

THE ANNALS  
AND  
MAGAZINE OF NATURAL HISTORY.  
[NINTH SERIES.]

No. 60. DECEMBER 1922.

---

LIX.—*New or little-known Tipulidæ (Diptera).*—XII. *Australasian Species.* By CHARLES P. ALEXANDER, Ph.D., F.E.S., Amherst, Massachusetts, U.S.A.

THE new species described at this time were collected in various parts of New Zealand by Messrs. Campbell, Harris, Howes, Gourlay, Stuart Lindsay, Oliver, and Watt, as stated in other instalments under this title. My sincere thanks are extended to those collectors who have done so much toward making known the Tipuloidean fauna of New Zealand. The types are preserved in the writer's collection.

*Dicranomyia megastigmosa*, sp. n.

Related to *D. sperata*; stigma very large, especially in the male; cell 1st  $M_2$  open by the atrophy of the outer deflection of  $M_3$ .

*Male.*—Length 6.2 mm.; wing 9.2 mm.

*Female.*—Length 10 mm.; wing 10.8 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval. Head black.

Mesonotal præscutum grey with a very broad median and less conspicuous lateral brownish-black stripes; scutal lobes black, the median area pale; scutellum pale; postnotum dark, pruinose. Pleura dark, pruinose. Halteres yellow, the knobs dark brown. Legs with the fore and middle coxæ

grey-pruinose, yellow apically; posterior coxæ yellow; trochanters obscure yellow; remainder of the legs black, the femoral bases narrowly obscure yellow. Wings whitish subhyaline, including the costal cell; stigma large, especially in the male, where it fills virtually all of cells 1st  $R_1$ ,  $Sc_1$ , and the base of 2nd  $R_1$ ; in the female, the stigma is smaller, but still much larger than in *D. sperata*; wing-tip broadly infuscated; brown clouds in base of cell  $M$ , the distal ends of the anal cells, and at the anal lobe; veins  $Cu$ ,  $Cu_2$ , and the cord seamed with dusky; anal angle, cell  $R$ , the distal half of cell  $M$ ,  $Cu_1$ , and a large space beyond the stigma whitish subhyaline; wing-base narrowly yellowish; veins dark brown. Venation:  $Sc_1$  ending opposite or beyond mid-length of  $R_s$ ;  $r$  very long and arcuated; cell 1st  $M_2$  open by the atrophy of the outer deflection of  $M_3$ ; basal deflection of  $Cu_1$  a little less than its own length beyond the fork of  $M$ .

Abdomen dark brown, the sternites greyish pruinose. Male hypopygium reddish brown, the fleshy lobe on the ventral face of each pleurite a little stouter than in *sperata*; mesal lobe of gonapophyses more slender than in *sperata*. Valves of the ovipositor slender and straight, but relatively short.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Ben Lomond, Otago, altitude 4000 feet, January 2, 1922 (*G. Howes*).

*Allotopotype*, ♀.

*Paratopotypes*, 3 ♂ ♂.

Closely related to *D. sperata*, Alex., differing chiefly in the very large stigma and the open cell 1st  $M_2$ .

*Molophilus banksianus*, sp. n.

*Male*.—Length 4 mm.; wing 3.4–3.5 mm.

Described from alcoholic specimens.

Closely related to *M. luteipygus*, from which it differs as follows:—

Mesonotal præscutum with three confluent dark brown stripes, the lateral ones of which continue caudad on to the scutal lobes. A broad, yellowish, longitudinal stripe across the ventral pleurites, passing immediately beneath the wing-root, the dorsal pleurites abruptly dark; sternites laterally paler brown. Halteres dark, the knobs pale. Legs pale, the tibiæ and metatarsi tipped with darker. Wings tinged with grey, the stigmal region vaguely darkened. Venation: basal deflection of  $Cu_1$  transverse, straight, so the inner end

of cell  $M_2$  lies a little proximad of that of cell  $Cu_1$ ; vein 2nd  $A$  lying opposite the fork of  $Cu$ .

Abdomen dark brown, the incisures conspicuously pale (in alcoholic material). Male hypopygium with the ventral pleural appendage long and slender, straight, blackened almost to the base, the distal third with appressed but conspicuous chitinized teeth; apex of each pleurite produced into a stout, more or less decurved hook.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Mt. Fitzgerald, Little River, Banks Peninsula, Canterbury, altitude 1500 feet, January 24, 1922 (*E. S. Gourlay*).

*Paratopotype*, ♂.

Associated with *M. luteipygus*, Alex., the two species preyed upon by a small Empidid fly.

*Molophilus pictipleura*, sp. n.

General coloration brown; antennæ short; sublateral margins of præscutum dark brown; pleura yellow with two conspicuous, dark brown, longitudinal stripes; wings broad, light grey, highly iridescent; basal section of  $R_{2+3}$  long, angulated before mid-length; male hypopygium with the basal pleural appendage small, straight, feebly denticulate near apex.

*Male*.—Length about 3 mm.; wing 3.8 mm.

Antennæ short. Head injured in the unique type.

Mesonotal præscutum light yellowish brown, margined sublaterally with dark brown, the lateral margins broadly light yellow. Pleura yellow with a broad dorsal and a narrower ventral dark brown longitudinal stripe, the dorsal stripe about as broad as the yellow stripe ventrad of it. Halteres yellow, the knobs broken. Legs with the coxæ and trochanters yellow; remainder of the legs broken. Wings broad, light grey, highly iridescent, the base and the region of the cord faintly infuscated; veins pale. Venation: basal section of  $R_{2+3}$  long, angulated before mid-length; petiole of cell  $M_3$  a little shorter than the basal section of  $M_{1+2}$ ; vein 2nd  $A$  feebly sinuous, ending about opposite one-fourth the length of the petiole of cell  $M_3$ .

Abdomen dark brown. Male hypopygium with the basal pleural appendage small, straight, stout at base, narrowed to the subacute apex which is feebly denticulate; distal pleural appendage large, the mesal lobe long and straight, acute, the lateral lobe broader, slightly widened distally.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Waipori, Otago, altitude 2000 feet, December 5, 1921 (*G. Howes*).

*Molophilus flagellifer*, sp. n.

Mesonotum light brown, the pleura dark brown; antennæ short in both sexes; halteres brown, the base and knobs yellow; wings faintly tinged with brown; basal pleural appendage of hypopygium a straight rod that is produced at apex into a long, flagelliform point, directed laterad.

*Male*.—Length about 3.5 mm.; wing 4.3 mm.

*Female*.—Length 4 mm.; wing 4.6 mm.

Rostrum obscure yellow; palpi brownish black. Antennæ short in both sexes, the basal segments obscure yellow, the flagellum pale brown with the bases of the individual segments a little darkened. Head dark brown, the anterior part of the vertex yellow.

Lateral margins of pronotal scutellum yellow. Mesonotum pale brown, the median area of the præscutum slightly darker anteriorly. Pleura and lateral sclerites of postnotum dark brown throughout. Halteres brown, the base of the stem and the knobs yellowish. Legs with the coxæ and trochanters obscure yellow; remainder of the legs brownish testaceous with dark brown trichix. Wings faintly tinged with brown; veins pale brown; macrotrichix dark brown. Venation: vein *2nd A* elongate, ending beyond mid-length of the first section of  $M_{1+2}$ .

Abdomen dark brown, the sternites paler. Male hypopygium with the basal pleural appendage a stout straight arm that tapers gradually to the apex which is abruptly bent at right angles into a long, acute, chitimized point that is directed laterad.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Mt. Ruapehu, altitude 3700 feet, January 6, 1922 (*M. N. Watt*).

*Allotopotype*, ♀.

*Paratopotypes*, 4 ♂ ♀.

*Molophilus niveicinctus*, sp. n.

Mesonotum light brown, the margins of the præscutum broadly sulphur-yellow; knobs of the halteres yellow; legs dark brown, with three broad white rings, two on the tibiæ and one before the apex of the metatarsus; basal pleural

appendage of male hypopygium a short straight rod that tapers to the subacute tip.

*Male*.—Length about 2·8 mm. ; wing 3·8 mm.

Head broken.

Mesonotum light brown, the margin of the præscutum to the wing-root broadly and conspicuously sulphur-yellow. Pleura dark brown. Halteres pale brown, the knobs conspicuously sulphur-yellow. Legs with the coxæ and trochanters brown ; femora dark brown, a little paler at base ; tibiæ alternately white and dark brown, the base and a subterminal ring white, the apex and a subbasal ring dark, these four annuli approximately equal in extent ; metatarsi dark brown with a broad white ring before the apex, this ring subequal to or broader than the dark base ; remainder of the tarsi dark brown. Wings faintly tinged with brown, the costal region more yellowish ; macrotrichiæ pale brown. Venation : *2nd A* elongate.

Abdomen dark brown, with conspicuous yellow setæ. Male hypopygium with the basal pleural appendage a short straight rod that tapers to the subacute apex. Distal pleural appendage with a deep U-shaped apical notch.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Mt. Ruapehu, altitude 3700 feet, January 6, 1922 (*M. N. Watt*).

*Molophilus niveicinctus* is allied to *M. multicinctus*, Edw., and *M. infantulus*, Edw.

*Molophilus lindsayi oliveri*, subsp. n.

*Male*.—Length about 4·5 mm. ; wing 5·4 mm.

Described from an alcoholic specimen.

Close to typical *lindsayi*, differing as follows :—

Size larger. Wings with the veins darker and consequently more distinct. *Rs* with a short spur at origin ; deflection of *R*<sub>3</sub> conspicuously shorter than *r-m*, transverse in position. Male hypopygium with both appendages terminal in position as in *lindsayi* ; lateral appendage almost straight basally, at about one-third the length gently curved, at two-thirds the length strongly curved, just before the tip slightly dilated and thence rapidly narrowed to the acute apex. In typical *lindsayi* this appendage is not conspicuously dilated before the apex, but at this point bears a small but conspicuous appressed tooth.

*Hab.* North Island (South Island).

*Holotype*, ♂, Lake Wakatipu, Otago, December 1921 (F. S. Oliver).

This interesting crane-fly is named in honour of its collector. More material may give this form full specific rank.

*Molophilus gourlayi*, sp. n.

General coloration brown; antennæ of male very long; wings long and narrow, brownish grey; cell  $R_2$  very short-petiolate; male hypopygium with a single small pleural appendage, this terminal in position.

*Male*.—Length about 3.4 mm.; wing 4.2 mm.

Rostrum and palpi testaceous. Antennæ of male very long, about one-half longer than the entire body; scape pale brown; flagellum dark brown, the apical part of each segment shiny black; flagellar segments with approximately the basal half enlarged and provided with conspicuous erect setæ, near mid-length narrowed into a slender neck. Head dark, dusted with grey.

Pronotum laterally obscure yellow. Mesonotum uniformly brown. Pleura obscure brownish yellow. Halteres pale brown. Legs with the coxæ and trochanters obscure yellow; remainder of the legs brown, passing into darker brown on the tarsi. Wings unusually long and narrow, tinged with brownish grey; veins pale brown. Venation: cell  $R_2$  very short-petiolate (instead of sessile, as usual in the genus);  $r$  a little more than its length beyond the fork; basal deflection of  $Cu_1$  at the fork of  $M$ , transverse.

Abdomen brown. Hypopygium with the pleurites stout, with a single pleural appendage, this terminal in position, broad at base, a little narrowed to the blunt apex which is densely set on the mesal face with small spinules. The gonapophyses and penis-guard taken together appear as a roughly quadrangular chitinized mass at the base of the pleurites.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Little River, Mt. Fitzgerald, Banks Peninsula, Canterbury, altitude 1500 feet, January 24, 1922 (E. S. Gourlay).

This interesting crane-fly is named after its collector, Mr. E. S. Gourlay, to whom the writer is indebted for much interesting material from Banks Peninsula and the vicinity of Christchurch. The strict generic position of this very isolated species must be considered as being in doubt. The petiolate cell  $R_2$  would place the fly near *Erioptera*, and it is

possible that more material will demonstrate that a new group is necessary for its reception. A slight proximad shifting of the base of vein  $R_2$  would make a *Molophilus* of this species, as far as venation is concerned, but the male genitalia are not of the strict *Molophilus* type. The antennæ somewhat resemble those of species of *Amphineurus* of the *insulsus* group, but are even more like those of *Molophilus quadrifidus*, Alex.

*Amphineurus gracilisentis*, sp. n.

*Male*.—Length about 4.4–4.8 mm. ; wing 5.3–5.8 mm.

Closely related to *A. otagensis*, differing as follows :—

The component parts of the hypopygium are all unusually long and slender. Ninth tergite with two long parallel lobes, the tips of each obtusely rounded, the notch separating these lobes about as wide as one lobe and of this same general outline. Distal pleural appendage very small, appearing as a slender curved spine, with the lateral spinule (thumb) long, straight, divergent, nearly as long as the slightly stouter apical point. Gonapophyses long and slender, straight, lying parallel to the slender penis-guard, the apex of each a little dilated, each apophysis a little shorter than the guard and closely appressed to it.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Mt. Ruapehu, altitude 3700 feet, January 6, 1922 (*M. N. Watt*).

*Allotype*, ♀, Ohakune, July 1921 (*T. R. Harris*).

*Paratopotype*, ♂ ; *paratypes*, 10 ♂ ♀, alcoholic, Ohakune, altitude 2060 feet, July 1921 (*T. R. Harris*).

*Amphineurus pressus*, sp. n.

Allied to *A. perdecorus* ; wings pale brown, darker in the stigmal area, the macrotrichia dark ; legs unicolorous ; cell 1st  $M_2$  present ;  $R_s$  square and spurred at origin ;  $Sc_2$  before mid-length of  $Sc$  ; male hypopygium with the basal pleural appendage elongate, slender, the margins smooth ; gonapophyses approximated basally, bent laterad and gradually narrowed to the blunt tips.

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

*Female*.—Length about 5.5 mm. ; wing 6.4 mm.

Rostrum and palpi dark brown. Antennæ dark brown, the apex of the second scapal segment paler. Head dark greyish brown.

Pronotum yellowish laterally. Mesonotum dark brown,

the humeral triangles of the præscutum obscure yellow. Pleura dark brown with patches of flattened white setæ, in the female these more delicate, hair-like, and darker. Halteres yellow, the distal half of the stem darker. Legs with the coxæ and trochanters concolorous with the pleura; legs of the type broken; allotype with the legs pale brownish testaceous, the terminal tarsal segments darker. Wings pale brown, darker in the stigmal area, paler before the stigma and cord; macrotrichiæ dark brown; veins mostly pale. Venation:  $Sc_2$  far before the origin of  $R_s$ , before mid-length of  $Sc$ ;  $R_s$  square and spurred at origin; cell  $R_2$  sessile or extremely short-petiolate;  $r$  on  $R_2$  about one and one-half times its length beyond the base; cell 1st  $M_2$  small, closed, the veins beyond it elongate; basal deflection of  $Cu_1$  beyond the fork of  $M$ , subtransverse in position, vein 2nd  $A$  elongate, ending opposite or slightly before the level of the fork of  $Cu$ .

Abdomen dark brown. Valves of the ovipositor elongate. Male hypopygium with the pleurites produced into moderately elongate, fleshy lobes that taper to the narrow tips; basal pleural appendage elongate, slender, gently arcuated, the margins smooth, the tip acute. The cephalic distal appendage is slender, the margin microscopically serrulate. Gonapophyses approximated at base, narrowed and strongly arcuated to the blunt tips, which are directed laterad and finally cephalad.

*Hab.* New Zealand (both Islands).

*Holotype*, ♂, South Island, exact locality unknown, but possibly Blackball, Westland (*J. W. Campbell*).

*Allotype*, ♀, Mt. Ruapehu, North Island, altitude 3700 feet, January 6, 1922 (*M. N. Watt*).

*Amphineurus nox*, sp. n.

*Male*.—Length about 6 mm.; wing 6 mm.

Closely related to *A. campbelli*, differing as follows:—

General coloration black. Rostrum and palpi black. Antennæ broken beyond the scape. Pronotum conspicuously yellow, only narrowly darker in the middle. Mesonotum black, the præscutum with each humeral angle obscure yellow, this elongate-triangular area enclosing the pseudo-sutural foveæ. Pleura black, with a small yellow spot on the mesepimeron. Halteres broken. Legs with the fore coxæ black, the other coxæ brown; remainder of the legs brown. Wings broad, pale brown with conspicuous dark brown macrotrichiæ. Venation:  $R_s$  long, almost square at



origin;  $R_{2+3}$  very short, less than one-half the basal deflection of  $R_{4+5}$ ;  $r$  on  $R_2$  about its own length beyond the fork; basal deflection of  $Cu_1$  beyond the fork of  $M$ ; cell 1st  $M_2$  relatively small; basal deflection of  $Cu_1$  subtransverse.

Abdomen dark brown, including the hypopygium. Male hypopygium with the pleurites greatly elongated as in *campbelli*, the distal appendages lying at about the basal third. Gonapophyses with the bend deeper than in *campbelli*, the distal point being less extensively chitinized.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Glentui, Canterbury, December 1921 (*Stuart Lindsay*).

*Gnophomyia* (?) *alpina*, sp. n.

General coloration dark brown; tuberculate pits on the cephalic margin of the conically produced præscutum; legs pale brown, the tarsi black; tibiæ with erect setæ; wings yellowish brown, the stigma darker; basal deflection of  $Cu_1$  beyond mid-length of cell 1st  $M_2$ .

*Female*.—Length about 5 mm.; wing 4.8 mm.

Rostrum and palpi dark brown. Antennæ with the scape black, the flagellum broken. Head black, sparsely pruinose.

Pronotum black medially, obscure brownish yellow laterally. Mesonotal præscutum dark brown medially, paler brown laterally and caudally, sunshiny, the humeral region a little paler; præscutum somewhat conically produced cephalad, the large and conspicuous tuberculate pits located far cephalad on the cephalic margin; remainder of the mesonotum black. Pleura dark brown. Halteres light yellow, the knobs darker. Legs with the fore coxæ dark, the other coxæ pale brown; trochanters obscure yellow; femora and tibiæ pale brown, the tips of the tibiæ and the tarsi abruptly blackened; legs, especially the tibiæ, with very conspicuous outspreading setæ as in *Trimicra* and other genera. Wings with a yellowish-brown suffusion, more yellowish at the base, in the costal region, and along vein  $Cu$ ; stigma oval, brown; veins brown, more yellowish in the region above mentioned. Venation:  $Sc_1$  ending about opposite two-thirds the length of  $Rs$ ,  $Sc_2$  only a short distance from the tip of  $Sc_1$ , the latter alone about equal to the deflection of  $R_{4+5}$ ;  $Rs$  elongate, about in alignment with  $R_{2+3}$ , which is a little arcuated and in alignment with  $R_2$ ;  $r$  faint, a little more than its own length from the tip of  $R_1$  and about one and one-half times its length beyond the fork of  $R_{2+3}$ ; inner ends of cells  $R_3$ ,  $R_5$ , and 1st  $M_2$  in alignment;

cell 1st  $M_2$  elongate, widened distally, a little longer than vein  $M_3$  beyond it; basal deflection of  $Cu_1$  at three-fifths the length of cell 1st  $M_2$ , only a little shorter than  $Cu_2$ .

Abdomen dark brownish black, the tergites a little paler laterally. Ovipositor with the valves long and slender, acicular.

*Hab.* New Zealand (South Island).

*Holotype*, ♀, Ben Lomond, Otago, altitude 4000 feet, January 2, 1922 (*G. Howes*).

The generic reference of this unique fly is provisional only. Certain features of its organization point to *Xipholimnobia*, Alex., of the Ethiopian and Oriental regions.

*Limnophila obliquata*, sp. n.

General coloration yellow; mesonotal præscutum with four dark brown stripes; postnotum with two large dark brown spots on posterior margin; pleura marked with dark brown; femora yellow with two narrow dark brown rings; wings tinged with yellow, with a heavy brown non-ocellate pattern; cell 1st  $M_2$  small; basal deflection of  $Cu_1$  very long and oblique, its origin before the level of the fork of  $M$ , its apex near the distal end of cell 1st  $M_2$ ; abdomen yellow, the lateral margins of the segments with small black dots.

*Female*.—Length 15.5 mm.; wing 13 mm.

Described from an alcoholic specimen.

Rostrum obscure yellow; palpi brown. Antennæ with the scape and basal flagellar segment yellow; remainder of the flagellar segments indistinctly bicolorous, the basal half than the apex; flagellar segments elongate. Head pale brown.

Pronotum yellow. Propleura with a dark brown spot. Mesonotum yellow, the præscutum with four brown stripes, the intermediate pair subcontiguous, broadly obsolete anteriorly; lateral margins of the præscutum infuscated; scutum yellow; the centre of each lobe conspicuously dark brown; scutellum pale yellow; postnotum brownish yellow, the posterior margin with two large, rounded, dark brown spots that are narrowly margined with obscure yellow. Pleura yellow; a conspicuous brown spot on the mesepisternum and another on the sides of the mesosternum between the fore and middle coxæ. Halteres elongate, brown, the knobs yellow. Legs with the coxæ and trochanters yellow; femora brownish yellow basally, the distal half clearer yellow, with two narrow, dark brown, subterminal rings, the distal ring about one-half as wide as the basal ring; tibiæ yellowish

brown; tarsi brown. Wings tinged with yellow, the base, and cells *C* and *Sc* brighter; a heavy, non-ocellate, brown pattern distributed as follows: at *h*; bases of cells *R* and *M*, extending to the costal margin; at origin of *Rs*, extending to *C*; end of *Sc*; conspicuous seams along cord and outer end of cell 1st *M*<sub>2</sub>; spots at forks of *R*<sub>2+3</sub> and *M*<sub>1+2</sub> and at ends of all the longitudinal veins, very large at the ends of the anal veins; most of the longitudinal veins seamed with brown; veins brown, darker in the infuscated areas. Venation: *Sc*<sub>2</sub> longer than *Sc*<sub>1</sub>; *Rs* elongate; *r* about one and one-half times its length from tip of *R*<sub>1</sub>; cell *M*<sub>1</sub> one-half longer than its petiole; cell 1st *M*<sub>2</sub> small, widened distally; basal deflection of *Cu*<sub>1</sub> very long and sinuous, oblique, its origin proximad of the level of the fork of *M* its apex only a short distance from the outer end of cell 1st *M*<sub>2</sub>; cell 2nd *A* comparatively long and narrow; anterior arculus atrophied.

Abdominal tergites orange-yellow, the extreme lateral margins of the basal segments with tiny black dots; sternites similar, with a tiny black dot at the latero-cephalic angle of each sclerite. Elongate tergal valves of the ovipositor dark brown.

*Hab.* New Zealand (North Island).

*Holotype*, alcoholic ♀, Palmerston N., Wellington Province, December 1921.

In spite of the non-ocellate character of its wing-pattern, *Limnophila obliquata* is most nearly related to *L. argus* and allied species.

*Limnophila (Metalimnophila) simplicis*, sp. n.

Male hypopygium simple in structure, the apical mesal angle of the pleurite not produced into a lobe; eighth sternite without a chitinized comb; outer pleural appendage with a chitinized spine on margin before apex.

*Male*.—Length 7 mm., wing 7.3 mm.

Described from an alcoholic specimen.

Rostrum brown, the palpi darker. Antennæ elongate; scape brownish yellow; flagellum dark brown, the incisures very narrowly and indistinctly pale. Head dark brown above, much brighter beneath.

Mesonotum brownish yellow, the præscutum with three darker brown stripes; scutal lobes and base of scutellum brown. Pleura yellow with a dorsal, brown, longitudinal stripe as in the subgenus. Halteres pale. Legs with the coxæ yellow; trochanters brownish yellow; remainder of

legs broken. Wings with a pale greyish-yellow tinge; stigma oval, brown; veins pale brown. Venation:  $Sc_1$  and  $Sc_2$  subequal, ending just beyond the fork of  $Rs$ ;  $R_2$  strongly angulated at origin; cell  $M_1$  only about one-half its petiole; basal deflection of  $Cu_1$  from one-third to one-half the length of cell 1st  $M_2$ .

Abdominal tergites dark brown, the sclerites a little paler apically. Sternites obscure yellow with a large brown blotch at the lateral margin of each sclerite. Male hypopygium of very simple structure for a member of this subgenus, the pleurites not produced into conspicuous lobes at the mesal apical angle and the eighth sternite without a chitinized comb. Outer pleural appendage black, the mesal face densely set with erect setæ which pass into spines near the distal end, the margin before the apex with a powerful chitinized spine; inner pleural appendage pale.

*Hab.* New Zealand (South Island).

*Holotype*, alcoholic ♂, Lake Wakatipu, Otago, December 1921 (*F. S. Oliver*).

*Limnophila (Metalimnophila) penicillata*, sp. n.

General characters as in *L. howesi*; mesal face of pleurites of hypopygium with a dense brush of yellow setæ; outer pleural appendage truncate at apex.

*Male*.—Length about 5.2 mm.; wing 6.4 mm.

Rostrum and palpi black. Antennæ elongate as in the males of this subgenus, black throughout. Head dark, dusted with tawny anteriorly, more greyish behind.

Mesonotum brown with a tawny pollen, the scutellum and postnotum more pruinose. Pleura grey with a narrow but very distinct, black, longitudinal stripe across the dorsal sclerites. Halteres yellow, the knobs darker. Legs with coxæ concolorous with the pleura; trochanters yellow; remainder of the legs dark brown, the femoral bases a little paler. Wings narrower than in related species, tinged with pale brown; stigma oval, pale brown; veins dark brown. Venation:  $Sc_1$  ending immediately before the fork of  $Rs$ ,  $Sc_2$  at the tip of  $Sc_1$  and equal to it;  $Rs$  arcuated; cell  $R_2$  pointed at base;  $r$  very faint, without macrotrichia, near mid-distance between the fork of  $R_{2+3}$  and the tip of  $R_1$ ; cell  $M_1$  very small, about one-third the length of its petiole; cell 1st  $M_2$  likewise small, the basal deflection of  $Cu_1$  near the middle of its length.

Abdomen dark brown. Male hypopygium with the pleurites stout, the apical mesal angles only slightly produced;

mesal face of each pleurite with a dense pencil of long yellow bristles, directed caudad and slightly mesad. Outer pleural appendage slender, narrow at base, thence dilated into a narrow blade, the apex truncate; inner pleural appendage slender, straight, the apex obtuse (as in *howesi*).

*Hab.* New Zealand (South Island).

*Hol. type*, ♂, Ben Lomond, Otago, December 30, 1921 (*G. Howes*).

*Gynophlistia luteibasis*, sp. n.

General coloration (in alcohol) dark brown; antennæ 15-segmented, the terminal four segments simple; halteres yellow; legs black, the femoral bases broadly yellow; bases of posterior metatarsi pale; wings subhyaline, the base light yellow, the disk heavily marked with dark brown, this including all of cells *C*, *Sc*, *Sc*<sub>1</sub>, and *M*<sub>1</sub>; gonapophyses of hypopygium appearing as stout, gently curved arms.

*Male*.—Length about 6 mm.; wing 6.2 mm.

Described from an alcoholic specimen.

Rostrum and palpi dark brown. Antennæ 15-segmented, the formula being 2+2+7+4; antennæ dark brown throughout, the longest flabellation being about one-half the length of the flagellum; pectination of ninth flagellar segment nearly twice the segment. Head brown, darker brown medially above.

Mesonotum brown, the præscutum striped with darker brown; a patch of setæ on the lateral margin of the scutum dorso-cephalad of the wing-root. Pleura dark brown. Halteres yellow. Legs with the coxæ dark brown, the fore coxæ a little paler; trochanters light yellow; femora dark brown, the bases broadly light yellow, widest on the fore femora where it includes more than the basal half, narrowest on the posterior femora where a little more than the basal third is included; remainder of the legs black, except the basal half of the posterior metatarsi which is pale. Wings subhyaline, the base conspicuously light yellow; a very heavy brown pattern including all of cells *C*, all of *Sc* except the prearcular portion, all of *Sc*<sub>1</sub>; conspicuous brown areas in base of cell *R*, at origin of *Rs*, scarcely attaining vein *M*; a very broad seam at and beyond the cord, narrowed posteriorly, the centre of cell 1st *M*<sub>2</sub> pale; wing-apex broadly darkened, this including all of cell *M*<sub>1</sub> and the broad outer ends of all the other distal cells; brown clouds in the basal half of cell *Cu* and the broad outer margins of the anal cells; veins dark brown, yellow in the flavous wing-base.

Venation :  $r$  faint, on  $R_2$  near three-fifths the length; cell  $M_1$  shorter than its petiole; basal deflection of  $Cu_1$  near two-thirds the length of cell 1st  $M_2$ ; vein 2nd  $A$  ending some distance before the level of the origin of  $Rs$ .

Abdomen dark brown. Male hypopygium with the apical mesal angle of each pleurite produced into a flattened rounded lobe; outer pleural appendage a broad, flattened, yellow blade. Gonapophyses appearing as stout arms that are curved gently caudad and mesad, their apices blunt.

*Hab.* New Zealand (North Island).

*Holotype*, alcoholic ♂, Palmerston N., Wellington Province, December 1921.

*Gynoplistia aurantiopyga*, sp. n.

General coloration (in alcohol) black, the hypopygium bright orange; antennæ 15-segmented; coxæ black; legs dark brown, the tips of the femora and tibiæ blackened; wings greyish subhyaline, with a rather diffuse brown pattern.

*Male*.—Length 7.5 mm.; wing 6.6–6.8 mm.

*Female*.—Length about 10 mm.; wing 7.8 mm.

Described from alcoholic specimens.

Rostrum and palpi dark brown. Antennæ 15-segmented, the formula being  $2 + 2 + 7 + 4$ , the longest pectination being about two-fifths the length of the flagellum, the pectination of flagellar segment 9 more than twice the length of the segment; antennæ dark brown. Head shiny black.

Mesothorax shiny black. Halteres dusky. Legs with the coxæ black; trochanters obscure yellow; femora obscure yellow, the apices rather broadly blackened; tibiæ yellowish brown, the tips narrowly infuscated; spurs very large; tarsal segments brown, the tips darker, the terminal segments more uniformly darkened. In the female the coxæ are all yellow. Wings greyish subhyaline, with a rather diffuse brown pattern; cells  $C$ ,  $Sc$ , and  $Sc_1$  infuscated; base of cell  $R$  darkened; a circular brown cloud at origin of  $Rs$ ; a large quadrangular area at stigma, continued caudad along the cord, the centre of cell 1st  $M_2$  being largely pale; wing-tip indistinctly darkened; a brown cloud near mid-length of cell  $Cu$ , continued into cell 1st  $A$ ; veins dark brown. Venation:  $R_{2+3}$  very short; cell  $M_1$  a little longer than its petiole; basal deflection of  $Cu_1$  near mid-length of cell 1st  $M_2$ .

Abdomen black, the hypopygium abruptly and very conspicuously orange. Male hypopygium with the apical angle

of the pleurites produced into a small beak-like lobe; mesal face of pleurite produced caudad and mesad into a lobe; apex of inner pleural appendage slender. Gonapophyses appearing as rods that are shaped somewhat like boomerangs, bent near mid-length, the distal ends obtuse.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Lake Wakatipu, Otago, December 1921 (F. S. Oliver).

*Allotopotype*, ♀.

*Paratopotype*, ♂.

*Gynoplistia bidentata*, sp. n.

General coloration shiny black, sometimes faintly greenish black or blue-black, especially on the abdomen; antennæ 15-segmented, the terminal five segments simple; male hypopygium with the gonapophyses deeply bifid at tips.

*Male*.—Length about 6.5–7 mm.; wing 5.6–6.2 mm.

*Female*.—Length about 8 mm.; wing 6 mm.

Rostrum and palpi black. Antennæ 15-segmented, the formula being 2+2+6+5, the longest flabellation about two-fifths the length of the flagellum; antennæ entirely black. Head shiny black.

Mesonotum shiny black. Pleura black, with a patch of greyish-yellow pubescence on the mesepisternum. Halteres pale, the knobs a little darker. Legs with the fore coxæ black, the other coxæ brownish black; trochanters brownish black; femora obscure yellow basally, black apically, the yellow most extensive on the posterior legs, where only the apices are darkened; remainder of the legs black; posterior tarsi uniformly dark. Wings greyish subhyaline; cell *Sc* infuscated; a rather sparse dark brown pattern as follows:—A circular area at origin of *Rs*, not attaining vein *M* in the male, barely reaching this vein in the female; a relatively narrow seam from the stigma along the cord and outer end of cell 1st *M*<sub>2</sub>; wing-tip faintly darkened; a more or less distinct cloud at fork of *M*<sub>1+2</sub>; faint clouds in outer ends of cells *Cu*<sub>1</sub> and *Cu*, at mid-length of vein *Cu*<sub>1</sub> and in cell 2nd *A*; veins dark brown. Venation: cell *M*<sub>1</sub> slightly variable in size, approximately equal to its petiole; basal deflection of *Cu*<sub>1</sub> beyond mid-length of cell 1st *M*<sub>2</sub>.

Abdomen blue-black, the hypopygium a very little paler. Male hypopygium with the apex of each pleurite produced into two flattened lobes, one smaller and more obtusely rounded than the other; gonapophyses deeply bifid, the lateral tooth about twice the length of the mesal tooth;

penis-guard broad-based, tapering rapidly to the slender apex. Ovipositor elongate, slender, reddish horn-colour.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Ben Lomond, Otago, altitude 4000 feet, January 2, 1922 (*G. Howes*).

*Allotopotype*, ♀, December 30, 1921.

*Paratopotypes*, 7 ♂ ♀, with the types.

*Gynoplistia bidentata purpurea*, subsp. n.

*Male*.—Length about 7 mm.; wing 7·2 mm.

Generally similar to typical *bidentata*, differing as follows:—

Size larger. Pectinations of flagellar segments longer, the longest more than one-half the length of the flagellum. Pubescence of mesepisternum silvery-grey in colour, appearing as a narrow oblique line. Legs longer and more slender. Wings with the apex distinctly clouded; clouds in the outer ends of cells *Cu*, *Cu*<sub>1</sub>, 1st *A*, where it is very large, and a small spot in the extreme end of cell 2nd *A*. Abdomen with intense purplish-blue reflections. Male hypopygium with the extreme tip of the outer pleural appendage slightly knobbed; mesal face of pleurites less densely setiferous.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Glentui, Canterbury, December 1921 (*S. Lindsay*).

*Gynoplistia bidentata* differs from all similar species with 15-segmented antennæ by the structure of the gonapophyses.

*Macromastix mesocera*, sp. n.

General coloration brown, the præscutum with three dark brown stripes; antennæ of male as long as the head and thorax taken together; setæ on thorax short; wings infused, especially at base and in costal region.

*Male*.—Length 12 mm.; wing 14·2 mm.; antenna about 5 mm.

Frontal prolongation of the head and the palpi dark brown. Antennæ moderately elongate, about as long as the head and thorax taken together, dark brown, the second segment obscure yellow. Head rich fulvous, the vertical tubercle entire; a narrow pale margin adjoining the inner margin of the eye.

Mesonotal præscutum pale brown, with three conspicuous dark brown stripes, of which the median stripe is very indistinctly split by a pale line; scutum pale brown, the lobes



conspicuously marked with darker brown; scutellum and postnotum light brown, the posterior margin of the latter darker. Thorax with very short setæ. Pleura grey, variegated with brown, especially on the ventral sclerites; dorso-pleural membrane obscure yellow. Halteres brown, the knobs obscure brownish yellow. Legs with the coxæ brown; trochanters greenish; femora yellowish brown, the tips rather narrowly but conspicuously blackened; tibiæ pale yellowish brown, the tips very narrowly blackened; basal tarsal segment bright brown, the terminal segments blackened. Wings strongly infumed, the caudal margin fading into grey; wing-base and cells *C* and *Sc* darker brown; stigma oval, dark brown; a conspicuous brown cloud on the basal deflection of  $R_{4+5}$  and  $r-m$ ; a brown cloud in the centre of cell *R*; a very small pale area before the stigma; veins dark, the tips of the medial and anal veins subobsolete. Venation: cell 1st  $M_2$  narrowed distally; petiole of cell  $M_1$  a little less than twice the length of *m*;  $m-cu$  distinct; cell 2nd *A* broad.

Abdominal tergite 1 and the lateral margins of 2 reddish yellow, the median area dark brown; remaining tergites shiny dark brown, the caudal margins of the segments narrowly blackened; hypopygium dark.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Dunedin, Otago, December 22, 1921 (*G. Howes*).

LX.—*Exotic* Muscaridæ (*Diptera*).—VIII.\* By J. R. MALLOCH, Bureau of Biological Survey, Washington, D.C.

#### Subfamily PHAONINÆ.

#### Genus XENOSIA, Malloch.

I erected this genus for the reception of one species, *ungulata*, Stein. In my original definition of the genus, I included the presence of fine hairs on the upper margin of the hypopleura in front of the spiracle as one of the characters of the genus. This applies to the genotype, but not to *morosa*, Stein, which I consider may properly be located in this genus. This character, therefore, must be eliminated.

\* For Part VII., see *Ann. & Mag. Nat. Hist.* (9) x., October 1922, pp. 379-391.