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# **Undescribed or little-known Tropical American Tipulidae (Diptera) Part I**

Charles P. Alexander

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(With 8 text-figures)

At this time I am instituting a series of papers that continues the study of the almost limitless crane-fly fauna of Tropical America. Most of the species treated in this part are from Peru and were collected at Quincemil, Cuzco, along the Marcapata River by Señor Luis A. Peña, to whom we owe much in making known the Chilean fauna and several of the more northern republics. Fewer species are from Ecuador where the majority were taken near Tena in Napo-Pastaza by Señor Peña. The types of the novelties are preserved in my personal collection.

Most of the species discussed at this time belong to the vast genus *Tipula* that had been considered earlier in a series of four papers by the author where all Neotropical species known to that date were listed.

- Alexander, C. P., 1945, Notes on the Tropical American species of the genus *Tipula* Linnaeus. Part. I. — *Rev. de Entomologia* 16: 330-356, 9 figs.  
 — 1945, The same. Part II. — *Ibidem*, 16: 415-440, 25 figs.  
 — 1946, The same. Part III. — *Ibidem*, 17: 172-201, 7 figs.  
 — 1951, The same. Part IV. — *Ibidem*, 22: 265-314, 24 figs.

### **Holorusia (Holorusia) penata** sp. n.

Size large (wing of female about 36 mm); frontal prolongation of head dark reddish brown, nasus elongate; mesonotal praescutum cinnamon brown with four grayish nacreous stripes that are bordered by black; pleura yellow, blackened dorsally on propleura and the dorsopleural region; halteres black; legs yellow, tips of femora black; wings medium brown with conspicuous yellowed areas, most evident in outer ends of cells *M*, *Cu* and *1st A* and in centers of cells *M*<sub>4</sub> and *2nd A*; cell *R*<sub>3</sub> scarcely constricted before midlength; abdomen cinnamon brown.

**F e m a l e.** — Length, about 38 mm; wing 36 mm; antenna, about 4.2 mm. Frontal prolongation of head long, subequal to remainder, dark reddish brown; nasus elongate, about one-fourth the prolongation; palpi black, the base of third segment narrowly

whitened. Antennae with scape and pedicel brownish yellow, flagellum pale brown; terminal segment about one-fourth longer than the penultimate. Head cinnamon brown, more pruinose medially behind; sides of posterior vertex and genae more darkened.

Pronotum light yellow, scutum dark brown medially and on sides. Mesonotal praescutum cinnamon brown with four grayish nacreous stripes that are bordered by black, the lateral pair extensively so, humeral and lateral borders narrowly yellow; scutum cinnamon brown medially, each lobe with two gray areas that are bordered anteriorly by brownish black; scutellum testaceous brown; mediotergite brownish gray, posterior third darkened, pleurotergite brown above, the katapleurotergite more yellowed. Pleura chiefly yellow, vaguely patterned with darker, including a small spot on sternopleurite; propleura and dorso-pleural region black. Halteres black, base of stem narrowly light yellow. Legs with coxae obscure yellow, anterior faces of fore and middle pairs brown; trochanters yellow; femora yellow, tips blackened, the amount subequal on all legs, including about the outer eighth of segment; remainder of legs yellowed. Wings medium brown, with conspicuous yellowed areas near outer ends of cells *M*, *Cu* and *1st A* and near centers of *M*<sub>4</sub> and *2nd A*; outer medial veins broadly seamed with yellow; stigma small, obscure yellow, margined posteriorly by brown; a conspicuous darkened spot at posterior end of *m-cu* and adjoining parts of vein *Cu*; series of small circular dots near bases of veins *R*, *Cu* and in cell behind prearcular section of vein *1st A*; veins yellowish brown to light brown. Veins glabrous. Venation: Veins *R*<sub>3</sub> and *R*<sub>4-5</sub> only slightly arcuated so cell *R*<sub>3</sub> is scarcely constricted before midlength as is the case in many species.

Abdomen chiefly cinnamon brown, basal sternites light yellow. Ovipositor with outer half of cercus slender, straight.

Holotype, ♀, Quito, Ecuador, altitude 9350 feet, May 31, 1963 (Luis A. Peña).

I take pleasure in dedicating this conspicuous fly to the collector who has added materially to our knowledge of the Neotropical Tipulidae. The species differs from other regional members of the genus of large size in the wing pattern and venation. Such species that most resemble this fly include *Holorusia* (*Holorusia*) *jasliana* Alexander, *H. (H.) monostictula* Alexander, *H. (H.) uniatra* Alexander, *H. (H.) vulpes* Alexander, and some others.

The relationship of *Neotipula* Alexander with the two major genera *Tipula* Linnaeus and *Holorusia* Loew still remains in question due to rarity of specimens in all recent collections.

**Ozodicera (Ozodicera) placata** sp. n.

Mesonotal praescutum with four brown stripes; wings light brown, prearcular and costal fields strongly yellowed; *r-m* obliterated by fusion of veins  $R_4+5$  and  $M_1+2$ ; male hypopygium with basistyle unarmed; inner dististyle subtriangular in outline, outer margin near base with two large darkened retrorse lobes; posterior border of sternite produced medially.

Male. — Length, about 22 mm; wing 17 mm; antenna, about 6 mm. Frontal prolongation of head elongate, light chestnut brown, nasus long; palpi black. Antennae with proximal three segments yellowed, flagellar segments two to five brownish yellow, the remainder of organ, including all branches, black, the latter with a short white pubescence; branches simple, a little longer than the segments, each with a small setiferous tubercle before apex, tip narrowed; four outer segments very long, simple. Head above buffy; vertex very narrow, the eyes correspondingly enlarged.

Prothorax small, buffy brown. Mesonotal praescutum with four brown stripes, anterior end of the broad lateral pair confluent internally with the intermediate stripe; interspaces brownish yellow, lateral praescutal borders more buffy; scutum and scutellum brown, more or less dusted with gray; postnotum buffy yellow. Pleura chiefly buffy yellow, without distinct markings; dorsopleural membrane weakly infuscated. Halteres brown. Legs with coxae and trochanters buffy; femora brownish yellow, tibiae darker brown, tarsi black; claws with a conspicuous basal spine. Wings light brown, prearcular and costal fields strongly yellowed; stigma small, almost concolorous; veins brown, yellowed in the brightened fields. Veins behind *R* glabrous, as common in the genus. Venation: *r-m* obliterated by fusion of veins  $R_{4-5}$  and  $M_{1-2}$ ; cell  $M_1$  broadly sessile, basal section of  $M_2$  about one-half *m*; cell 1st  $M_2$  large.

Basal abdominal tergites yellowed, darkened laterally, the amount of the latter increasing on the outer segments; sternites light yellow; segments seven and eight dark brown to form a ring, hypopygium yellowed. Male hypopygium (Fig. 1) having the posterior border of tergite, *t*, with a narrow U-shaped emargination, the adjacent angles produced into slender lobes. Basistyle elongate, unarmed. Dististyles terminal; outer style, *od*, broad on basal half and provided with numerous setae, outer half narrowed into a long spine, with a small subterminal tubercle; inner style, *id*, slightly longer, subtriangular in outline,

tip obtuse; dorsal margin at base with two large darkened retrorse lobes, the outer one larger; distad of this lobe the margin with three small points. Phallosome relatively small and inconspicuous. Eighth sternite with central region of posterior border produced, the lateral angles less evidently so, with long yellow setae.

Holotype, ♂, Quincemil, Cuzco, Peru, November 12, 1962 (Luis A. Peña).

*Ozodicerca (Ozodicerca) placata* is readily distinguished from other regional species of the genus having unicolorous wings with *r-m* obliterated by the fusion of adjoining veins in the structure of the male hypopygium, particularly the distinctive inner dististyle. With nearly 50 species presently known *Ozodicerca* is one of the largest genera of Neotropical crane-flies.

### ***Tipula (Microtipula) akestra* sp. n.**

General coloration of head and thorax orange; antennae of male moderately long, flagellum black, the segments shallowly incised; wings weakly darkened, base more brightened, costal border and stigma darker; abdominal tergites darkened laterally, sternites yellowed, subterminal segments blackened to form a conspicuous ring; male hypopygium with the inner dististyle produced into a long slender arm or spine; ninth sternite with two stout arms that are densely covered with blackened setae.

Male. — Length, about 11-12 mm; wing, 11-12 mm; antenna, about 5 mm. Frontal prolongation of head yellowish orange, without nasus; palpi testaceous yellow. Antennae of male moderately long, nearly one-half the wing; scape, pedicel and base of first flagellar segment yellowed, remaining segments black; flagellar segments shallowly incised; verticils shorter than the segments. Head orange.

Thorax orange, pleura a trifle more yellowed. Halteres with stem obscure yellow, the base orange, knob dark brown. Legs with coxae and trochanters orange yellow; remainder of legs obscure yellow, tips of tibiae narrowly darkened, tarsi passing into black; claws toothed. Wings weakly darkened, cells *C* and *Sc* strongly infuscated, stigma dark brown, prearcular field yellowed; veins dark brown, yellowed in the prearcular field. Venation: Petiole of cell  $M_1$  approximately twice *m*; *m-cu* relatively long, at fork of  $M_{3-4}$ ; cell *2nd A* narrow.

Basal abdominal tergites darkened laterally, in cases more uniformly pale brown, sternites more yellowed; segment seven

and base of eighth sternite blackened; remainder of hypopygium orange. Male hypopygium (Fig. 2) with tergite, *t*, elongate, apex virtually truncate, with a small U-shaped notch and a small median lobe that divides into two divergent arms, their inner margins with a few short black setae. Proctiger a complex

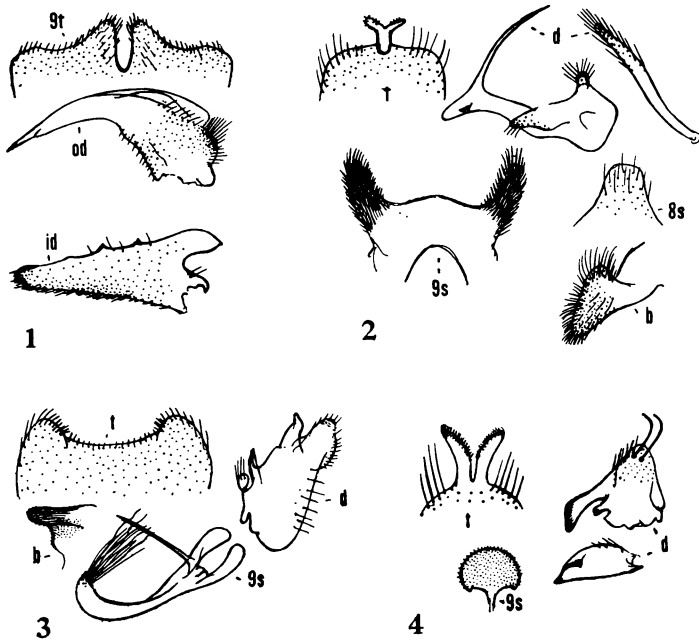


Fig. 1. *Ozodicera (Ozodicera) placata* sp. n.; male hypopygium. — Fig. 2. *Tipula (Microtipula) akestra* sp. n.; male hypopygium. — Fig. 3. *Tipula (Microtipula) crassistyla* sp. n.; male hypopygium. — Fig. 4. *Tipula (Microtipula) pararia* sp. n.; male hypopygium. (Symbols: *b*, basistyle; *d*, dististyles; *id*, inner dististyle; *od*, outer dististyle; *s*, sternite; *t*, tergite).

blackened scaffolding. Ninth sternite, *9s*, with two widely separated arms that are conspicuously covered with blackened setae, the arms broadly interconnected across the midline. Basistyle, *b*, with a subtriangular lobe on mesal face near base, densely set with strong setae. Outer dististyle, *d*, an elongate slender lobe, with long setae on outer half; inner style slender, the beak slightly widened, with a low blackened tooth on side and with a very long slender arm on outer margin, terminating in a long black spine; at base of style with two unequal setiferous lobes. Phallosome small, the aedeagus subtended by the small elongate-oval gonapophyses. Eighth sternite, *8s*, outwardly narrowed and produced, the apex broadly obtuse.

Holotype, ♂, Quincemil, Cuzco, Peru, August 1962 (Luis A. Peña). Paratopotypes, 4 ♂♂, September 2 - November 11, 1962.

*Tipula (Microtipula) akestra* is readily told from all other regional species by the structure of the male hypopygium, especially the tergite, ninth sternite and inner dististyle. *T. (M.) subeffeta* Alexander is generally similar in appearance but is not closely related.

### ***Tipula (Microtipula) crassistyla* sp. n.**

Thoracic dorsum almost uniformly dark brown, pleura reddish yellow; antenna of male of moderate length, nearly one-third the wing, flagellum blackened; wings strongly infuscated, prearcular and costal regions, with the stigma, darker brown; cell *2nd A* very narrow; male hypopygium with posterior border of tergite shallowly emarginate, without median lobes; outer dististyle very small, oval, inner style stout, at apex divided into two unequal lobes.

Male. — Length, about 13.5 mm; wing, 11 mm; antenna, about 3.5 mm. Frontal prolongation of head brown above, more yellowed beneath; nasus with a tuft of long black setae. Antennae of male relatively short, nearly one-third the wing; scape and pedicel brownish yellow, flagellum black; flagellar segments moderately incised, verticils a little more than one-half the segments. Front gray, remainder of head dark brown.

Pronotum brown, paling to yellow on sides. Mesonotum almost uniformly dark brown, humeral region of praescutum vaguely more reddened; sides of mediotergite and anapleurotergite paler. Pleura reddish yellow, very vaguely patterned. Halteres with stem brown, knob brownish black. Legs with coxae yellowed; trochanters obscure yellow; femora brownish yellow, tibiae and tarsi black; claws toothed. Wings strongly infuscated, prearcular and costal regions dark brown, the stigma concolorous; a narrow obliterative streak across cell *1st M<sub>2</sub>* into the adjoining cells; veins brownish black. Outer radial veins with macrotrichia; veins before cord and outer medial branches glabrous. Venation: Petiole of cell *M<sub>1</sub>* about one-half longer than *m*; *m-cu* on *M<sub>4</sub>* just beyond origin; cell *2nd A* very narrow.

Abdominal tergites yellow, blackened medially, narrow on the first segment, becoming broader on the succeeding segments, the basal rings yellowed; sternites yellow; a subterminal black ring that includes segments six and seven, with the basal two-

thirds of the eighth sternite; remainder of hypopygium yellowed. Male hypopygium (Fig. 3) with the tergite, *t*, transverse, posterior border shallowly emarginate, without median lobes or projections, lateral lobes obtusely rounded. Proctiger appearing troughlike, unblackened. What appears to represent the appendage of the ninth sternite, *9 s*, is a slender sclerotized lobe or rod, at apex with a brush of long yellow setae, near base of rod with a long straight spine; the strict homologies of this structure remain uncertain. Basistyle, *b*, with the blackened mesal lobe narrowed on outer half, the surface microscopically roughened. Outer dististyle very small, oval, with six or seven long setae, the longest exceeding the style; inner style, *d*, simple, stout, at apex divided into two unequal lobes, the inner one a slender blade, outer lobe a little longer, brown, densely provided with short yellow setulae and with scattered pale longer setae.

Holotype, ♂, Quincemil, Cuzco, Peru, November 11, 1962 (Luis A. Peña).

The most similar described species is *Tipula (Microtipula) didactyla* Alexander, of Peru, which likewise has the tergite of the hypopygium simply emarginate but longer, differing in the other structures, including especially both dististyles and the appendage of the ninth sternite. The hypopygium of *didactyla* has been described and figured in another paper by the writer (Ann. Mag. Nat. Hist., ser. 11, vol. 9: 345, fig. 7; 1942).

### ***Tipula (Microtipula) pararia* sp. n.**

General coloration of mesonotum medium brown, pleura more yellowed; antenna of male elongate, bicolored; legs obscure yellow; wings pale brown, conspicuously patterned with dark brown, very broadly in costal region and outer radial field; *r-m* short, cell  $M_1$  subequal in length to its petiole; abdomen with a blackened subterminal ring; male hypopygium with apex of ninth tergite divided into two divergent lobes; inner dististyle broad, at summit with two strong blackened setae.

Male. — Length, about 11 mm; wing, 10.5 mm; antenna, about 5 mm. Frontal prolongation of head dark brown above, more yellowed beneath, outwardly with very long setae; base of nasus stout; palpi black. Antennae of male elongate, approximately one-half the wing; scape, pedicel and first flagellar segment yellow, succeeding flagellar segments bicolored, the small basal enlargement brown, the outer ends brown, outer segments uniformly darkened; verticils about one-half the segments. Head plumbeous, front and narrow orbits gray.



Pronotum light brown. Mesonotal praescutum and scutum uniform medium brown, scutellum and mediotergite testaceous yellow, parascutella and pleurotergite medium brown. Pleura brownish yellow above, paling to yellow ventrally. Halteres dark brown. Legs with coxae and trochanters yellow; femora and tibiae obscure yellow, tarsi brown; claws toothed. Wings with the ground pale brown, conspicuously patterned with dark brown, including the broad costal border that includes also most of cell *R* and the outer radial field; darker brown spots at base of outer section of vein  $R_{4-5}$ , posterior end of *m-cu*, outer end of cell *1st M*<sub>2</sub> and outer medial branches; more whitened areas before and beyond cord, especially in cells *R*<sub>1</sub>, *R* and *M*; outer medial cells and base of *R*<sub>5</sub> extensively whitened; veins brown, slightly darker in the costal field. Veins *R*<sub>3</sub> and *R*<sub>4</sub> with numerous macrotrichia, with a few on outer half of *M*<sub>1</sub>. Venation: *Rs* arcuated; basal section of  $R_{4+5}$  long and straight, greatly reducing *r-m*; cell *M*<sub>1</sub> short and broad, subequal to its petiole; *m-cu* at near midlength of  $M_3+4$ ; cell *2nd A* relatively narrow.

Basal abdominal segments light yellow, lateral borders of tergites two and three darkened, segments seven and eight blackened to form a conspicuous ring, hypopygium light yellow. Male hypopygium (Fig. 4) with the tergite, *t*, narrowed outwardly, at apex divided into two divergent lobes, the mesal edge of more than the outer half of each with abundant short black setae. Proctiger a broad pale glabrous plate without blackened points. Outer dististyle, *d*, scoop-shaped, the acute apex and a flange on outer margin before apex blackened; inner style very high, nearly as broad as long; beak narrow, slightly widened on the blackened outer half, apex obtuse; lower beak short, parallel-sided, apex blackened, acute; summit of disk of style with two powerful blackened setae that are gently curved at near midlength, with additional normal long setae. Ninth sternite, *9s*, with a low circular disk, densely covered with short setulae.

Holotype, ♂, Quincemil, Cuzco, Peru, September 2, 1962 (Luis A. Peña).

Other species of the subgenus that have modified blackened setae on the inner dististyle include *Tipula (Microtipula) trihastata* Alexander, of Peru, with three such setae, and *T. (M.) septemhastata* Alexander, of Bolivia, with seven, both species being entirely different from the present fly in the blackened antennal flagellum, distinctive wing pattern, and in all details of the male hypopygium, particularly the tergite and inner dististyle.

**Tipula (Eumicrotipula) atameles** sp. n.

Belongs to the *macrotrichiata* group; mesonotal praescutum obscure brownish yellow with three brown stripes, pleura yellow with a narrow transverse dark brown stripe on the anterior margin of the mesepisternum; antennae of male long, flagellum beyond the first segment blackened; wings weakly tinged with brown, costal border slightly darker, cell *Sc* with three slightly darker areas; cell  $M_1$  deep, its petiole correspondingly shortened; a few macrotrichia in the stigmal region; basal abdominal tergites dark brown, variegated by more orange areas, outer segments more uniformly darkened; male hypopygium with apex of each gonapophysis produced into an acute point.

**Male.** — Length, about 9-9.5 mm; wing, 9-10 mm; antenna, about 5.5-5.6 mm. Frontal prolongation of head above obscure yellow or brownish yellow, more darkened on sides; palpi black. Antennae of male relatively long, exceeding one-half the body or wing; scape and pedicel light yellow, first flagellar segment slightly darker yellow, remainder of organ black; flagellar segments elongate, the basal enlargements small; verticils short, about one-third to one-fourth the segment, the entire segment with further short dense white erect setae. Head with front yellow, center of vertex more obscure yellow, the sides light brown.

Pronotum obscure yellow. Mesonotum obscure brownish yellow, with a broad brown central stripe and less evident lateral darkenings, more distinct in the paratype; scutal lobes darker, median region restrictedly paler; scutellum obscure yellow or brownish yellow; mediotergite brown, pleurotergite more reddish brown. Pleura yellow, with a conspicuous dark brown transverse stripe extending from the dorsopleural region over the anterior mesepisternum to the sternopleurite. Halteres infuscated, base of stem yellowed. Legs with coxae and trochanters yellow; femora brownish yellow, clearer yellow basally, tips narrowly and vaguely more darkened, tibiae and tarsi brown; claws small, simple. Wings weakly tinged with brown, costal border and stigma slightly darker, cell *Sc* with three still darker areas that are slightly smaller than the interspaces; small vague creamy areas across *Rs*, near outer end of cell *M* and in bases of outer radial cells; a more whitened obliterative area across the cord into cell *1st M*<sub>2</sub>; veins brown. Numerous macrotrichia on veins beyond general level of origin of *Rs*; a series of about 6 or 7 trichia in stigma. Venation:  $R_{1+2}$  entirely atrophied; cell  $M_1$  deep, its petiole varying from about one-half to twice *m*; *m-cu* at or just before fork of  $M_{3+4}$ ; cell *2nd A* narrow.

Abdominal tergites dark brown, proximal segments with more orange areas; basal sternites uniformly orange yellow; outer abdominal segments more uniformly darkened; hypopygium yellowed. Male hypopygium (Fig. 5) with posterior border of tergite, *t*, very gently emarginate, the lateral lobes low; a small median notch. Outer dististyle cylindrical with sparse setae; inner style, *d*, with lower beak slender, the beak stouter. Gonapophyses, *g* with outer apical angle slightly produced into a small lobe, its angle extended into an acute point.

Holotype, ♂, Quincemil, Cuzco, Peru, altitude 780 meters, August 16, 1962 (Luis A. Peña). Paratype, ♂, Libertad, 6 kilos southeast of Tena, Napo-Pastaza, Ecuador, May 11, 1963 (Luis A. Peña).

*Tipula (Eumicrotipula) atameles* is quite distinct from other members of the subgenus, differing especially in the nearly uniform color of the wings, presence of a linear series of trichia in the stigma, the unusually deep cell  $M_1$  and in the details of structure of the male hypopygium, particularly the gonapophyses.

### ***Tipula (Eumicrotipula) kathema* sp. n.**

Belongs to the *macrotrichiata* group; antennae of male elongate, flagellar segments long, with abundant erect blackened setae; mesonotal praescutum with three brown stripes, the median one broad; femora black with a conspicuous yellow subterminal ring; wings with the restricted ground cream colored, heavily patterned with brown, prearcular and costal fields, with the stigma, darker brown; no macrotrichia in wing cells, outer veins with abundant trichia; male hypopygium with gonapophysis broad, their area subequal to that of the inner dististyle.

Male. — Length, about 9 mm; wing, 8.5 mm; antenna about 7 mm. Frontal prolongation of head short, without a nasus, pale brown dorsally, darker on sides, yellowed beneath; palpi black. Antennae of male elongate, as shown by the measurements; scape yellow, pedicel very pale; flagellar segments with the slight basal enlargements blackened, the remainder slightly paler, outer segments uniformly blackened; verticils about one-third the segments, the abundant erect setae shorter, blackened. Head brown.

Pronotum obscure yellow with three brown areas, the median one small. Mesonotal praescutum with the restricted ground buffy yellow, the disk with three brown stripes, the median one broad; lateral margins with a brown area behind the yellowed humeri; anterior ends of scutal lobes and the scutellum dark brown,

remainder of scutum slightly paler brown; postnotum brown. Pleura obscure yellow, patterned with brown on propleura, anepisternum and ventral sternopleurite. Halteres with stem

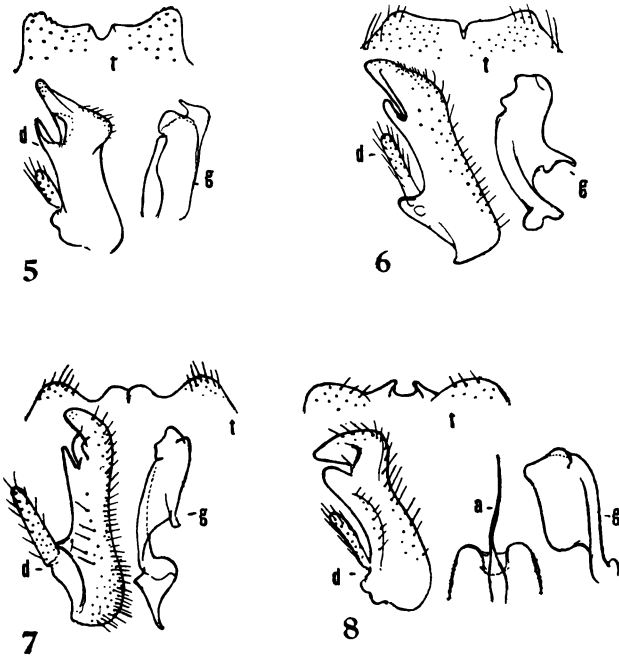


Fig. 5. *Tipula (Eumicrotipula) atameles* sp. n.; male hypopygium. — Fig. 6. *Tipula (Eumicrotipula) kathema* sp. n.; male hypopygium. — Fig. 7. *Tipula (Eumicrotipula) nolens* sp. n.; male hypopygium. — Fig. 8. *Tipula (Eumicrotipula) palitans* sp. n.; male hypopygium. (Symbols: a, aedeagus; d, dististyles; g, gonapophysis; t, tergite).

obscure yellow, knob brownish black. Legs with coxae pale brown, trochanters yellowed; femora black, bases paler, with a conspicuous yellow subterminal ring, subequal in extent to the darkened apex; remainder of legs black. Wings with the restricted ground cream colored, with more extensive brown areas; prearcular and costal fields, with the stigma, darker brown, cell Sc slightly invaded by pale before origin of  $R_s$ ; veins brown. No macrotrichia in wing cells or stigma; all outer veins with abundant trichia. Venation:  $R_{1-2}$  entirely atrophied; petiole of cell  $M_1$  about one-half longer than  $m$ ; cell  $1st M_2$  relatively long, basal section of vein  $M_3$  nearly twice  $M_{3+4}$ ;  $m-cu$  at about two-thirds to three-fourths  $M_{3-4}$ ; cell  $2nd A$  narrow, its outer end pointed.

Abdominal tergites black, sternites light brown, slightly darker at bases, outer segments more uniformly darkened; outer end of hypopygium, including the styli, more yellowed. Male hypopygium (Fig. 6) with posterior border of tergite, *t*, almost truncate, with a very small U-shaped median emargination. Outer dististyle cylindrical; inner style, *d*, with the beak obtuse, outer surface faintly striolate; lower beak slender, cylindrical. Gonapophyses, *g*, yellowed, broad, subequal in extent to the inner dististyle, broadly flattened, apex obtuse, lower margin with two small lobes.

Holotype, ♂, Quincemil, Cuzco, Peru, October 26, 1962 (Luis A. Peña).

Other generally similar members of the *macrotrichiata* group include *Tipula* (*Eumicrotipula*) *fatidica* Alexander, *T. (E.) tunguraguana* Alexander, and a few others that are described in the present paper. All of these differ among themselves in antennal structure and coloration, wing pattern and in details of hypopygial structure.

### ***Tipula* (*Eumicrotipula*) *nethis* sp. n.**

Belongs to the *macrotrichiata* group; size small (wing of female under 10 mm); antennal flagellum bicolored, segments pale brown, their tips yellowed; femora and tibiae yellow; wings faintly suffused, prearcular and costal fields more yellowed, stigma large, brown; a restricted paler brown pattern that includes the narrow wing tip and seams over the outer veins; no macrotrichia in wing cells, outer medial branches glabrous;  $R_{1-2}$  atrophied, petiole of cell  $M_1$  longer than *m*, *m-cu* at near midlength of the short  $M_{3-4}$ ; ovipositor with both cerci and hypovalvae short and fleshy, the former with setae over the whole surface.

**F e m a l e.** — Length, about 9 mm; wing, 9.5 mm. Frontal prolongation of head yellow, palpi slightly darker, brownish testaceous. Antennae with scape, pedicel and first flagellar segment light yellow, remaining segments bicolored, their bases pale brown, tips yellow, the amount of the latter decreasing on outer segments, the outer two or three almost uniformly darkened. Head gray.

Mesonotum gray, praescutum patterned with darker, the coloration obscured in mounting. Pleura obscure yellow. Halteres infuscated, base of stem slightly paler. Legs with coxae and trochanters yellow; femora and tibiae yellow, the tips of latter narrowly more darkened, tarsi passing into dark brown. Wings faintly suffused, prearcular and costal fields more yellowed; stigma large, oval, brown; wing tip narrowly and vaguely more

darkened; very narrow and indefinite pale brown seams on anterior cord, *m-cu* and over the outer medial veins; a vague clouding in anterior half of cell *R*; veins brown, more yellowed in the brightened fields. No macrotrichia in wing cells; trichia on veins *R*<sub>3</sub> and outer three-fourths of *R*<sub>5</sub>, all other outer veins glabrous. Venation: *Sc*<sub>2</sub> ending about opposite one-third the length of *Rs*; *R*<sub>1-2</sub> entirely atrophied; petiole of cell *M*<sub>1</sub> longer than *m*; *m-cu* at near midlength of the short *M*<sub>3+4</sub>; basal section of *M*<sub>3</sub> very long, nearly twice *m*; cell *2nd A* relatively narrow.

Abdomen blackened basally, outer segments more yellowed; abdomen filled with large blackened eggs, the chorion with numerous short blackened pegs with blunt tips. Ovipositor with both cerci and hypovalvae short and fleshy, the former triangular in outline, with setae over the whole surface.

Holotype, ♀, Quincemil, Cuzco, Peru, November 15, 1962 (Luis A. Peña).

There are several regional species of the *macrotrichiata* group of the subgenus that lack macrotrichia in the wing cells, including besides the four new species described at this time, also *Tipula (Eumicrotipula) fatidica* Alexander and *T. (E.) tunguraguana* Alexander, both of Ecuador. These latter have the outer wing veins with abundant macrotrichia and having the wing pattern entirely different. The somewhat peculiar eggs in the female abdomen are noteworthy.

### ***Tipula (Eumicrotipula) nolens* sp. n.**

Belongs to the *macrotrichiata* group; mesonotal praescutum almost uniformly polished brown, pleura dark brown; male antennae of moderate length, flagellum bicolored; femora yellow, tips narrowly brownish black; wings without macrotrichia in cells, cream colored, heavily marmorate with brown; male hypopygium with posterior border of tergite biemarginate, the median region slightly produced.

Male. — Length, about 9 mm; wing, 8.5 mm; antenna, about 3.4 mm. Frontal prolongation of head brown, at apex tufted with very long setae; palpi black. Antennae of male of moderate length, less than one-half the wing; proximal three segments yellow, pedicel clearer; succeeding flagellar segments conspicuously bicolored, base black, with about the outer two-thirds yellow, the basal enlargements of segments poorly developed; segments with dense short white setae and sparse verticils that are less than one-half the segments. Head light brown.

Mesonotal praescutum almost uniformly polished brown, posterior sclerites brownish black. Pleura dark brown. Halteres with stem obscure yellow, knob brown. Legs with coxae dark brown, fore pair brownish yellow; trochanters yellow; femora yellow, tips narrowly brownish black; tibiae brownish yellow, tips very narrowly darker, tarsi light brown; claws simple. Wings with ground light cream colored, heavily marmorate with brown, including three darker subcostal areas that are subequal in extent to the interspaces; first darkened area at *h* continued backward across bases of cells *R* and *M* to vein *Cu*; second and third dark areas interconnected in cell *R*; stigma darker brown; all outer cells with an oval ground area just before margin; veins light brown, interspaces of *Sc* and *R* light yellow. No macrotrichia in stigma or wing cells; longitudinal veins beyond general level of origin of *Rs* with macrotrichia. Venation:  $R_{1-2}$  entirely atrophied; *m* slightly longer than petiole of cell  $M_1$ ; *m-cu* at fork of  $M_{3-4}$ .

Abdomen brownish black, hypopygium more yellowed. Male hypopygium (Fig. 7) with posterior border of tergite, *t*, biemarginate, forming distinct lateral lobes, the median region being farther produced into a broader lobe that is very shallowly emarginate; lateral tergal lobes with sparse long setae. Outer dististyle cylindrical, tip obtuse; inner style, *d*, almost parallel-sided, lower beak slender, cylindrical, beak stouter. Gonapophyses, *g*, moderately broad, apex insensibly trilobed.

Holotype, ♂, Libertad, 6 kilos southeast of Tena, Napo-Pastaza, Ecuador, May 10-12, 1963 (Luis A. Peña).

The most similar regional species is *Tipula (Eumicrotipula) palitans*, sp. n. readily told by the more elongate antennae and distinctive male hypopygium, including especially the tergite, inner dististyle and phallosome.

### ***Tipula (Eumicrotipula) palitans* sp. n.**

Belongs to the *macrotrichiata* group; mesonotal praescutum with a fulvous central stripe, lateral stripes and the posterior mesonotal sclerites blackened; pleura yellow, conspicuously patterned with black; legs yellow, femora with a narrow dark brown subterminal ring; claws simple; wings cream yellow, marmorate with pale brown, cell *Sc* with four darker brown areas; no macrotrichia in wing cells; male hypopygium with posterior border of tergite generally truncate, with a small U-shaped emargination that is subtended by slender lobules; gonapophyses very broad, aedeagus slender, from a darkened basal plate.

**Male.** — Length, about 8-8.5 mm; wing, 9-11 mm; antenna, about 6-7 mm.

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

Frontal prolongation of head chestnut brown, in cases more yellowed above; palpi black. Antennae of male very long, approximately two-thirds the body or wing, light yellow; bases of flagellar segments narrowly blackened, the amount about one-third the pale apex; verticils much shorter than the segments; a short dense erect pubescence. Antennae of female short, proximal four or five segments yellow, remainder yellow with their bases narrowly brownish black. Head light brown.

Pronotum brownish yellow, sides brownish black. Mesonotal praescutum with the ground obscure yellow, median stripe fulvous, lateral stripes black, the anterior end outcurved to the margin; scutal lobes black, median area and the scutellum testaceous yellow; postnotum brown to dark brown. Pleura yellow, conspicuously patterned with black on propleura, anepisternum and meron, the last narrowly interconnected with the postnotum across the posterior spiracle. Halteres with stem light yellow, knob brownish black. Legs with fore and hind coxae brown, middle coxae more blackened; trochanters obscure yellow; femora yellow with a narrow dark brown subterminal ring, the yellowed tip slightly narrower; tibiae yellow, tips very narrowly darkened; tarsi brownish yellow, outer segments slightly darker; claws of male small, simple. Wings with the ground cream yellow, conspicuously marmorate with pale brown, the amount subequal in extent to the ground; cell *Sc* light yellow with four darker brown areas that are subequal in extent to the yellow interspaces, the first dark area largest, extending from costa at *h* to vein *Cu*; veins light yellow in the ground, pale brown in the clouded portions. Veins beyond general level of origin of *Rs* with macrotrichia; no trichia in the cells or the stigma. Venation:  $R_{1-2}$  atrophied; *Rs* relatively long, from two to two and one-half times  $R_{2-3}$ ; petiole of cell  $M_1$  subequal to or a little longer than *m*; *m-cu* on  $M_4$ , the basal section of the latter perpendicular; cell *2nd A* narrow.

Abdomen with basal segments chiefly light brown patterned with darker, outer segments more brownish black, the posterior tergal borders narrowly paler, the sternites more broadly pale, the amount exceeding the darkened bases; hypopygium brownish yellow. Male hypopygium (Fig. 8) with the tergite, *t*, transverse, posterior border generally truncate with broad low lateral lobes;



a broad median emargination subtended by slender lobules. Outer dististyle slender, nearly cylindrical, yellow, with sparse long setae; inner style, *d*, parallel-sided; beak pale, decurved, lower beak stout, blackened. Gonapophyses, *g*, very broad, tips obtuse. Aedeagus, *a*, very slender outwardly, from a broad darkened basal plate, its lateral margins microscopically roughened.

Holotype, ♂, Quincemil, Cuzco, Peru, September 2, 1962 (Luis A. Peña). Allotopotype, ♀, pinned with type. Paratopotypes, 10 ♂♂, August 18 - November 15, 1962.

The most similar regional member of the group, lacking macrotrichia in the wing cells and with bicolored antennae, is *Tipula* (*Eumicrotipula*) *nolens*, sp. n., which differs evidently in the shorter antennae and in the structure of the male hypopygium, including the tergite, inner dististyle and aedeagus.