

NEW OR LITTLE-KNOWN NEOTROPICAL TIPULIDAE  
(DIPTERA). VI

BY  
Charles P. Alexander

---

From the Transactions of the American Entomological Society  
Volume 106: 121-147

Issued June 5, 1980

1479

---

---

This is a separatum from the TRANSACTIONS and is not a reprint. It bears the original pagination and plate numbers, and library copies were mailed at Philadelphia on the above date of issue.

## NEW OR LITTLE-KNOWN NEOTROPICAL TIPULIDAE (DIPTERA). VI

CHARLES P. ALEXANDER

*Amherst, Massachusetts<sup>1</sup>*

At this time I am continuing the series of papers considering the crane-flies of Tropical America that were collected by the distinguished entomologist Luis Peña Guzman, chiefly from Ecuador, with fewer species taken in Argentina and Bolivia. A few species were taken in Peru by Felix Woytkowski and in Ecuador by William Clarke-Macintyre. The types of the various species are preserved in the Alexander Collection. I am deeply indebted to the collectors for their invaluable assistance in making known the vast crane-fly fauna of Tropical America.

### TIPULINAE

#### **Ozodicera (Ozodicera) idiostyla sp.n.**

General coloration of the entire body almost uniformly pale brown; antennae with the flagellar branches short; legs brownish yellow, tarsi darker; wings almost uniformly light brown; male hypopygium with the inner dististyle distinctive, unusually large, the basal plate transverse, each outer lateral angle produced into long spine-like points.

*Male.* Length about 25 mm.; wing 19 mm.

Frontal prolongation of head subequal in length to the remainder, dark yellow; nasus short and stout. Antennae (Fig. 2) yellow, outer flagellar segments gradually darkened, the outer ones dark brown; branches about two-thirds the length of the segment, slightly stouter than the stem, as shown, dark brown. Head light brown; anterior vertex narrower than the diameter of the antennal scape.

Pronotum obscure yellow. Mesonotal praescutum and scutum light brownish yellow, the praescutal stripes scarcely differentiated; scutal lobes and scutellum light yellowish brown, postnotum more evidently yellow. Pleura and pleurotergites pale yellowish gray, dorsopleural membrane clear yellow. Halteres with stem yellow, the small knob dark brown. Legs with coxae yellow, whitened pruinose; trochanters yellow; femora and tibiae brownish yellow; tarsi brown, outer segments darker. Wings (Fig. 2) light brown, prearcular and costal fields more brownish yellow; stigma scarcely differentiated, pale brown; veins light brown. Venation: *m-cu* and distal section of *Cu*, nearly equal in length.

Abdomen long, almost uniformly brownish yellow. Male hypopygium (Fig. 1)

---

<sup>1</sup>Contribution from the Entomological Laboratory, University of Massachusetts.

with the inner dististyle, *id*, distinctive, as shown; unusually large, the basal plate transverse, each outer lateral angle extended caudad into long spinelike extensions, the inner or more mesal one sinuous, slightly longer than the outer spine. Phallosome, *ph*, at apex with two divergent pale spines, as shown.

*Holotype*. ♂, Junction of the Coca and Napo Rivers, Ecuador, May 2, 1965 (Peña).

Other somewhat similar species include *Ozodicera (Ozodicera) bispinifer* Alexander, Brasil, *O. (O.) multitermis* Alexander, Ecuador, *O. (O.) phallacantha* Alexander, Peru, *O. (O.) thaumasta* Alexander, Peru, and *O. (O.) trispinifer* Alexander, Ecuador, all differing in the male hypopygial characters.

### **Zelandotipula azuayensis sp. n.**

Mesonotal praescutum brownish yellow to light brown, with four gray stripes, with a capillary more blackened central line; pleura chiefly light gray, slightly patterned with darker; legs with femora brownish yellow, tips broadly blackened, outer tarsal segments black; wings light brown, stigma slightly darker brown; abdomen dark brown above, restrictedly patterned with paler brown, hypopygium almost entirely yellow; tergite large, terminating in two divergent horns; outer dististyle dilated basally; aedeagus very small.

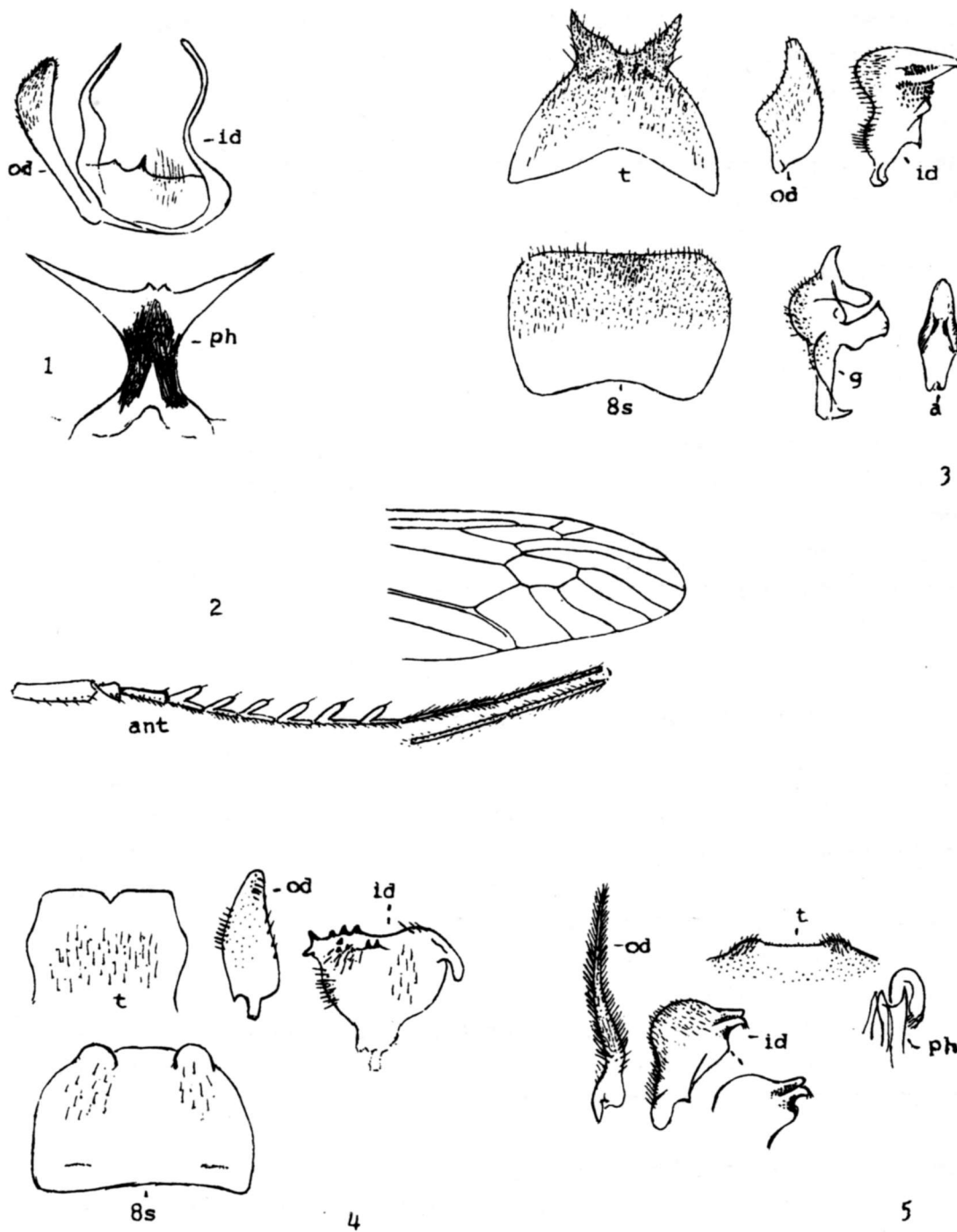
*Male*. Length about 20-21 mm.; wing 20-21.5 mm.; antenna about 4.5-5 mm.

*Female*. Length about 18 mm.; wing 19 mm.

Frontal prolongation of head pale brown, slightly more pruinose basally; nasus elongate. Antennae with proximal three or four segments brownish yellow, outer segments uniformly black. Head behind whitish gray, pruinose medially, with a narrow brown central line, sides light brown; no developed vertical tubercle.

Pronotal scutum narrow, light yellow, faintly pruinose, with a capillary blackened median line; scutellum light yellow. Mesonotal praescutum brownish yellow to light brown with four gray stripes, their outer margins vaguely more darkened; a capillary more blackened central line, paler and subevanescent at ends; lateral stripes gray, outer borders slightly more darkened; lateral margins of praescutum darker brown; scutal lobes light gray, central area more yellowed, with a capillary light brown median line; scutellum and posterior mediotergite pale whitish yellow, with a continuous narrow light brown central line. Pleura chiefly light gray, darker gray on ventral sternopleurite, with indications of a darker anterior stripe; dorsopleural membrane pale yellow, silvery pruinose. Halteres long and slender, stem yellow, knob medium brown. Legs with coxae yellow, light gray pruinose, fore pair slightly darker; trochanters yellow; femora brownish yellow, tips broadly blackened; tibiae brown; outer tarsal segments black; claw elongate, with a slender basal point and a stouter spine at near midlength. Wings light brown, stigma only slightly darker brown; a microscopic darker brown spot at origin of *Rs*; veins brown. Veins chiefly glabrous, *R*<sub>1</sub> and *R*<sub>4+5</sub>, with sparse trichia on central portions.

Abdominal tergites dark brown, restrictedly patterned with paler brown; sternites brown, proximal segments more yellowed. Male hypopygium (Fig. 3) almost entirely yellow, including the vestiture. Ninth tergite, *t*, large, slightly narrowed out-



FIGURES 1-5. 1, *Ozodicera (Ozodicera) idiostyla* sp.n., male hypopygium. 2, the same, venation and male antenna. 3, *Zelandotipula azuayensis* sp.n., male hypopygium. 4, *Zelandotipula nebulipennata* sp.n., male hypopygium. 5, *Zelandotipula perlongistylata* sp.n., male hypopygium.

Symbols: *ant*, antenna; male hypopygium: *a*, aedeagus; *g*, gonapophysis; *id*, inner dististyle; *od*, outer dististyle; *ph*, phallosome; *s*, 8th sternite; *t*, 9th tergite.

wardly, terminating in two divergent spinelike points or horns; the narrowed outer part of the disk with very abundant microscopic setulae, the horns with fewer much longer delicate pale setae. Outer dististyle, *od*, dilated basally, outer third narrowed, with moderately long setae; setae of the expanded part long, basal margin glabrous; inner dististyle, *id*, shaped as shown, posterior border strongly sinuous, with sparse very long yellow setae that are directed outwardly; both the beak and lower beak of style with a group of small blackened obtuse points, as shown. Aedeagus, *a*, unusually small. Inner gonapophyses, *g*, appearing as small subtriangular blades; outer apophyses larger, base setiferous, outer end extended into two divergent glabrous blades. Eighth sternite, *8s*, large, about three times the ninth tergite; rectangular in outline, outer half with abundant small setae that are more concentrated at midportion of outer end.

*Holotype*. ♂, Cordillera Tanajillas, South Cuenca, Azuay, Ecuador, 3100 meters, March 18-19, 1965 (Peña). Allotype, ♀, Tarqui, Ecuador, 2800 meters, March 8, 1965 (Peña). Paratypes, 2 ♂♂, with the holotype; one ♂, pinned with the allotype.

The present fly is most readily distinguished from other related species that have the wings virtually unpatterned in the hypopygial structure, especially the tergite and phallosome.

### **Zelandotipula melanopodia sp.n.**

Size large (wing of female 25 mm.); mesonotum chiefly brown, pleura yellowed, with a black longitudinal stripe; legs with femora brown, apices black, preceded by a subequal subterminal yellow ring, tibiae and tarsi black; wings medium brown, variegated by darker brown and whitened areas; abdominal tergites light brown, lateral borders paler, sternites and pleural membrane dull orange.

*Female*. Length about 22 mm.; wing 25 mm.

Frontal prolongation of head relatively short and stout, brown above, sides black, ventral half obscure yellow; mouthparts and palpi black; palpi subequal in length to the antennae (in female, unknown for male). Antennae clear light yellow, especially the proximal two or three segments. Head above whitish gray, darker behind adjoining the eye.

Pronotum on sides light yellow, dark brown medially above. Mesonotal praescutum chiefly brown, including four narrow stripes that are more narrowly bordered behind by brownish black; scutum medium brown, vaguely patterned with darker, the transverse suture polished black; scutellum and postnotal mediotergite dark brown, heavily pruinose, central line narrowly dark brown. Pleura dorsally in front light orange, becoming more yellowed posteriorly, with a conspicuous black longitudinal stripe that is more widened behind on the dorsal sternites; ventral sternites obscure yellow, meron light brown. Halteres with stem brownish yellow, clearer yellow at base, knob dark brown, apex obscure yellow. Legs with fore coxae brownish yellow, posterior pairs clearer yellow; trochanters yellow; femora chiefly brown, bases narrowly paler, apex black, preceded by a subequal subterminal obscure yellow annulus; tibiae and tarsi black, extreme bases of tibiae pale. Wings

with the ground almost uniform medium brown, with darker brown areas, including the stigma, a small spot at base of  $R_s$ , and a linear area in cell  $C$  before the stigma; conspicuous whitened areas before and above the stigma and at the basal section of  $M_{1+2}$ ; more obscure pale markings in outer ends of cells  $R_1$  and  $M_1$ , in bases of cells  $M_1$  and 2nd  $M_2$  and marginally in cell 1st  $A$  near vein 2nd  $A$ ; cells of basal half of wing without dark markings; veins yellow. Venation: Vein  $R_{1+2}$  only moderately sinuous; petiole of cell  $M_1$  slightly more than one-half  $m$ ;  $m-cu$  shortly before fork of  $M_{1+2}$ .

Abdominal tergites medially light brown, posterior borders darker brown to black, lateral margins narrowly yellowish brown to yellow; sternites and membrane almost uniformly dull orange. Ovipositor with cerci long and slender, straight.

Holotype. ♀, Yungas La Paz, Coroico — Unduavi, Cochabamba, Bolivia, 3000 meters, January 5, 1976 (Peña).

The more similar regional species include *Zelandotipula songoensis* (Alexander) and *Z. triatra* (Alexander), both from Bolivia, differing most evidently in the coloration of the body, wings, and especially the legs.

### *Zelandotipula nebulipennata* sp.n.

Wings obscure yellow, with pale brown clouds in all cells excepting  $C$  and  $Sc$ , as described;  $R_s$  very short and straight, shorter than  $R_{1+2}$ ; male hypopygium with the dististyles fused basally, inner style with sparse blackened points at posterior end, the beak decurved.

*Male.* Wing about 15 mm.; antenna about 3.5 mm.

Head, hypopygium and legs mounted on microscope slide. Antenna 12-segmented; flagellar segments short-cylindrical, apices truncated; segments beyond the second glabrous, without setae except for two or three small hairs at outer ends. Palpi about two-thirds the antennae, terminal segment subequal in length to the combined basal three segments. Head light brown.

Legs with femora and tibiae yellow, tips narrowly dark brown, shorter on the tibiae; tarsi brown, proximal ends of basitarsi only slightly paler; claw with a short blackened point at near two-thirds the length. Wings with the ground obscure yellow, costal and subcostal cells unpatterned; remainder of wing chiefly covered by pale brown clouds in all cells excepting  $C$  and  $Sc$ , in basal two-thirds of  $R$  and  $M$  appearing as a linear pale brown line, the outer ends of cells more heavily darkened; cells beyond the cord with pale brown washes over most of the surface, especially along the veins; basal cells before the cord and the Anals chiefly pale brown, narrowly variegated by the yellow ground along the veins; veins pale brown. Beyond the cord, veins  $R_1$  and  $R_{2+3}$  with rather numerous trichia, fewer on  $M_1$  and  $M_2$ . Venation:  $R_s$  very short and straight, slightly less than vein  $R_{1+2}$ ;  $m$  and petiole of cell  $M_1$  subequal in length.

On slide, outer three abdominal segments appearing light brown. Male hypopygium (Fig. 4) of the unique type poorly preserved on microscope slide, the more important characters apparently about as shown. Ninth tergite,  $t$ , with apex

nearly truncate, with a very small median incision to form two equal parts. Dististyles, *d*, apparently fused basally into a single element, the outer style, *od*, flattened, broadest at or before midlength, thence narrowed to the obtuse apex; inner style, *id*, with the beak decurved, apex obtuse; posterior extension of style with about 9 or 10 blackened spines or points arranged about as shown. Eighth sternite, *8s*, as shown.

*Holotype*. ♂, on slide; North Aconquija, Catamarca, Argentina, 1700 meters, October 2, 1968 (Peña).

The unique type is in poor condition, including the hypopygium, which is mounted on a microscope slide. The most characteristic feature of the species is the pattern of the wing, as described.

### **Zelandotipula perlongistyla sp.n.**

General coloration of body brownish yellow to clearer yellow; antenna of male unusually long, dull orange; legs with femora light yellowish brown, tips narrowly darkened; wings pale brownish yellow, weakly patterned with darker brown; macrotrichia on *Rs* and outer radial veins, especially *R*<sub>4+5</sub>; abdominal tergites brownish yellow, posterior borders slightly more darkened; male hypopygium with outer dististyle unusually long and slender, about twice the inner dististyle.

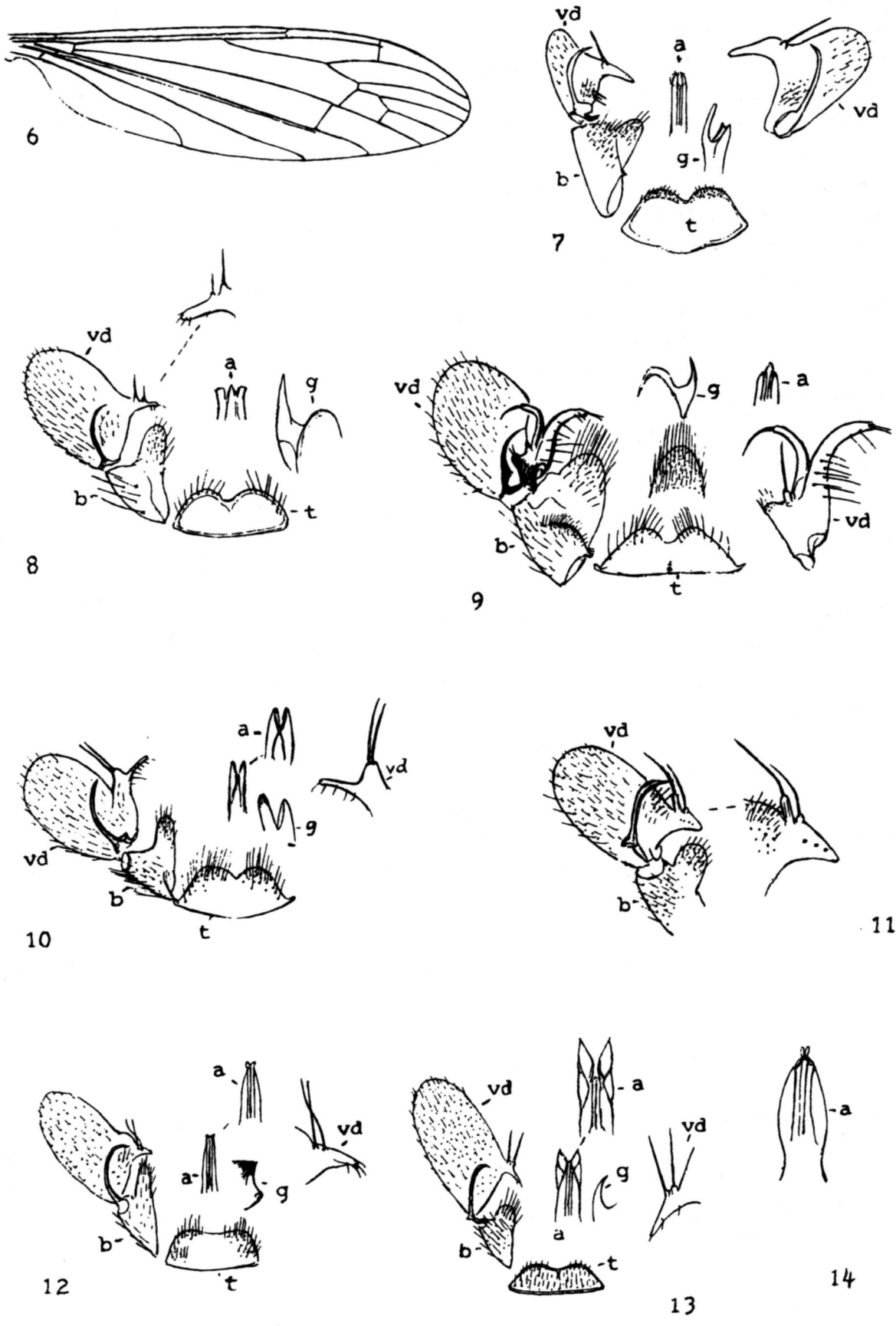
*Male*. Length about 20 mm.; wing 23.5 mm.; antenna about 10 mm. or slightly more.

Frontal prolongation of head long, about one-half more than the remainder, brownish yellow; nasus short; palpi light brown, incisures narrowly yellow (terminal segment lost). Antennae unusually long, as shown by the measurements; total length estimated, the outer three or four segments lacking; all preserved segments dull orange; flagellar segments long-cylindrical, the first with about five large black setae near base; remaining segments all with vestiture consisting of abundant inconspicuous very short erect setulae, laterally the vestiture very abundant, microscopic. Head above light brown, more yellowed beneath.

Pronotum yellow, notum infuscated medially, sides of cervical sclerites more strongly darkened. Mesonotal praescutum with the restricted ground brownish yellow, with four ill-defined narrow stripes, intermediate pair slightly darker than

FIGURES 6-14. 6, *Limonia (Neolimonia) quadricostata* sp.n., venation. 7, *Limonia (Dicranomyia) monorhaphis* sp.n., male hypopygium. 8, *Limonia (Geranomyia) calinota* Alexander, male hypopygium. 9, *Limonia (Geranomyia) idiopygialis* sp.n., male hypopygium. 10, *Limonia (Geranomyia) pergracilis* sp.n., male hypopygium. 11, *Limonia (Geranomyia) quinquelineata* sp.n., male hypopygium. 12, *Limonia (Geranomyia) terpsis* sp.n., male hypopygium. 13, *Limonia (Geranomyia) viriditincta* sp.n., male hypopygium. 14, *Limonia (Geranomyia) bicincta* (Alexander), male hypopygium, aedeagus.

Symbols. *b*, basistyle; *t*, 9th tergite; *vd*, ventral dististyle. Other symbols as in Figs. 1-5.





the ground, their inner margins narrowly reddish brown, outer border darker, lateral stripes pale brown; scutal lobes pale brown, median area more yellowed; scutellum obscure yellow; postnotal mediotergite yellow, pleurotergites pale brown. Pleura chiefly yellowed, dorsopleural membrane clear light yellow; cervical pleurites with a darkened area that extends caudad onto the propleura. Halteres with stem yellow, knob weakly more darkened. Legs with coxae obscure yellow, posterior pair clearer yellow; trochanters brownish yellow; femora light yellowish brown, tips of fore pair narrowly dark brown, the remaining femora with apices less evidently dark brown; tibiae and tarsi light to medium brown; claws large, ventral surface with a strong spine at near midlength, base with a smaller straight point. Wings before cord pale brownish yellow, outer cells slightly darkened; stigma and cell *C* somewhat darker; small brown spots at arculus and origin of *Rs*, with restricted paler brown clouds in cell *Sc*<sub>2</sub>, base of *R*<sub>1</sub>, basal section of *M*<sub>1</sub> and posterior end of *m-cu*; small whitened areas before stigma, on basal section of *M*<sub>1+2</sub>, and less conspicuously at margin of cell *1st A* close to vein *2nd A*; veins light to medium brown. Macrotrichia on veins *Rs* and *R*, and more abundantly on *R*<sub>4+5</sub>; sparse trichia on *M*<sub>1</sub>.

Abdominal tergites brownish yellow, posterior borders weakly more darkened; sternites and outer segments, including hypopygium, clearer yellow. Male hypopygium (Fig. 5) with the essential details as shown. Ninth tergite, *t*, small, posterior border nearly straight, with a very low lobe on either side, these with slightly longer setae. Outer dististyle, *od*, distinctive, very long and slender, about twice the length of the inner dististyle, broadest at base, narrowed very gradually to the tip; surface beyond the base with very abundant long conspicuous setae. Inner dististyle, *id*, subcircular in outline; beak and lower beak closely approximated, each with few very small blackened spicules, as shown.

*Holotype*. ♂, Sebundoi, Ecuador, 2600 meters, September 11-15, 1977 (Peña).

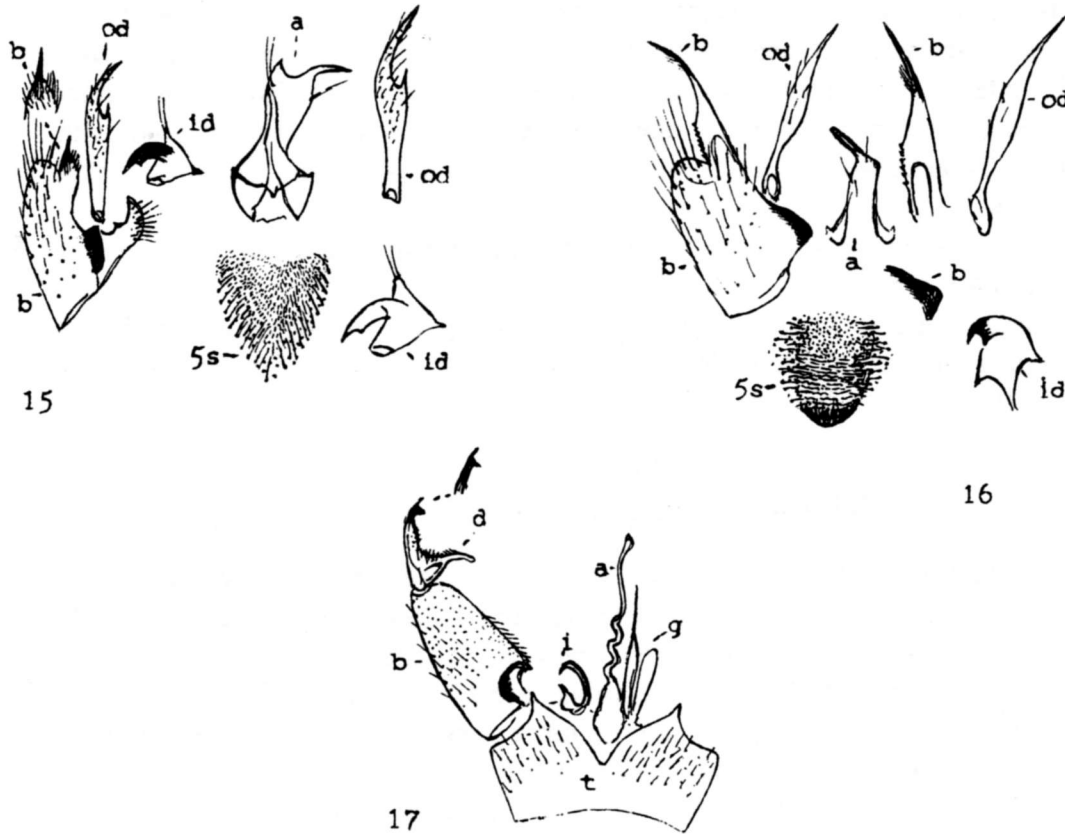
The present fly is most readily told from other similar species by the elongate male antennae and the hypopygial structure, especially the very long outer dististyle, as described and figured. One of the more similar species is *Zelandotipula yungasicola* (Alexander), of Bolivia, that still is known only from the female sex. This differs from the present fly in details of coloration and in the trichiation of the wing veins, these being very sparse on vein *R*, and lacking on the other outer radial and medial veins.

### ***Zelandotipula septemlineata* sp.n.**

Mesonotal praescutum dull brownish orange, including four stripes that are narrowly bordered by brownish black to produce a total of seven darkened lines; legs with femora brownish yellow, tips narrowly blackened; wings with trichia on veins *R*<sub>1</sub>, *R*<sub>4+5</sub> and outer half of *M*<sub>1</sub>; abdominal tergites light brown, bases of outer segments vaguely more yellowed; sternites yellow, with a linear light brown central line.

*Female*. Length about 19 mm.; wing 22 mm.; antenna about 4 mm.

Frontal prolongation of head obscure yellow, slightly more darkened on sides; nasus long and slender, with numerous setae, the terminal ones longer; palpi

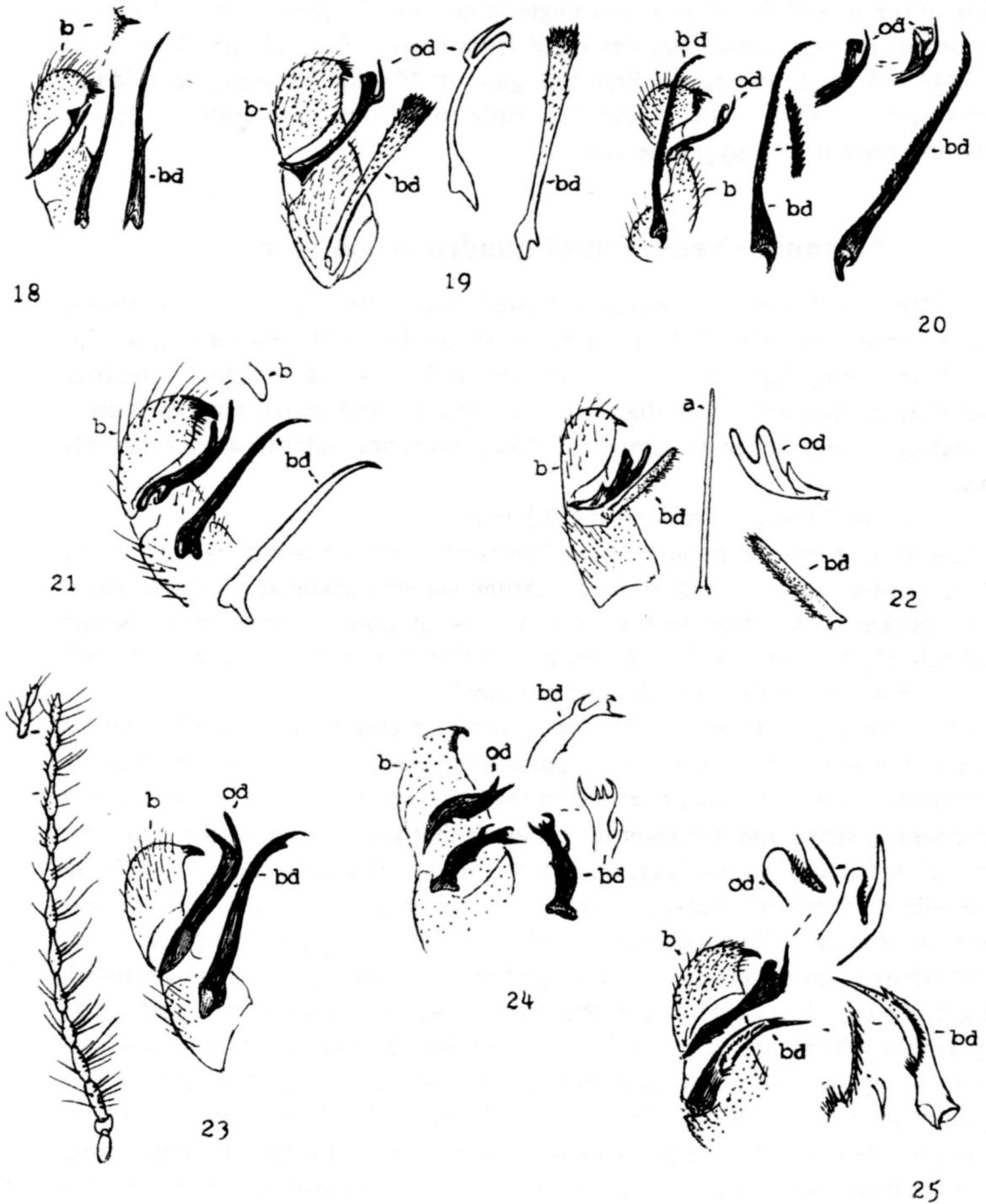


FIGURES 15-17. 15, *Teucholabis (Teucholabis) cocaensis* sp.n., male hypopygium. 16, *Teucholabis (Teucholabis) sublaxa* sp.n., male hypopygium. 17, *Shannonomyia subumbra* sp.n.

Symbols: *b*, basistyle; *d*, dististyle; *i*, interbase; *s*, 5th sternite; *t*, tergite. Other symbols as in previous figures.

brownish yellow (terminal two segments broken). Antennae uniformly light yellow, only the extreme apex weakly darkened; flagellar segments cylindrical, the first subequal in length to the combined second and third; succeeding segments subequal in length, the outer three or four very slightly shorter. Front and anterior vertex orange, vertex light brown, in places pale silvery pruinose.

Pronotum with scutum brownish black medially, sides and the scutellum yellowed. Mesonotal praescutum with the ground dull brownish orange forming four stripes that are narrowly bordered by brownish black to form a total of seven lines, the interspaces brownish orange; scutal lobes chiefly obscure orange, more darkened anteriorly; scutellum brown, gray on sides; postnotal mediotergite yellow with a narrow brown central line, the darkened sides broader, pleurotergites similarly darkened. Halteres with stem light brown, base and the knob obscure yellow. Legs with coxae brownish yellow, with very long yellow setae; trochanters yellow; femora brownish yellow, clearer yellow basally, tips narrowly darker brown to black; tibiae



FIGURES 18-25. 18, *Molophilus (Molophilus) azuayensis* sp.n., male hypopygium. 19, *Molophilus (Molophilus) hirsuticlavus* sp.n., male hypopygium. 20, *Molophilus (Molophilus) microserratus* sp.n., male hypopygium. 21, *Molophilus (Molophilus) neosubfalcatus* sp.n., male hypopygium. 22, *Molophilus (Molophilus) setistylatus* sp.n., male hypopygium. 23, *Molophilus (Molophilus) stygius* sp.n., antenna, male hypopygium. 24, *Molophilus (Molophilus) subperfidus* sp.n., male hypopygium; 25, *Molophilus (Molophilus) subretrorsus* sp.n., male hypopygium.

Symbols as in previous figures.

yellowish brown, tips very narrowly darker; tarsi very long, brownish black to black; claws of female simple. Wings chiefly pale brown; slightly darker areas include the stigma, a small spot at origin of *Rs*, and conspicuous seams along vein *Cu*, in cell *M* including also *m-cu*; vein *2nd A* and outer veins with pale brown seams; most outer veins narrowly seamed with pale brown, involving the margin; pale markings behind vein *R*, including the area before the stigma; small, more whitened spots in bases of cells *M*<sub>1</sub> and *2nd M*<sub>1</sub>, less evident in cell *1st M*<sub>1</sub>; a whitened marginal dash in cell *1st A* near vein *2nd A*, extended basad into a long point; veins pale brown, slightly darker in the more heavily patterned areas. Trichia on veins *R*<sub>1</sub>, *R*<sub>4+5</sub>, and outer half of *M*<sub>1</sub>. Venation: Petiole of cell *M*<sub>1</sub> short, slightly more than one-fourth *m*; *m-cu* at fork of *M*<sub>3+4</sub>.

Abdominal tergites chiefly light brown, bases of outer segments vaguely more yellowed; sternites yellow, with a linear light brown central line that is slightly expanded at the posterior end. Ovipositor small; cerci appearing as long narrow yellow blades, tips rounded.

*Holotype*. ♀, Yungas La Paz, Coroico-Unduavi, Cochabamba, Bolivia, 3000 meters, January 1-3, 1976 (Peña).

The present fly is most readily told from other generally similar members of the genus by the distinctive pattern of the thoracic praescutum that has suggested the specific name.

### *Zelandotipula subcalypso* sp.n.

Size large (wing of female 25 mm.); general coloration of body brown, patterned with yellow; wings broad, generally as in *calypso*, differing in details, including the absence of stigmal trichia, as described.

*Female*. Length about 24 mm.; wing 25 mm.; antenna about 5.5 mm.

Frontal prolongation of head about as long as the remainder, medium brown above, slightly more yellowed ventrally; nasus long; palpi with proximal three segments brownish yellow, terminal segment black. Antennae with proximal four segments yellow, outer segments dark brown, especially basally, the outer two more blackened; antennae stouter than in *calypso*. Head above medium brown, with a conspicuous obscure yellow central line.

Pronotal scutum darkened, scutellum brownish black medially, sides conspicuously light yellow, confluent with the similarly colored dorsopleural membrane. Mesonotal praescutum with the restricted ground medium brown, disk with four stripes, the central pair gray, paler behind, narrowly bordered by black, lateral stripes dark brown, humeral region paler brown; scutal lobes brown, median area vaguely obscure yellow; scutellum pale brown medially, the depressed parascutella darker; postnotal mediotergite pale brown, anterior half gray pruinose on both sides of the narrow dark central line. Pleura chiefly yellowed, the sternopleurite slightly more infuscated; propleura restrictedly infuscated. Halteres brownish yellow, base of knob pale brown. Legs with coxae and trochanters yellowed; femora obscure yellow, with a narrow dark brown subterminal ring, extreme apex yellowed; tibiae pale brown; tarsi passing into black; claws black, bases yellowed. Wings broader

than in *calypso*, general coloration pale brownish yellow, cells *C* and *Sc* more intensely so; a restricted pale brown pattern that includes especially the stigma and adjoining membrane and a darker brown area at origin of *Rs*; paler brown clouds on cord, narrowly darker over *m-cu* and as a narrow seam along the entire length of *Cu*; conspicuous obliterative areas before the stigma and over the basal section of *M*<sub>1+2</sub>; Anal cells pale brown; *1st A* at end and a more conspicuous marginal area near *2nd A* whitened; prearcular field and base of cell *2nd A* pale brown. Lower part of stigma lacking a row of about a dozen long trichia such as occurs in *calypso*. Venation almost as in *calypso*, the posterior cells longer, due to the broader wings.

Abdominal tergites yellow, outer six segments with posterior borders extensively dark brown; basal sternites yellow, the intermediate ones with outer ends pale brown.

*Holotype*. ♀, La Alegría, Ecuador, 2700 meters, September 14-15, 1977 (Peña).

The most similar regional species is *Zelandotipula calypso* (Alexander), likewise from Ecuador, differing as discussed above. Particular attention is called to the lack of stigmal trichia on the wings of the present fly.

## LIMONIINAE

### LIMONIINI

#### *Limonia (Dicranomyia) monorhaphis* sp.n.

Wings subhyaline, stigma scarcely indicated; *Sc*, ending shortly before origin of *Rs*; cell *1st M*, subequal in length to cell *M*<sub>3</sub>; *m-cu* at fork of *M*; male hypopygium unusually glabrous; rostral prolongation of ventral dististyle with a single long straight spine; gonapophysis with mesal apical lobe long and slender.

*Male*. Length about 5.5 mm.; wing 7 mm.; antenna about 1.1 mm. Type specimen on microscope slide; thorax missing. Head and appendages dark brown. Antennae with proximal flagellar segments oval, the outer ones more narrowed; flagellar verticils very slender, the largest slightly more than one-half the segment.

Wings subhyaline, stigma scarcely indicated; veins pale brown. Venation: *Sc*, ending shortly before origin of *Rs*; cell *1st M*, subequal in length to cell *M*<sub>3</sub>; *m-cu* at fork of *M*; vein *1st A* entirely glabrous, *2nd A* with two trichia at outer end.

Abdomen medium brown, the segments vaguely lined longitudinally by paler brown areas. Male hypopygium (Fig. 7) with lobes of ninth tergite, *t*, rounded, with small tubercles that are tipped with short pale setae. Basistyle, *b*, with setae pale, unusually sparse, very small to microscopic except for a group of about 10 to 12 long black setae near outer end of mesal face. Ventral dististyle, *vd*, with rostral prolongation virtually glabrous, without setae, including the usual terminal pair; outer surface of body of style virtually glabrous, as shown. Rostral prolongation glabrous, with a single long straight basal spine. Dorsal dististyle entirely pale. Gonapophysis, *g*, with mesal apical lobe long and very slender.

*Holotype*. ♂, North Cuenca, Azuay, Ecuador, 2800 meters, March 15, 1965 (Peña).

Another regional member of the subgenus *Dicranomyia* that has the rostral pro-

longation of the ventral dististyle with a single spine, as in the present fly, is *Limonia* (*Dicranomyia*) *peñana* Alexander, described from Cuzco, Peru (Journ. N.Y. Ent. Soc., 63:114-115: 1955, and Studia Entomologica, 10:302, fig. 22 (venation) and fig. 25 (hypopygium); 1967). This species is readily told from the present fly by the venation and certain hypopygial details.

### ***Limonia* (*Neolimonia*) *quadricostata* sp.n.**

Wing of female 9.5 mm.; mesonotum yellowed, with three brownish black stripes, pleura obscure yellow with a blackened dorsal stripe; legs with femora yellow, tips narrowly black; wings light yellow with a conspicuous brown pattern, including four oval costal areas that are larger than their interspaces; abdominal tergites brown, bases slightly paler; sternites orange yellow, posterior lateral angles slightly darkened.

*Female.* Length about 11 mm.; wing 9.5 mm.

Rostrum dark brown; palpi black; mouthparts protruding beyond the level of the palpi as a slender rod, the apex pointed. Antennae with scape and pedicel black; flagellum broken. Anterior vertex very narrow at anterior end, only slightly widened behind; dark gray with a central brown line on posterior vertex; sides with several long black setae that are directed anteriorly.

Pronotum pruinose, patterned with darker (dorsum chiefly concealed by two extraneous red masses, presumed to be parasitic mites). Mesonotal praescutum yellowed medially, attractively patterned by three brownish black areas, including a complete central stripe and narrower lateral areas that are incurved at their anterior ends to enclose narrow ground lines; outer parts of scutal lobes blackened, confluent with the lateral praescutal areas; postnotum behind chiefly reddened, mediotergite blackened anteriorly. Pleura obscurely yellowed, with a conspicuous black dorsal stripe extending from the propleura to the abdomen. Halteres with stem whitened, knob light brown. Legs with coxae obscure yellow, fore pair darker; trochanters yellow; femora yellow, tips narrowly black; tibiae dark brown; tarsi black; claw ventrally with a long outer spine that is more than one-half the apical point, at base with small blackened points. Wings (Fig. 6) with the ground light yellow, with a conspicuous darkened pattern that includes four oval costal areas that are more extensive than the interspaces, the basal darkening smallest; other similar dark markings include the stigma and broad seams over the cord and outer end of cell *1st M*<sub>1</sub>; remainder of ground with paler brown washes in all the cells to form a subapical band in the outer cells; basad of the cord all cells with pale brown clouds; the yellow ground color more conspicuous on anterior fourth and in the interspaces of most cells; veins dark brown. Venation: *Sc* long, *Sc*<sub>1</sub> ending just beyond midlength of *Rs*, *Sc*<sub>2</sub> shortly subterminal; free tip of *Sc*<sub>2</sub> and *R*<sub>1</sub> in transverse alignment; cell *1st M*<sub>1</sub> shorter than the cells beyond; *m-cu* close to the fork of *M*.

Abdominal tergites chiefly brown, bases slightly paler; sternites clear orange yellow, extreme posterior lateral angles slightly darkened. Ovipositor with cerci long, the outer ends very slender.

*Holotype.* ♀, North de El Tambo, Ecuador, 2900 meters, February 20-21, 1965 (Peña).

The present fly is readily told from the more similar large-sized regional members of the subgenus by the wing coloration, especially the series of large brown costal areas that much exceed in size the ground interspaces. The more similar species include *Limonia* (*Neolimonia*) *dicax* Alexander, Peru, Bolivia; *L. (N.) horrenda* Alexander, Peru; and *L. (N.) precipua* Alexander, Ecuador, all of which have wings with cells *C* and *Sc* virtually unpatterned.

### ***Limonia* (*Geranomyia*) *calinota* Alexander**

*Limonia* (*Geranomyia*) *calinota* Alexander; Ann. Mag. Nat. Hist. (ser. 11) 8:318-320; 1941. Type, female from Carpapata, Tarma, Junin, Peru, 2600 meters, May 15, 1940 (Woytkowski).

I am designating a male specimen as allotype.

Characters generally as in the female, as described. Male hypopygium (Fig. 8) with the ninth tergite, *t*, having the cephalic border nearly straight, posterior margin with a broad notch, lobes rounded; marginal setae relatively sparse, very long. Ventral dististyle, *vd*, large and fleshy, its area nearly three times that of the basistyle; rostral prolongation slender, apex obtuse; two approximated rostral spines, the smaller outer one hairlike, from a small basal tubercle; inner spine longer and more powerful, from a larger tubercle. Dorsal dististyle a moderately curved slender spine. Gonapophyses, *g*, distinctive; mesal-apical lobe a narrow erect spinelike point, as shown. Aedeagus, *a*, with apical lobes pale, lateral pair truncated.

*Allotype*. ♂, Cuenca, Gr1 Plaza, Ecuador, 2200-2400 meters, October 18-19, 1977 (Peña).

The more important features of the hypopygium in this species are in the rostral spines of the ventral dististyle and the conformation of the gonapophyses.

### ***Limonia* (*Geranomyia*) *idiopygialis* sp.n.**

General coloration of body brownish black to black; legs black, first three tarsal segments and distal ends of tibiae yellowed; wings strongly blackened, stigma slightly darker; *Sc* ending a short distance beyond origin of *Rs*; *m-cu* at fork of *M*; cell *1st M*<sub>1</sub> longer than cell *2nd M*<sub>1</sub>; male hypopygium with ventral dististyle large and fleshy, the rostral spines unusually complex, as described and figured.

*Male*. Length, excluding rostrum about 7.5 mm.; wing 7.3 mm.; rostrum about 3 mm.; antenna about 1.8 mm. Rostrum long, as shown by the measurements, black throughout; palpi small, black. Antennae black throughout; proximal flagellar segments oval, outer ones slightly more elongated. Head dull black. Eyes (male) large; anterior vertex very narrow.

Prothorax dull black. Mesothorax dull black, sparsely pruinose; dorsopleural membrane darkened. Halteres brownish black, the large knobs darker. Legs with fore and middle coxae black, posterior coxae and all trochanters paler, obscure yellow; femora black; tibiae blackened basally, outer ends gradually paling to obscure yellow; proximal three tarsal segments obscure yellow, distal two brownish

black; claws long, nearly straight, without teeth. Wings strongly blackened, the oval stigma very slightly darker; veins dark brownish black. Venation: *Sc* ending a short distance beyond origin of *Rs*; *m-cu* at fork of *M*; cell *1st M*<sub>1</sub> long, about one-half longer than cell *2nd M*<sub>1</sub>.

Abdomen brownish black; ventral dististyle of male hypopygium slightly paler. Male hypopygium (Fig. 9) complex in structure, especially the ventral dististyle. Ninth tergite, *t*, with conspicuous darkened rounded lobes, these with long black setae. Basistyle, *b*, with ventromesal lobe bearing unusually long delicate setae. Ventral dististyle, *vd*, large and fleshy, its area slightly exceeding that of the basistyle, the setae relatively short and sparse; rostral prolongation unusually complex, as shown; outer spine at tip of a long arcuated basal prolongation that is nearly twice as long as the slightly curved terminal spine; inner spine at the base of the outer one, subequal in length to the latter, its basal tubercle very small, as shown in the enlarged subfigure. Dorsal dististyle a small blackened gently curved spine, its base complex. Gonapophysis, *g*, unusually slender, strongly arcuated, outer point yellowed, nearly straight. Aedeagus, *a*, small and narrow, the genital tubes subterminal to the small central lobe.

*Holotype*. ♂, West Pilalo, Ecuador, 800 meters, October 9-10, 1977 (Peña).

The present fly is generally similar to certain other species that are allied to *Limonia* (*Geranomyia*) *lachrymalis* (Alexander), of Ecuador. The hypopygium of this latter species has been described and figured in an earlier paper by the writer that may be consulted (Rev. Ecuat. Ent. Par., 2:52, fig. 11; 1954).

### ***Limonia* (*Geranomyia*) *pergracilis* sp.n.**

General coloration of thoracic dorsum yellow, with two intermediate reddish brown stripes on praescutum, posterior sclerites darker brown; legs yellow, femora with a narrow subterminal pale brown annulus; wings yellow, restrictedly patterned with pale brown, including five costal areas; vein *Sc*<sub>1</sub> nearly opposite one-third the length of *Rs*; abdomen chiefly yellow, posterior borders of tergites very pale brown; male hypopygium with rostral prolongation of the large fleshy ventral dististyle very slender; gonapophysis with mesal-apical lobe straight, the obtuse apex darkened; aedeagus very slender.

*Male*. Length, excluding rostrum, about 8 mm.; wing 7.1 mm.; rostrum 3.3 mm. Rostrum black. Antennae brownish black; scape elongate, nearly five times the pedicel; flagellar segments elongate, verticils small. Head brownish black.

Pronotum obscure yellow. Mesonotal praescutum with the ground yellow, with two intermediate nearly contiguous reddish brown stripes, lateral borders darker brown; scutum brown, scutellum more yellowed; postnotal mediotergite darker brown, pleurotergites paler brown. Pleura chiefly obscure brownish yellow; anterior sternopleurite narrowly dark brown. Halteres with stem yellow, knob brown. Legs with fore coxae dark brown; remaining coxae and all trochanters light yellow; remainder of legs pale brownish yellow, femora with a narrow subterminal pale brown annulus, tip more broadly light yellow; tibiae and tarsi brownish yellow, outer two tarsal segments dark brown; claws slender, with three basal spines, the



outermost long, straight. Wings with ground yellow, base and costal region more clearly so; a restricted pale brown pattern, including about five areas in the costal and subcostal fields, formed by five small spots extending from the humeral cross-vein to the stigma, the two areas at origin of *Rs* and tip of *Sc* nearly confluent; paler brown seams over the cord and with very small markings at ends of the outer veins, smallest on *R<sub>4+5</sub>*, and the medial veins; veins yellow, slightly more darkened in the patterned areas. Vein *1st A* glabrous, *2nd A* bearing two apical setae. Venation: *Sc* relatively short, *Sc*<sub>1</sub> ending near one-third the length of *Rs*, *Sc*<sub>2</sub> near its tip; *m-cu* shortly beyond the fork of *M*.

Abdomen chiefly yellow, posterior borders of tergites narrowly very pale brown. Male hypopygium (Fig. 10) with posterior border of ninth tergite, *t*, shallowly emarginate, lobes rounded, provided with unusually long setae. Basistyle, *b*, small, its area on slide slightly more than one-third that of the ventral dististyle; setae of the ventromesal lobe sparse, long and delicate. Dorsal dististyle a long slender gently curved rod. Ventral dististyle, *vd*, large and fleshy, setae relatively sparse and delicate; rostral prolongation with outer portion very slender, base with two long slender spines at summit of a stout basal lobe, the latter about twice as stout as the prolongation (subfigure, *vd*). Gonapophysis, *g*, small, mesal-apical lobe straight, apex obtuse, slightly darkened. Aedeagus, *a*, very narrow on outer half, shaped about as shown.

*Holotype*. ♂, Abitagua, Oriente, Ecuador, 1000 meters, November 4, 1939 (Macintyre).

Other somewhat similar regional species include *Limonia (Geranomyia) stricta* Alexander, Ecuador; *L. (G.) gaudens* Alexander, Argentina; *L. (G.) opulens* Alexander, Ecuador, Brasil, and some others, all being most certainly separated by hypopygial characters. The very slender outer portion of the rostral prolongation of the ventral dististyle has suggested the name given to this species.

### ***Limonia (Geranomyia) quinquelineata* sp.n.**

General coloration of thorax and abdomen yellowed, the praescutum with five darkened stripes, suggesting the specific name; legs with femora yellow with a narrow light brown subterminal ring; wings subhyaline, very restrictedly patterned with darker; male hypopygium with ventral dististyle large, rostral prolongation small, with two long spines, the more basal one from a long tubercle.

*Male*. Length, excluding rostrum about 5 mm.; wing 5.5 mm.; rostrum about 2.2 mm.

Head (mounted on slide) dark brown; rostrum elongate. Antennae (broken at the seventh segment) uniformly dark brown; flagellar segments nearly round or globular, in length nearly equal to their longest verticils.

Pronotum and cervical region dark brown. Mesonotal praescutum with the ground yellow, disk with three very conspicuous dark brown stripes that are wider than the interspaces, lateral areas darkened, especially on the inner margins so that the mesonotum viewed from above appears to have five stripes, suggesting the

specific name; scutum dull yellow, each lobe encircled by a dark brown ring; scutellum and postnotum brown. Pleura anteriorly obscure yellow, more infuscated on the posterior sclerites; sternum light yellow. Halteres with stem light yellow, knob brown. Legs with coxae and trochanters yellow; a single (fore) leg remains, femora yellow, with a narrow light brown subterminal ring, subequal in width to the clear yellow apex; tibiae and base of tarsi yellow, outer three segments light brown. Wings subhyaline or very slightly tinted, the darkened pattern including only the pale brown stigma and small similar areas at end of *Sc* and base of *Rs*, with a smaller cloud over the subcostal crossvein; veins light brown. Venation: *Sc*, ending shortly beyond origin of *Rs*, *Sc*, slightly removed; *m-cu* shortly before the form of *M*.

Abdomen, on a microscope slide, appearing pale brownish yellow, slightly darker laterally; hypopygium pale brown. Male hypopygium (Fig. 11) only partially preserved on slide. Basistyle, *b*, with ventromesal lobe oval, rounded. Dorsal dististyle straight on basal half, outer end slightly curved, a little dilated before the slender terminal spine. Ventral dististyle, *vd*, relatively large, about two and one-half times the basistyle, *b*, vestiture short, very delicate and scattered; rostral prolongation small, nearly glabrous, with two spines, the more basal one from a long tubercle, the closely approximated outer spine with a very small tubercle, both spines gently curved beyond their bases.

*Holotype*. ♂, Tandapi, Ecuador, 1300-1500 meters, June 15-20, 1965 (Peña).

In its hypopygial structure the present fly is generally similar to *Limonia* (*Geranomyia*) *avara* Alexander, of southeastern Brasil and some other species, differing in the size, coloration of the body and wings, and in hypopygial details.

### *Limonia* (*Geranomyia*) *terpsis* sp.n.

Thoracic dorsum patterned with light brown, pleurotergites and pleura pale yellow; halteres with stem yellow, knob dark brown; legs with femora yellowed basally, outer half with two broad brown rings; wings subhyaline, with an inconspicuous pale brown pattern, including five costal areas, those at origin of *Rs* and tip of *Sc* slightly separated; male hypopygium with posterior border of tergite nearly straight; ventral dististyle large and fleshy; rostral spines long and slender, decussate, on small separate basal tubercles; gonapophyses appearing as flattened plates, apex truncate, outer angle blackened; aedeagus long and slender, genital tubes contiguous.

*Male*. Wing 8 mm. Head missing. Pronotum brown, darker on sides. Mesonotal praescutum with three closely approximated light brown stripes on the median area, broadly silvery sublaterally, sides broadly dark brown; median region of scutum pale, lobes light brown, central areas more darkened; scutellum chiefly pale brownish yellow; postnotal mediotergite light brown, pleurotergites yellowed. Pleura uniformly very pale yellow. Halteres with stem yellow, knob dark brown. Legs with coxae and trochanters light yellow; femora with basal half yellowed, outer half with two broad brown rings that are separated by a narrower pale yellow annulus; tibiae yellow, extreme tips darkened; tarsi with basitarsi pale, outer segments

brownish black; claws nearly straight, at base with a compact group of five black spines, the outermost larger. Wings subhyaline, with an inconspicuous pale brown pattern that includes five costal areas, the stigmal one darker brown; brown areas at origin of *Rs* and tip of *Sc* slightly separated; narrow pale brown seams over cord and outer end of cell *1st M*<sub>1</sub>; veins pale brown, slightly darker in the patterned areas. Venation: *Sc*<sub>1</sub> ending shortly before midlength of *Rs*, *Sc*<sub>2</sub> slightly removed; *m-cu* at or just beyond the fork of *M*; cell *1st M*<sub>1</sub> slightly longer than the outer medial cells.

Abdomen light yellowish brown. Male hypopygium (Fig. 12) about as shown as regards the relative proportions and the vestiture. Ninth tergite, *t*, with posterior border nearly straight. Ventral dististyle, *vd*, large, fleshy, in area three or more times the basistyle; rostral prolongation small, spines long and slender, decussate, arising from small separate basal tubercles. Basistyle, *b*, with ventromesal lobe long, straight. Gonapophysis, *g*, distinctive, appearing as a flattened plate, apex truncate, outer apical angle blackened, produced into a small point. Aedeagus, *a*, unusually long and narrow (outer half shown enlarged), genital tubes contiguous; lateral flanges narrow, subhyaline.

*Holotype*. ♂, Celica, Ecuador, 2000 meters, August 16-18, 1977 (Peña).

The present fly is most similar to species such as *Limonia (Geranomyia) deliciosa* Alexander, Panama to Peru, *L. (G.) diargyria* Alexander, Peru, and some others, differing in body coloration and hypopygial structure, especially the ventral dististyle and its rostral prolongation, and in the gonapophyses and aedeagus.

### ***Limonia (Geranomyia) viriditincta* sp.n.**

Head dark brown, dorsally with a narrow silvery median stripe; thorax yellowed to pale green, with a central pale brown stripe on praescutum, pleura pale brown to pale green; legs with femora yellowed, with a narrow light brown subterminal ring; wings light yellow, restrictedly patterned with brown, including five small subcostal areas, with other marginal darkenings at ends of all veins; cord and outer end of cell *1st M*<sub>1</sub> narrowly seamed; male hypopygium with ventral dististyle large and fleshy; basistyle small, rostral spines from separate very small basal tubercles; gonapophyses pale, gently curved to a spinoid point; aedeagus terminating in two flattened terminal blades, their apices pointed.

*Male*. Length about 6-7 mm.; wing 6.5-8 mm.; rostrum alone 3.5-4 mm. Rostrum black; elongate, slightly more than one-half the remainder of body; palpi black. Antennae black, in cases the flagellum tinged with green. Head dark brown, dorsally with a narrow central silvery stripe, extending from the anterior vertex to the occiput.

Thorax chiefly yellowed to pale green, in the holotype the praescutum almost entirely greenish, with a central pale brown stripe and poorly indicated more greenish laterals; scutal lobes pale brown, the remainder pale green; postnotum pale green. Pleura of holotype pale green; in other specimens pale brown with greenish tinges. Halteres pale brown, stem whitened. Legs with coxae and trochanters tinged with green; femora yellowed with a narrow light brown subterminal ring that is about one-third the yellow apex; tibiae and tarsi obscure yellow to pale brownish yellow;

tarsi strongly tinged with light green; claw with two powerful basal spines, the outer one much larger; hind leg with third tarsal segment on lower surface with a longitudinal series of about 20 nearly equal short spinoid setae. Wings light yellow, the basal and costal regions more saturated yellow; a restricted brown pattern that includes five small subcostal areas, those at origin of *Rs* and tip of *Sc* contiguous or nearly so; stigma small; small marginal darkenings at ends of all veins, including the *Anals*, smallest and least evident on *R*<sub>4+5</sub>; cord and outer end of cell *1st M*<sub>1</sub> narrowly seamed with brown; veins yellow, darkened in the patterned areas; outer third of costa strongly suffused with light green. Venation: *Sc*<sub>1</sub> ending before midlength of *Rs*, the latter angulated at origin; *m-cu* at or close to base of cell *1st M*<sub>2</sub>.

Abdomen brownish yellow, the tergites slightly darker; basal segments of hypopygium slightly darker, showing greenish suffusions in pinned specimens, especially on the outer parts. Male hypopygium (Fig. 13) with the tergite, *t*, small, its area less than one-fourth that of the large fleshy ventral dististyle, *vd*. Ventral dististyle small, apex very slender, the two spines on separate very small basal tubercles. Dorsal dististyle small, very gently curved, the slender apical spine decurved. Gonapophyses, *g*, entirely pale; mesal-apical lobe gently curved, narrowed to a spinoid point. Aedeagus, *a*, relatively broad, the outer end slightly dilated, terminating in two flattened terminal blades, their apices pointed.

*Holotype*. ♂, Loja — Malacatos, Ecuador, 1900 meters, August 21-22, 1977 (Peña); below on pin. *Paratopotypes*, 5 ♂♂, mounted on three pins; holotype pinned below on pin 400.

The present fly is generally similar to certain other regional forms, including especially *Limonia (Geranomyia) bicincta* (Alexander), of Peru, which differs in details of body and wing coloration, venation, and especially the male hypopygium, including the aedeagus, as shown, Fig. 14 (paratype of *bicincta*).

## HEXATOMINI

### *Shannonomyia subumbra* sp. n.

General coloration of mesonotum blackened, praescutum with three nearly confluent polished black stripes, pleura clear gray pruinose; antennae of male relatively long, black; halteres light yellow; legs black, femoral bases broadly yellow; wings whitened, patterned with brown, as described; conspicuous trichia on longitudinal veins beyond the general level of the cord; cell *1st M*<sub>1</sub> subequal in length to vein *M*<sub>2</sub>; male hypopygium with tergite deeply incised on posterior border, the lobes extended into points.

*Male*. Length about 7 mm.; wing 7.5 mm.; antenna 2.1 mm. Rostrum and palpi black. Antennae relatively long, as shown by the measurements, black throughout; flagellar segments long-oval to subcylindrical, longer than the verticils that are only slightly shorter; all segments with abundant very short erect setulae. Head light gray pruinose; anterior vertex broad; posterior vertex with numerous long porrect setae.

Pronotum dark gray. Mesonotal praescutum with three nearly confluent polished

black stripes, the sides more pruinose; scutal lobes blackened, posterior sclerites of notum weakly pruinose. Pleura clear gray pruinose; dorsopleural membrane blackened. Halteres light yellow, especially the knobs. Legs with coxae and trochanters brownish yellow; remainder of legs black, femoral bases broadly yellowed; claws yellow. Wings whitened, prearcular field light yellow, including the veins; stigma oval, dark brown; broad paler brown seams over the anterior cord and along vein *Cu* in cell *M*<sub>1</sub>; outer end of cell *1st M*<sub>1</sub> very narrowly darkened; paler brown darkenings at wing apex and on base of cell *2nd A*; veins dark brown. Numerous trichia on veins beyond general level of the cord, including also the outer half of *Rs* and *Cu* and more than the distal half of *2nd A*. Venation: *Sc*, ending about opposite three-fourths *Rs*, *Sc*, near its tip; *r-m* strongly arcuated; *m-cu* shortly before midlength of cell *1st M*<sub>1</sub>, the latter subequal in length to vein *M*<sub>1</sub>.

Abdomen black; ninth segment pale brownish yellow, remainder of hypopygium blackened. Male hypopygium (Fig. 17) with the tergite, *t*, distinctive; posterior border deeply emarginate, the two lobes extended into points. Outer dististyle, *d*, at apex narrowed into a slender bifid blackened rod, the outer point long acute; inner style narrow. Aedeagus, *a*, very long, basal half strongly sigmoid, as shown; gonapophyses, *g*, and interbase, *i*, as figured.

*Holotype*. ♂, Sebundoi, Ecuador, 2600 meters, September 11-15, 1977 (Peña).

The more similar species include *Shannonomyia torus* Alexander, Bolivia, and *S. umbra* Alexander, Peru, differing in details of coloration and venation and in antennal and hypopygial structure. The conformation of the ninth tergite of the hypopygium is most as in *umbra*. Other somewhat similar species include *Shannonomyia globulicornis* Alexander, Chile, *S. lignyptera* Alexander, Bolivia, *S. subexilipes* Alexander, Ecuador, and some others, all distinct in antennal and hypopygial characters.

## ERIOPTERINI

### *Teucholabis (Teucholabis) cocaensis* sp.n.

General coloration of entire body black; legs brownish black; wings subhyaline, the apex and a band at cord brown; male hypopygium with terminal spine of basistyle a small black point from a short stouter base; details of inner dististyle and aedeagus distinctive, as described and figured.

*Male*. Length about 5 mm.; wing 4.5 mm.; antenna about 1.3 mm. Head polished black. Antenna and palpi brownish black.

Thorax entirely polished black. Halteres with stem black, knob slightly paler. Legs with coxae black, trochanters dark brown; remainder of legs brownish black. Wings subhyaline, with a relatively narrow pale brown band at midlength over the cord, confluent with the darker brown narrow stigma; apical fifth of wing uniformly brown, about three times the central darkening; no markings basad of cord; veins dark brown. Outer veins from *R*<sub>1+2</sub> to *M*<sub>1</sub> with abundant long trichia, including also about six on outer half of *Rs*, the basal pair very small. Venation: Vein *R*<sub>1</sub> slightly oblique, shorter than *R*<sub>1+2</sub>; cell *1st M*<sub>1</sub> long, somewhat shorter than *2nd M*<sub>1</sub>, slightly

widened outwardly; *m-cu* a short distance beyond the fork of *M*.

Abdomen black. Sternal pocket of segment five, *5s*, with abundant trichia, the pocket broadest at posterior end, innermost trichia very small to microscopic, as shown; sternite 6 with a central group of about 15 very long delicate setae. Male hypopygium (Fig. 15) with terminal spine of basistyle, *b*, distinctive, as shown, short, the outer third narrowed into a straight black spine, its base with abundant yellow setae. Mesal flange of basistyle, *b*, blackened, conspicuous. Outer dististyle, *ad*, elongate, lower margin beyond midlength with a slender blackened spine, as shown; inner style, *id*, compact, apex blackened, as shown. Aedeagus, *a*, with apical spine gently curved, blackened.

*Holotype*.  $\sigma$ , Junction of the Coca and Napo Rivers, Ecuador, May 29, 1965 (Peña).

The most similar species is *Teucholabis (Teucholabis) latibasalis* Alexander, likewise from Ecuador, which similarly has no darkened band on proximal half of wing, differing especially in the details of hypopygial structure, including the terminal spine of the basistyle, inner dististyle, and the aedeagus.

### ***Teucholabis (Teucholabis) sublaxa* sp.n.**

Mesonotum brownish yellow, pleura patterned with blackened areas; legs with femora yellow, tips narrowly blackened; wings pale brown, more whitened on the proximal costal region and before and beyond the stigma; abdominal sternal pocket of segment five distinctive; male hypopygium with apical spine of basistyle and the inner dististyle subequal in length and in general conformation.

*Male*. Length about 6.5 mm.; wing 5.8 mm.; antenna about 1.5 mm.

Palpi and antennae dark brown; terminal segment of palpus oval. Antennae with basal flagellar segment short oval, outer ones progressively longer and more slender. Head brownish black.

Prothorax brownish black. Mesonotum polished brownish yellow. Pleura darkened dorsally, especially the pleurotergite; anepisternum with a circular intensely blackened area; lower pleurites and sternum yellow. Halteres brownish black. Legs with all coxae and trochanters yellow; remainder of legs (posterior pair lacking) with femora yellow, tips narrowly blackened, involving about the outer fifth or sixth of segment; tibiae brownish yellow, tips brownish black; tarsi black. Wings with the ground pale brown, the basal fifth, costal region and areas before and beyond the stigma whitened; stigma oval, darker brown; anterior cord only slightly darkened; veins brown. Veins beyond cord with long delicate setae, lacking on *Cu*; *Rs* with sparse long setae. Venation: *Sc* long, *Sc*<sub>1</sub> ending opposite three-fifths the long *Rs*; *R*<sub>1+2</sub> and *R*<sub>3</sub> subequal; *m-cu* at fork of *M*.

Abdominal tergites brown, ninth tergite yellowed; sternites paler brown at bases, outwardly yellowed. Sternal pocket of segment five, *5s*, (Fig. 16) large, short-oval, with very numerous transverse rows of abundant short black setae on posterior third, anteriorly becoming more dense lines, the front end of the area solidly blackened, as shown; on either side of the pocket with about a score of long black setae that are directed mesad toward the pocket. Male hypopygium (Fig. 16) with

apical spine of the basistyle, *b*, a long blade that narrows on outer third into a slender black spine, before apex with a group of long yellow setae; lower margin of basal half with a row of about six microscopic spicules. Mesal flange of basistyle, *b*, black, elongate, more expanded and rounded at lower end, the margin smooth. Outer dististyle, *od*, subequal in length to the apical spine of the basistyle, base slender, outwardly dilated and gradually extended into a slender point; inner dististyle, *id*, shaped about as shown, the short apical blade blackened, terminating in two spines. Aedeagus, *a*, as shown.

*Holotype*. ♂, Dureno, Ecuador, 150 meters, September 23-28, 1977 (Peña).

Generally similar to the larger *Teucholabis* (*Teucholabis*) *laxa* Alexander, Costa Rica, differing in the details of body and leg coloration and especially in hypopygial structure and conformation of the sternal pocket of the fifth abdominal segment.

### ***Molophilus* (*Molophilus*) *azuayensis* sp.n.**

Belongs to the *plagiatus* group: general coloration of body brown; antennae of male relatively long; flagellar segments with long verticils; halteres yellow; male hypopygium with beak of the basistyle a nearly straight blackened point; basal dististyle a long nearly straight blackened rod, the margin before midlength with a small acute subappressed spine.

*Male*. Length about 4.8-5 mm.; wing 5.5-6 mm.; antenna about 2-2.3 mm. Rostrum black, with long black setae; palpi black. Antennae relatively long, brown; flagellar segments elongate, with very long outspreading pale verticils. Head grayish brown.

Pronotum dark brown. Mesonotum light brown, almost concolorous, the praescutal interspaces with numerous short black setae; posterior sclerites and pleura dark brown. Halteres yellow. Legs with coxae and trochanters light yellow; femora and tibiae pale yellowish brown; tarsi black. Wings pale, veins light brown; setae of veins elongate, blackened.

Abdomen dark brown; hypopygium light brown. Male hypopygium (Fig. 18) with beak of basistyle, *b*, a nearly straight blackened point. Basal dististyle, *bd*, a long nearly straight blackened rod, the margin before midlength with a small acute subappressed spine, the outer part of the rod without well developed spines or points.

*Holotype*. ♂, Cotinojillas, South Cuenca, Azuay, Ecuador, 3200 meters, March 18-21, 1965 (Peña). Paratopotype, ♂, with the type. Paratypes, 3 ♂♂, Cordillera Tinajilla, Azuay, Ecuador, 3100 meters, March 18-20, 1977 (Peña).

The present fly is most readily told from other generally similar species by the antennal and hypopygial structures. Other such flies include *Molophilus* (*Molophilus*) *honestus* Alexander, Argentina; *M. (M.) stylifer* Alexander, Argentina; *M. (M.) subfaucatus* Alexander, Venezuela, and some others, all best separated by the genitalia. It should be emphasized that in the present fly the basal dististyle has a single lateral spine, with the long terminal point entirely smooth.

**Molophilus (Molophilus) hirsuticlavus sp.n.**

Belongs to the *plagiatus* group; general coloration brown; halteres light yellow; male hypopygium with outer dististyle at apex distinctive, as described and figured; ventral dististyle a long straight rod, gradually enlarged outwardly, apex truncate, with dense black setae or weak spines.

*Male.* Length about 5.5 mm.; wing 5 mm.; antenna about 1.5 mm.

Head brown. Antennae brown; flagellar segments subcylindrical, almost subequal in length throughout; longest verticils subequal in length to the segment.

Thorax almost uniform medium to darker brown, scutellum slightly more yellowed. Halteres light yellow. Legs with fore coxae brown, remaining coxae and all trochanters yellow; remainder of legs obscure brownish yellow, outer tarsal segments dark brown. Wings subhyaline, more clouded with pale brown beyond the base and along the cord and adjoining parts; veins and trichia darker brown.

Abdomen dark brown, hypopygium slightly more yellowed. Male hypopygium (Fig. 19) with the beak of the basistyle, *b*, black, decurved, surrounded by dense black setae. Outer dististyle, *od*, with outer end distinctive, as shown; bifid at about the outer fourth, axial arm stouter, its apex obtuse, with a small lower point; upper arm erect at base, thence strongly bent into a long straight spine that lies parallel to the axial arm. Basal dististyle, *bd*, a long straight rod, narrowed basally, gradually enlarged outwardly, the distal end forming a long club, its surface with small roughened points, the truncate apex with abundant short dense black setae or weak spines.

*Holotype.* ♂, El Chaco, East Ecuador, 1700 meters, September 22-23, 1977 (Peña).

Other somewhat similar regional species include *Molophilus (Molophilus) avitus* Alexander, Ecuador, Bolivia; *M. (M.) coryne* Alexander, Ecuador; *M. (M.) grus* Alexander, Peru; *M. (M.) licitor* Alexander, Colombia; *M. (M.) panchrestus* Alexander, Peru, and some others, all most readily distinguished by the hypopygial structure.

**Molophilus (Molophilus) microserratus sp.n.**

Belongs to the *plagiatus* group; size small, wing of male less than 4 mm.; general coloration of body brown; halteres and legs brown; wings strongly infuscated; male hypopygium with the beak of the basistyle slender; basal dististyle a long slender rod, the lower surface of outer three-fourths with a longitudinal series of approximately 50 small points, becoming smaller and less conspicuous on distal fourth.

*Male.* Length about 3.5 mm.; wing 3.8 mm.

Head and appendages brown. Antennae broken beyond the third segment, apparently relatively long.

Thorax almost uniformly medium brown, the dorsum slightly darker; setae of the pronotum very long, of the praescutal interspaces shorter but conspicuous, progressively longer posteriorly. Halteres dark brown. Legs with coxae obscure testaceous; remainder of legs medium brown throughout. Wings strongly in-



fuscated, the veins and trichia darker brown.

Abdomen uniformly brown. Male hypopygium (Fig. 20) with the beak of the basistyle slender, nearly straight; face of style below the beak darkened, with conspicuous black setae. Outer dististyle, *od*, curved, narrowed into a long slender axial spine, lateral appendage stouter, as shown. Basal dististyle, *bd*, diagnostic; a long unusually slender nearly straight rod that is fully as long as the basistyle; lower face of the outer three-fourths of style with a long series of approximately 50 blackened subappressed spines, as shown in the subfigure. Phallosome unusually small.

*Holotype*. ♂, Reventador, East Ecuador, 1750 meters, October 3-6, 1977 (Peña).

*Molophilus (Molophilus) microserratus* is generally similar to certain other regional species, differing in the small size and especially in the hypopygial details, including especially the ventral dististyle. Other such generally similar species include *Molophilus (Molophilus) capricornis* Alexander, Colombia, Peru; *M. (M.) carpishensis* Alexander, Bolivia, Peru; *M. (M.) flemingi* Alexander, Venezuela; *M. (M.) pennatus* Alexander, Mexico; *M. (M.) planitas* Alexander, Bolivia, and some others, all differing among themselves chiefly in hypopygial characters.

### ***Molophilus (Molophilus) neosubfalcatus* sp.n.**

Belongs to the *plagiatus* group; head gray; thoracic dorsum uniformly dark gray, pleura more blackened, abdomen black; halteres and legs black; wings strongly blackened; male hypopygium with beak of the basistyle straight, the subacute tip slightly decurved; basal dististyle a simple nearly straight rod that narrows to the acute tip.

*Male*. Length about 5 mm.; wing 4.5 mm.; antenna about 2.5 mm.

Head gray; appendages black. Antennae (male) elongate, about one-half the body; flagellar segments elongate, nodulose, bases swollen, outer ends strongly narrowed, glabrous; each segment with a whorl of about 7 or 8 very long outspreading verticils, the longest about one and one-half times the segment. Thoracic dorsum almost uniformly dark gray, pleura more blackened. Halteres and legs black. Wings strongly blackened throughout. Trichia of veins long, black. Region of the stigma, including cells C to anterior border of cell R<sub>1</sub>, with abundant very small to microscopic punctures continued outwardly almost to the wing tip, more extensive along the outer margin of cell R<sub>1</sub>.

Abdomen, including the hypopygium and appendages, black. Male hypopygium (Fig. 21) with the beak of the basistyle, *b*, straight at base, the subacute tip slightly decurved. Basal dististyle, *bd*, a simple nearly straight rod, narrowed gradually to the acute tip, total length about one-third longer than the outer dististyle, *od*, apparently without setae or other armature.

*Holotype*. ♂, West Pilalo, Ecuador, 1800 meters, October 9-10, 1977 (Peña).

*Molophilus (Molophilus) neosubfalcatus* is most readily distinguished from other blackened species by the structure of the hypopygium. The most similar species presently known is *M. (M.) subfalcatus* Alexander, Venezuela, Peru, differing in the

smaller size and in details of body and wing coloration, additional to hypopygial structure.

### **Molophilus (Molophilus) setistylatus sp.n.**

Size relatively small (wing of male 3.8 mm.); general coloration of body brown; flagellar segments of antennae with very long verticils; male hypopygium with beak of basistyle small, straight; basal dististyle a slender straight pale blade, surface with abundant long very delicate pale setae. Aedeagus very long and slender.

*Male.* Length about 4.5 mm.; wing 3.8 mm. Rostrum and palpi black. Antennae black; flagellar segments long-oval, progressively more slender outwardly, with very long outspreading verticils, the longest about two and one-half times the segment. Head blackened.

Thoracic dorsum medium brown, praescutum with the central stripe more blackened anteriorly. Pleura medium brown. Halteres yellow. Legs with coxae yellowed, the fore pair slightly darker; trochanters yellow; remainder of legs medium brown. Wings subhyaline to very slightly infuscated; veins and trichia light brown.

Abdomen dark brown, ninth segment light yellow; male hypopygium with basal dististyle light brown, dististyle conspicuously black. Male hypopygium (Fig. 22) with beak of basistyle, *b*, small, slender, straight. Outer dististyle, *od*, conspicuously blackened, outer arm slightly longer and more slender. Basal dististyle, *bd*, distinctive, a slender, straight, pale blade, apex subobtusate, surface with abundant, long, very delicate pale setae. Aedeagus, *a*, very long and slender, straight, about equal to the total length of the basistyle.

*Holotype.* ♂, Reventador, Ecuador, 1750 meters, October 2-5, 1977 (Peña).

The present fly is generally similar to *Molophilus (Molophilus) pala* Alexander, Ecuador, Peru, Bolivia, differing especially in hypopygial structure, including the basistyle and dististyles, especially the basal dististyle.

### **Molophilus (Molophilus) stygius sp.n.**

Belongs to the *plagiatus* group; general coloration brownish black, including the mouthparts, antennae and legs; antennae relatively long, the individual flagellar segments flask-shaped to appear beadlike; male hypopygium with the basal dististyle a long simple rodlike spine, before apex on lower face with a microscopic point.

*Male.* Length about 4.5 mm.; wing 4.3 mm.; antenna about 1.2 mm.

Type mounted and preserved on microscope slide in canada balsam. Entire body brownish black, including the palpi and antennae. Legs more intensely blackened. Antennae (Fig. 23, ant.) distinctive, elongate, nearly one-third the body; flagellum appearing beadlike, the individual segments flask-shaped, bases swollen, apices narrowed into shorter petioles; longest verticils slightly exceeding the segments.

Wings strongly infuscated; veins darker. Venation:  $R_2$  in transverse alignment with *r-m*; petiole of cell *M*, slightly more than twice *m-cu*; vein *2nd A* long. Male

hypopygium (Fig. 23) with beak of basistyle, *b*, slender. Outer dististyle, *od*, with upper arm slender, the lower arm widened at base. Basal dististyle, *bd*, appearing as a long simple rodlike spine, narrowed gradually into a slightly curved terminal spine, before apex on lower face with a microscopic point.

*Holotype*. ♂, Junction of the Coca and Napo Rivers, Ecuador, May 27th, 1965 (Peña). The present fly is told by the long beadlike antennae and hypopygial structure of the male, as described and figured.

### **Molophilus (Molophilus) subperfidus sp.n.**

Belongs to the *plagiatus* group; general coloration brown, the ventral thoracic pleura more yellowed; antennae black, verticils of flagellar segments very long; legs with femora yellowed, outer segments brown; male hypopygium with both the outer and basal dististyles nearly equal in size, the outer style terminating in two nearly equal divergent black spines; basal dististyle differing slightly in the available materials, as shown for the type, on one side with a pair of nearly equal small straight spines that are lacking on the opposite style.

*Male*. Length about 3.9-4 mm.; wing 4.7-4.9 mm.; antenna about 1.2-1.3 mm. Rostrum and palpi black. Antennae moderately long, nearly one-third the body, black throughout; flagellar segments long oval, the proximal ones with long verticils that are nearly three times the segments. Head brown.

Thoracic dorsum almost uniformly light brown, posterior sclerites slightly more yellowed. Pleura above light brown, more yellowed ventrally. Halteres obscure yellow, base of stem clearer yellow. Legs with coxae and trochanters yellow; femora yellowed; tibiae appearing light brown from the abundant setae; tarsi brown. Wings pale brown; veins and trichia darker brown. Venation: Vein 2nd *A* long, ending some distance beyond *m-cu*.

Abdomen brown, hypopygium and ninth segment slightly more yellowed, the dististyles black. Male hypopygium (Fig. 24) with the beak of the basistyle, *b*, black, short, decurved. Outer dististyle, *od*, with the two spines apical, nearly equal. Basal dististyle, *bd*, as shown; note the differences in the apex of the style on the two sides of the holotype, as shown, on one there being two nearly equal small straight spinules between the two larger lateral spines.

*Holotype*. ♂, Sebundoi, Ecuador, 2600 meters, September 11-15, 1977 (Peña). Paratypes, 2 ♂♂, Dureno, Ecuador, 150 meters, September 23-28, 1977 (Peña).

The most similar species is *Molophilus (Molophilus) perfidus* Alexander, from Argentina and Chile. The chief differences between the two are in the hypopygium, especially the basal dististyles, as described and figured.

### **Molophilus (Molophilus) subretrorsus sp.n.**

Belongs to the *plagiatus* group; general coloration of body dark brownish gray; halteres clear light yellow; legs yellow, tarsi pale brown; wings pale yellow, veins slightly darker; male hypopygium distinctive, especially both dististyles, as described

and figured.

*Male.* Length about 4.5 mm.; wing 5.5 mm.; antenna about 1.3 mm.

Head light gray; palpi black. Antennae brownish black; flagellar segments long-oval, with short dense white setulae, the intermediate segments each with a single very long bristle near base, this about 2.5 times the length of the segment.

Thorax almost uniformly brownish gray, scutellum very slightly paler. Halteres clear light yellow. Legs yellow, tarsi pale brown; fore tibia with a conspicuous sub-basal brown ring. Wings pale yellow, the veins only slightly darker, in the holotype the region of the stigma and cord very slightly tinged with pale brown, scarcely evident in one paratype; veins very pale yellow.

Abdomen dark brown. Male hypopygium (Fig. 25) with both dististyles distinctive. Outer dististyle, *od*, in the axil of the lower arm with a series of about 12 spinoid setae, as shown, the upper arm extended into a long slender spine. Basal dististyle, *bd*, slender, narrowed outwardly into a long slender spine, the surface of the style with a longitudinal row of retrorse spinoid setae that are extended into long hairlike points, as shown in the two subfigures.

*Holotype.* ♂, Cordillera Tanajillas, South Cuenca, Azuay, Ecuador, 3100 meters, March 18-19, 1965 (Peña). Paratopotypes, one male, on pin with holotype; one further male on separate pin.

The present fly is unusually distinct in details of structure of the male hypopygium, including both dististyles, particularly the outer style. No other similar species is known to me.