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## RECORDS AND DESCRIPTIONS OF NEOTROPICAL CRANE-FLIES (TIPULIDAE, DIPTERA), V

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The preceding part under this general title was published in 1928 (Journal N. Y. Entomological Society, 36: 47-59). A considerable proportion of the species discussed at this time are from Chile, collected by PP. Jaffuel and Pirion. One interesting species of *Austrolimnophila* was collected by Doctor Michaelsen in Patagonian Tierra del Fuego and kindly sent to me for determination by Doctor Kröber. The striking new species of *Epi-phragma* was collected in Chiriqui, Panama, by Doctor F. M. Gaige. One species is based in part on the extensive collections made by Parish in British Guiana in 1913. I am very greatly indebted to Doctor Crampton for the gift of certain interesting species of crane-flies that he received from Mrs. Gillott and Mr. Duurvoort. I wish to extend my deepest thanks to all of the above-named entomologists who have aided so materially in the progress of this study. Except where stated to the contrary, the types of the new forms are preserved in my collection.

### Genus *Limonia* Meigen

*Limonia* (*Zelandoglochina*) *setulipennis* new species.

General coloration obscure fulvous, the præscutum margined sublaterally with brown; rostrum short, the labial palpi only a little longer than the labrum; thoracic pleura with a broad brown longitudinal stripe; wings with macrotrichiaë in the distal cells; *Sc* short; male hypopygium with the dorsal dististyle a sickle-shaped rod, the outer margin with appressed denticles; rostral prolongation of the ventral dististyle bearing a single spike-like spine close to its outer end.

Male.—Length (excluding head) about 4.5 mm.; wing 6 mm.

Female.—Length (excluding rostrum) about 5 mm.; wing 5.6 mm.; rostrum alone 0.8 mm.

Rostrum (♀) relatively short, the fronto-clypeus approximately one-half the remainder of the head, the labrum only a little shorter than the labial palpi; maxillary palpi 4-segmented; rostrum and appendages dark brown.

Antennæ moniliform, dark brown throughout, the individual segments oval with a short glabrous apical pedicel, the outer segments more elongate-oval. Head dark brown.

Pronotum dark brown, obscure yellow behind. Mesonotal præscutum obscure fulvous, the sublateral portions of the sclerite broadly dark brown, the usual lateral stripes clearer yellow, the usual interspaces represented by vague narrow dusky lines; scutum yellowish brown, darker near the suture; scutellum brown, margined with testaceous yellow; postnotum brownish yellow. Pleura buffy yellow, with a broad, conspicuous brownish-black longitudinal stripe extending from the propleura across the anepisternum, pteropleurite and ventral pleurotergite, passing immediately below the root of the halteres to the abdomen. Halteres black, the base narrowly but conspicuously yellow. Legs with the coxæ and trochanters light buffy yellow; remainder of legs dark brown, the femoral bases a little brighter. Wings with a dusky tinge, the stigma darker brown; circular brown marks at origin and fork of  $R_s$ ; cord and outer end of cell  $1st M_2$  narrowly seamed with brown; apical cells and outer ends of the Anal cells, especially cell  $1st A$ , darkened; veins dark brown. Conspicuous macrotrichæ in the cells of the wing beyond the cord, including all except the bases of cells  $R_2$ ,  $R_3$ ,  $R_4$ ,  $2nd M_2$ ,  $M_3$  and  $M_4$ . Venation:  $Sc$  short,  $Sc_1$  ending shortly beyond origin of  $R_s$ ,  $Sc_2$  opposite this origin; free tip of  $Sc_2$  and  $R_2$  in alignment; basal section of  $R_{4+5}$  weakly angulated;  $m-cu$  at or just before the fork of  $M$ .

Abdomen dark brown, the hypopygium obscure yellow; basal sternites a little brightened caudally. Male hypopygium with the ninth tergite having a deep U-shaped median notch, the lateral lobes obtuse, with elongate setæ. Ventral dististyle small, fleshy, the rostral prolongation long and stout, with a single spike-like spine close to its outer end. Dorsal dististyle a strongly curved sickle-shaped rod, the outer margin on middle third with appressed denticles. Female with the subterminal segments brownish yellow; ovipositor reddish horn-color, the base of the sternal valves blackened.

Habitat.—Chile.

Holotype, ♂, Concepcion, October, 1927 (Jaffuel & Pirion).

Allotopotype, ♀.

Paratopotype, ♀.

*Limonia (Zelandoglochina) torticornis* new species.

General coloration of thorax yellow, the præscutum with a brown median stripe; dorso-pleural region dark; rostrum very short; maxillary palpi 4-segmented, longer than the rostrum; femora yellow with a dark brown subterminal ring; wings with  $Sc$  relatively long; male hypopygium with the dorsal dististyle lacking; ventral dististyle with the rostral prolongation long and slender, with a rudimentary seta-like spine only.

Male.—Length (excluding rostrum) about 7.5–8 mm.; wing 7.7–8.3 mm.; rostrum about 0.8–0.9 mm.

Female.—Length (excluding rostrum) about 7 mm.; wing about 8 mm.; rostrum about 0.8 mm.

Rostrum only about one-half the length of the antennæ, brownish black, the tip of the labrum pale; maxillary palpi 4-segmented, a little longer than the labial palpi. Antennæ brownish-black throughout; flagellar segments of peculiar shape, the outer face at base a little produced and bearing a group of setæ, the inner face at near midlength slightly produced and provided with a pair of setæ; apical pedicels of the individual segments short. Head dark brown, pruinose, the occipital region paler.

Pronotum brownish yellow. Mesonotal præscutum brownish yellow with a brown median stripe that is divided near the suture, suffusing the scutal lobes; median area of scutum and scutellum whitish; postnotum brown, paler medially at base. Pleura yellow with a brown dorsal stripe extending from the propleura and base of fore coxæ to the postnotum; dorso-pleural region pale. Halteres dark brown, the base of the stem restrictedly pale. Legs with the coxæ yellow, the fore coxæ darkened; trochanters yellow; femora yellow with a conspicuous dark brown subterminal ring that is about twice as wide as the pale apex beyond; tibiæ and tarsi yellow, the terminal segments darkened. Wings with a yellowish ground-color; stigma brown; restricted brown seams arranged as follows:  $Sc_2$ ; origin of  $R_s$ ; along cord and outer end of cell 1st  $M_2$ ; less distinct marginal clouds at the ends of the longitudinal veins; veins dark brown, the costal region paler. Venation:  $Sc$  relatively long,  $Sc_1$  extending to about two-fifths the length of  $R_s$ ,  $Sc_2$  close to its tip;  $R_s$  angulated and, in cases, spurred at origin; free tip of  $Sc_2$  and  $R_2$  pale and in transverse alignment;  $m-cu$  close to the fork of  $M$ .

Abdomen dark brown, the bases of the proximal sternites broadly paler; in cases, the bases of the tergites are paler than the caudal margins; hypopygium obscure yellow. Male hypopygium with the ninth tergite only gently emarginate. Basistyle with the ventromesal lobe extended into a slender finger-like lobule. Ventral dististyle small, the rostral prolongation very long and slender, unarmed or with a weak, seta-like spine only. Dorsal dististyle lacking. Gonapophyses broad, appearing as flattened mitten-shaped structures, the palm truncated across apex. Aedeagus with a laterally directed lobe on either side at apex.

Habitat.—Chile.

Holotype, ♂, Marga-marga, September 10, 1927 (Jaffuel & Pirion).

Allotopotype, ♀.

Paratopotypes, 3 ♂ ♂, 5 ♀ ♀, August 15, 1926 (F. Jaffuel); several ♂ ♀, September 11–23, 1926; paratypes, ♂ ♀, Concepcion, October 10, 1927 (Jaffuel & Pirion).

*Limonia (Zelandoglochina) tenuipalpis* new species.

General coloration of thorax fulvous, the præscutum with a black median stripe; pleura chiefly brownish black, pruinose; rostrum very long; maxil-

lary palpi 2-segmented; antennæ (♂) strongly nodulose; wings with *Sc* short; male hypopygium with the rostral prolongation of the ventral dististyle bearing two long slender spines.

Male.—Length (excluding rostrum) about 4.5–5 mm.; wing 5.5–6 mm.; rostrum about 3–3.2 mm.

Female.—Length (excluding rostrum) about 4.5–5.5 mm.; wing 6–6.8 mm.; rostrum about 3–3.2 mm.

Rostrum unusually long for a member of this subgenus, if bent backward extending about to one-fourth the length of the abdomen, black throughout; maxillary palpi short, 2-segmented; labial palpi extremely long and slender, longer than the antennæ. Antennæ brownish black throughout, strongly nodulose (♂), the individual flagellar segments with the inner face very strongly produced, the outer face less conspicuously so; terminal glabrous pedicels of the segments about one-half the length of the segment; outer segments with the basal enlargements oval, the terminal segment elongate. In the female, the antennæ are shorter, with the moniliform appearance less conspicuous. Head dark brown, the surface pruinose; genæ and occiput sometimes more ochreous.

Pronotum dark brown. Mesonotal præscutum dark reddish fulvous to obscure yellow, with a broad, black median stripe; lateral stripes sometimes vaguely indicated; scutum similar, the mesal portions of the lobes darkened; scutellum and postnotum more testaceous yellow. Pleura chiefly brownish black, the sternopleurite more reddish brown, the surface sparsely pruinose. Halteres with the stem obscure yellow, the knobs dark brown. Legs with the coxæ brownish testaceous; trochanters obscure yellow; femora brownish yellow, brighter basally, the tips darker; tibiæ brown, the tips and the tarsi darker brown. Wings with a grayish tinge, the oval stigma darker brown; very vague and restricted dark seams along the cord, outer end of cell *1st M*<sub>2</sub> and along vein *Cu*; wing-tip almost insensibly darkened; veins brownish black. Venation: *Sc* short, *Sc*<sub>1</sub> ending about opposite the origin of *Rs*, *Sc*<sub>2</sub> at its tip; cell *1st M*<sub>2</sub> subrectangular; *m-cu* close to the fork of *M*.

Abdomen black, the hypopygium obscure yellow; basal sternites a little variegated with obscure yellow. Male hypopygium with the ninth tergite low, the caudal margin subtruncate to very gently emarginate. Basistyle relatively stout, the ventro-mesal lobe large. Ventral dististyle large and fleshy, larger than the basistyle, the rostral prolongation relatively short, provided with two very long gently curved spines that are longer than the prolongation itself. Dorsal dististyle a gently curved black rod, its tip acute. Gonapophyses with the mesal apical angle relatively inconspicuous, a little widened outwardly. Ovipositor with the tergal valves long and slender, only gently upcurved.

Habitat.—Chile.

Holotype, ♂, Marga-marga, September 23, 1927 (Jaffuel & Pirion).

Allotopotype, ♀.

Paratopotypes, numerous ♂ ♀, September 7-23, 1927; *paratypes*, 5 ♂ ♀, Concepcion, October 13, 1927 (Jaffuel & Pirion).

*Limonia (Zelandoglochina) parvispinosa* new species.

General coloration of thorax fulvous, the pleura with a narrow black longitudinal stripe; rostrum elongate; wings with the stigma distinct; *Sc* short; male hypopygium with the ninth tergite only slightly emarginate; rostral prolongation of ventral dististyle bearing two slender spines that are closely approximated at origin.

Male.—Length (excluding rostrum) about 4.8 mm.; wing 6.6 mm.

Female.—Length (excluding rostrum) about 6.5 mm.; wing 7.5 mm.; rostrum about 3.5 mm.

Head of male lost. Rostrum (♀) very long and slender, black throughout; maxillary palpi 2-segmented. Antennæ black throughout, nodulose, the apical pedicels short. Head variegated brown and buffy, the surface a little pruinose.

Thorax light fulvous, with a relatively narrow black longitudinal stripe on the dorsal pleurites, extending from the cervical region to the abdomen; postnotum more or less darkened medially. Halteres dark brown, pale at base. Legs with the coxæ testaceous; trochanters greenish testaceous; remainder of legs brown, the tibiæ and tarsi passing into brownish black. Wings subhyaline, the oval stigma brown, conspicuous; very vague dusky seams along the cord and outer end of cell *1st M*<sub>2</sub>; veins brownish black. Venation: *Sc* short, both *Sc*<sub>1</sub> and *Sc*<sub>2</sub> approximately opposite the origin of *Rs*; *R*<sub>3</sub> deflected rather strongly to the wing-tip, narrowing the cell; cell *1st M*<sub>2</sub> large, rectangular; *m-cu* near the fork of *M*.

Abdomen black, the proximal sternites a little brightened basally; hypopygium obscure yellow, the tips of the ventral dististyles dusky. Male hypopygium with the ninth tergite relatively short, the caudal margin subtruncate or only slightly emarginate. Basistyles relatively short and broad, the ventro-mesal lobe large. Ventral dististyle large and fleshy, much larger than the basistyle, the rostral prolongation relatively short and slender, provided with two slender, slightly unequal spines of relatively small size, placed close together at near midlength of the prolongation. Dorsal dististyle a curved rod, the tip suddenly narrowed into a spine. Gonapophyses with the mesal-apical angle conspicuous, dusky, the extreme tips suddenly narrowed into a minute black point. Ovipositor with the valves long and relatively slender, the tergal valves gently curved.

Habitat.—Chile.

Holotype, ♂, Concepcion, October, 1927 (Jaffuel & Pirion).

Allotopotype, ♀.

Paratype, 1 ♂, Malleco, January, 1928 (A. Pirion).

In its general appearance, *L. (Z.) parvispinosa* is most similar to *L. (Z.) tenuipalpis* new species and *L. (Z.) multinodosa* Alexander, differing from all described species by the combination of elongate rostrum, short *Sc* and the structure of the male hypopygium.

***Limonia (Dicranomyia) alboapicalis* new species.**

General coloration reddish brown, the præscutum with three darker brown stripes; femora pale brown, the tips broadly and conspicuously whitened; wings subhyaline, the stigma and weak seams along the cord and outer end of cell *1st M*<sub>2</sub> brown; abdomen dark brown, the segments conspicuously ringed caudally with obscure yellow; male hypopygium with the spines of the rostral prolongation placed at the apex or nearly so.

Male.—Length about 7 mm.; wing, 8 mm.

Female.—Length about 8 mm.; wing, 9.5 mm.

Rostrum brownish black, about one-third the length of the remainder of the head; palpi brownish black. Antennæ with the basal segment light brown, the remaining segments dark brown with the extreme bases restrictively pale to produce a weak bicolored appearance; flagellar segments oval. Head dark brown, paler beneath and behind.

Pronotum elongate, dark brown above. Mesonotum reddish brown, the præscutum with three darker brown stripes; scutal lobes dark brown; median region of scutum and the scutellum paler; postnotum dark brown, sparsely pruinose. Pleura dark reddish brown, the anepisternum darker; dorso-pleural region chiefly dusky. Halteres elongate, dark brown, the base of the stem narrowly pale yellow. Legs with the coxæ brown, the fore coxæ darker brown; trochanters greenish testaceous; femora pale brown, the bases lighter, darkened outwardly, the tips broadly and conspicuously whitened; tibiæ and tarsi brown, the latter still darker apically. Wings subhyaline, the oval stigma brown; a dusky cloud at fork of *Rs*; narrow and scarcely evident brown seams along the cord and outer end of cell *1st M*<sub>2</sub>; veins pale brown. Venation: *Sc* short, *Sc*<sub>1</sub> ending about opposite the origin of *Rs*, *Sc*<sub>2</sub> a short distance from its tip; *Rs* only feebly arcuated, about one-third longer than the basal section of *R*<sub>4+5</sub>; *m-cu* at the fork of *M*. In the female, *Sc*<sub>1</sub> is slightly longer than in the male.

Abdomen dark brown, the segments ringed caudally with obscure yellow to produce a conspicuous annulated appearance; hypopygium dark, the penultimate segment uniformly pale. Male hypopygium with the ninth tergite narrow but relatively long, the caudal margin with a deep V-shaped median notch. Basistyle with the mesal lobe obtuse. Ventral dististyle a large oval fleshy lobe, the rostral prolongation relatively short and stout, the two conspicuous spines placed close to its outer end; spines subequal, gently curved, the tips acute; outer spine at extreme apex of prolongation, the inner spine a little removed from this tip. Dorsal dististyle curved, narrowed to

the cultriform apex. Gonapophyses broad, the mesal-apical lobe broad-based, gently curved.

Habitat.—Chile.

Holotype, ♂, Perales de Marga-marga, February 23, 1927 (A. Pirion).

Allotopotype, ♀, February 25, 1927 (A. Pirion).

It is possible that the single female specimen of *L. (D.) vernalis* (Philippi) with conspicuous pale abdominal rings should be referred to the present species (Verh. zool.-bot. Ges. Wien. 15: 612-613; 1865).

### Genus *Austrolimnophila* Alexander

*Austrolimnophila michaelsoni* new species.

General coloration grey, the præscutum with three broad rufous stripes, the median one with a shallow anterior split; wings subhyaline, with a relatively heavy brown pattern that is confined to the vicinity of the veins;  $R_{2+3}$  about one-third longer than  $R_3$ ; cell  $M_1$  deep; *m-cu* shortly before mid-length of cell 1st  $M_2$ ; abdominal segments dark rufous brown, the caudal margins grayish.

Female.—Length about 9 mm.; wing, 10.2 mm.

Rostrum obscure ochreous; palpi dark brown. Antennæ brown, the flagellar segments elongate-oval, with verticils that do not exceed the segments in length; antennæ of moderate length only, if bent backward extending about to the wing-root. Anterior vertex light grey, the posterior vertex and occiput more infuscated, leaving the posterior orbits narrowly light grey.

Pronotum grey, the lateral regions of the scutellum more rufous. Mesonotal præscutum light grey with three broad rufous stripes that are nearly confluent behind; median stripe split by a gray line for about the cephalic fifth; lateral stripes crossing the suture and suffusing the scutal lobes; median area of scutum and base of scutellum damaged by the pin; posterior portion of scutellum and the postnotum yellowish brown. Anepisternum light grey, the remainder of the pleura pale ochreous. Halteres relatively elongate, pale yellow, the knobs darker. Legs with the coxæ and trochanters pale; remainder of legs broken. Wings subhyaline, with a relatively heavy brown pattern distributed as follows: A rectangular area at origin of  $R_3$ , including cell  $Sc$ , extending caudad almost to vein  $M$ ; a continuous seam along the cord, extending from the costa to the fork of  $M$ ; similar seams on *m-cu* and the outer end of cell 1st  $M_2$ ; stigma oval; small circular spots at fork of  $M_{1+2}$ , tip of  $R_3$  and extreme apex of wing; veins pale brown. Venation:  $R_2$  about two-thirds  $R_{1+2}$ , the latter subequal to  $R_{2+3+4}$ ;  $R_{2+3}$  about one-third longer than  $R_3$  alone; cell  $M_1$  deep, about four times its petiole;

cell 1st  $M_2$  long and narrow, *m-cu* shortly before midlength. All veins beyond cord nearly straight or weakly sinuous, not deflected strongly caudad at tips.

Abdominal tergites dark rufous brown, the caudal margins of the segments narrowly grayish; sternites similar, the caudal margins more broadly grayish. Ovipositor with the tergal valves slender, rather strongly upcurved; basal shield of sternal valves dark rufous brown, the tips conspicuously yellow.

Habitat.—Patagonia.

Holotype, ♀, Usthuaia Wald, southern Tierra del Fuego, November 15, 1892 (W. Michaelsen).

Type in the Natural History Museum, Hamburg.

Named in honor of the collector, Dr. W. Michaelsen.

### Genus *Epiphragma* Osten Sacken

*Epiphragma gagei* new species.

General coloration dark fulvous brown; halteres dark brown; legs yellow; wings yellow, more brownish yellow posteriorly, variegated with whitish-subhyaline window-like spots.

Male.—Length about 13.5 mm.; wing 14.5 mm.

Rostrum brownish black; basal segments of palpi light brown, the two terminal segments brownish black. Antennæ relatively short, if bent backward ending some distance before the wing-root; scape black; first flagellar segment elongate, dark fulvous; remainder of flagellum brownish black, the segments long-cylindrical, with verticils that are approximately as long as the segments. Head dark brown, the anterior vertex brighter; occipital region weakly corrugated.

Pronotum deep fulvous-brown. Mesonotal præscutum deep fulvous brown, including the usual præscutal stripes; two paired subtriangular black spots near the posterior end of the median stripe, at about their own length before the suture; lateral stripes less evidently darkened; scutum chiefly light brown, the median area behind darker reddish; scutellum dark brown; postnotum brown, variegated with two darker spots before the posterior end. Pleura dark yellowish brown, vaguely variegated with darker. Halteres dark brown, only the extreme base of the stem brightened. Legs with the coxæ brown; trochanters obscure brownish yellow; remainder of legs yellow, unmarked. Wings with a very strong yellow tinge, brighter on the cephalic half, more brownish yellow on the posterior half; anterior cells variegated with yellowish marks, of the radial and posterior cells whitish and very conspicuous; a dark brown blotch in the outer end of cell *R* and across the anterior cord; narrow brown seams on *h* and the supernumerary crossvein; the pale yellow areas in the costal region include extensive markings before and beyond *h*, a narrow area before the origin of *Rs* and an extensive one



surrounding the supernumerary crossvein; the most conspicuous of the fenestrate white spots are as follows: Post-arcular in both cells *R* and *M*; near outer end of cell *R*, connected with a slightly larger spot in cell *M*; center of cell 1st *M*<sub>2</sub>; near base of cells *M*<sub>1</sub>, 2nd *M*<sub>2</sub>, *M*<sub>3</sub> and *M*<sub>4</sub>; two areas near base and two smaller ones near outer end of cell *Cu*; the above white marks are narrowly bordered by dusky; a series of more yellowish marginal spots in the ends of all the cells, largest in cell 1st *A*, there being two in cell 2nd *A*; veins-brown, brighter in the costal region. Venation: Supernumerary crossvein in cell *C* very oblique in position; *Rs* angulated and short-spurred at origin; *m-cu* a little less than its own length before the fork of *M*.

Abdominal tergites dark brown, the sternites brighter.

Habitat.—Panama (Chiriqui).

Holotype, ♂, in a deep cañon about one mile from Boquete, altitude 4700–5000 feet, March 19–27 (F. M. Gaige).

Type in the collection of the University of Michigan.

I take great pleasure in naming this beautiful species of *Epi-phragma* in honor of the collector, Dr. F. M. Gaige.

### Genus *Elephantomyia* Osten Sacken

*Elephantomyia tarsalba* new species.

General coloration black; head and humeral region of the præscutum paler; legs black, the tips of the tarsi snowy-white; wings strongly suffused with blackish, the stigma and costal region still darker.

Male.—Length (excluding rostrum) about 6 mm.; wing, 4 mm.; rostrum, 4.8 mm.

Female.—Length (excluding rostrum) about 5.8 mm.; wing, 4.3 mm.; rostrum, 4 mm.

Described from alcoholic specimens.

Rostrum relatively long and slender, as shown by the measurements. Antennæ dark brown, the second scapal segment a trifle paler; flagellar segments with long conspicuous verticils on all the segments, longer on segments eight to fifteen. Head pale yellowish brown.

Mesonotum dark brown, the lateral and humeral regions of the præscutum more ochreous. Pleura dark brown. Halteres dirty white. Legs with the coxæ brown; trochanters obscure yellow; femora black, the bases restrictedly pale; tibiae black; basitarsi with the proximal two-thirds to three-fourths black; remainder of tarsi snowy-white. Wings strongly suffused with blackish, the stigma and costal region still darker; veins black. Venation: *Sc* relatively short, *Sc*<sub>1</sub> ending shortly before the fork of *Rs*, *Sc*<sub>2</sub> at its tip; cell 1st *M*<sub>2</sub> relatively large; *m-cu* at from one-fifth to one-third the length of cell 1st *M*<sub>2</sub>, subequal to the distal section of *Cu*<sub>1</sub>.

Abdomen of female black; of male dark brown, blackened subapically. Ovipositor with the tergal valves long and slender, gently upcurved to the acute tips.

Habitat.—Dutch Guiana.

Holotype, ♂, Paramaribo, January, 1928 (L. A. Duurvoort); through Dr. G. C. Crampton.

Allotopotype, ♀.

Paratopotype, ♂.

In its general appearance, *Elephantomyia tarsalba* is curiously like *Helius albitarsis* (Osten Sacken). One wing of the paratype has cell 1st  $M_2$  open by the partial atrophy of  $m$ .

### Genus *Gnophomyia* Osten Sacken

*Gnophomyia flagrans* new species.

Belongs to the *luctuosa* group; color black, the thorax orange; wings with a blackish suffusion; abundant macrotrichiae in the cells beyond the cord.

Female.—Length about 9 mm.; wing, 8 mm.

Described from an alcoholic specimen.

Rostrum, palpi and antennae black; flagellar segments oval, the outer segments narrower and more elongate, all segments short-pedicellate. Head black.

Pronotum black. Mesonotal praescutum fiery orange, the remainder of the notum and pleura more yellowish orange. Halteres black, the knobs more brownish. Legs black, the middle coxae a little brighter at base. Wings with a blackish suffusion, the prearcular region, cells  $C$  and  $Sc$ , the stigma and a seam along vein  $Cu$  darker; cells 2nd  $M_2$ ,  $M_3$  and  $M_4$  with the central portions, cells  $Cu$  and 1st  $A$  with the distal portions a little paler than the ground-color; veins brownish black. Abundant macrotrichiae in the cells beyond the cord and in the outer ends of the cubital and anal cells. Venation:  $Sc_2$  close to tip of  $Sc_1$ ;  $R_3$  long, gently arcuated;  $R_2$  subequal to second section of  $R_1$ ; inner ends of cells  $R_4$  and  $R_5$  in oblique alignment.

Abdomen brownish black, the pleural membrane paler.

Habitat.—Costa Rica.

Holotype, ♀, near Cartago (Mrs. A. G. M. Gillott); through Dr. G. C. Crampton.

The related species of the *luctuosa* group have the thorax wholly black (*funebri* Alexander, *luctuosa* Osten Sacken,

*melancholica* Alexander and *pammelae* Alexander) or black and orange (*leucoplaca* Alexander).

### Genus *Gonomyia* Meigen

#### *Gonomyia* (*Lipophleps*) *gillottae* new species.

Belongs to the *manca* group; general coloration dark brown, the pleura variegated with pale; scutellum pale; wings with a strong dusky tinge; male hypopygium with one of the dististyles produced into a very long, needle-like rod; phallosomic structure with a flattened plate that is trifid at apex.

Male.—Length about 3 mm.; wing, 3.6 mm.

Types preserved in alcohol.

Rostrum and palpi black. Antennæ black throughout. Head dark, only the occipital region restrictedly pale.

Pronotum pale. Mesonotum dark brown, the scutellum pale. Pleura extensively pale, with two brown stripes, the more dorsal extending from above the fore coxæ, most extensive on the anepisternum and dorsal portions of the sternopleurite, behind this point much narrower and apparent only along the suture to the base of the haltere; ventral stripe including the fore coxæ and ventral portions of the sternopleurite and meron. Halteres pale. Legs long and slender; fore coxæ dark, the remaining coxæ and trochanters paler; remainder of legs dark brown. Wings with a strong dusky tinge, the prearcular and costal regions more yellowish; stigmal region a little darker; veins brown. Venation:  $Sc_1$  ending just before the origin of  $R_s$ ,  $Sc_2$  some distance from its tip;  $Sc_1$  alone nearly as long as  $m-cu$ ;  $R_s$  only gently arcuated;  $m-cu$  close to the fork of  $M$ .

Abdominal tergites dark brown, the sternites yellow. Male hypopygium with the outer lateral angle of the basistyle a little produced and here provided with a dense group of long setæ. Dististyles two, one a very long, needle-like rod arising from a broad base, narrowed very gradually into the long sinuous acicular spine; second style shorter, appearing as a narrow subrectangular blade, the apex produced into a flattened knife-like point, in addition to several powerful setæ of various sizes on the distal third; surface of the blade with microscopic setulæ. Phallosomic structure with a long slender median spine and a flattened rectangular plate, the apex of the latter tri-spinous, the lateral spines much longer than the small median point.

Habitat.—Costa Rica.

Holotype, ♂, near Cartago, October, 1927 (Mrs. A. G. M. Gillett); through Dr. G. C. Crampton.

Paratopotype, ♂, in the alcoholic collection of Dr. Crampton.

This interesting *Gonomyia* is named in honor of the collector.

**Gonomyia (Lipophleps) duurvoorti** new species.

Belongs to the *manca* group; antennæ black throughout; pleura striped longitudinally with dark brown; male hypopygium with the dististyle single, unarmed except for a powerful fasciculate seta; ædeagus elongate; gonapophysis single, terminating in an acute black spine borne at right angles to the apex of the apophysis.

Male.—Length about 3.4 mm.; wing, 3.5 mm.

Described from alcoholic specimens.

Rostrum obscure yellow; palpi black. Antennæ black throughout, the second scapal segment enlarged; flagellar segments linear, with elongate verticils on about the basal eight or nine segments. Head dark brown, restrictedly yellow before the antennal fossæ.

Mesonotum dark brown, the scutellum pale; postnotal mediotergite pale laterally. Pleura pale, striped with dark brown, the more dorsal stripe appearing as a small spot on the propleura and a much larger spot on the anepisternum and dorsal sternopleurite; ventral stripe occupying the ventral sternopleurite, meron and coxæ. Halteres dusky, the knobs pale. Legs with the coxæ dark, the fore coxæ pale except at base; trochanters dark brown; remainder of legs brownish black. Wings with a strong dusky tinge, the costal region paler; cell  $Sc_1$  a trifle more yellowish; veins brown. Venation:  $Sc_1$  ending shortly before the origin of  $Rs$ ,  $Sc_2$  some distance from its tip,  $Sc_4$  alone being a little longer than  $m$ ; cell 1st  $M_2$  closed; *m-cu* at or before the fork of  $M$ .

Abdominal tergites dark brown, the sternites and lateral margins of the tergites obscure yellow; hypopygium obscure yellow. Male hypopygium with the lateral lobes of the tergite conspicuous, relatively slender, provided with seven or eight powerful spines, the basal one largest, the spines thence becoming smaller distally and finally merging into setæ. Basistyle elongate, slender; a single dististyle, this roughly oval in outline, unarmed except for a single powerful fasciculate seta and additional smaller normal setæ. Phallosomic structure asymmetrical, consisting of a long slender ædeagus that juts far beyond the other elements of the hypopygium; only a single well-developed gonapophysis, this appearing as a flattened yellowish blade, the face carinate, at apex bearing an acute straight black spine at right angles to the apex of the apophysis.

Habitat.—Dutch and British Guiana.

Holotype, ♂, Paramaribo, Dutch Guiana, December, 1927 (L. A. Duurvoort); through Dr. G. C. Grampton.

Paratopotype, ♂; paratype, ♂, Bartica, British Guiana, February 5, 1913 (H. S. Parish).

I take pleasure in naming this species after the collector, Mr. L. A. Duurvoort. The paratype was part of the type-series of *G. (L.) inermis* Alexander (Trans. Amer. Ent. Soc., 40: 242–243; 1914).

**Gonomyia (Lipophleps) tergofimbriata** new species. •

Male.—Length about 3.3 mm.; wing, 3.6 mm.

Generally similar to *G. (L.) inermis* Alexander, with which it was confused in the original diagnosis of the latter (Trans. Amer. Ent. Soc., 40: 242-243; 1914). The description of the male hypopygium in the above reference pertains to the present species.

Thoracic pleura only vaguely marked with darker. Male hypopygium with the lateral lobes of the ninth tergite slender, directed toward one another, the mesal margin with a dense fringe of long reddish setæ but without spines, as in certain allied forms. Dististyle single, fleshy, unarmed except for setæ. Phallosomic structure relatively stout, the ventral surface set with numerous powerful setæ.

In true *inermis*, the dististyle is somewhat similar, being armed only with two powerful fasciculate setæ. The phallosome is entirely distinct in structure, the ædeagus being greatly flattened, pale, the two gonapophyses very different from one another, the longest appearing as a slender chitinized arm, at apex dilated into a head which is further produced into a blackened beak-like spine, the whole structure somewhat resembling the head and neck of a swan; the second apophysis is pale, the apex narrowed and terminating in an acute black spine.

Habitat.—British Guiana.

Holotype, ♂, Bartica, December 24, 1912 (H. S. Parish).