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STUDIES ON THE CRANE-FLIES OF MEXICO

PART II

Order Diptera, Superfamily Tipuloidea

BY

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STUDIES ON THE CRANE-FLIES OF MEXICO.

PART II.

(Order Diptera, Superfamily Tipuloidea).

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The present paper is a continuation of the studies outlined in part I of this series of papers (Annals Ent. Soc. America, 18: 341 - 362; 1925). As before, the species discussed were all included in very large and important series of crane-flies that were collected and sent to me for determination by my friend, Dr. Alfons Dampf, State Entomologist of Mexico. A few brief notes on certain additional *Mexican Biocenosis* (M.B.) and *Mexican Fauna* (M. F.) numbers are given herewith:

Hacienda San Francisco, near *Córdoba*: Swept from the walls of a passage way, cut three to four meters deep across an uncultivated area covered with woods and bushes, the perpendicular walls of the pass overgrown with small ferns and other plants. M.F. 335, 490, etc.

Barranca of the Rio San Antonio, near *Córdoba*, altitude 870 meters, swept from ferns and other plants beneath overhanging trees. The Rio consists of small clear ponds connected by faint water-courses with very stony beds. *Isocoenosis* to M. B. 73 (see Part I, p. 341). M. B. 102.

Cerro de Hongos: Southern prolongation of the Desierto mountain range; swept from grass in open pine forest at an altitude of from 3500 to 3700 meters. M. B. 117.

Ajusco: The highest and most easterly part of the mountain chain south of Mexico City, of which the Desierto forms the western part. Dense *Abies* forest, altitude 3500 meters, swept from weeds along the course of a small brooklet.—*Rhaphidolabis (Plectromyia) tergata* sp.n. In pine forests between 3500 and 4100 meters.—*Tipula oreomyzoides* sp.n.

I express my deepest thanks to Dr. Dampf for the privilege of studying this splendid series of Mexican Tipulidae, the types of which are retained in my collection through the kindness of the collector.

*Contribution from the Entomological Laboratory of the Massachusetts Agricultural College.

Limonia Meigen.

Limonia fissilis sp. n.

General coloration brown, the pleura with a conspicuous longitudinal black stripe; rostrum and antennae black throughout; wings with a dusky tinge, the stigma darker; *Sc* and *Rs* long; male hypopygium complicated in structure.

Male. Length about 4.8 mm; wing, 5 mm.

Rostrum and palpi black. Antennae black, the flagellar segments oval. Head dark brown.

Mesonotal praescutum dark brown laterally and more broadly so medially behind, the remainder of the disk more reddish brown; scutal lobes dark brown, the median area and the scutellum more testaceous; postnotum shiny brown. Pleura light brown with a broad black longitudinal stripe extending from the cervical sclerites to the base of the abdomen, passing beneath the root of the halteres; ventral pleurites paler. Halteres dark brown, the base of the stem narrowly paler. Legs with the fore coxae slightly infuscated; remaining coxae and the trochanters yellowish testaceous; femora dark brown, the bases paler; tibiae and tarsi darker brown. Wings (Fig. 1) with a dusky tinge, the stigma oval, darker brown; slightly paler brown clouds at origin of *Rs*, tip of *Sc* and as vague seams along the cord and outer end of cell *1st M*₂; veins dark brown. Venation: *Sc* long, *Sc*₁ extending to opposite two-thirds the length of *Rs*, *Sc*₂ at its tip; *Rs* long, gently arcuated; cell *1st M*₂ large, widened distally; *m-cu* close to the fork of *M*.

Abdominal tergites dark brown, the sternites vaguely bicolorous, the bases being paler than the tips. Male hypopygium (Fig. 12) with the ninth tergite (t) nearly straight across the caudal margin, with a large patch of setae on either side. Basistyle (b) relatively large, the ventro-mesal lobe very large and complicated in structure; on its outer side near base bearing a small, densely hairy, finger-like lobule; lobe dilated outwardly, the inner margin before apex dilated into a ledge that is microscopically setulose; apex of lobe terminating in a small conical papilla. Dorsal dististyle (dd) boomerang-shaped. Ventral dististyle (vd) very complex, the rostral prolongation large. Phallosome (p) forming a large central mass.

Holotype, ♂, Tres Valles, Vera Cruz, September 26, 1924; in hotel (A. M. Dampf).

Rhipidia Meigen

Rhipidia (Rhipidia) multifida sp. n.

Male with ten branched flagellar segments; flagellum bicolorous; thorax anteriorly obscure yellow, the posterior sclerites of the notum and pleura darkened; all tarsi infuscated; wings tinged with dusky, with three additional smaller dark spots and inconspicuous seams along the cord; *m-cu* before the fork of *M*; male hypopygium with the dorsal dististyle long and slender, strongly curved near midlength.

Male. Length about 5 mm.; wing, 5.8 mm.

Rostrum and palpi black. Antennae with the scapal segments black; basal enlargements of the flagellar segments and the branches black, the elongate pedicel of the individual segments whitish; ten branched flagellar segments, the longest branch about three times the length of the segment; first flagellar segment with a conically produced apical projection. Head dark brownish gray. Eyes (σ^7) almost touching, the anterior vertex being reduced to a narrow strip.

Pronotum dark brown. Mesonotal praescutum obscure yellow, with a brown median stripe that is slightly interrupted near midlength; lateral stripes very short and paler in color; scutum entirely dark brown; scutellum and postnotum slightly paler brown. Pleura obscure yellow, the posterior pleurites (pteropleurite, meron and all sclerites caudad of them) infuscated. Halteres obscure yellow, the knobs infuscated. Legs with the fore coxae obscure yellow; middle and hind coxae dark brown; trochanters brownish testaceous; femora brown, the bases somewhat paler; tibiae and tarsi brown, the terminal tarsal segments brownish black. Wings (Fig. 2) with a strong dusky tinge, the stigma oval, slightly darker brown, the outer end darker than the remainder and appearing as a seam at *r*; small brown clouds at origin of *Rs* and tip of *Sc*; very narrow and vague dusky seams along cord and outer end of cell *1st M*₂; prearcular cells pale; veins dark brown. Venation: *Sc* relatively short, *Sc*₁ ending just before midlength of *Rs*, *Sc*₂ at its tip; *Rs* long, weakly angulated at origin; *m-cu* shortly before the fork of *M*; *h* apparently lacking.

Abdominal tergites dark brown; sternites obscure yellow, the caudal margins of the segments narrowly ringed with brownish black. Male hypopygium (Fig. 13) having the ninth tergite with a deep U-shaped notch caudally, the lateral lobes conspicuous, fringed with powerful spinous bristles. Basistyle (b) relatively small, the ventro-mesal lobe narrowed outwardly, provided with numerous tubercles that bear conspicuous setae, some of which are exceedingly elongate. Dorsal dististyle (dd) long and slender, at midlength bent at about a right angle, near the apex suddenly narrowed into a long, acute, blackened spine. Ventral dististyle (vd) fleshy, larger than the basistyle, the rostrum elongate; rostral spines two, the outer one much stouter (its tip broken and total length not certain), the inner spine more slender, setiform. Gonapophyses (g) conspicuously blackened. Aedeagus (a) at apex split into two lobes.

Holotype, σ^7 , Córdoba, September 30, 1924 (A. M. Dampf); M. F. No. 385.

Rhipidia (*Arhipidia*) **agglomerata** sp. n.

Male. Length 4.5—4.7 mm; wing, 6.2—6.3 mm.

Closely allied to *R. (A.) multiguttata* Alexander, of Guatemala, to which species it runs by means of the author's key to the New World species of *Rhipidia* (Bull. Brooklyn Ent. Soc., 8: 7-8; 1912). The present species differs as follows:

Head brownish gray. Mesonotal praescutum rich reddish brown in front, the three brownish black stripes indicated behind, crossing the suture and suffusing the scutal lobes; scutellum pruinose; postnotal mediotergite baso-medially brownish black. Ventral brown pleural stripe broader and darker, suffusing the basal halves of the middle and posterior coxae. Legs with the femora obscure yellow, and tips a little clearer yellow but the segments without distinct darker sub-terminal rings. Wings with the brown dots in the cells of the wings relatively few in number, tending to mass into irregular blotches. Venation: *Sc*₁ ending opposite or beyond midlength of *Rs*.

Holotype, σ^7 , Córdoba, Rio San Antonio, after sunset, September 30, 1924 (A. M. Dampf); M. F. 385.

Paratopotypes, 2 σ^7 σ^7 .

The hypopygial details in these two species are very similar to one another. The same general type is found not only in other species of *Arhipidia*, but in the typical subgenus (*R. longispina* Alexander.) One of the paratypes shows a remarkable deformity of the male hypopygium, the dististyles of the right side being duplicated; the basistyle of this side is larger than usual. The gonapophyses and aedeagus likewise appear to be asymmetrically repeated.

Helius St. Fargeau.

Helius quadrifidus sp. n.

Allied to *H. albitarsis* (O. S.); size small (wing, σ^7 , 4 mm.); wings with a dusky tinge, veins *R*₄₊₅ and *M*₁₊₂ very extensively fused, obliterating *r-m* and giving the appearance of four veins issuing from cell *1st M*₂.

Male. Length, 4 mm; wing, 4 mm.

Rostrum and palpi black. Antennae black. Head black.

Thorax dark brown, the mesopleura paler brown. Halteres dark brown. Legs with the coxae and trochanters dark brown; femora and tibiae black, the extreme bases of the former somewhat paler; tarsi black, the end of the basitarsus and all the remaining tarsal segments except the last pure white, clothed with snowy white setae. Wings (Fig. 3) with a dusky tinge, the oval stigma somewhat darker; veins dark brown. Venation: *Sc*₁ ending opposite three-fourths the length of *Rs*, *Sc*₂ at its tip; *Rs* nearly straight; *R*₂₊₃ sinuous; *R*₄₊₅ very extensively fused with *M*₁₊₂ to form the cephalic margin of cell *1st M*₂, giving the appearance of four veins issuing from the cell; basal deflection of *R*₄₊₅ short; cell *1st M*₂ very large; *m-cu* shortly beyond midlength of the cell.

Abdomen black, the basal sternites paler; hypopygium black.

Holotype, σ^7 , At light on train between La Favorita and Tapachula, State of Chiapas, June 14, 1925 (A. M. Dampf); M. F. No. 558.

Orimarga Osten Sacken.**Orimarga dampfi** sp. n.

General coloration gray, the mesonotal praescutum with a median brown stripe; thoracic pleura with a conspicuous silvery white stripe; legs pale brown; wings with a pale grayish tinge, the base whitish; no macrorichiae on distal section of vein M_4 .

Male. Length, 7.5–8 mm.; wing, 5.5 mm.

Female. Length about 8.5 mm.; wing, 6–6.2 mm.

Rostrum and palpi brownish black. Antennae dark brown, pruinose; flagellar segments globular to short-oval. Head light gray.

Mesonotum dark gray, the praescutum with a median brown stripe, the extreme lateral margins of the sclerite pale. Pleura brownish gray, with a conspicuous silvery white stripe extending from behind the fore coxa, across the dorsal edge of the sternopleurite, ending above the posterior coxa. Halteres short, pale yellow. Legs with the coxae brownish testaceous, the trochanters obscure yellowish brown; femora pale brown, the remainder of the legs somewhat darker brown, the tips of the individual segments narrowly darker, the terminal tarsal segments more uniformly darkened. Wings (Fig. 4) with a very pale gray tinge, the prearcular region whitish; veins pale brown. Macrotrichiae on veins rather numerous, there being about 20 on the distal section of vein M_3 , about 24 on the distal section of R_{2+3} ; no macrotrichiae on M_4 . Venation: Sc ending opposite one-third the length of R_s , Sc_2 at its extreme tip; R_s gently angulated at origin; r about one and one-half times its length from the tip of R_1 and about its length beyond the fork of R_s ; r near midlength of the basal section of R_{4+5} ; M_4 a little more than one-half the distal section of M_3 ; $m-cu$ oblique, near midlength of R_s .

Abdomen elongate, dark grayish brown.

Holotype, ♂, Vera Cruz, November 10, 1923 (A. M. Dampf).

Allotopotype, ♀.

Paratopotypes, 30 ♂ ♀.

This interesting species is named in honor of the collector, Dr. Alfons Dampf, to whom we are indebted for much of our knowledge of the crane-flies of Mexico.

Erioptera Meigen.**Erioptera** (Mesocyphona) **venustipes** sp. n.

Belongs to the *dulcis* group; head variegated; fore and middle femora each with three broad black rings; posterior femora black with a narrow yellow subterminal ring; tips of the tibiae narrowly brownish black.

Female. Length about 3.5 mm.; wing, 4.8 mm.

Rostrum and palpi black. Antennae with the scapal segments brownish black, the basal flagellar segments pale yellow, the terminal

segments passing into pale brown. Head dark brown, the orbits narrowly but conspicuously yellowish.

Lateral pretergites narrowly pale sulphur-yellow. Mesonotal praescutum brownish gray with two conspicuous dark brown stripes that are subequal in width to the space separating them, these dark stripes continued caudad onto the scutal lobes; lateral margins of the praescutum passing into light brown, the extreme lateral edge dark brown; pseudosutural foveae pale; scutellum with the caudal margin broadly yellow. Pleura dark brown and silvery, alternated, the dark brown including the dorsal half of the dorso-pleural region; a conspicuous stripe extending from and including the fore coxa, passing above the halteres to the postnotum; a narrow ventral stripe extending from the sternopleurite passing above the middle coxa and below the halteres to the abdomen; a conspicuous sulphur-yellow stripe occupies the ventral portion of the dorso-pleural membrane, extending from above the fore coxa to the wing-root; the silvery stripes remaining are two in number, the dorsal one narrowed in front, widening behind and including the base of the halteres; the ventral silvery stripe includes the broad meron and the katepisternum. Halteres white, the knobs infuscated. Legs with the fore coxae dark brown; middle and hind coxae pale, the apices of each with a dark spot; trochanters pale; fore and middle femora yellow, each with three conspicuous brownish black annuli that are much more extensive than the ground-color, the first pre-medial, the second, a little wider, post-medial, the third broadest, subapical; posterior femora entirely brownish black except for a conspicuous yellowish white ring far before the tip and the extreme apex of the segment which is pale; tibiae yellowish white, the tips narrowly brownish black; two basal segments of tarsi yellowish white, the tips and the remainder of the tarsal segments dark brown. Wings with a brown suffusion, more intense apically and in the radial field; basal half of cells C and Sc more yellowish; prearcular cells dark; disk with twenty large white spots arranged about as in the other members of the *dulcis* group, including spots at h , Sc_2 , Sc_1 , along the cord and fork of M_{1+2} ; a series of nine marginal spots between veins R_1 and $1st A$; the remaining spots are located at arculus, origin of R_s , on R_s just before the fork; on M_{1+2} shortly beyond m ; and two areas along vein $1st A$, one near the base, the second near midlength of the vein; anal angle restrictedly pale; veins brown, in the pale areas whitish; vein R largely black, R_1 and Cu_1 largely yellow. Venation: Cell $1st M_2$ open by the atrophy of the outer deflection of M_3 .

Abdominal tergites brown, the lateral margins of the segments narrowly blackened; sternites more yellowish brown, with numerous brown setigerous punctures.

Holotype, ♀, Coscomatepec, altitude 1580 meters, flying over the surface of the Rio Tlacuapan, a swift-flowing stream with sandy bottom and very clear water, November 29, 1924 (A. M. Dampf); M. F. No. 463.

Paratopotype, ♀; M. F. No. 461.

E. venustipes belongs to the *dulcis* group of the subgenus, which now includes *dulcis* Osten Sacken, *eiseni* Alexander, *needhami* Alexander, and the present species.

Gonomyia Meigen.

Gonomyia (*Gonomyia*) *remota* sp. n.

Belongs to the *subcinerea* group; antennal scape largely yellow; rostrum black; head yellow with a dark spot on vertex; pleura yellow with two dark brown stripes; wings with *Sc* short, *Sc*₁ ending far before the origin of *Rs*, *Sc*₂ lying detached, some distance distad of *Sc*₁; abdominal tergites dark brown, with conspicuous caudo-lateral yellow triangles.

Sex? Length about 3.8 mm.; wing, 4.6 mm.

Rostrum and palpi black. Antennal scape conspicuously yellow with vague darker markings; flagellum dark brown; flagellar segments oval, passing into elongate-oval. Head light yellow, the center of the vertex with a dark brown spot.

Pronotum light sulphur yellow. Lateral pretergites similar. Mesonotal praescutum brown with three nearly confluent darker brown stripes, the surface weakly pruinose; lateral margins of sclerite and the humeral triangle obscure brownish yellow; pseudosutural foveae elongate, reddish brown; scutum obscure yellow, the lobes extensively dark brown, confluent across the suture with the lateral praescutal stripes; scutellum testaceous yellow; postnotal mediotergite yellow, darkened posteriorly. Pleura yellow, with two conspicuous dark brown stripes, the dorsal one extending from the cervical sclerites, passing above the root of the halteres and including the posterior margin of the postnotum; ventral stripe including the stenopleurite and meron. Halteres slender, dark-colored. Legs with the coxae and trochanters light yellow; remainder of legs dark brown. Wings (Fig. 5) with a faint brown tinge, the stigma slightly darker; veins darker brown. Venation: *Sc* very short for a member of the *subcinerea* group, *Sc*₁ ending a distance before the origin of *Rs* that is nearly as long as the latter; the detached *Sc*₂ lies considerably beyond the end of *Sc*₁ at near two-fifths the distance between *Sc*₁ and the origin of *Rs*; *Rs* strongly arcuated, about equal to the slightly less arcuated *R*₂₊₃; basal deflection of *R*₄₊₅ short; *m-cu* immediately beyond the fork of *M*.

Abdominal tergites dark brown; tergites two to four with conspicuous light yellow caudo-lateral triangles; abdomen broken beyond the fourth segment; sternites light yellow.

Holotype, *Sex?*, Barranca of the Rio San Antonio, near Córdoba, altitude 870 meters, November 20, 1924 (A. M. Dampf); M. B. No. 102.

Gonomyia remota departs from the normal characters of the *subcinerea* group in the yellow antennal scape and short subcosta. The detached *Sc*₂ is unique in the genus, as far as known.

Gonomyia (*Lipophleps*) *strigilis* sp. n.

Male. Length about 3.2 mm.; wing, 3.8 mm.

Belongs to the *cinerea* group; most closely allied to *G. (L.) cinerea* (Doane), differing chiefly in the structure of the male hypopygium.

Rostrum and palpi black. Scapal segments of antennae brownish yellow, blackened beneath. Head yellow, the center of the vertex infuscated. Mesonotal praescutum brown, the lateral margins paler; pseudosutural foveae conspicuous, reddish brown; posterior sclerites of mesonotum weakly pruinose; a capillary median vitta extending from the suture to the abdomen. Pleura with the whitish longitudinal stripe fully twice as wide as the brown stripes that enclose it. Wings with the costal margin china-white as in the group. Male hypopygium (Fig. 14) with the ventral or outer dististyle (d) a long blade, the apical half infuscated, on the mesal face at near the basal third with a small, subappressed black spine, the margins of the style not otherwise armed; intermediate dististyle a short blackened spine, narrowed to the acute apex; dorsal or inner style a pale fleshy lobe, the caudal margin produced caudad into a blackened spine.

Holotype, ♂, Between Coscomatepec and Tomatlan, altitude nearly 1500 meters, swept from the train, from grass and bushes, November 30, 1924 (A. M. Dampf); M. F. No. 466.

The chief differences between the present species and *G. cinerea* are the small spine on the ventral dististyle and the short, heavily blackened intermediate dististyle.

Gonomyia (*Lipophleps*) *latistyla* sp. n.

Belongs to the *pleuralis* group; size small (wing, ♂, less than 3.5 mm.); male hypopygium with the dististyle appearing as a flattened blade, the lateral apical angle produced into a small spinous lobe, the apex of the style with numerous setae and a conical spine.

Male. Length about 3.5 mm.; wing, 3.2-3.3 mm.

Rostrum and palpi black. Antennal scape obscure orange; flagellum black. Head pale orange-yellow.

Praescutum pale brown, the lateral margins broadly light yellow, margined internally by a narrow dark brown line; scutal lobes pale brown; scutellum darker brown; postnotal mediotergite brownish yellow, indistinctly variegated medially with darker. Pleura brown, with a conspicuous white longitudinal stripe extending from the bases of the fore coxae, across the anepisternum and ventral margin of the pteropleurite to the base of the abdomen; this stripe is margined both dorsally and ventrally by a slightly narrower dark brown line; sterno-

pleurite and meron pale. Halteres pale brown, the knobs a little infuscated. Legs with the coxae pale, the apical half of the fore coxa dark brown; femora brown, the tips a little darker; remainder of legs dark brown. Wings tinged with dusky, the oval stigma dark brown; the region before and beyond the stigma paler; base of wing and costal region slightly more yellowish; veins pale, the cord darker. Venation: *Sc* short, *Sc*₁ ending a distance before the origin of *Rs* that is about two-thirds the length of the latter vein; *R*₂₊₃ short and arcuated, bending around the stigma; cell 1st *M*₂ strongly narrowed at proximal end; *m-cu* shortly before fork of *M*.

Abdomen dark brown. Male hypopygium (Fig. 15) of the general type of *G. (L.) pleuralis* (Will.); chitinized spines at apex of basistyle (b) shorter, the longer slender, curved, the tip acute, the base not heavily chitinized; the shorter spine is very small and pale throughout. Dististyle (d) a broad flattened blade, the outer apical angle produced into a small spinous lobe, the terminal surface of the style with numerous setae and a conspicuous conical spine at the inner apical angle; outer margin of style with a pale flange.

Holotype, ♂, Vera Cruz, Mexico, November 10, 1923 (A. M. Dampf).

Paratopotype, ♂; *paratype*, ♂, Tempisque, Costa Rica, January 18, 1921 (A. Alfaro).

Gonomyia (Lipophleps) *spinistyla* sp. n.

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

Belongs to the *pleuralis* group; most closely allied to *G. (L.) latistyla* sp. n., differing especially in the structure of the male hypopygium.

Mesonotum rich reddish brown, the scutal lobes darker; median region of scutum yellow with a narrow dusky vitta that extends caudad onto the median area of the scutellum, the latter broadly light yellow behind; postnotum dark at base, the remainder more yellowish. Pleural stripe creamy-white. Abdomen with the disk of the segments pale, the lateral margins broadly darker. Male hypopygium (Fig. 16) with the apical spine of basistyle (b) relatively short and stout, cylindrical, the tip suddenly narrowed into an acute point; ventral fleshy lobe of basistyle moderately stout; the second chitinized spine of the basistyle is apparently lacking in the species. Dististyle (d) pale, the outer margin armed with an acute black spine, the apex of the style beyond this spine narrowed and provided with erect setae, the two apical ones much larger. Phallosome asymmetrical, as figured.

Holotype, ♂, At light on train, between La Favorita and Tapachula, State of Chiapas, June 14, 1925 (A. M. Dampf); M. F. No. 558.

Gonomyia (Lipophleps) *bifida* sp. n.

Male. Length about 4 mm.; wing, 3.6 mm.

Female. Length about 4.5 mm.; wing, 4 mm.

Belongs to the *pleuralis* group; most closely allied to *G. (L.) recurvata* Alex.

Rostrum and palpi black. Basal antennal segments orange, this coloration including the first segment of flagellum; remainder of organ dark brown. Head light yellow, the center of the vertex broadly infuscated.

Pronotum sulphur-yellow. Mesonotal praescutum rich reddish brown, the lateral margin narrowly light yellow, the color margined internally by a narrow brownish black line that ends before the cephalic end of the sclerite which remains of a rich reddish brown; a median dark stripe that is better indicated posteriorly; scutal lobes reddish brown, the median area broadly pale with a capillary brown median vitta that passes caudad onto the testaceous yellow scutellum; postnotum pale, dark at the cephalic portion, the caudal end slightly darkened. Pleura light yellow with two narrow brownish black stripes, the space between light yellow and a little wider; dorso-pleural area more chestnut brown.

Abdominal tergites obscure yellow, the caudal and lateral margins of the segments darker, each segment with a narrow, dark, longitudinal median stripe that is more expanded anteriorly. Male hypopygium (Fig. 17) with the outer angle of the basistyle (b) prolonged into a gently curved acicular spine; outer fleshy lobe moderately stout. Dististyle (d) profoundly bifid, the lateral arm a slender, gently curved spine, the inner arm paler, the apex terminating in two powerful bristles, the surface of this arm with numerous smaller setae; at extreme base of dististyle a tiny chitinized peg or spine. Gonapophyses (g) with the blades elongate, acicular, divergent; ventral gonapophyses (g) very short, about as broad as long, the apex terminating in two small, divergent spines.

Holotype, ♂, Tospan, near Córdoba, swept from walls of a way, December 15, 1925 (A. M. Dampf); M. F. No. 490.

Allotopotype, ♂, with the type and pinned on same pin.

Paratype, ♀, San Francisco, near Córdoba, December 10, 1924 (A. M. Dampf); M. F. 474.

Gonomyia (Lipophleps) *haploa* sp. n.

Male. Length about 3.3 mm.; wing, 3.7 mm.

Belongs to the *manca* group; resembling *G. (L.) inermis* Alex., differing especially in the structure of the male hypopygium.

Rostrum obscure orange; palpi black. Antennae black throughout, the verticils very elongate. Head black, the center of the vertex with an orange-yellow spot.

Pronotum dark. Mesonotal praescutum shiny, rather dark brown, the pretergites conspicuously pale whitish yellow, this coloration ex-

tending to the wing-root; pseudosutural foveae shiny brown; scutellum broadly yellow, with a dark brown median basal spot. Pleura dusky, sparsely pruinose, with a broad white longitudinal stripe extending from the fore coxa, beneath the root of the halteres, to the abdomen. Halteres with the knobs dark. Legs with the coxae and trochanters brownish testaceous; remainder of legs darker brown. Wings with a grayish tinge, the stigma lacking; veins dark brown.

Abdominal tergites dark brown. Male hypopygium (Fig. 18) with the basistyle (b) long and slender, narrowed distally, the surface with setae, including a longitudinal series of stouter setae along the mesal face. Dististyle (d) single, simple, entirely pale, appearing as a direct apical prolongation of the basistyle, the apex with two powerful setae, the surface with about six smaller setae, the outer surface with abundant erect setulae. Phallosome (p) pale, asymmetrical, the longest element (aedeagus, a) long and slender, projecting far beyond the other elements of the hypopygium, the gonapophyses small and only weakly chitinized.

Holotype, ♂, Barranca of the Rio San Antonio, near Córdoba, altitude 870 meters, November 20, 1924 (A. M. Dampf); M. B. No. 102.

The members of the *manca* group in which the male hypopygium has but a single, entirely fleshy dististyle are: *manca* O.S., *inermis* Alex., *phoroctenia* Alex. and the present form. The species are readily separated from one another by the details of structure of the phallosome.

Teucholabis Osten Sacken.

Teucholabis minuta sp. n.

General coloration yellow, the praescutum with three reddish brown stripes, the scutal lobes darker; pleura yellow with a darker dorsal longitudinal stripe; knobs of halteres dark brown; wings hyaline, the stigma lacking; *Sc* short; cell 2nd R_1 at wing-margin much narrower than cell R_3 .

Male. Length about 3 mm.; wing, 3.1 mm.

Rostrum and palpi dark, the latter slender. Antennae dark brown throughout, the flagellar segments with relatively long verticils. Head light gray.

Pronotum yellow. Mesonotal praescutum sulphur-yellow, with three reddish brown stripes, the median stripe darker anteriorly, the lateral stripes crossing the suture and suffusing the scutal lobes; scutellum yellow; postnotum with the mediotergite infuscate, the posterior third brighter. Pleura whitish yellow, including the pleurotergite, the dorsal sclerites suffused with brown to produce a longitudinal stripe. Halteres testaceous, the knobs dark brown. Legs with the coxae and trochanters yellow; femora obscure yellow, the tips conspicuously though narrowly blackened, the amount subequal on all the

legs; tibiae brownish yellow, the tips passing into black; basal half of basitarsi pale, the remainder of the tarsi passing into black. Wings (Fig. 6) hyaline, the stigma lacking; veins dark brown. Macrotrichiae of veins relatively sparse, there being only three on the distal section of R_{2+3} , widely scattered along the vein. Venation: Sc_1 ending shortly beyond the origin of *Rs*; *r* almost at the tip of R_1 , the latter being about one-third the vein; cell R_3 at wing-margin nearly twice as wide as cell 2nd R_1 ; *m* a trifle shorter than the outer deflection of M_3 .

Abdomen brown, the sternites paler; hypopygium dark brown. Male hypopygium of the general structure of *T. pabulatoria* Alexander, but the short dististyles of different shape, the outer arm not extended into a long point.

Holotype, ♂, Vera Cruz, November 10, 1923 (A. M. Dampf); along margins of a ditch.

T. minuta is the smallest species of the genus yet described. Its nearest ally is *T. pabulatoria* Alexander, of Guatemala.

Pilaria Sintenis.

Pilaria rubella sp. n.

Antennae of male elongate; general coloration of thorax shiny reddish brown; wings with a strong brownish tinge, the oval stigma slightly darker brown.

Male. Length, 7-7.5 mm.; wing, 8-8.8 mm.

Rostrum ferruginous, the terminal segments of the palpi dark brown. Antennae with the scapal segments orange-brown; flagellum brownish black, the segments with a dense erect pubescence, in addition to the elongate verticils. Head with the center of the vertex dark brown, the color passing into reddish brown on the genae.

Thorax shiny reddish brown to ferruginous, without evident darker markings, only the scutal lobes somewhat darker, the pale median area of the scutum continued cephalad across the suture onto the praescutum. Halteres brown, the knobs darker. Legs with the coxae and trochanters reddish brown; femora yellowish brown with darker brown setae; tibiae brown, the tips and the tarsi passing into brownish black. Wings (Fig. 7) with a strong brown tinge, the oval stigma setiferous and slightly darker brown; veins dark brown. Venation: Sc_1 ending about opposite two-thirds the length of *Rs*, Sc_2 at its tip; *r* immediately beyond the fork of R_{2+3} and a little more than twice its length from the tip of R_1 ; R_2 relatively short, arched near midlength; inner ends of cells R_3 , R_5 and 1st M_2 in oblique alignment, cell 1st M_2 lying more basad than the other elements; *m-cu* just before to just beyond midlength of cell 1st M_2 ; cell M_1 longer than its petiole.

Abdominal tergites dark brown, indistinctly variegated with paler; sternites obscure brownish yellow; hypopygium reddish yellow.

Holotype, ♂, Córdoba, Hacienda San Francisco, altitude 900 meters; swept from perpendicular walls of a passage way

that was covered with small ferns and other vegetation; September 13, 1924 (A. M. Dampf); M. F. No. 335.

Paratopotype, ♂.

P. rubella differs from *P. tenuipes* (Say) in the coloration of the thorax and the strongly infumed wings.

Atarba Osten Sacken.

Atarba mexicana sp. n.

General coloration shiny brownish yellow; antennae bicolorous, the flagellar segments black, the apices of the segments narrowly pale yellow; wings with veins *Sc* and *Rs* elongate; cell *1st M*₂ closed; abdomen bicolorous, the basal portion of the segments black, the apical portion broadly brownish yellow.

Male. Length about 4.5 mm.; wing, 6 mm.

Rostrum obscure brownish yellow; palpi black. Antennae elongate, if bent backward extending about to the third abdominal segment; scapal segments dark brown; flagellar segments black, the apex of the segments light yellow, that of the first segment including about one-sixth the total length, of the second and third segments including approximately one-third the length; on the succeeding flagellar segments the amount of yellow becomes gradually less, the terminal four or five segments uniformly dark. Head dark brown.

Mesonotum shiny brownish yellow, without distinct markings. Pleura somewhat more yellowish, the dorso-pleural region darker brown. Halteres obscure yellow, the knobs dark brown. Legs with the coxae and trochanters yellowish testaceous; femora yellow, the tips very narrowly and vaguely darkened; tibiae obscure yellow; tarsi passing into dark brown. Wings (Fig. 8) with a strong brownish yellow tinge, the costal region somewhat brighter yellow, especially in the stigmal region; veins brown, those in the costal region paler, especially *Sc*. Venation: *Sc* long, *Sc*₁ ending beyond four-fifths the length of *Rs*, *Sc*₂ some distance from its tip; *Rs* strongly angulated and weakly spurred at origin; cell *R*₁ at wing-margin nearly three times as wide as cell *R*₃; cell *1st M*₂ closed, rectangular, *m-cu* beyond mid-length.

Abdomen bicolorous, the basal half or less of the segments blackened, the apical portion broadly brownish yellow; hypopygium obscure yellow; sternites somewhat less distinctly bicolorous. Male hypopygium with the aedeagus very elongate, decurved.

Holotype, ♂. Córdoba, near the Rio San Antonio, October 8, 1924 (A. M. Dampf); M. F. No. 401.

Atarba aperta sp. n.

Female. Length about 5 mm.; wing, 5.6 mm.

Generally similar to *A. mexicana* sp. n., differing especially in the venation, trichiation and the coloration of the antennae and abdomen.

Antennae broken near mid-length, if complete extending approximately to the base of the abdomen; flagellar segments uniformly pale brown. Head brown.

Pleura slightly pruinose. Wings (Fig. 9) with cell *1st M*₂ open by the atrophy of the outer deflection of *M*₃; *Sc*₁ shorter than in *mexicana*. Macrotrichiae of wing-veins less abundant than in *mexicana*, the bases of the longitudinal veins largely without trichiae, this glabrous area including the basal fourth of *Sc*, the basal three-fourths of *M* and the basal two-thirds of *Cu*₁. In *mexicana*, the trichiae on *Sc* extend basad almost to arculus; occupy the distal four-fifths of *M*; are much more numerous on the Anal veins, especially *1st A*.

Abdominal tergites dark brown, at most vaguely bicolorous; basal sternites obscure yellow. Genital segment obscure yellow, the valves of the ovipositor horn-yellow.

Holotype, ♀, Heights of Penna Blanca, a mountain chain north of Córdoba, white limestone cliffs in dense forest, swept from sunny places, altitude 1200 meters, December 15, 1924 (A. M. Dampf); M. B. 110.

A Key to the American Species of *Atarba*.

1. *Sc* long, *Sc*₁ ending beyond midlength of the long *Rs*..... 2
Sc short, *Sc*₁ ending approximately opposite the origin of the short *Rs*.... 3
2. Cell *1st M*₂ open; vein *M* with macrotrichiae confined to distal fourth.
(Mexico)..... *aperta* sp. n.
Cell *1st M*₂ closed; vein *M* with macrotrichiae almost to base. (Mexico),
mexicana sp. n.
3. Femora with a brown subapical ring; wings with a vague darker marking
along the cord..... 4
Femora without a subapical ring; wings unmarked, except for the stigma... 5
4. Mesonotum shiny yellow, the praescutum with a brown median stripe,
each scutal lobe with two dark brown spots; wings with a narrow brown
seam along cord and outer end of cell *1st M*₂. (Paraguay), *punctiscuta* Alex.
Mesonotum yellowish, unmarked; wings with a dusky spot on anterior cord.
(Colombia)..... *columbiana* Alex.
5. Antennal flagellum uniformly brownish black. (Colombia),
brunneicornis Alex.
Antennal flagellum bicolorous; (in *megaphallus* very indistinctly so, only
the incisures between the segments being paler)..... 6
6. Flagellar segments dark brown, with both ends very narrowly and indistinctly
pale; male hypopygium with the aedeagus greatly dilated.
(Brazil)..... *megaphallus* Alex.
Flagellar segments with one end broadly pale; male hypopygium with the
aedeagus of moderate size only..... 7
7. Flagellar segments dark brown or black with the apical portion conspicuously
yellow. (British Guiana)..... *cinclicornis* Alex.
Flagellar segments dark brown or black with the basal portion conspicuously
yellow..... 8
8. Femora with the tips narrowly blackened. (Paraguay)..... *fiebrigi* Alex.
Femora uniformly yellowish..... 9
9. Abdominal tergites dull yellow; size larger (wing, ♀, over 5.5 mm.)
(Eastern North America)..... *picticornis* O. S.
Abdominal tergites dark brown; size small (wing, ♀, under 5 mm.) (Peru),
varicornis Alex.

Eriocera Macquart.**Eriocera pallidipes** sp. n.

General coloration brown, the pleura largely black; tips of the tibiae and all but the apices of the tarsi obscure brownish white; wings with a pale brown tinge, the costal region and most of the longitudinal veins clouded with darker brown; *Rs* long, cell *M*₁ lacking.

Male. Length, 12 mm.; wing, 10-10.4 mm.

Female. Length, 14 mm.; wing, 10.2-10.5 mm.

Rostrum and palpi black. Antennae short, the scapal segments obscure brownish yellow; flagellum black, the first segment paler at base; flagellar segments elongate, gradually shortening outwardly. Head dark plumbeous; vertical tubercle small.

Mesonotum brown, the praescutum behind, the scutal lobes and the scutellum more plumbeous. Pleura largely black, the coloration including the postnotal pleurotergite; sternopleurite and meron paling into shiny brownish yellow. Halteres relatively short, the knobs dark brown. Legs with the coxae shiny obscure yellow, the extreme bases of the fore and middle coxae blackened; trochanters yellow; femora obscure yellow, the tips narrowly blackened; tibiae brown, the tips narrowly whitened; tarsi obscure brownish white; the terminal segments passing into brown. Wings (Fig. 10) with a pale brownish tinge, the stigma scarcely indicated, the base, costal region and seams along most of the veins darker brown; veins dark brown. Venation: *Sc*₁ ending about opposite two-thirds *R*₂₊₃, *Sc*₂ just beyond the fork of *Rs*; *Rs* very long, from two to two and one-half times *R*₂₊₃; *r* from one and one-half to twice its own length from the tip of *R*₁ and about twice its length beyond the fork of *R*₂₊₃; cell *M*₁ lacking; cell *1st M*₂ rectangular; *m-cu* about its own length beyond the fork of *M*.

Abdomen brown, with a more or less distinct median dark vitta on the tergites; pleural region darker brown. Male hypopygium relatively small. Ovipositor with the valves long and slender, acute, blackened basally, the tips paler.

Holotype, ♂, Vera Cruz, November 10, 1923 (A. M. Dampf).

Allotopotype, ♀.

Paratopotypes, 6 ♂ ♀; ♂, Laboratorio Howard B. Cross, July, 1924.

E. pallidipes still further eliminates the characters available for separating *Penthoptera* from *Eriocera*.

Rhaphidolabis Osten Sacken.**Rhaphidolabis** (*Plectromyia*) **tergata** sp. n.

Cell *R*₃ sessile; vein *M* very delicate, in alignment with *M*₁₊₂; *m-cu* shortly beyond the fork of *M*; male hypopygium with the tergite conspicuous, the lateral angles produced into ear-like lobes; mesal face of basistyle with a conspicuous pencil of long yellow setae.

Male. Length about 4.5 mm.; wing, 5.3 mm.

Rostrum and palpi black. Antennae relatively short, black throughout; flagellar segments oval. Head dark gray.

Mesonotum discolored; from slight patches of the normal coloration remaining, probably brownish gray, the praescutum presumably striped. Pleura brownish gray. Halteres short, brown, the base of the stem narrowly pale. Legs with the coxae light gray pruinose; trochanters brownish yellow; remainder of legs brown, the femoral bases paler, the terminal tarsal segments passing into dark brown. Wings (Fig. 11) with a pale brownish tinge; stigma vaguely delimited, slightly darker brown; an ill-defined brown cloud on the anterior cord; veins darker brown. Veins *M* and *1st A* very slender and pale. Venation: *Sc*₁ extending to beyond one-third the length of *R*₂₊₃, *Sc*₂ far before the origin of *Rs*, the distance being nearly one-half longer than that portion of *Sc*₁ beyond the origin of *Rs*; *Rs* gently arcuated; *R*₂₊₃ elongate; *R*₂ about equal to *R*_{1+R}₂; *R*₃ a little shorter than *R*₂₊₃, gently arcuated; basal section of *R*₄₊₅ very short, about equal to the basal deflection of *R*₅; *M* in alignment with *M*₁₊₂, both very pale, the latter becoming stronger beyond the fork of *M*₃₊₄; *m-cu* immediately beyond the fork of *M*; cell *M*₄ long and narrow, gently widened outwardly.

Abdomen dark brown, the hypopygium more yellowish brown. Male hypopygium (Fig. 19) with the ninth tergite (t) conspicuous, the caudo-lateral angles produced into ear-like lobes, the surface of the sclerite densely set with setiferous tubercles. Basistyle (b) produced into a slender lateral lobe that is spinous at apex, with a small sessile dorsal lobe that bears a lesser number of spinulae. Mesal face of basistyle with a conspicuous pencil of long yellow setae; slightly more basad of this, an oval cushion densely set with small erect setae. Dististyle (d) broad at base, the apex narrowed, the style extended beyond the apical lobe of the basistyle, the surface with a few large and numerous microscopic setulae. Interbases (i) slender, more or less foot-shaped. Aedeagus (a) broad.

Holotype, ♂, Ajusco, altitude 3500 meters, May 10, 1925 (A. M. Dampf); M. F. No. 549.

Tipula Linnaeus.**Tipula bellardiana** sp. n.

General coloration gray; antennae with the basal flagellar segments bicolorous, black, with the tips paler; head with a narrow brown vitta; praescutum with three clearer gray stripes that are narrowly margined with brown, the median stripe further split by a capillary dark vitta; femora with a vague yellowish subterminal ring; wings variegated whitish subhyaline and brown, including a complete lunate band beyond the cord; tip of *R*₂ atrophied; abdomen obscure yellow, the subterminal segments blackened.

Male. Length, 10-11 mm.; wing, 13-14 mm.

Frontal prolongation of head brown, the nasus slender; palpi darker brown. Antennae relatively short, if bent backward extending about to the root of the haltere; scape and first flagellar segment yellow; intermediate flagellar segments more or less bicolorous, black, with the apex of the segment narrowly and sometimes indistinctly brownish yellow, more extensive on the basal segment, the amount becoming more restricted outwardly, the terminal flagellar segments uniform black; flagellar segments with the basal enlargement moderate in size, the verticils conspicuous. Head gray, the vertex with a median dark stripe.

Mesonotal praescutum yellowish gray with three clearer gray stripes, the median stripe further split medially and margined laterally with brown to form three approximated brown vittae; lateral stripes sometimes poorly indicated, usually appearing as a gray area margined with dark brown, the color crossing the suture onto the scutal lobes; scutal lobes gray, each with the antero-lateral marking just described and a much larger posterior spot that nearly covers the lobe; scutellum gray, the median area somewhat darker; postnotum dark brown, heavily pruinose. Pleura dark gray, indistinctly variegated with paler, this including the dorsal portion of the sternopleurite and most of the pteropleurite and meron; dorso-pleural membrane light yellow. Halteres obscure yellow, the knobs dark brown. Legs with the fore and middle coxae dark gray, the posterior coxae paler; trochanters reddish yellow; femora brown, the tips blackened, this color preceded by a vague obscure yellow ring of approximately equal width; tibiae light brown, gradually passing into brownish black, the tarsi concolorous; all tarsi longer than tibiae. Wings whitish subhyaline, variegated with brown, the stigma darkest; cell *C* infuscated except near the outer end where there is a clear spot; cell *Sc* yellow, alternating with four dark brown markings of slightly greater extent; wing-apex broadly darkened; a lunate brown mark before the cord, extending from the stigma to the wing-margin at *Cu*₁; an irregular pale brown cross-band across cells *R*, *M* and *A*, near two-fifths the length of the former; bases of cells *R* and *M* darkened; the chief pale areas thus remaining include a curved band that completely crosses the wing beyond the cord, including the bases of cells *R*₂, *R*₃ and *R*₅ and almost all of cells *1st M*₂ and *M*₃; a Y-shaped band with the origin of *R*s in the fork of the Y, the two distal pale blotches in cell *Sc* forming the arms; conspicuous pale areas in bases of cells *R* and *M* and including much of the Anal cells. Venation: Distal section of *R*₂ entirely atrophied; petiole of cell *M*₁ about one-half longer than *m*.

Basal abdominal tergites obscure yellow, the subterminal segments passing into dark brown, the segments with the lateral margin narrowly and indistinctly blackened, the mid-dorsal region with a black stripe that becomes broader behind; caudal margins of the segments narrowly ringed with pale; hypopygium reddish brown; sternites brownish yellow with an interrupted brown median vitta, the brown of the individual segments broadest behind, the color interrupted at the base of each segment. Male hypopygium with the ninth tergite large, reddish,

the caudal margin with a deep V-shaped notch, the lateral ears thus formed being very conspicuous, over-shadowing the dististyles. Basistyles very small. Ninth sternite with a U-shaped median notch. Eighth sternite unarmed.

Holotype, ♂, Chapingo, July 23, 1924 (A. M. Dampf); M. F. No. 254.

Paratopotypes, ♂, July 14, 1924, M.F. No. 235; ♂, July 21, 1924, M. F. No. 249; ♂, July 25, 1924, M. F. No. 255; ♂, August 8, 1924, M. F. No. 285; ♂, August 13, 1924, M. F. No. 291.

This interesting species of *Tipula* is named in honor of Professor Luigi Bellardi, pioneer student of the Diptera of Mexico.

Tipula oreomyzoides sp. n.

Antennae 16-segmented, elongate, the flagellar segments black, strongly incised beneath; general coloration of head and thorax gray, the praescutum with four darker gray stripes; wings tinged with brown, longitudinally vittate with whitish subhyaline, this color including cells *1st M*₂ and *R*₅; abdomen yellow, the tergites tri-vittate with brown, the sternites with a median interrupted brown stripe.

Male. Length, 12.5–14 mm.; wing, 15–18.5 mm.; antenna, 7.5–8 mm.

Frontal prolongation of head obscure yellow, the sides with a narrow dark brown line; nasus conspicuous; palpi dark brown. Antennae 16-segmented, elongate, if bent backward extending to opposite mid-length of the abdomen; scape and basal portion of the first flagellar segment obscure yellow, the remainder of the organ black; flagellar segments deeply incised beneath. Head light gray, the center of the vertex a little darker gray.

Mesonotal praescutum light gray with four darker gray stripes, the narrower intermediate pair briefly connected at the cephalic end; scutal lobes gray, each with two darker gray spots; scutellum pale ashy gray; postnotum light gray. Pleura gray, vaguely variegated with darker, especially on the sternopleurite and meron; postnotal pleurotergite whitish gray; dorso-pleural membrane obscure yellow. Halteres pale, the knobs dark brown. Legs with the coxae obscure yellow, the fore coxae slightly pruinose; trochanters yellow; femora brown, paler at base, the tips passing into darker brown; tibiae brown, the tips broadly darker brown; tarsi brownish black; all tarsi longer than tibiae. Wings with a faint brownish tinge, the costal region more yellowish brown; disk of wings with a longitudinal vittate pattern of whitish subhyaline, this including the broad bases of the Anal cells; the narrow base and broader apex of cell *Cu*; bases of cells *R* and *M*; apical third of cell *M*; all of cells *1st M*₂ and *R*₅, and the base of cell *M*₃; longitudinal veins and the cord narrowly seamed with somewhat darker brown.

In a few cases, the wings are still paler than described, with the basal cells almost entirely whitish subhyaline; veins brown, paler in the costal region; obliterative areas including the cord and outer section of M_{3+4} . Venation: Distal section of R_2 pale but complete; cell 1st M_2 irregularly pentagonal; m and petiole of cell M_1 subequal.

Abdomen yellow, the lateral margins of the tergites broadly brown, the line becoming wider behind, on the sixth to eighth segments including the caudal margins of the segments; an interrupted dorso-median stripe, the vitta broadly broken at the posterior margin of each segment, less so at the base; hypopygium yellowish, the apices of the inner dististyles heavily blackened; sternites yellow, the caudal margins of the basal segments narrowly infuscated, on sternites six to eight more extensively so. Male hypopygium very similar in structure to that of *T. moctezumae* Alexander. Ninth tergite with the lateral lobes less conspicuously truncated at apices, the smaller median notch less abrupt. Eighth sternite with a small median liguliform lobe.

Holotype, ♂, Ajusco, altitude 3800 meters, in pine forest, May 10, 1925 (A. M. Dampf).

Paratopotypes, 2 ♂♂, altitude 3500–4100 meters, in pine forest, May 10, 1925. *Paratypes*, 7 ♂♂, Cerro de Hongos, altitude 3500–3700 meters, swept from grass in open pine forest, April 5, 1925 (A. M. Dampf); M. B. No. 117.

T. oreomyzoides is obviously closely allied to *T. moctezumae* Alex. and *T. azteca* Alex., which are likewise Mexican species from the higher mountains near Mexico City. The presence of sixteen antennal segments in *T. oreomyzoides* indicates that the range of antennal segments in *Tipula*, as now known, lies between 13 and 16. The supposed genus *Oreomyza* Pokorný is based upon three species from the higher Alps in which the males have 15-segmented antennae, the females 14-segmented antennae. The genus *Oreomyza* has no validity and must be placed in the synonymy of *Tipula*.

EXPLANATION OF PLATES.

Symbols: a—aeedeagus; b—basistyle; d—dististyle; dd—dorsal dististyle; g—gonapophysis; i—interbasal process; p—phallosome; t—9th tergite; vd—ventral dististyle.

PLATE XI.

- Fig. 1. Wing of *Limonia fissilis* sp. n.
 Fig. 2. Wing of *Rhipidia* (*Rhipidia*) *multifida* sp. n.
 Fig. 3. Wing of *Helius quadrifidus* sp. n.
 Fig. 4. Wing of *Orimarga dampfi* sp. n.
 Fig. 5. Wing of *Gonomyia* (*Gonomyia*) *remota* sp. n.
 Fig. 6. Wing of *Teucholabis minuta* sp. n.
 Fig. 7. Wing of *Pilaria rubella* sp. n.
 Fig. 8. Wing of *Atarba mexicana* sp. n.
 Fig. 9. Wing of *Atarba aperta* sp. n.
 Fig. 10. Wing of *Eriocera pallidipes* sp. n.
 Fig. 11. Wing of *Rhaphidolabis* (*Plectromyia*) *tergata* sp. n.

PLATE XII.

- Fig. 12. Male hypopygium of *Limonia fissilis* sp. n.
 Fig. 13. Male hypopygium of *Rhipida* (*Rhipida*) *multifida* sp. n.
 Fig. 14. Male hypopygium of *Gonomyia* (*Lipophleps*) *strigilis* sp. n.
 Fig. 15. Male hypopygium of *G. (L.) latistyla* sp. n.
 Fig. 16. Male hypopygium of *G. (L.) spinistyla* sp. n.
 Fig. 17. Male hypopygium of *G. (L.) bifida* sp. n.
 Fig. 18. Male hypopygium of *G. (L.) haploa* sp. n.
 Fig. 19. Male hypopygium of *Rhaphidolabis* (*Plectromyia*) *tergata* sp. n.

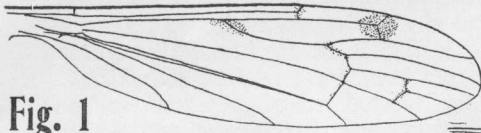


Fig. 1

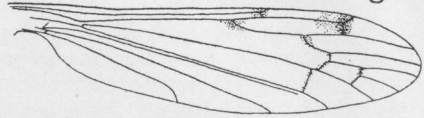


Fig. 2

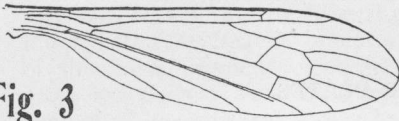


Fig. 3



Fig. 4

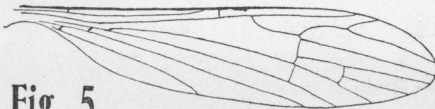


Fig. 5

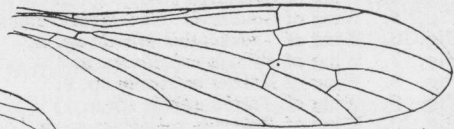


Fig. 6

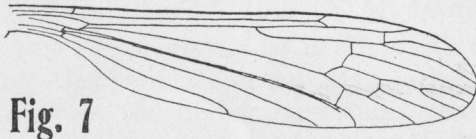


Fig. 7

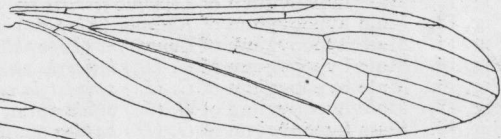


Fig. 8

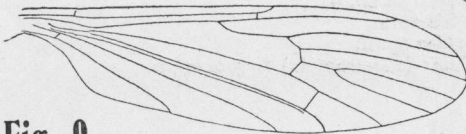


Fig. 9



Fig. 10

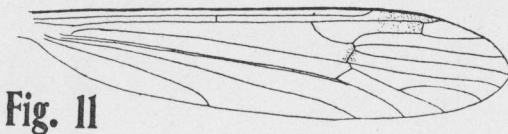


Fig. 11

C. P. Alexander

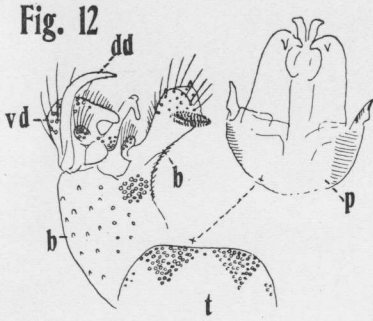


Fig. 12

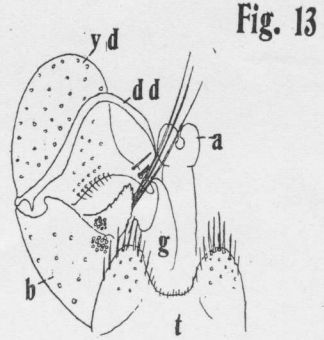


Fig. 13

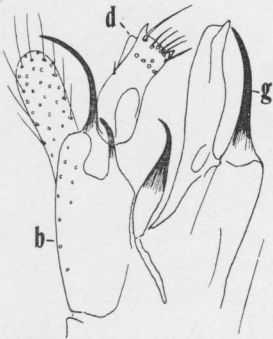


Fig. 15

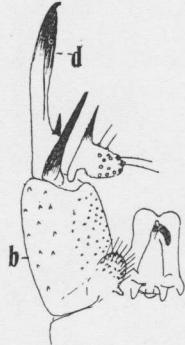


Fig. 14

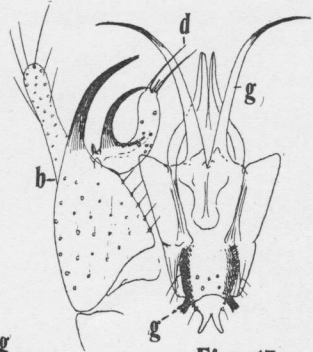


Fig. 17

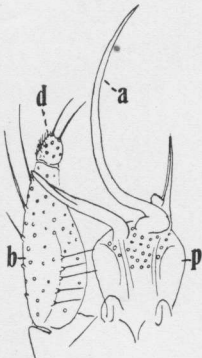


Fig. 18

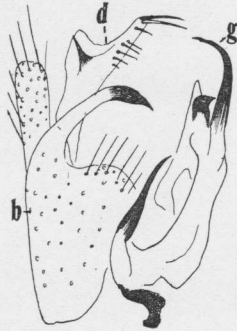


Fig. 16

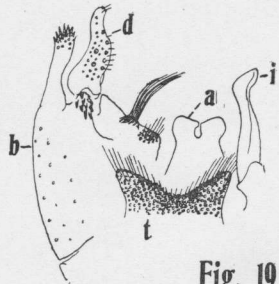


Fig. 19

C. P. Alexander