and nearly straight, exceeding twice the length of *m-cu*, cell *R*₁ narrow; *m-cu* on *M*₄ just beyond the perpendicular base.

Abdominal tergites yellow, conspicuously trivittate with black to form entire median and lateral stripes; basal sternites more uniformly yellow; subterminal segments more uniformly dark brown, the hypopygium chiefly yellow. Male hypopygium (fig. 12) with the posterior border of tergite, 9*t* conspicuously emarginate, the median region produced into an elongate lobe to form two oval sublateral notches; lateral tergal lobes subacute, glabrous. Lobe of basistyle very small, with a dense group of setæ of very unusual length. Outer dististyle long-clavate. Inner dististyle with the setæ of outer

margin long and pale, not forming a definite row as in certain allied species. Eighth sternite, 8s, with the median lobe of unusual length and narrowness, the length approximately five times the greatest diameter at base; lobe provided with elongate setæ that are chiefly apical and marginal in distribution.

Hab. Peru (Huanuco).

Holotype, ♂, Piedras Grandes, altitude 3000 metres, November 13, 1937 (*Woytkowski*).

Tipula stenoglossa is readily distinguished from all other members of the *monilifera* group by the coloration of the body and wings and by the details of structure of the male hypopygium, notably the tergite and eighth sternite. The tongue-like lobe of the eighth sternite is longer and narrower than in other described species.

Tipula woytkowskiana, sp. n.

Belongs to the *monilifera* group; general coloration of the præscutum brownish yellow, with four very slightly darker stripes, the intermediate pair separated by a capillary dark brown median line; antennæ relatively short, less than one-half the length of wing; flagellum black; basal enlargements of flagellar segments very abrupt and conspicuous; femora brown, with a narrow blackened, nearly terminal ring; wings extensively dark brown, the white colour reduced but including a conspicuous incomplete band beyond stigma; male hypopygium with caudal margin of tergite trilobed, there being a conspicuous median projection in the notch; lobe of eighth sternite elongate, nearly four times as long as width across base, provided with long conspicuous setæ.

Male.—Length about 15 mm.; wing 17.5 mm.; antenna about 8 mm.

Frontal prolongation of head ochreous-brown above, darker on sides, relatively elongate, exceeding the remainder of head; nasus long and slender; palpi black. Antennæ relatively short for a member of the group; scape and pedicel yellow, base of first flagellar segment brownish yellow, remainder of organ black; basal swellings unusually accentuated, each about as long as the diameter at base. Head buffy brown, the vertex with a capillary blackened median vitta.

Mesonotal præscutum with the ground brownish yellow, with four slightly darker stripes, the narrow intermediate pair with dusky outer margins and a common, still darker brown capillary median vitta; lateral stripes narrow, dark brown; interspaces broad, nearly as wide as the intermediate stripes, with conspicuous brown setigerous punctures; scutal lobes darkened, the median region behind more or less brightened; scutellum dark brown; mediotergite brownish grey with a blackened capillary median vitta. Pleura slightly infuscated dorsally, paling to clear yellow on ventral portion. Halteres with stem brown, yellow at base, knob dark brown. Legs with the coxæ yellow, the fore pair slightly more infuscated; trochanters yellow; femora brown with narrow blackened, nearly terminal rings; tibiæ and tarsi brownish black. Wings with the ground very extensively dark brown, the whitish colour reduced, the pattern distributed as follows:—In cell *R* with two areas adjoining vein *R* before origin of *Rs*; in cell *R*₁ before stigma; a conspicuous but incomplete post-stigmal band from costa into base of cell *M*₃, occupying almost all of cell 1st *M*₂; outer fourth of cell *R*₅; major areas in *M* on basal and outer thirds of cell; other whitish areas in cell *Cu*, including a long outer streak adjoining vein *Cu*; anal cells extensively whitened, especially at bases; veins dark brown. Venation: *Rs* long and straight, about twice *m-cu*; *R*₁₊₂ complete, the distal half without trichia; cell 1st *M*₂ shorter than in *mitua*.

Abdomen brown, darker on lateral portions, the basal two tergites more extensively yellow; extreme caudal borders of segments pale, darkened sublaterally; basal rings of more proximal segments clearer yellow; outer segments uniformly blackened; appendages of hypopygium paling to obscure yellow; sternites obscure brownish yellow. Male hypopygium (fig. 13) with the caudal border of tergite, 9*t*, conspicuously tridentate, there being a median lobe in addition to the broader, nearly acute lateral blades; the central lobe shorter and weakly emarginate at apex. Outer dististyle with blade long and narrow, about one-half longer than the stem. Inner dististyle long and narrow, the basal half generally parallel-sided. Lobe of basistyle, *b*, very small, bearing a pencil of long reddish setæ that are directed ventrad.

Gonapophyses, *g*, of peculiar shape, as shown., Eighth sternite, 8*s*, with caudal margin convexly rounded, the median lobe dark coloured, long and slender, its length nearly four times the width across base, the lateral and apical portions with very long coarse yellow setæ.

Hab. Peru (Junin).

Holotype, ♂, Huacapistana, Tarma, altitude 3600–5400 feet, March 3, 1940 (*Woytkowski*).

I take great pleasure in naming this distinct fly in honour of the collector, Mr. Felix Woytkowski, who has added so materially to our knowledge of the insects of Peru. The species is most similar to *Tipula mitua* Alexander, of Colombia, agreeing in the relatively short antennæ of the male and the long median lobe of the eighth sternite, disagreeing in the coloration of the body, antennæ and legs, and in the details of structure of the male hypopygium, as the trilobed tergite.

Tipula innubens, sp. n.

Belongs to the *monilifera* group; general coloration of præscutum yellow, with four narrow dark brown stripes in addition to the darkened humeral and lateral borders; nasus lacking; antennæ (male) elongate; knobs of halteres yellow; femora with a yellow subterminal ring; wings brown, conspicuously variegated with darker brown and yellowish areas, the former including three conspicuous markings in cell *Sc*; abdominal tergites reddish brown with interrupted dark brown lateral stripes; male hypopygium with the caudal margin of tergite having a tiny median incision and low sublateral lobes; lobe of eighth sternite depressed, pale, about four times as long as wide.

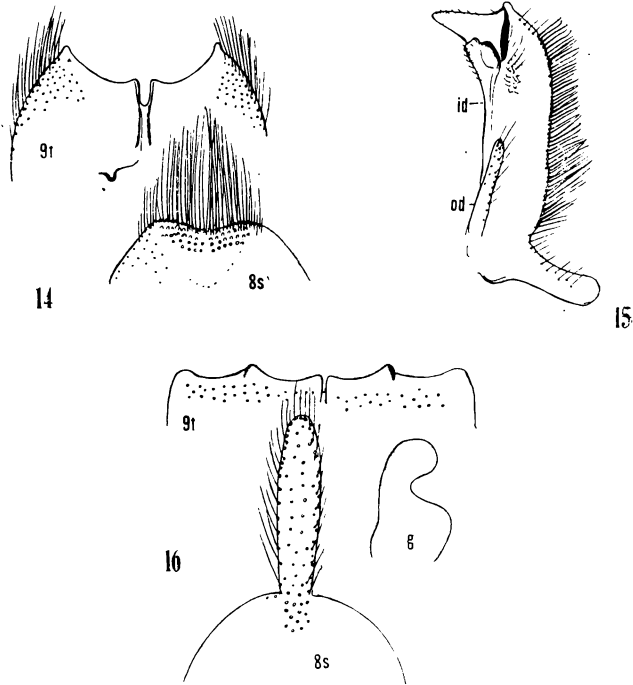
Male.—Length about 15–16 mm.; wing 17–17.5 mm.; antenna about 13 mm.

Frontal prolongation of head elongate, exceeding the remainder of head, obscure yellow, restrictedly darkened along sides; nasus lacking; palpi black. Antennæ (male) elongate, exceeding two-thirds the length of wing; basal three segments obscure yellow, succeeding segments weakly bicoloured, the globular basal swellings black, the remainder of segment passing into dark brown; outer segments uniformly blackened; longest verticils shorter

than the segments. Head reddish brown, the front and very narrow orbits more yellowish; central portion of posterior vertex slightly more darkened.

Pronotum variegated dark brown and buffy yellow. Mesonotal præscutum with the ground-colour yellow, with four narrow but very conspicuous dark brown stripes, the intermediate pair separated by a greyish yellow line of nearly equal width, the two stripes confluent just before the suture, with a further delicate U-shaped darkening at extreme posterior end; besides the dark stripes, præscutum with humeral and lateral portions heavily darkened; a few dark setigerous punctures on anterior interspaces; posterior sclerites of notum greyish yellow, conspicuously variegated with dark brown enclosing two areas on each scutal lobe, and a narrow but very conspicuous stripe extending from suture to base of abdomen; parascutella dark. Pleura greyish yellow, conspicuously variegated with dark brown, including a broad dorsal longitudinal stripe immediately beneath the yellow dorsopleural membrane, this latter stripe extending from the cervical region to beneath the wing-root; less distinct dark stripes and lines on the more ventral pleurites. Halteres elongate, obscure yellow at base, the stem darkened outwardly, the knob extensively yellow. Legs with the coxæ grey; trochanters yellow; femora pale brown, the extreme bases more yellow, the tips blackened, preceded by a slightly narrower clear yellow ring; tibiæ pale brown, the tips darkened; tarsi brown, the outer segments passing into black. Wings brown, conspicuously variegated with darker brown, cream-yellow and whitish subhyaline areas, the pattern unusually irregular and including zigzag areas; cell *C* brownish yellow; cell *Sc* yellow with three conspicuous dark brown markings; a restricted yellow cross-band beyond stigma; all outer medial cells with a central darkening that is narrowly bordered by yellow; unusually irregular yellow areas in cell *1st A*, with further similar brightenings in cells *M*, *Cu* and *2nd A*; a somewhat more whitened obliterative area across cell *1st M*₂; veins brown, more yellowish brown on interspaces of veins *Sc* and *R*. Venation: tip of vein *R*₁₊₂ very pale to atrophied; *Rs* long and nearly straight, about twice *m-cu*.

Abdomen with basal tergite obscure yellow ; succeeding tergites deeper yellow to reddish brown, with broken dark brown lateral stripes that are interrupted by the grey apical portions of the segments ; no distinct dark median stripe ; eighth segment a trifle darker ; sternites and hypopygium yellow. Male hypopygium (fig. 16) with the tergite, 9*t*, narrowly transverse, the caudal border



Figs. 14, 15.—*Tipula auricomata*, sp. n. ; male hypopygium.
Fig. 16.—*Tipula innubens*, sp. n. ; male hypopygium.

(Symbols : *g*, gonapophysis ; *id*, inner dististyle ;
od, outer dististyle ; *s*, sternite ; *t*, tergite.)

generally truncate with a tiny median slit and low obtuse sublateral lobes. Basistyle provided with long dark setæ ; lobe of basistyle subquadrate, the apex a little widened and truncate, clothed with short dense setæ. Outer dististyle long-cylindrical, with coarse erect setæ. Inner dististyle expanded at apex ; outer margin with weak

erect setæ that are not arranged in rows. Gonapophyses, *g*, obtusely rounded at tips. Eighth sternite, 8*s*, with the median lobe depressed, pale, with coarse pale setæ from darkened punctures; lobe a little more than four times as wide; no major setæ on sternite excepting a median series extending backwards from the lobe.

Hab. Peru (Junin).

Holotype, ♂, Huasahuasi, Tarma, altitude 2800 metres, April 23, 1940 (*Woytkowski*). *Para-topotype*, ♂, April 10, 1940.

The present fly is very different from all other described species of the *monilifera* group, especially in the lack of a nasus, the pattern of the femora and wings, and in the details of structure of the male hypopygium. It is, perhaps, as close to *Tipula woytkowskiana*, sp. n., as to any other form, yet very distinct.

Tipula auricomata, sp. n.

Belongs to the *monilifera* group; flagellar segments of male antennæ abruptly nodulose, the organ about one-half the length of wing; basal flagellar segments strongly bicoloured; wings with a strong brown tinge, striped longitudinally with pale yellow, including two major streaks, one extending from the outer end of cell *R* through 1st *M*₂ to wing-apex in cell *R*₅, the second stripe chiefly in the bases of the anal cells, continued along cell *Cu* almost to wing-margin; male hypopygium with conspicuous tufts of yellow setæ on lobes of ninth tergite, ventral portion of basistyle, and especially as two flattened groups on posterior border of eighth sternite, which is otherwise unarmed.

Male.—Length about 14–15 mm.; wing 16–17 mm.; antenna 8–9 mm.

Frontal prolongation of head grey above, darker on ventral half; nasus elongate, yellow; palpi brownish black, the incisures paler. Antennæ (male) moderately elongate, about one-half the length of wing; basal three segments yellow, succeeding segments strongly bicoloured, the basal knot black, the stem yellow; outer segments passing through feebly bicoloured to uniform brownish black by a gradual darkening of the stem of the segment; basal knots of segments abruptly developed as in the

typical members of the group. Head ashy grey, variegated with brown, including a more or less distinct median line.

Pronotum grey with a median brown vitta. Mesonotal præscutum brownish grey, with three brown stripes, the median one pale brown, distinctly divided by a capillary dark brown vitta and with the lateral borders vaguely infumated; lateral stripes narrow, medium brown; setigerous punctures of the interspaces dark brown, conspicuous; posterior sclerites of notum brownish grey; lobes of scutum patterned with darker brown; scutellum with an anchor-shaped brown marking; mediotergite with a capillary brown dash, narrowed behind. Pleura yellowish grey, scarcely patterned with darker. Halteres brown, the base of stem restrictedly brightened. Legs with coxæ grey; trochanters yellow; femora obscure yellow with a narrow brown nearly terminal ring; tibiæ brownish yellow, the tips narrowly dark brown; tarsi passing into black; claws toothed. Wings with a strong brown tinge, patterned with pale yellow, chiefly as two narrow longitudinal stripes, the more cephalic extending from outer end of cell *R* through 1st *M*₂ to the wing-apex in *R*₅, including almost all of the latter cell and, in cases, the adjoining portions of cells *M*₁ and 2nd *M*₂; the second pale stripe includes most of cell *Cu* and the bases of the anal cells, not reaching the wing margin in cell *Cu*; cells *C* and *Sc* brownish yellow, unpatterned; veins brown. Venation: *R*₁₊₂ entire but pale; cell *M*₄ deep.

Abdominal tergites obscure yellow, with three brown stripes, the lateral pair narrow and broken; sternites and hypopygium chiefly yellow. Male hypopygium (figs. 14, 15) large. Ninth tergite, 9*t*, with the caudal border broadly emarginate, with a narrow secondary median notch; lateral lobes at apex relatively narrow, the outer margins with groups of long yellow setæ. Basistyle complete, its ventral portion with a group of long setæ. Outer dististyle, *od*, appearing as a small lobe, at base more or less fused with the inner style. Inner dististyle, *id*, with outer margin bearing a single series of about forty-five strong powerful spinous bristles, the outer ones shorter and slightly stouter, the bristles terminating in a delicate hair; outer margin of style at base produced into a conspicuous flattened pale blade,

the apex obtuse. Eighth sternite, 8s, narrowed posteriorly, the apex more or less membranous, bearing two flattened brushes of long yellow setæ, the ones nearer the median line longer.

Hab. Peru (Huanuco).

Holotype, ♂, Piedras Grandes, Huanuco, altitude 3000 metres, November 17, 1937 (*Woytkowski*). *Paratopotypes*, 2 ♂♂, November 12-14, 1937. *Paratype*, 1 ♂, Huanuco, altitude 2,000 metres, September 15, 1937 (*Woytkowski*).

Tipula auricomata is entirely distinct from all other members of the *monilifera* group, differing especially in the longitudinally striped wings and the peculiar structure of the male hypopygium, notably the conspicuous hair-tufts on the eighth sternite. The single row of spinous setæ along the outer margin of the inner dististyle is somewhat as in the otherwise very different *T. pantherina* Alexander, of Venezuela.

Tipula tephronota, sp. n.

General coloration of mesonotum dark brown, with a broad ash-grey central stripe extending the entire length, this contrasting abruptly with the lateral borders; frontal prolongation almost in alignment with remainder of head; antennæ with basal two segments yellow, flagellum beyond the elongate first segment black; legs dark, the femora black, narrowly yellow at bases, with a narrow obscure yellow subterminal ring; wings whitish hyaline, the prearcular field and costal border narrowly but continuously dark brown; weak brown washes elsewhere on wing-disk; *Rs* long, exceeding one and one-half times *m-cu*; basal abdominal segments yellow, the tergites patterned with darker, tergites five to seven, uniformly black; cerci long and slender.

Female.—Length about 17 mm.; wing 15.5 mm.

Frontal prolongation of head black, more reddish or piceous on sides of dorsal half; nasus lacking; prolongation subequal in length to remainder of head, without a marked depression between it and remainder of front; palpi black, the terminal segment of moderate length. Antennæ with scape and pedicel light yellow; first flagellar segment brown; remainder of flagellum black; first flagellar segment elongate, about equal to

the succeeding two combined ; outer flagellar segments short, with conspicuous basal enlargements ; verticils considerably longer than the segments. Head brownish grey, the posterior vertex conspicuously patterned with brown on central portion and as large areas behind the eyes ; no vertical tubercle.

Pronotum brown, with a more buffy spot on either side of mid-line. Entire mesonotum with a broad central ash-grey stripe, on the mediotergite a trifle more brownish grey ; præscutum with lateral and humeral third abruptly dark brown ; lateral half of each scutal lobe similarly dark brown ; parascutella darkened. Pleura uniformly deep yellow, the propleura and dorsopleural membrane to wing-root abruptly dark brown. Halteres with stem brown, the knob still darker. Legs relatively long and slender ; coxæ light yellow, the fore pair slightly darker ; trochanters yellow ; femora black, the bases narrowly and abruptly light yellow ; a narrow obscure yellow subterminal ring more than twice its length back from tip ; tibiæ and basitarsi brown, the tips still darker ; remainder of tarsi black. Wings with the ground-colour whitish hyaline, the prearcular and costal fields, with the stigma, uniformly and continuously dark brown ; remainder of wing weakly washed with brown, including the apical cells beyond the level of outer end of cell 1st M_2 , and less evident washes in basal cells, the most distinct appearing as a cloud along vein Cu in cell M at about two-thirds the length, and a seam on distal section of vein Cu_1 ; axilla and vein 2nd A more narrowly seamed ; veins brown. Venation : Sc long, Sc_2 ending shortly before distal end of long straight Rs ; tip of R_{1+2} pale but preserved ; petiole of cell M_1 nearly twice m ; cell 2nd A relatively wide.

Abdomen with basal segments light yellow, the outer segments black ; tergites two to four with the posterior borders and a weak central line brown, the latter becoming much wider on the fourth tergite ; tergites five to seven, inclusive, uniformly black ; tergite eight and the genital shield slightly paler, especially the basal portion of the latter. Ovipositor with the valves horn-coloured, the long cerci slender and straight.

Hab. Peru (Huanuco).

Holotype, ♀, Piedras Grandes, altitude 3000 metres, November 21, 1937 (*Woytkowski*).

Tipula tephronota is very different from all described species of the genus in the Andean fauna. Despite the very different coloration, the fly appears to be most closely related to species such as *T. abortiva* Alexander, *T. campa* Alexander, *T. curinao* Alexander, and *T. piro* Alexander, all from the vicinity of Callanga, Peru.