

## Records and descriptions of Tipulidae from tropical America (Diptera). Part IV.

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(With 19 figures)

The preceding part under this general title was published in the *Revista de Entomologia*, vol. 12: 322-337; July 1941. In this report I am presenting descriptions of new genera and species and records of distribution of unusually interesting species from Ecuador collected by Messrs. David B. Laddey and William Clarke-MacIntyre who have added most materially to our knowledge of the insect fauna of this still little known republic. The distributional records are all from the vicinity of Mount Abitagua in the Oriente of Ecuador where the material was collected by MacIntyre and assistants. An account of Abitagua and many other stations in Ecuador where entomological collections have been made is given in the very fine paper by F. Martin Brown (A Gazetteer of Entomological Stations in Ecuador. *Ann. Ent. Soc. America*, 34: 809-851, 10 maps; December 1941) which must long remain a prime source of information on this subject. Some further notes on Abitagua are supplied by the writer in a paper still in press at the date of this writing (*Ann. Ent. Soc. America*, 35; 1942). Together with very many other entomologists interested in the vast insect fauna of Ecuador I express my deepest thanks to Messrs. Laddey and MacIntyre for their untiring efforts to make known this important area. All types are preserved in my personal collection of Tipulidae.

### Records of distribution

*Brachypremna arcuaria* Alexander. — Mayorga Playa, Abitagua, altitude 1100 meters, March 18 — April 13, 1940.

*Tanypremna (Tanypremna) invaripes* Alexander. — Same as last.

*Tanypremna (Tanypremna) pictarella* Alexander. — Altitude 1600 meters, April 9, 1940; 1800 meters, April 15-18, 1940. In all of these specimens the dark wing band before cord is wider than in the holotype, exceeding in diameter the pale band on either side.

*Tanypremna (Pehlkea) pallitarsis* Alexander. — Same data as *T. (T.) invaripes*.

*Tanypremna (Tanypremnella) crystallina* Alexander. — Altitude 1100 meters, July 2, 1940; 1800 meters, April 15, 1940.

*Ozodicera (Ozodicera) trispinifer* Alexander. — Altitude 1100 meters, April 14, 1940.

*Limonia (Limonia) bimucronata* Alexander. — Altitude 1800 meters, April 15, 1940.

*Limonia (Limonia) hyperphallus* Alexander. — Cunibunda, Abitagua, altitude 1100 meters, April 2, 1940.

*Limonia (Dicranomyia) alfaroi* (Alexander). — Abitagua, June 27, 1940.

*Limonia (Rhipidia) annulicornis* (Enderlein). — Cunibunda, 1100 meters, April 7-8, June 27, 1940.

*Limonia (Rhipidia) jubilata* Alexander. — Same data as last.

*Limonia (Rhipidia) myriosticta* Alexander. — Altitude 1800 meters, April 15, 1940.

*Limonia (Neolimnobia) corallina* Alexander. — Same data as last.

*Limonia (Geranomyia) cinereinota* (Alexander). — Cunibunda, 1100 meters, April 7-8, 1940.

*Limonia (Geranomyia) hirsutinota* Alexander. — Altitude 1800 meters, April 15, 1940.

*Limonia (Geranomyia) luteimana* Alexander. — Altitude 1600 meters, April 9, 1940; 1800 meters, April 15, 1940.

*Limonia (Geranomyia) umbricolor* Alexander. — Mayorga Playa, altitude 1100 meters, April 12-13, 1940.

*Helius (Helius) ineptus* Alexander. — Cunibunda, Abitagua, altitude 1100 meters, March 22, 1940.

*Epiphragma (Epiphragma) oxyphallus* Alexander. — Altitude 1100 meters, July 2, 1940; 1800 meters, April 15-18, 1940.

*Epiphragma (Epiphragma) subsolatrix* Alexander. — Same data as last.

*Hexatoma (Eriocera) perversa* Alexander. — Altitude 1800 meters, April 15-18, 1940.

*Elephantomyia (Elephantomyia) supernumeraria* Alexander. — Altitude 1100 meters, April 12, 1940; 1800 meters, April 15, 1940.

*Lecteria (Lecteria) armillaris* (Fabricius). — Mayorga Playa, altitude 1100 meters, March 18, April 12-13, June 27, 1940.

*Teucholabis (Teucholabis) atripennis* Alexander. — Altitude 1100 meters, March 21-28, 1940.

*Teucholabis (Teucholabis) longispina* Alexander. — Altitude 1100 meters, March 22, 1940.

## Descriptions of new species

### *Limonia (Dicranomyia) pietatis*, sp. n.

General coloration of mesonotum black, the praescutum and scutum almost uniformly so; antennae black throughout; halteres and legs blackened; wings with a strong blackish tinge, the oval stigma still darker;  $Sc_1$  ending just beyond origin of  $Rs$ ,  $Sc_2$  some distance from its tip; cell  $1st\ M_2$  long, subequal in length to vein  $M_{1-2}$  beyond it; male hypopygium with the dorsal dististyle a strongly curved sickle, the tip obtuse; ventral dististyle large and fleshy, the rostral prolongation short, triangular, with

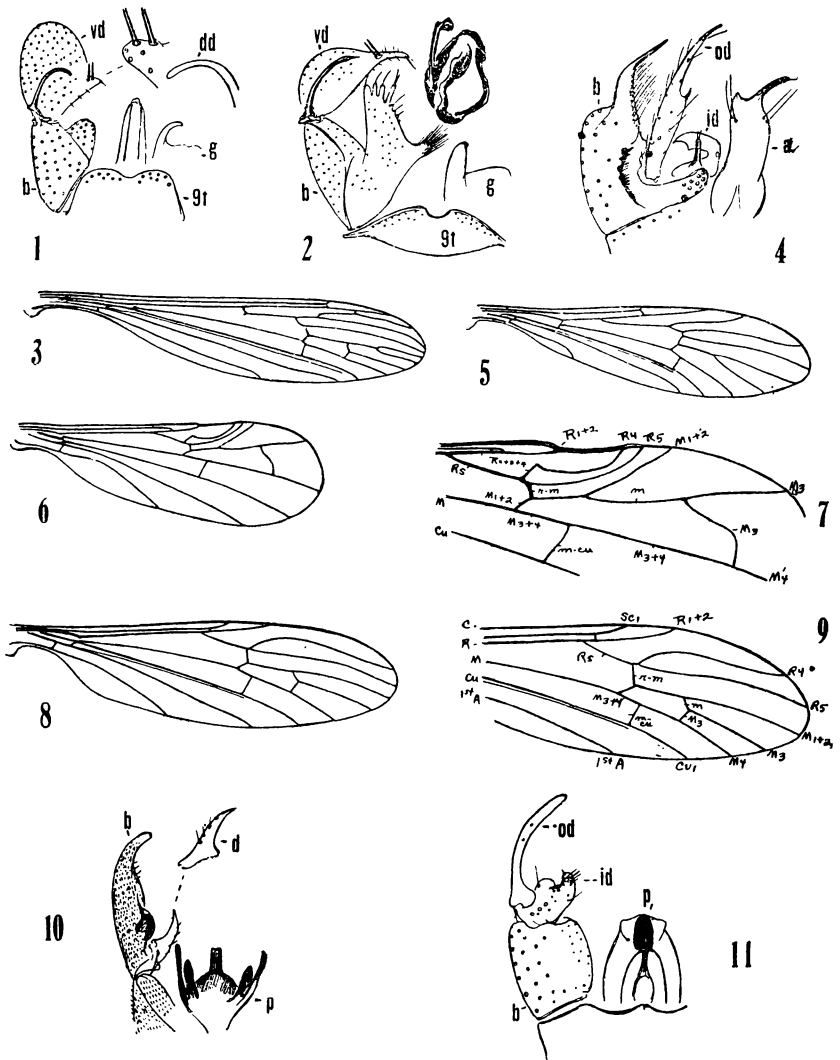


Fig. 1. *Limonia (Dicranomyia) pietatis*, sp. n., male hypopygium. — Fig. 2. *Limonia (Rhipidia) tridigitata*, sp. n.; male hypopygium. — Fig. 3. *Austrolimnophila (Austrolimnophila) oroensis*, sp. n., venation. — Fig. 4. *Teucholabis (Teucholabis) denuda*, sp. n.; male hypopygium. — Fig. 5. *Jivaromyia problematica*, gen. et sp. n.; venation. — Fig. 6. *Quechuamyia phantasma*, gen. et sp. n.; venation; male sex. — Fig. 7. Details of venation of same. — Fig. 8. Venation of same; female sex. — Fig. 9. Details of venation of same. — Fig. 10. *Jivaromyia problematica*, gen. et sp. n.; male hypopygium. — Fig. 11. *Quechuamyia phantasma*, gen. et sp. n.; male hypopygium. — (Explanation of symbols: *a*, aedeagus; *b*, basistyle; *d*, dististyle; *dd*, dorsal dististyle; *g*, gonapophysis; *id*, inner dististyle; *od*, outer dististyle; *p*, phallosome; *vd*, ventral dististyle). — (Venation: *C*, Costa; *Cu*, Cubitus; *M*, Media; *m*, medial crossvein; *m-cu*, medial-cubital crossvein; *R*, Radius; *r-m*, radial-medial crossvein; *Rs*, Radial sector; *Sc*, Subcosta).

two slightly separated spines; gonapophyses with the mesal-apical lobe slender, gently curved.

Male. — Length about 5.5 mm.; wing, 6 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments oval, the outer ones more elongate, especially the terminal segment which is about one-half longer than the penultimate; verticils of more basal segments elongate, on outer segments shorter and weaker. Head black; anterior vertex reduced to a narrow strip.

Pronotum and mesonotum blackened, the praescutum and scutum almost uniformly so; scutellum reddish brown, the central portion more blackened; mediotergite dark brown. Pleura and pleurotergite chiefly dark brown, the dorsopleural membrane and meral region darkened. Halteres blackened, relatively long. Legs with the coxae brownish testaceous, the fore pair slightly darker; trochanters yellow; remainder of legs brownish black. Wings with a strong blackish tinge, cell *Sc* and the oval stigma still darker brown; veins brown. Venation: *Sc*<sub>1</sub> ending just beyond origin of *Rs*, *Sc*<sub>2</sub> some distance from its tip, about as far before origin of *Rs* as *Sc*<sub>1</sub> is beyond this point; free tip of *Sc*<sub>2</sub> and *R*<sub>2</sub> pale, in transverse alignment; cell *1st M*<sub>2</sub> long, subequal to vein *M*<sub>1-2</sub> beyond it; *m-cu* at fork of *M*; cell *2nd A* moderately wide.

Abdominal tergites brownish black; basal sternites obscure yellow, the outer segments darker; hypopygium brownish black. Male hypopygium (Fig. 1) with the tergite relatively large, the caudal margin shallowly emarginate; lateral lobes broad and obtusely rounded. Dorsal dististyle a strongly curved sickle, the tip obtuse. Ventral dististyle relatively large and fleshy, the rostral prolongation correspondingly short and obtuse, blunt-triangular; the two rostral spines about equal in length to the prolongation, slightly separated at their bases. Gonapophyses with mesal-apical lobe slender, gently curved.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 14, 1941 (L a d d e y).

Superficially the present fly is most like *Limonia (Dicranomyia) malitiosa* Alexander and other dark colored species but in the structure of the male hypopygium it is entirely distinct, being somewhat more like *L. (D.) labecula* Alexander, an entirely different fly.

*Limonia (Rhipidia) tridigitata*, sp. n.

Mesonotum obscure yellow, conspicuously patterned with brown and black including three praescutal stripes; antennae (male) bipectinate, with at least eight two-branched segments, the first flagellar segment simply produced; thoracic pleura yellow with a conspicuous black longitudinal stripe; halteres black; wings

almost uniformly suffused with black, very restrictedly patterned with pale in the subcostal field; a restricted darker pattern in the subcostal field, along cord and the outer end of cell *1st M*<sub>2</sub>; *m-cu* shortly beyond fork of *M*; male hypopygium with two relatively short rostral spines; basistyle with ventromesal lobe conspicuously provided with lobes and lobules.

*Male*. — Length about 5.5 mm.; wing, 5.4 mm.; antenna about 1.9 mm.

Rostrum and palpi black. Antennae of moderate length, black, the pedicels of the more proximal segments a little paler; first flagellar segment simply produced, the apical pedicel subequal in length to the segment; second segment with two branches that are nearly as long as the segment itself; succeeding seven segments each with two elongate branches, the longest (about flagellar segments six and seven) nearly twice the segments; branch of antepenultimate segment shorter, apparently with a single branch only; penultimate segment with a single much reduced branch that is only about one-fourth the length of the segment; terminal segment longer, simple, swollen on basal half. Head sooty black on anterior vertex, more grayish black behind, with a median T-shaped blackened area on posterior vertex; anterior vertex of moderate width, subequal to diameter of scape.

Pronotum obscure brownish yellow, variegated with black. Mesonotal praescutum obscure yellow or buffy yellow, with three conspicuous brown stripes, the median one broad, insensibly split by a capillary pale vitta; lateral stripes narrow, their anterior ends bent mesad and becoming confluent with the median stripe, isolating the posterior interspaces; posterior sclerites of notum brownish black, the median region of scutum and a capillary vitta on scutellum pale yellow, the latter bordered on either side by a black spot. Pleura yellow with a conspicuous black longitudinal stripe extending from the cervical region to the abdomen, passing beneath the halteres; pleural sclerites and membrane above this stripe obscure brownish yellow, the ventral pleurites and all coxae clear light yellow. Halteres short, black, the extreme base of stem yellow. Legs with coxae as described above; trochanters a trifle more obscure yellow; remainder of legs broken. Wings with a very strong blackish tinge, very restrictedly patterned with darker and pale; pale areas limited to three very small spots in the subcostal field, the first at arculus, the third shortly before origin of *Rs*; prearcular field a trifle paler than the ground; the darker areas include the very extensive costal interspaces, stigma, and seams

along cord and outer end of cell *1st M*<sub>2</sub>; veins brownish black, with long conspicuous trichia. Venation: *Sc* of moderate length, *Sc*<sub>1</sub> ending about opposite midlength of *Rs*, *Sc*<sub>2</sub> at its tip; free tip of *Sc*<sub>2</sub> and *R*<sub>2</sub> in transverse alignment; cell *1st M*<sub>2</sub> rectangular; *m-cu* a short distance beyond fork of *M*.

Abdominal tergites brownish black, the lateral and caudal borders narrowly more blackened; sternites yellow, the incisures narrowly but conspicuously black; hypopygium black. Male hypopygium (Fig. 2) with the tergite, *9t*, transverse, the caudal margin with a low U-shaped median notch. Basistyle, *b*, unusually narrow, the ventromesal lobe very large and conspicuous, expanded outwardly, the more caudal portion with three slender fingerlike lobes, each tipped with a single strong yellow bristle; cephalic angle of lobe produced into a larger and stouter lobe that is abundantly tufted with long delicate yellow setae. Dorsal dististyle a gently curved black rod, its tip an acute spine. Ventral dististyle, *vd*, an oval structure that narrows directly into the elongate rostrum; rostral spines two, placed close together near base of rostrum, relatively short, directed backward. Gonapophyses, *g*, with mesal-apical lobe straight, the tip obtuse or but slightly produced. What appear to represent developments of the anal tube, *at*, appear as a group of blackened rods, about as figured.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 14, 1941 (L a d d e y).

The most similar regional species are *Limonia (Rhipidia) sprucei* Alexander and *L. (R.) vafra* Alexander, which differ very conspicuously in the structure of the male hypopygium.

*Austrolimnophila (Austrolimnophila) oroensis*, sp. n.

General coloration of mesonotum dark brown, unpatterned or virtually so; pleura paler; halteres unusually long, brownish black; legs brownish black, including the tarsi; wings brownish subhyaline, restrictedly patterned with brown; *Rs* angulated and short-spurred at origin; *R*<sub>2-3-4</sub> shorter than *R*<sub>1-2</sub>; *m-cu* a short distance beyond fork of *M*; abdominal segments dark brown, ringed with yellow.

F e m a l e. — Length about 9 mm.; wing, 9.5 mm.

Rostrum dark brown, palpi black. Antennae brownish black throughout; flagellar segments cylindrical, with long verticils, the longest ones distributed in a unilateral series. Head brown; anterior vertex narrow.

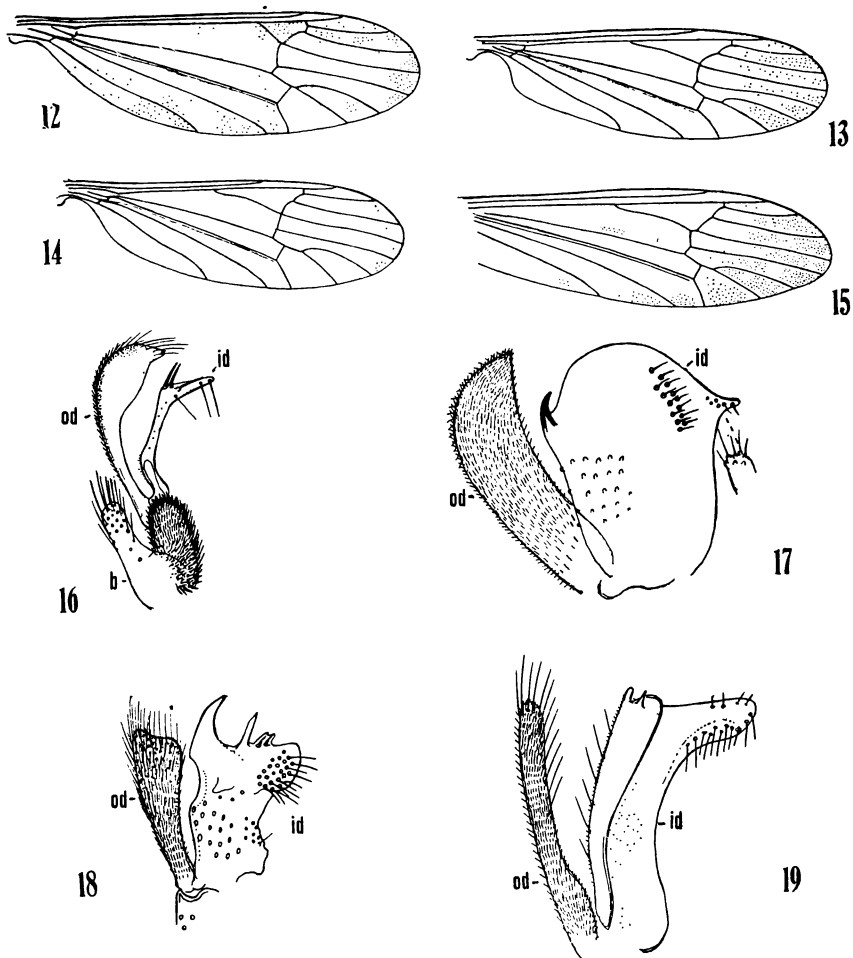


Fig. 12. *Cryptolabis (Cryptolabis) jubilata*, sp. n.; venation. — Fig. 13. *Cryptolabis (Cryptolabis) monacantha*, sp. n.; venation. — Fig. 14. *Cryptolabis (Cryptolabis) laddeyi*, sp. n.; venation. — Fig. 15. *Cryptolabis (Cryptolabis) sordidipes*, sp. n.; venation. — Fig. 16. *Cryptolabis (Cryptolabis) jubilata*, sp. n.; male hypopygium. — Fig. 17. *Cryptolabis (Cryptolabis) monacantha*, sp. n.; male hypopygium. — Fig. 18. *Cryptolabis (Cryptolabis) laddeyi*, sp. n.; male hypopygium. — Fig. 19. *Cryptolabis (Cryptolabis) sordidipes*, sp. n.; male hypopygium. — (Explanation of symbols: *b*, basistyle; *id*, inner dististyle; *od*, outer dististyle).

Pronotum and mesonotum almost uniformly dark brown, the praescutum and scutum unpatterned; mediotergite more testaceous brown with a capillary dark brown median vitta. Pleura obscure yellow, the propleura, dorsopleural membrane and pleurotergite darker. Halteres unusually long and slender, brownish black. Legs with the coxae and trochanters testaceous yellow, the fore pair somewhat darker; remainder of legs brownish black, the femoral bases restrictedly paler; claws small, simple. Wings (Fig. 3)

brownish subhyaline, with a spotted brown pattern that is restricted to the vicinity of the veins; cells *C* and *Sc* more yellowish brown, virtually unpatterned; the brown areas are arranged as follows: At *h*; arculus; origin of *Rs*; cord and outer end of cell *1st M*<sub>2</sub>; fork of *Sc*, continued caudad across fork of *R*<sub>2-3-4</sub>; *R*<sub>2</sub>, continued caudad into cell *R*<sub>3</sub>; fork of *M*<sub>1-2</sub>; marginal spots on veins *R*<sub>1-2</sub>, *R*<sub>3</sub>, *R*<sub>4</sub>, *M*<sub>3</sub>, *M*<sub>4</sub>, *Cu*<sub>1</sub> and *2nd A*, very reduced to lacking on veins *R*<sub>5</sub>, *M*<sub>1</sub>, *M*<sub>2</sub> and *1st A*; a large circular brown spot on vein *M* at near one-fourth its length; veins dark brown. Venation: *Rs* angulated and short-spurred at origin; *R*<sub>2-3-4</sub> shorter than *R*<sub>1-2</sub>; *m-cu* about one-half to one-third its length beyond fork of *M*; cell *1st M*<sub>2</sub> gently widened outwardly; cell *2nd A* moderately wide.

Abdominal tergites dark brown, the caudal portions of the segments restrictedly pale; sternites more extensively yellow, the segments ringed with brown; genital segment darkened; ovipositor with valves yellowish horn color, strongly upcurved.

Habitat: Ecuador (El Oro).

Holotype, Morro Morro, altitude 1000 meters, July 16, 1941 (Laddey).

*Austrolimnophila (Austrolimnophila) oroensis* is very different from the other species so far discovered in the northern Andes, being more generally similar to rather numerous forms in southeastern Brazil. It is well-distinguished by the coloration of the body, legs and wings, and by the details of venation.

*Teucholabis (Teucholabis) denuda*, sp. n.

General coloration black, including the head, the surface extensively opaque; halteres with stem blackened, knob yellow; legs black, the femoral bases restrictedly more brightened; wings with a strong blackish tinge, the wing-tip and a vague seam along cord a little darker than the ground; *Sc* relatively long, *Sc*<sub>1</sub> ending about opposite two-thirds *Rs*; sternal armature of male abdomen weak, sparse and scattered; male hypopygium with apical blade of basistyle broad-based, the mesal edge with a fringe of long setae; outer dististyle acute at apex, with a small acute spine at near midlength.

Male. — Length about 6 mm.; wing, 5.3 mm.

Rostrum black, elongate, exceeding the remainder of head; palpi black. Antennae black throughout; flagellar segments oval. Head dull black.

Pronotum black. Anterior lateral pretergites restrictedly yellow. Mesonotal praescutum polished black, the lateral portions



weakly pruinose, the humeral region restrictedly brightened; posterior sclerites of notum polished black. Pleura black, the surface relatively dull and opaque. Halteres with stem blackened, knob yellow. Legs with coxae and trochanters brownish black; remainder of legs black, the femoral bases restrictedly more brightened. Wings with a strong blackish tinge, the tip and a vague seam along cord a little darker than the ground; stigma long-oval, brown; veins brown. Costal fringe relatively long and dense. Venation:  $Sc$  relatively long,  $Sc_1$  ending about opposite two-thirds  $Rs$ ,  $Sc_2$  some distance from its tip, about opposite one-third  $Rs$ ; branches of  $Rs$  nearly parallel to one another for most of their lengths, thence feebly divergent; cell  $1st M_2$  shorter than any of the veins beyond it;  $m-cu$  a short distance beyond the fork of  $M$ .

Abdomen black, the membranes slightly paler. Sternal armature of segments five and six unusually weak, sparse and scattered. Male hypopygium (Fig. 4) with the apical blade of basistyle,  $b$ , broad-based, terminating in a long slender black spine, the mesal edge of the blade with a fringe of long setae that are nearly as long as the apical spine itself; a conspicuous blackened flange on face of style. Outer dististyle,  $od$ , a stout darkened rod, the mesal face at near midlength bearing a single acute spine beyond which point the style gradually narrows, terminating in a long spine. Inner dististyle,  $id$ , as figured. Aedeagus,  $a$ , dark-colored, flattened, terminating in a relatively slender blackened point.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 20, 1941 (L a d d e y).

*Teucholabis (Teucholabis) denuda* is generally similar to species such as *T. (T.) longisetosa* Alexander but has the male hypopygium entirely different, more as in *T. (T.) laterospinosa* Alexander and allied forms.

#### *Jivaromyia*, gen. nov.

Wings (Fig. 5) with  $R_2$  lacking; four radial branches ( $R_{1-2}$ ,  $R_3$ ,  $R_4$  and  $R_5$ ) reach wing margin; all veins elongated and extending generally parallel to one another;  $R_{4-5}$  present as an elongate element, exceeding  $r-m$ ; basal section of  $R_5$  about one-half  $r-m$ ;  $Sc_2$  at tip of  $Sc_1$ ; three branches of media reach the wing margin; cell  $M_2$  open by atrophy of basal section of  $M_3$ ;  $m-cu$  more than its own length beyond fork of  $M$ ;  $Cu_2$  present as a strong element to beyond the level of  $m-cu$ ; anterior arculus

preserved, the prearcular field elongate with the prearcular crossveins, including *h*, far before the arculus so the cells are unusually long. Male hypopygium (Fig. 10) with the posterior border of tergite bearing combs of spinous setae as in *Lipophleps* (subgenus of *Gonomyia*); basistyle, *b*, long-produced; dististyle, *d*, subbasal in position, small and simple.

Genotype. — *Jivaromyia problematica*, sp. n. (Neotropical: Ecuador).

Despite the loss of legs and antennae I have no hesitancy in proposing a new generic group for the peculiar crane-fly described herewith. The structure of the male hypopygium is somewhat as in certain species of *Molophilus* and *Gonomyia* and the fly seems unquestionably to be Eriopterine. The venation, especially the presence of four radial branches, with  $R_2$  atrophied, cell  $R_3$  sessile, and  $Sc_2$  at the tip of  $Sc_1$ , together with the great development of the prearcular field, furnishes strong characters for the recognition of the group.

*Jivaromyia problematica*, sp. n.

Size small (wing, 3.5 mm.); general coloration black; wings strongly blackened; male hypopygium with the small simple dististyle placed near the base of the basistyle.

Male. — Length about 3 mm.; wing, 3.5 mm.

Rostrum, palpi and basal segments of antennae black. Head black; anterior vertex very wide, the eyes correspondingly small.

Thorax uniformly black; vestiture of mesonotal praescutum short and sparse. Halteres relatively long, black throughout. Legs with the coxae and trochanters dark brown; remainder of legs broken. Wings (Fig. 5) uniformly blackened, without stigma or other pattern; veins darker than the ground. Costal fringe relatively long and conspicuous; no macrotrichia on *Rs*; anterior branch of latter almost without trichia; remaining veins beyond cord with regular series of trichia for virtually their entire lengths. Venation: As described under the generic definition.

Abdomen, including hypopygium, uniformly black. Male hypopygium (Fig. 10) with what appears to represent the tergite bent backward in the unique slide mount, fringed with long coarse spinous setae (not figured). Basistyle, *b*, a stout curved hornlike lobe, gradually narrowed and incurved to the narrowly obtuse glabrous point, the remainder of style with scattered long coarse setae and abundant shorter setulae; mesal face of style above the point of insertion of the dististyle with a flattened oval dusky lobe or flange. Dististyle, *d*, a simple small sclerotized blade or horn, narrowed to the acute tip, the outer margin with a series of

about six pale setae. Phallosomic mass compact, the gonapophyses unequally bifid.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 20, 1941 (L a d d e y).

The very remarkable fly herewith defined seems to fall closest to *Gonomyia* Meigen yet is very different, especially in the three branched radial sector with a long element  $R_{4-5}$ . Superficially the fly much resembles certain small dark-winged species of *Helius* occurring in the same general region.

### *Quechuamyia*, gen. nov.

Strongly dimorphic in the two sexes, especially as shown by the wing shape and venation. Antennae 16-segmented, nearly equal in length in the two sexes; terminal segment subequal in length to or a trifle shorter than the penultimate; scape relatively short, only a little longer than the pedicel; flagellar verticils shorter than the segments. Eyes (male) large, the anterior vertex correspondingly reduced. No tibial spurs; claws simple. Wings of male very obtuse at apex; venation (Figs. 6, 7) entirely different from any other known crane-fly, more suggesting a Syrphid or a Muscoidean fly, especially in the medial field; only two branches of  $R_s$ , vein  $R_3$  lacking as is also  $R_2$ ; cell 1st  $M_2$  of great size, the terminal section of vein  $M_{1-2}$  deflected strongly cephalad, extending generally parallel to veins  $R_4$  and  $R_5$  and thus widely separated from  $M_3$ ; basal section of  $M_3$  strongly sinuous, the cephalic end lying more basad than does the caudal portion;  $m-cu$  about its own length beyond the fork of  $M$ ; two Anal veins. Costal border more or less depressed or broken above the pale stigma, the latter causing the deformation of the radial field, as above described. In the female, the wing shape and venation are more normally Tipulid but the venation still very different from that of *Gnophomyia* and allies (Figs. 8, 9); two branches of  $R_s$  persist,  $R_2$  and  $R_3$  atrophied, cell  $R_2$  at margin very extensive;  $r-m$  at or close to fork of  $R_s$ ; cell 1st  $M_2$  of normal size and shape, both elements closing its outer end ( $m$  and the basal section of  $M_3$ ) short and virtually transverse;  $m-cu$  about in the same relative position as in the male. Male hypopygium (Fig. 11) much as in *Gnophomyia*; two dististyles, both terminal in position, the outer,  $od$ , a simple curved blade; phallosome,  $p$ , a compact mass. Ovipositor with cerci only moderately sclerotized, the tips narrowly obtuse; hypovalvae very short.

Genotype. — *Quechuamyia phantasma*, sp. n. (Neotropical: Ecuador.

The amazing fly herewith described shows the greatest dimorphism in the wing venation of any crane-fly so far defined, the previous greatest extreme having been in the eastern Nearctic *Dactylolabis pemetica* Alexander. There seems to be no possible question of the correct association of the two sexes although they were not taken in copulation. However the general coloration and appearance of the sexes is such that I feel certain that both pertain to a single species. Despite the great difference in venation in the sexes, the veins are entirely homologizable, as shown by the diagrams herewith supplied (Figs. 7, 9). It will be seen that the distortion in the male has been brought about by the cephalization of both branches of the radial sector,  $R_s$ , around the stigma and by the tremendous enlargement of cell  $1st M_2$  and all cells lying distad of it. The structure of the male hypopygium is so similar to that of *Gnophomyia* Osten Sacken that there can be no doubt that this latter is the closest known ally of the present genus. It should be noted that other Eriopterine groups which have lost one branch of  $R_s$  (*Gonomyia* Meigen and its subgenera *Lipophleps* Bergroth and *Ptilostenodes* Alexander; *Teucholabis* Osten Sacken, typical subgenus, as contrasted with the subgenus *Paratropesa* Schiner) that the missing branch is  $R_3$  just as is the case in the present fly. On this basis of homologies, the present group may perhaps better be placed as a subgenus of *Gnophomyia* despite the vast dissimilarity of the two sexes that is not even suggested in any known species of *Gnophomyia*.

*Quechuamyia phantasma*, sp. n.

General coloration pale yellow; wings very dissimilar in venation in the two sexes; wings yellow with two darkened clouds, one along the cord, the other near the bases of the Anal cells.

Male. — Length about 6 mm.; wing, 6-6.5 mm.; antenna about 2.2-2.3 mm.

Female. — Length about 6.5 mm.; wing, 5.7-6.5 mm.; antenna about 2.3-2.4 mm.

Rostrum yellow; palpi short, weakly darkened. Antennae with the scape and pedicel yellow, flagellum black. Head yellow.

Thorax almost uniformly yellow, the notum glabrous. Halteres pale yellow. Legs yellow, the outer tarsal segments weakly darkened. Wings (Figs. 6, 8) uniformly pale yellow in both sexes, restrictedly patterned with pale brown, including a major area on cord and a smaller cloud near bases of the Anal cells, involving primarily cell  $1st A$ ; stigma of male appearing as though stretched taut like a drum-head, with abundant transverse parallel striae; no stigma developed in female; veins yellow, darkened in the clouded areas. Venation (Figs. 7, 9): As described under the

generic definition;  $Sc_2$  removed from tip of  $Sc_1$  in female; cell  $2nd\ A$  wide. In male,  $Sc_1$  apparently atrophied,  $Sc_2$  entering  $R$  about opposite two-thirds the length of  $Rs$ .

Abdominal segments yellow, their posterior borders a trifle paler. Male hypopygium (Fig. 11) with the outer dististyle, *od*, darkened, not or scarcely narrowed to the subacute tip; inner dististyle, *id*, of somewhat peculiar conformation, as shown. Phallosome, *p*, compact.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, along stream, altitude 1500 meters, July 14, 1941 (Laddey). Allotopotype, female, with the type. Paratopotypes, 1 male, 2 females, July 14-29, 1941 (Laddey). Mr. L a d d e y writes that these flies, with most others taken at Las Pinas, were taken along a stream deep in the forest. He waded up the stream bed, sweeping the flies from vegetation along the banks, making his greatest hauls when the sun was completely obscured by clouds.

The present fly needs no further comparison with any known crane-fly.

*Cryptolabis (Cryptolabis) jubilata*, sp. n.

Size large (wing over 5 mm.); general coloration yellow, the thoracic pleura with a very conspicuous brownish black longitudinal stripe; legs yellow, the tips of femora and tibiae narrowly dark brown; wings pale yellow, restrictedly but conspicuously patterned with dark brown;  $Rs$  short, cell  $R_1$  forming an approximately equilateral triangle; male hypopygium with the outer dististyle a flattened pale clavate blade, the stem narrowed; inner dististyle a dark-colored rod bearing three spines near apex.

M a l e. — Length about 5 mm.; wing, 5.5 mm.

F e m a l e. — Length about 5 mm.; wing, 5.5 mm.

Rostrum testaceous yellow; palpi a trifle darker. Antennae pale yellow, the basal segments more darkened; flagellar segments oval, the outer ones more elongate; verticils long and conspicuous. Head yellow.

Pronotum and mesonotum very pale whitish yellow, variegated only by restricted dark brown areas on the mediotergite; an abundant dense white pubescence on notum, very conspicuous on praescutum. Pleura whitish yellow with a very conspicuous brownish black longitudinal stripe extending from the ventral cervical region, involving the fore coxae, including the dorsal

anepisternum and pteropleurite, ending on the dorsal pleurotergite; this stripe more narrowed or interrupted on the propleura and along the suture between the pteropleurite and pleurotergite. Halteres uniformly pale yellow. Legs with the coxae and trochanters pale yellow, the fore coxae darkened, as described; femora and tibiae obscure brownish yellow, the tips narrowly darker brown, more abrupt and conspicuous in the female; basal segments of tarsi yellowish white, the outer segments more darkened; legs conspicuously hairy. Wings (Fig. 12) very pale yellow, restrictedly but conspicuously patterned with dark brown, including areas at arculus; along anterior cord and at stigma, the two latter areas united behind at *r-m*, thence continued across wing; restricted marginal areas on vein  $R_5$  to  $Cu_1$  inclusive; veins yellow, conspicuously darkened in the patterned areas. Macrotrichia of cells abundant, occupying most of wing especially beyond the cord and in Anal field, more extensive in female than in male. Venation: *Rs* short, cell  $R_1$  nearly an equilateral triangle; *m-cu* shortly before fork of  $M_{3-4}$ .

Abdomen brown, the bases of the segments paler, the outer segments more uniformly pale. Male hypopygium (Fig. 16) with the basistyle, *b*, produced into a darkened cylindrical lobe and a more mesal oval cushion, the latter densely set with abundant black setae and spinous bristles. Outer dististyle, *od*, a flattened pale clavate blade, the stem narrow, the outer margin with abundant setae that are longer and more conspicuous at and near apex. Inner dististyle, *id*, slender, darkened, just before apex with three blackened spines; ventral margin near apex with three setae of unusual length.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 14, 1941 (L a d d e y). Allotopotype, female.

*Cryptolabis (Cryptolabis) jubilata* is readily told by its large size, conspicuous wing pattern, and especially by the distinctive structure of the male hypopygium. It is most similar to species such as *C. (C.) diversipes* Alexander, *C. (C.) invaripes* Alexander and *C. (C.) varipes* Alexander, yet amply distinct.

*Cryptolabis (Cryptolabis) monacantha*, sp. n.

General coloration of thorax yellow, the praescutum with three dark brown stripes; scutal lobes heavily blackened; pleura with a broad brownish black dorsal stripe; femora obscure yellow, the tips weakly darkened; wings with a weak brownish tinge, the prearcular and costal fields more yellow; *Rs* elongate; male

hypopygium with the outer dististyle a flattened pale cultrate blade; inner dististyle an even larger blade, strongly flattened, the outer margin with a single strong blackened spine, aedeagus long and stout, very strongly convoluted.

Male. — Length about 4 mm.; wing, 4.5 mm.

Female. — Length about 4.5 mm.; wing, 5 mm.

Rostrum obscure yellow; palpi brown. Antennae black throughout; basal segments short and crowded, outer segments elongate, all flagellar segments with very long, conspicuous verticils. Head obscure brownish yellow.

Pronotum yellow, darkened laterally. Mesonotal praescutum testaceous yellow with three dark brown stripes, the median one somewhat paler behind; scutum testaceous yellow medially, the lobes conspicuously brownish black; scutellum darkened; mediotergite obscure yellow, the central portion restrictedly darkened. Pleura obscure yellow or testaceous yellow, with a broad brownish black dorsolongitudinal stripe; a much less distinct lower stripe involves the ventral sternopleurite and meron. Halteres dusky, the base of stem narrowly yellow. Legs with coxae testaceous yellow; trochanters yellow; femora obscure yellow, the tips weakly darkened; tibiae testaceous, their tips vaguely darker; tarsi brownish black; legs conspicuously hairy. Wings (Fig. 13) with a weak brownish tinge, especially distinct beyond cord; prearcular and costal fields more yellow; veins brown. Macrotrichia of cells beyond cord relatively sparse, especially in male, in female more extensive (represented in figure by stippling), including all cells beyond cord, as well as the outer ends of cells *Cu* and *1st A*. Venation: *Rs* elongate, sinuous;  $R_{2-3-4}$  only moderately precipitous, nearly twice  $R_{2-3}$ .

Abdominal tergites brown; sternites and hypopygium paler. Male hypopygium (Fig. 17) with the outer dististyle, *od*, a flattened cultrate blade, entirely pale, densely covered with abundant pale setae. Inner dististyle, *id*, an even larger flattened blade, on outer margin with a single strong blackened spine; mesal edge produced into a pale setiferous lobe; face of style with from 12-14 strong spinous setae. Aedeagus dark-colored, long and stout, very strongly convoluted.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 16, 1941 (Laddey). Allotopotype, female, July 20, 1941.

*Cryptolabis (Cryptolabis) monacantha* is quite distinct from all other regional species in the conspicuously patterned mesonotum and in the structure of the male hypopygium.

*Cryptolabis (Cryptolabis) laddeyi*, sp. n.

General coloration of mesonotum very pale yellow, unpatterned; thoracic pleura yellow with a conspicuous brownish black longitudinal stripe; legs of different color patterns, the fore pair, especially the femora, darker; wings pale yellow subhyaline with a scarcely indicated darkening along cord; macrotrichia of cells relatively sparse, restricted to series beyond the cord;  $R_{2-3-4}$  unusually erect;  $R_s$  long; male hypopygium with the outer dististyle a pale flattened blade, more expanded outwardly; aedeagus long, stout, blackened, very strongly convoluted.

Male. — Length about 4 mm.; wing, 4.5 mm.

Female. — Length about 3.8 mm.; wing, 4.2 mm.

Rostrum yellow; palpi infuscated. Antennae weakly infuscated, especially the scape and pedicel, the flagellum paler. Head obscure brownish yellow.

Pronotum yellow. Mesonotal praescutum, scutum, scutellum and mediotergite uniform very pale yellow. Pleura yellow with a conspicuous brownish black dorsolongitudinal stripe extending from the cervical region to the pleurotergite. Halteres yellow, the stem darker. Legs with the coxae and trochanters pale yellow; legs broken but apparently with the fore pair differently colored from the remainder; what appear to represent the fore femora blackened, the remaining femora yellow with the tips rather narrowly dark brown; the apparent fore tibia black, the tarsi brownish black; remaining tibiae and basitarsi yellow, the tips narrowly darkened; remainder of tarsi dark brown. Wings (Fig. 14) pale yellowish subhyaline; veins pale brown, yellower at wing-base and in costal field; veins along cord a little darker to produce a narrow and indistinct band. Macrotrichia of cells relatively sparse, a little more numerous in female than in male (as figured, trichia represented by stippling). Venation:  $Sc$  relatively short,  $Sc_1$  ending a short distance beyond midlength of the long  $R_s$ ;  $R_{2-3-4}$  very erect and precipitous, about in transverse alignment with remainder of anterior cord.



Abdominal tergites dark brown; sternites obscure brownish yellow. Male hypopygium (Fig. 18) with the outer dististyle, *od*, a pale flattened blade, more expanded outwardly. Inner dististyle, *id*, of irregular conformation, as shown. Aedeagus long, stout, blackened, very strongly convoluted.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 20, 1941 (L a d d e y). Allotopotype, female, pinned with type.

I am very pleased to name this distinct *Cryptolabis* in honor of the collector, Mr. David B. Ladd e y, to whom we are greatly indebted for a vast increase in our knowledge of the insects of western and southern Ecuador. The species is very distinct from other known members of the genus, differing especially in the venation and structure of the male hypopygium.

*Cryptolabis (Cryptolabis) sordidipes*, sp. n.

General coloration pale yellow, the thoracic pleura with a conspicuous blackened dorsolongitudinal stripe; legs dark brown; wings with a weak brownish tinge, the cord narrowly seamed with slightly darker brown; male hypopygium with the outer dististyle slender; inner dististyle of irregular conformation, at apex produced laterad into a long beak or flange.

Male. — Length about 5 mm.; wing, 5.5 mm.

Rostrum and palpi brown. Antennae dark brown throughout. Head pale yellow.

Pronotum and mesonotum uniformly pale yellow, the praescutum unmarked; scutal lobes a trifle darkened behind; scutellum yellow. Pleura yellow, with a very conspicuous black dorsolongitudinal stripe extending from the cervical region to the abdomen, passing beneath the wings, including the dorsal pteropleurite and ventral pleurotergite. Halteres pale. Legs with the coxae and trochanters yellow; remainder of legs dark brown; terminal tarsal segments black. Wings (Fig. 15) with a weak brown tinge, unpatterned except for a darker brown seam along cord, more distinct on anterior cord; veins pale, brown in the patterned areas. Macrotrichia of cells relatively abundant, as shown by the stippling in figure. Venation:  $R_{2-3-4}$  suberect, longer than  $R_{2-3}$ ; *m-cu* beyond midlength of  $M_{3-4}$ .

Abdominal tergites dark brown; sternites and hypopygium yellow. Male hypopygium (Fig. 19) with the outer dististyle, *od*,

slender. Inner dististyle, *id*, of irregular conformation, as shown; at apex produced laterad into a long beak or flange.

Habitat: Ecuador (El Oro).

Holotype, male, Las Pinas, Morro Morro, altitude 1500 meters, July 14, 1941 (L a d d e y).

*Cryptolabis (Cryptolabis) sordidipes* is most like *C. (C.) laddeyi*, sp. n., differing especially in the pattern of the legs and wings and in the very distinctive structure of the male hypopygium.

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