

VIII.—*New or little-known Tipulidæ (Diptera).*—XXX.  
*Australasian Species.* By CHARLES P. ALEXANDER, Ph.D.,  
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THE species described at this time are all from New Zealand, where they were collected by my friends Messrs. Campbell, Fenwick, Harris, Howes, Stuart Lindsay, Myers, Philpott, Tillyard, and Tonnoir. I am especially indebted at this time to Dr. Tonnoir, who personally collected the majority of the species herein described as new. The types of the novelties collected by Tonnoir have been returned to him for redistribution in New Zealand collections. The other types are preserved in the collection of the writer.

*Polymoria proximata*, sp. n.

Allied to *P. argus* (Hutton); wings nearly hyaline with ocelliform yellow markings that are narrowly margined and centred with brown;  $R_{2+3}$  longer than the basal section of  $R_2$ ; *m-cu* at the proximal end of cell 1st  $M_2$ .

*Male.*—Length about 14 mm.; wing 11.5 mm.

Rostrum and palpi brown. Antennæ with the scapal segment buffy, strongly tinged with green; flagellum broken. Head greenish brown, heavily pollinose.

Pronotum yellowish fulvous. Mesonotal præscutum yellowish pollinose, the usual stripes more infuscated, better indicated behind; scutum yellowish pollinose, each lobe with a brown mark; scutellum brownish yellow; postnotal mediotergite yellow, extensively infuscated medially. Pleura greenish yellow, variegated with brown on the anepisternum, sternopleurite, and postnotal pleurotergite; dorso-pleural membrane more fulvous. Halteres pale, the extreme bases indistinctly greenish, the knobs passing into clearer yellow. Legs with the coxæ and trochanters pale, strongly suffused with greenish; femora greenish yellow with two narrow brown rings before the tips; tibiæ greenish brown, the tips a little darker; tarsi brown. Wings yellow and subhyaline, the costal region and a broad seam along vein *Cu* more yellowish, the disc whitish subhyaline; a conspicuous pattern of brown ocelliform markings, marginal and along the cord, outer end of cell 1st  $M_2$ , fork of  $M_{1+2}$ , and in the radial cell; ocelliform markings yellow with very narrow brown centres; marginal spots smallest at vein  $M_2$ , becoming larger and with more conspicuous

centres to vein *2nd A*; veins greenish. Venation: *Sc*<sub>2</sub> at tip of *Sc*<sub>1</sub>, extending to beyond mid-length of *R*<sub>2+3</sub>; *Rs* relatively short, arcuated at origin; *R*<sub>2+3</sub> long, exceeding the basal section of vein *R*<sub>2</sub>; cell *M*<sub>1</sub> about twice its petiole; *m-cu* at the proximal end of cell *1st M*<sub>2</sub>.

Abdomen greenish pollinose, without distinct darker markings. Male hypopygium generally similar to that of *P. argus*, the interbasal process longer and narrower.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Auckland, Auckland, February 3, 1924 (*T. R. Harris*).

*Limnophila tonnoiri*, sp. n.

Allied to *L. nebulifera* (Alexander); wings pale brown with a relatively small darker brown cloud at origin of *Rs* and a conspicuous seam along the cord; male hypopygium with the outer dististyle weakly toothed at apex.

*Male*.—Length about 4.5 mm.; wing 5.3 mm.

Rostrum and palpi brown. Antennæ short, brown throughout; flagellar segments oval, the ends truncated; verticils longer than the segments. Head dark brown, discoloured in the unique type.

Mesonotum uniformly dark brown, the pseudosutural foveæ conspicuous, brownish black; postnotum testaceous brown. Pleura brownish testaceous. Halteres relatively elongate, pale brown. Legs with the coxæ and trochanters pale; remainder of legs pale brown throughout; tibial spurs long and straight, a little more than the basal half conspicuously setiferous, the apex glabrous; claws relatively small, each with a small basal tooth. Wings pale brown with a diffuse darker brown pattern, the oval stigma a trifle darker-coloured than the remaining clouds; these markings include seams at origin of *Rs*; tip of *Sc*<sub>1</sub>; along cord and outer end of cell *1st M*<sub>2</sub>; veins darker brown. Macrotrichæ on the longitudinal veins beyond the cord, including about five on the distal third of *Rs*; cross-veins and deflections of veins without trichæ. Venation: *Sc*<sub>1</sub> ending a short distance before the tip of *Rs*, *Sc*<sub>2</sub> about twice its length from the tip of *Sc*<sub>1</sub>; *Rs* long, nearly straight; *r* very faint, a little more than its own length from the tip of *R*<sub>1</sub>; inner ends of cells *R*<sub>3</sub>, *R*<sub>5</sub>, and *1st M*<sub>2</sub> in transverse alignment; *R*<sub>2+3</sub> about equal to or a little longer than *m-cu*; cell *M*<sub>1</sub> shorter than its petiole; cell *1st M*<sub>2</sub> relatively small; *m-cu* just beyond the fork of *M*; anterior arculus present.

Abdomen brown, including the hypopygium. Male

hypopygium with the basistyles relatively slender, slightly narrowed distally; mesal face at base with the interbasal process a flattened, obtusely truncated, blackened collar-like plate that partially encircles the base of the style; surface of basistyle with long setæ, shorter and more numerous on the pale mesal face; apex of basistyle produced caudad and slightly mesad into a small cylindrical lobe that is a little shorter and more slender than the fleshy dististyle, the apex rather suddenly narrowed, short-setiferous, the base of this lobe glabrous or with still shorter setæ. Dististyles two, the outer style a slender black rod, feebly dilated just before the tip, which is short, acute, gently decurved, just before the apex on outer margin with two small obtuse denticles to produce a weakly toothed effect; inner or fleshy dististyle a little more than one-half the length of the outer style, pale, long-setiferous. Gonapophyses appearing as flattened blades, the apex of each produced mesad as a long, acute, blackened spine.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Nelson, Nelson, September 28, 1923 (*A. Tonnoir*)

*Paratype*, ♂, Aniseed Valley, Nelson, December 1-4, 1923 (*A. Tonnoir*).

This interesting crane-fly is named in honour of Dr. André L. Tonnoir, to whom I am indebted for many favours.

*Limnophila perscita*, sp. n.

General coloration light brown; head yellowish grey; femora obscure yellow; wings with a strong yellow tinge, the stigma, a spot at origin of *Rs*, seams along the cord and outer end of cell 1st *M*<sub>2</sub>, and a spot at fork of *M*<sub>1+2</sub> dark brown.

*Female*.—Length 6-8.3 mm.; wing 7.2-8.2 mm.

Rostrum and palpi dark brown. Antennæ brown throughout; flagellar segments oval, with verticils of moderate length. Head dark yellowish grey; vertex between the eyes of moderate width.

Mesonotum light brown, in cases with four darker stripes that are better defined posteriorly; in front with a single median stripe that becomes obsolete near the tuberculate pits; scutal lobes slightly darkened; remainder of mesonotum reddish brown. Pleura brownish yellow, the anepisternum more or less infuscated and weakly pruinose. Halteres yellow. Legs with the coxæ and trochanters brownish yellow; femora obscure yellow with relatively

conspicuous setæ; remainder of legs testaceous yellow, the terminal tarsal segments dark brown. Wings with a strong yellowish tinge, the base and cells *C* and *Sc* a trifle more saturated; subhyaline longitudinal streaks in cells *R* and 1st *M*<sub>2</sub> along vein *M* and in bases of the anal cells; conspicuous dark brown markings as follows: at origin of *Rs*; the elongate-oval stigma; conspicuous seams along cord and outer end of cell 1st *M*<sub>2</sub>, the latter cell so small that the marks are nearly confluent; a spot at fork of *M*<sub>1+2</sub>; a more or less distinct spot at arculus; veins yellow, darker in the infuscated areas. Venation: *Sc*<sub>1</sub> ending about opposite the fork of *Rs*, *Sc*<sub>1</sub> about equal to *m-cu*; *Rs* moderately arcuated; *r* at about one-third the length of the stigma and just beyond mid-length of the terminal section of *R*<sub>1</sub>; inner ends of cells *R*<sub>3</sub>, *R*<sub>5</sub>, and 1st *M*<sub>2</sub> in oblique alignment; cell 1st *M*<sub>2</sub> very small; cell *M*<sub>1</sub> shorter than its petiole; *m-cu* near mid-length of the lower face of cell 1st *M*<sub>2</sub>; anterior arculus preserved.

Abdomen obscure brownish yellow, the sternites a little clearer yellow. Ovipositor with the tergal valves long and slender, gently upcurved. In some cases, the abdominal segments are light brown, indistinctly ringed caudally with paler.

*Hab.* New Zealand (South Island).

*Holotype*, ♀, Dun Mt., Nelson, March 1, 1924 (*A. Philpott*); collector's number 60.

*Paratypes*, 2 ♀ ♀, Waiho, Westland, altitude 600 feet, January 28, 1922 (*A. Tonnoir*).

It is very possible that the discovery of the male sex of this conspicuous fly will result in its removal to the genus *Zelandomyia*. It is retained in *Limnophila* only in the broadest usage of the name.

#### *Limnophila spissigrada*, sp. n.

Subapterous (at least in ♀ sex); wings about as long as the combined head and thorax; general coloration brown, grey pruinose; posterior sclerites of mesonotum flattened; femora dilated distally, the segments of the legs hairy.

*Female*.—Length about 3·2–3·5 mm.; wing 1·5 mm.

Rostrum and palpi dark brown. Antennæ short, if bent backward extending about to the wing-root; black throughout; flagellar segments oval with verticils that are slightly longer than the segments. Head grey, the vertex more yellowish, the narrowest portion passing into silvery.

Mesonotum brown, grey pruinose; posterior sclerites

much depressed, the scutum, scutellum, and postnotal mediotergite being almost plane. Pleura grey. Halteres pale, including the knobs. Legs large and conspicuous, the segments with conspicuous erect setæ; trochanters dark, sparsely pruinose, the tips more yellowish; femora incrassated outwardly, brown, the bases narrowly paler; tibiæ pale brown, the tips narrowly darker; tarsi brownish black. Wings semi-atrophied, about as long as the combined head and thorax, the venation not seriously distorted; coloration brownish white, more yellowish before the cord; veins dark brown, conspicuous. Conspicuous macrotrichæ on vein *R* back to arculus; on *R*<sub>3</sub>, *R*<sub>4+5</sub>, *M*<sub>1+2</sub>, *M*<sub>1</sub>, *M*<sub>2</sub>, distal section of *M*<sub>3</sub>, *M*<sub>4</sub> beyond *m-cu*; solitary bristles at outer ends of veins *Cu*<sub>1</sub> and 2nd *A*. Prearcular region extensive, the arculus lying near one-fourth the wing-length. Venation: almost as in a typical *Limnophila*; *Rs* relatively long, almost square at origin; *R*<sub>2+3</sub> short, approximately equal to the basal deflection of *R*<sub>4+5</sub>; cell *M*<sub>1</sub> shorter than its petiole; *m-cu* less than its length beyond the fork of *M*; anterior arculus present.

Abdomen dark brown, the tergites more or less pruinose; subterminal sternite obscure yellow at base; base of sternal valves of ovipositor blackened. Ovipositor with the tergal valves relatively short, strongly upcurved, the tips acute, brownish yellow to horn-coloured.

*Hab.* New Zealand (South Island).

*Holotype*, ♀, Mt. Arthur Tableland, Nelson, altitude 5000 feet, December 23, 1921 (*A. Tonnoir*); collector's number 120.

*Paratopotypes*, 2 ♀ ♀, altitude 4500 feet, December 27, 1921 (*A. Tonnoir*).

The strict generic position of this little alpine fly is somewhat in question. The species seems to be related to *L. oliveri*, Alexander, but certain features, especially the structure of the ovipositor, would indicate that it might well be a *Metalimnophila*.

#### *Metalimnophila protea*, sp. n.

General coloration light greyish brown, the thoracic pleura with a narrow brown longitudinal stripe; male hypopygium of simple structure; basistyle scarcely produced at tip; dististyles two, simple; armature of genital chamber reduced to three powerful curved hooks on either side.

*Male*.—Length about 6.2 mm.; wing 6.8 mm.

Rostrum and palpi black. Antennæ of moderate length, if bent backwards extending to near mid-length of the abdomen, black throughout; flagellar segments elongate-cylindrical. Head dark grey.

Mesonotal præscutum light greyish brown, the stripes somewhat darker-coloured; scutellum and postnotum light grey. Pleura pale, light grey pruinose, with a narrow brown longitudinal dorsal stripe extending from above the fore coxæ to the postnotal pleurotergite. Halteres pale, the knobs a little darker. Legs with the coxæ and trochanters obscure brownish yellow; femora obscure brownish yellow, the tips very slightly darkened; tibiæ concolorous, the tips narrowly darkened; tarsi pale brown; the terminal segments passing into darker. Wings with a faint brown tinge, the oval stigma darker brown; veins dark brown. Venation:  $Sc_2$  at the tip of  $Sc_1$ , the latter ending immediately before the fork of  $R_s$ ;  $R_s$  weakly angulated at origin, in alignment with  $R_{2+3}$  which is subequal to the basal deflection of  $R_{4+5}$ ;  $r$  very faint, about twice its length beyond the fork of  $R_{2+3}$  and near two and one-half times its length from the tip of  $R_1$ ; cell 1st  $M_2$  relatively long and narrow; petiole of cell  $M_1$  about one-half longer than the cell;  $m-cu$  a little less than its own length beyond the fork of  $M$ .

Abdomen dark brown, the hypopygium paler. Male hypopygium of a very primitive structure for a member of this genus. Basistyles very short and stout, the outer face with long coarse macrotrichia; the usual produced lobe on mesal face at apex reduced to a low rounded protuberance. Dististyles two, but connected with one another at base by membrane; outer dististyle longer, appearing as a broad-based gently curved appendage that gradually narrows to the acute blackened apex; inner dististyle slender, cylindrical, gradually narrowed to the obtusely rounded apex which terminates in a single large seta. The usual spinous armature of the genital chamber is here reduced to three large curved black hooks on either side.

*Hab.* New Zealand (Both Islands).

*Holotype*, ♂, Mt. Ruapehu, Wellington, altitude 3000–4000 feet, January 20, 1924 (*T. R. Harris*).

*Paratype*, ♂, Maitai Valley, Nelson, March 16, 1922 (*A. Tonnoir*).

“Along trail through beech (*Nothofagus*) forests.”—*Harris*.

*Metalimnophila protea* superficially resembles *M. howesi*

(Alexander), differing conspicuously from all described species in the structure of the male hypopygium.

*Metalimnophila greyana*, sp. n.

Antennæ of male a little shorter than the body; male hypopygium with the apex of each basistyle produced into a short obtuse lobe and a small blackened conical tubercle; outer dististyle narrowed to the apex, which is conspicuously bifid and restrictedly blackened.

*Male*.—Length about 6.2 mm.; wing 6.6 mm.

Rostrum and palpi black. Antennæ elongate, only a little shorter than the body; flagellar segments cylindrical to slightly fusiform; scape brown, flagellar segments black, the extreme base of the proximal segments paler. Head dark grey.

Mesonotum brown, the præscutum with four ill-defined slightly darker brown stripes, the intermediate pair only narrowly separated; scutellum and postnotum sparsely pruinose. Pleura dark brown dorsally, more pruinose ventrally; ventral half of sterno-pleurite suddenly paler; meron ochreous. Halteres pale, the knobs darker. Legs with the coxæ and trochanters light yellow; remainder of legs broken. Wings with a pale brown tinge, cells *C* and *Sc* slightly more yellowish; stigma darker brown; veins dark brown. Venation: *Sc*, ending just before the fork of *Rs*, *Sc*<sub>3</sub> at its tip; *Rs* unevenly arcuated; *R*<sub>2+3</sub> and basal deflection of *R*<sub>4+5</sub> approximately equal; *R*<sub>2</sub> uneven; cell *M*<sub>1</sub> about as long as its petiole; cell 1st *M*<sub>2</sub> small, gently widened distally; *m-cu* at near one-third the length of cell 1st *M*<sub>2</sub>.

Abdomen dark brown. Male hypopygium with the basistyles stout, the mesal apical angle only slightly produced, the opposite mesal angle with a small, blackened, somewhat conical tubercle that is weakly trifid. Outer dististyle a gently arcuated, elongate-conical horn, gradually narrowed to the apex, pale, the surface with abundant setæ, the apex narrowly blackened, terminating in two conspicuous black spines; inner dististyle small and slender, narrowest just before the bluntly rounded apex. Genital armature relatively powerful, there being about six blackened spines on either side.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Mt. Grey, Canterbury, in beech forest, February 23, 1924 (*J. W. Campbell*).

*Metalimnophila yorkensis*, sp. n.

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

Closely related to the genotype, *M. mirifica* (Alexander), differing chiefly in antennal and genitalic characters.

Antennæ considerably shorter, if bent backward not extending to beyond mid-length of the abdomen, the flagellar segments correspondingly shorter. Mesonotal præscutum with three darker brown stripes. Legs with the coxæ obscure yellow. Wings with the veins dark brown. Macrotrichiaë on all the longitudinal veins for virtually their entire lengths; sparse trichiaë on many of the cross-veins and deflections of veins. Venation:  $Sc_2$  longer than  $Sc_1$ ;  $r$  near one-third the length of the stigma, more than twice its length beyond the fork of  $R_{2+3}$ ; cell  $M_1$  about two-thirds its petiole;  $m-cu$  near mid-length of the lower face of cell 1st  $M_2$ . Male hypopygium with the apex of each basistyle produced caudad and slightly mesad into a slender rod that is only a little shorter than the inner dististyle; the rod is gently curved toward the tip which terminates in a single, small, conical spine; entire apex of the rod densely set with short recurved setæ; near mid-length on outer edge of stem are two or three very long and powerful setæ. Outer dististyle fleshy and provided with long setæ on basal three-fourths, the outer setæ larger and more conspicuous; apex of style somewhat narrowed into a flattened, obtuse, darkened blade that is provided with tiny setigerous punctures. Inner dististyle fleshy, the lateral apical angle prolonged into a slender digitiform lobe that terminates in a single strong seta; mesal apical angle of style tumid, provided with several short stout setæ. Armature of genital chamber powerful. Ninth tergite with two slender, gently divergent rods, separated by a deep V-shaped notch.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, York Bay, Wellington, February 2, 1924 (J. G. Myers).

*Paratypes*, 2 ♂♂, Nihotapu, Auckland, altitude 500 feet, February 23–25, 1923 (A. Tonnoir).

*Metalimnophila productella*, nom. nov.

1922. *Limnophila* (*Metalimnophila*) *producta*, Alex., Ann. & Mag. Nat. Hist. (9) ix. pp. 514–515; nec *Prionolabis producta*, Meun., Mon. Tipulidæ et Dixidæ de l'Ambre de la Baltique, pp. 376–377 (1906).

An examination of the type-specimen of Meunier's *Prionolabis producta* (Baltic amber) shows that it is referable to the genus *Limnophila*, necessitating the above change of name.



*Zelandomyia tantula*, sp. n.

*Male*.—Length about 3 mm. ; wing 3·5 mm.

*Female*.—Length 3·6 mm. ; wing 3·8 mm.

Closely allied to *Z. pygmæa*, Alexander, differing as follows :—

General coloration slightly darker, including the head which is faintly pruinose. Wings with  $R_{2+3}$  shorter, approximately one-half, or a trifle more, of  $R_2$  alone ; cell 1st  $M_2$  closed by the retention of  $m$ , relatively large for a member of this genus. Male hypopygium with the gonapophyses strongly curved, the extreme tips bent mesad into long, slender, very acute tips. In *Z. pygmæa*, the gonapophyses are broad-based, the tips short and very obtuse.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Rewanui, Paparua Range, Westland, altitude 600–800 feet, February 15, 1923 (*T. R. Harris*).

*Allotopotype*, ♀.

*Tricyphona furcata*, sp. n.

*Male*.—Length about 7 mm. ; wing 10–10·5 mm.

*Female*.—Length about 8·5 mm. ; wing 11 mm.

Related to *T. novæ-zelandiæ*, Alexander, differing chiefly in the structure of the male hypopygium, especially the deeply furcate interbasal process.

Antennæ dark brown throughout ; flagellar segments short-oval, clothed with a delicate white pubescence. Head with the centre of the vertex largely brown. Median præscutal stripe narrowly split by a capillary dull grey vitta. Pleura strongly grey pruinose. Wings more greyish. Venation : cell  $R_2$  normally sessile, in one wing of the paratype male short-petiolate ;  $m$  nearly its length beyond the fork of  $M_{1+2}$  ; in the allotype, cell 1st  $M_2$  is open by the atrophy of  $m$  in both wings. Male hypopygium obscure brownish yellow ; mesal face of basistyle with a group of long powerful setæ ; dististyle very extensive, especially the yellowish chitinized portion which is deeply notched on external margin, the surface with abundant microscopic delicate setæ and a few large powerful bristles. Interbasal process appearing deeply forked, the organ being bent into the shape of a boomerang, the apex obtusely rounded, just beyond the bend with a long, powerful, acute spine that is subappressed to the apex. Tergal region with caudal margin transverse, each lateral angle produced caudad into a conical setiferous lobe ; beneath each caudal-lateral angle

arises a hook-like chitinized rod that is likewise shaped somewhat like a boomerang, but smaller than the interbase, the apex obtuse.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Mt. Arthur Tableland, Nelson, altitude 4500 feet, December 26, 1921 (*A. Tonnoir*); collector's number 119.

*Allotopotype*, ♀, December 21, 1921.

*Paratopotype*, ♂, with the allotype.

*Rhabdomastix (Sacandaga) monilicornis*, sp. n.

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

Closely allied to *R. (S.) neozelandiæ*, Alexander, differing as follows:—

Antennæ short, the six basal flagellar segments moniliform, or nearly so, each being only a trifle longer than wide (terminal segments broken). In *neozelandiæ* the intermediate and outer flagellar segments are long, fully twice as long as broad. Head broad, heavily dusted with grey. Mesothorax dark brown, very sparsely dusted with a yellowish pollen, not at all pruinose. Knobs of the halteres infuscated. Wings with a strong brownish tinge, the stigma scarcely darker; veins darker brown. No macrotrichia on veins  $R_s$ ,  $R_{2+3}$ ,  $R_2$ ,  $R_3$ ,  $M_{1+2}$ ,  $M_3$ , or  $M_4$ ; those on  $R_{4+5}$  confined to the outer four-fifths of the vein and relatively scattered. Abdomen brownish black. Ovipositor with the tergal valves slender, strongly upcurved, near two-thirds the length becoming slightly expanded and pale.

*Hab.* New Zealand (South Island).

*Holotype*, ♀, Maitai Valley, Nelson, March 16, 1922 (*A. Tonnoir*); collector's number 105 n.

*Rhabdomastix monilicornis* is readily distinguished by the nearly moniliform antennæ, the total lack of macrotrichia on all veins beyond the cord excepting  $R_{4+5}$ , and the dark-knobbed halteres.

*Rhabdomastix (Sacandaga) trichiata brunneipennis*, subsp. n.

*Male*.—Length about 4 mm.; wing 5.5 mm.

*Female*.—Length about 4.5 mm.; wing 6.2–6.5 mm.

Differs from typical *trichiata*, Alexander, in the following regards:—

Head and thorax dark brown, without pruinosity, the mesonotum almost black, subshiny. Wings with a uniform strong brownish suffusion, the costal region and stigma only a trifle darker. Macrotrichia on  $R_{2+3}$  reduced to but two

or three scattered setæ. Venation:  $R_{2+3}$  elongate, from four to five times  $R_2$  alone;  $R_2$  short, the space on costa between  $R_1$  and  $R_2$  nearly twice the length of the latter vein alone.

The spines on the outer margin of the outer dististyle of the male hypopygium are relatively short and markedly appressed to the margin of the style; terminal spine relatively stout. The inner dististyle is rather suddenly narrowed at apex into a cylindrical tip that bears a single powerful seta. Distal blades of gonapophyses relatively narrow.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Nihotapu, Auckland, altitude 500 feet, February 24, 1923 (*A. Tonnoir*); collector's number 105 *h*.

*Allotopotype*, ♀.

*Paratopotypes*, 2 ♀ ♀.

*Gonomyia (Lipophleps) ludibunda*, sp. n.

Generally similar to *G. (L.) nigrohalterata*, Edwards; abdomen largely orange; outer dististyle of male hypopygium with two unequal black spines; elements of phallosome elongate, acute at tips.

*Male*.—Length about 3.6 mm.; wing 5.2 mm.

*Female*.—Length about 3.8 mm.; wing 4.5 mm.

Rostrum obscure brownish yellow; palpi brownish black. Antennæ black throughout. Head obscure orange-yellow in front, dark brown behind, the posterior vertex and occiput with a median pale mark.

Pronotum and conspicuous lateral margins of the præscutum bright sulphur-yellow. Mesonotum dark brown, the median area of scutum, the scutellum, and anterior half of postnotal mediotergite bright sulphur-yellow. Pleura sulphur-yellow with two conspicuous dark brown longitudinal stripes, the more dorsal one extending from the propleura, passing above the halteres to the postnotal mediotergite; ventral stripe occupying sternopleurite and meron. Halteres brownish black, the knobs of the halteres indistinctly yellowish. Legs with the coxæ and trochanters obscure yellow, the outer faces of anterior ones more infuscated; legs dark brown, the femoral bases paler. Wings about as in *G. nigrohalterata*, the stigmal region a trifle darker.

Abdomen of males with the basal tergites darkened, the remainder of the organ largely orange, including the hypopygium. Male hypopygium with the style asymmetrical as

in the group. Outer style of right side a chitinized relatively short beak, near mid-length narrowed to the sub-obtuse apex, the whole structure more or less resembling the head and bill of a duck; inner style fleshy, terminating in a long fasciculate bristle. Outer style of left side flattened apically, the mesal angle produced into a powerful, gently curved, black spine, directed slightly laterad; immediately beside this spine a much smaller, straight, black spine; base of larger spine with small subappressed setæ; inner style of this side generally similar to the corresponding one of opposite side. Elements of phallosome unusually long and slender, much longer and more pointed at tips than in *nigrohalterata*; the shorter one (presumably an apophyse) with the margins from base almost to apex with small setæ; apex a chitinized spine.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Dun Mt., Nelson, altitude 3000 feet, January 5-7, 1922 (*A. Tonnoir*); collector's number 107.

*Allotopotype*, ♀.

*Paratopotype*, 1 ♂, 1 doubtful ♀.

The paratype female may not be conspecific, as the abdominal segments are dark brown with narrow yellow caudal margins.

*Gonomyia (Lipophleps) tenuistylus*, sp. n.

*Male*.—Length about 3.6 mm.; wing 4.2-4.5 mm.

Most closely related to *G. (L.) longispina*, Alexander, from which it differs chiefly in genitalic characters.

Rostrum yellow; palpi brownish black. Head dark brown, extensively variegated with sulphur-yellow. Præscutum largely brown, the scutal lobes somewhat darker brown; median area of scutum and the broad scutellum bright yellow; postnotal mediotergite largely yellow, darkened posteriorly. Pleural stripes conspicuous. Apices of knobs of halteres rather bright yellow. Male hypopygium asymmetrical as in the group. Spines of outer dististyles unusually long and slender. Outer dististyle of left side subcylindrical, narrowed to the apex, which bears a long curved spine, the base encircled by dense, short, reddish setæ. Outer dististyle of right side arising from an enlarged base, gently curved to the acute apex. Inner styli of both sides fused or closely approximated to their respective outer styles, approximately equal to one another in shape and size, setigerous, each terminating in a powerful fasciculate seta. Elements of phallosome two, very unequal in size, one (pre-

sumably an apophyse) very short, the other (presumably the ædeagus) unusually long and acutely pointed at apex.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Nelson, Nelson, November 8, 1923 (*A. Tonnoir*); collector's number 107.

*Paratopotype*, ♂, March 16, 1923 (*A. Tonnoir*).

*Gnophomyia* (*Campbellomyia*) *brevitarsis*, sp. n.

General coloration pale yellow; rostrum and scapal segments of antennæ yellow; head pale brown, the occiput and genæ paling into yellow; tarsi very short, a little less than one-fourth the tibiæ; wings nearly hyaline.

*Male*.—Length about 3.2 mm.; wing 4.2 mm.

Closely allied to *G. (C.) fulvipleura*, Alexander, both species having long slender legs with relatively short and inconspicuous trichiæ and with the tarsi unusually shortened.

Rostrum pale yellow, the palpi passing into pale brown. Antennæ short, the scapal segments light yellow, the flagellum brown; flagellar segments oval with verticils of moderate length. Vertex very broad; head pale testaceous brown, a little darker on the sides of the vertex, the occiput and genæ paling into dull yellow.

Pronotum obscure yellow, a little darkened anteriorly. Mesonotum obscure yellow, the præscutum a very little darker; pseudosutural foveæ pale, inconspicuous against the ground-colour. Halteres elongate, pale. Legs with the coxæ and trochanters light yellow; femora and tibiæ pale brownish yellow; trichiæ of the tibiæ moderately long, but subappressed and inconspicuous; tarsi pale brown; tarsi very short, the segments gradually decreasing in length, the first approximately twice the second, the second approximately twice the third, the entire posterior tarsus measuring 1.2 mm., the tibia 4.2 mm. Wings relatively narrow, nearly hyaline, the stigma ill-defined and only a trifle darker than the ground-colour; veins darker brown. Macrotrichiæ on distal third of  $R_2$  and on distal three-fourths of  $R_3$ . Venation: *m-cu* near mid-length of cell 1st  $M_2$ ; cell 2nd  $A$  long and narrow.

Abdomen pale brown, the sternites obscure yellow; eighth abdominal segment darker brown to produce a narrow sub-terminal ring; hypopygium obscure yellow. Hypopygium almost exactly as in the genotype, *G. (C.) alpina*, Alexander.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Nelson, Nelson, December 1921 (*A. Tonnoir*); collector's number 109.

*Gnophomyia (Campbellomyia) alpina pallipes*, subsp. n.

*Male*.—Length about 3·2 mm.; wing 5 mm.

*Female*.—Length about 3·6 mm.; wing 5·6 mm.

Differing from typical *alpina* in several details.

Antennæ pale brown. Præscutum with the produced anterior end and lateral spots behind the pseudosutural foveæ dark brown; lateral ends of scutal lobes darkened. Pleura pale, the sternopleurite and anepisternum with a conspicuous dark brown girdle; postnotal pleurotergite similarly darkened. Knobs of halteres conspicuously infuscated. Outer face of fore coxa not more infuscated than the other coxæ. Legs with the coxæ concolorous with the tibiæ, obscure brownish yellow, the tips of the basal three segments and the terminal segments weakly more infuscated. In typical *alpina* the tips of the tibiæ and all the tarsi are black. Tarsi proportionately shorter, approximately one-third the length of the tibia (posterior tibia 4 mm., tarsus 1·3 mm.); in *alpina*, the posterior tarsi are approximately two-fifths the length of the tibia (posterior tibia 5 mm., tarsus 2 mm.). Wings more greyish; cell 2nd *A* a trifle wider.

In some specimens, the dark lateral spot on the præscutum and the postnotal pleurotergite are not evident, but the dark vertical girdle on the anterior mesopleura is evident in all cases.

*Hab.* New Zealand (Both Islands).

*Holotype*, ♂, Aniseed Valley, Nelson, March 22, 1922 (*A. Tonnoir*); collector's number 121.

*Allotype*, ♀, Wilton's Bush, Wellington, December 2, 1921 (*A. Tonnoir*).

*Paratypes*, ♂, Khandallah, Wellington, November 30, 1921 (*A. Tonnoir*); ♂, Nelson, Nelson, March 4, 1922 (*A. Tonnoir*).

*Aphrophila trifida*, sp. n.

Size small (wing under 7 mm.); vertex broad; median præscutal carina present; coxæ grey pruinose; legs dark brown, the femoral bases narrowly paler; abdomen dark, grey pruinose, the hypopygium with the smaller plate of the gonapophyses terminating in three acute subparallel teeth.

*Male*.—Length about 4·5–4·6 mm.; wing 6·2 mm.

*Female*.—Length about 6 mm.; wing 6·5 mm.

Head clear light grey, the vertex between the eyes broad, in the male about equal to the diameter of a single eye.

Thorax higher and more gibbous than in *A. triton*. Mesonotal præscutum clear blue-grey with three dark grey stripes, the median stripe divided by a median carina. Legs with the coxæ black, grey pruinose; outer faces of trochanters infuscated; legs dark brown, only the femoral bases narrowly paler. Wings with a strong brown tinge; stigma oval, slightly darker brown, relatively ill-defined; veins darker brown. Veins with macrotrichiæ on distal half of  $R_{2+3}$ ; none on basal quarter of  $M_{1+2}$  or basal third of distal section of  $Cu_1$ . Venation:  $Sc_1$  ending beyond three-fourths the length of  $Rs$ ,  $Sc_1$  about twice  $Sc_2$ ;  $r$  nearly its own length before the fork of  $R_{2+3}$ , and nearly three times its length from the tip of  $R_1$ .

Abdomen dark grey, including the hypopygium. Male hypopygium with the dististyle long and slender, narrowed to the single apical tooth. Larger plate of gonapophyses neither darkened nor serrulate at apex; smaller plate narrow, terminating in three rather long, acute, subparallel teeth, the outer pair a trifle longer and more acute, the median tooth broader and a trifle shorter, with faint indications of microscopic lateral shoulders at extreme base.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Mt. Arthur Tableland, Nelson, altitude 4500 feet, December 27, 1921 (*A. Tonnoir*); collector's number 114.

*Allotopotype*, ♀, altitude 5000 feet, December 23, 1921.

*Paratopotypes*, 1 ♂, 1 ♀, with allotype; *paratypes*, 1 ♂, Dun Mt., Nelson, altitude 3000 feet, January 5-7, 1922 (*A. Tonnoir*); 1 ♂, Waiho, Westland, January 18, 1922 (*A. Tonnoir*).

*Aphrophila trifida* bears a resemblance to *A. triton* (Alexander), differing most evidently in the smaller size, broad vertex, median carina on mesonotal præscutum, and details of structure of the male hypopygium.

*Aphrophila luteipes*, sp. n.

General coloration obscure brownish yellow, the præscutum with darker stripes, at least indicated antero-medially; legs with femora obscure yellow; wings tinged with brownish yellow; male hypopygium with the smaller plate of gonapophyses roughly triangular in outline, the median tooth large and conspicuous, the lateral teeth subobsolete.

*Male*.—Length about 5.5 mm.; wing 6.5 mm.

*Female*.—Length about 6 mm.; wing 7.5-8.5 mm.

♂. Antennal scape yellowish brown, the flagellum black;

flagellar segments short-oval. Vertex brown, sparsely pruinose; relatively narrow, at narrowest point less than one-half the diameter of a single eye.

Mesonotal præscutum obscure brownish yellow with three darker brown stripes, the median one not reaching the suture; median carina indicated posteriorly, but very faint; scutal lobes extensively darkened, the median area and scutellum pale; postnotal mediotergite darker behind. Pleura brownish yellow, the dorsopleural membrane somewhat clearer. Halteres pale yellow. Legs with the coxæ obscure yellow, the extreme bases weakly infuscated; trochanters yellow; femora obscure yellow, scarcely darkened apically, the surface with abundant short brown setæ; tibiæ obscure yellow, the tips narrowly brownish black; tarsi black. Wings tinged with brownish yellow, cells *C* and *Sc* a trifle darker; stigma very ill-defined, only a trifle darker than the ground-colour; veins darker brown. Macrotrichia on vein  $R_{2+3}$  near origin and on basal section of  $R_{4+5}$ ; trichia on *M* and *Cu* proximad of cord. Venation: *r* on  $R_{2+3}$  about one-half its length before the fork and on  $R_1$  a trifle more than twice its length from the tip.

Abdomen brownish black, the pleural membrane more buffy; hypopygium yellowish. Male hypopygium with the dististyle a trifle more slender than in *A. flavopygialis*, terminating in an acute blade, with a smaller subapical tooth. Smaller plate of gonapophyses roughly triangular in outline, the median tooth large and conspicuous; lateral teeth subobsolete, appearing as ill-defined shoulders at base of median tooth.

♀. The females that are associated with the type male probably belong here, although differing in some details of coloration. Præscutal stripes paler, only the anterior ends of the median stripes darkened; median carina indicated throughout its length. Wings with stigma well defined; in the allotype,  $Sc_2$  at extreme tip of  $Sc_1$ . Abdomen light brown, the tergites a little darker.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Alexandra, Otago, January 7, 1923 (*C. C. Fenwick*).

*Allotype*, ♀, Woodside, near Maungatua, Otago, December 15, 1923 (*W. Geo. Howes*).

*Paratypes*, ♀, Lake Manapouri, Southland, altitude 600 feet, January 1-7, 1923 (*S. Lindsay*); ♀, Waiho, Westland, altitude 600 feet, January 24, 1923 (*A. Tonnoir*); collector's number 115.



*Aphrophila tridentata*, sp. n.

General coloration pale brown, the præscutum with three darker brown stripes; præscutum with median carina; pleura obscure yellow; femora testaceous-yellow, the tips narrowly infuscated; wings tinged with pale brown; male hypopygium yellowish, the dististyle bifid at apex; smaller plate of gonapophyses terminating in three small subequal teeth.

*Male*.—Length 4.5–5.5 mm.; wing 5.5–6 mm.

Antennæ with the scapal segments yellowish brown; flagellum black, the segments short-oval. Head brownish grey, paler on the anterior vertex, the latter relatively narrow, a trifle less than one-half the diameter of one eye.

Mesonotal præscutum pale brown with three dark brown stripes, these but little evident against the ground-colour; lateral margins of sclerite and humeral region more yellowish; median carina distinct; mesonotum gibbous, the præscutum produced cephalad over the base of the head, the dorsum of the præscutum when viewed laterally plane or even feebly concave; scutal lobe dark brown, the lateral edge of the darkened portion weakly carinate; median area of scutum more testaceous; scutellum and postnotum dark brown. Pleura obscure yellow, the sternopleurite slightly infuscated. Halteres pale. Legs with the coxæ and trochanters testaceous-yellow; trochanters obscure yellow; femora testaceous-yellow, the tips narrowly but distinctly infuscated; tibiæ testaceous, the tips narrowly infuscated; tarsi with the basal two segments testaceous, tipped with darker; terminal segments uniformly dark brown. Wings with a pale brown tinge, the stigma oval, slightly darker brown; veins dark brown. Macrotrichiaë lacking on basal deflection of  $R_{4+5}$  and on base of terminal section of  $M_{1+2}$ ; chief elements of cord pale to semi-obsolete. Venation:  $Sc_2$  not far from tip of  $Sc_1$ , terminating near two-thirds the length of  $R_s$ , the latter feebly angulated at origin;  $r$  on  $R_{2+3}$  one-half or more of its length before the fork, and more than twice its length from the tip of  $R_1$ ; base of terminal section of  $M_3$  semi-obliterated.

Abdomen brown, the sternites a little paler; subterminal segments dark brown to produce a ring; male hypopygium yellowish, the extreme bases of dististyle a trifle infuscated. Male hypopygium approximating the type of *A. flavopygialis*. Dististyle relatively slender, terminating in a slender spine with a slightly smaller spine just back from tip. Smaller plate of gonapophyses long and slender,

narrowed gradually outwardly, the apex truncate and provided with three small, approximately equal teeth, the median tooth a trifle shorter and broader. The larger plate rests on three supports, with a cavity beneath.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Aniseed Valley, Nelson, December 1-4, 1923 (*A. Tonnoir*); collector's number 113 c.

*Paratypes*, 2 ♂♂, 1 ♀, Takaka, Nelson, February 6, 1920 (*R. J. Tillyard*).

The paratypes were earlier (*Ann. & Mag. Nat. Hist.* (9) vol. ix. pp. 150-151, 1923) included as paratypes of *A. flavopygialis* (Alexander), to which species the present form is closely allied.

*Aphrophila monacantha*, sp. n.

General coloration reddish brown, the præscutum with three darker brown stripes; vertex of male narrow, about equal in width to the diameter of the basal segment of scape; femora obscure yellow, tipped with black; wings tinged with pale yellow, cells *C* and *Sc* indistinctly clouded with brown; male hypopygium yellowish, the dististyle bifid at apex; larger plate of gonapophyses with a U-shaped apical notch; small plate of gonapophyses reduced to a slender spine.

*Male*.—Length 4.5-4.8 mm.; wing 6-6.8 mm.

*Female*.—Length about 6 mm.; wing about 6.6 mm.

Rostrum pale brown, the palpi dark brown. Antennæ with the basal segment of the scape reddish yellow, the apex darker; remainder of organ dark brown; flagellar segments oval. Head dark grey, the anterior vertex and orbits lighter grey; vertex between eyes very narrow, about as wide as the diameter of the first scapal segment. In the female, the vertex is a trifle wider.

Mesonotum reddish brown, the præscutum with three darker brown stripes; median carina present but ill-defined; scutal lobes vaguely darkened; scutellum obscure yellow; postnotal mediotergite blackened posteriorly. Pleura reddish yellow, the sternopleurite darker; a vague darkened area on anepisternum immediately behind the fore coxæ. Halteres pale. Legs with the coxæ and trochanters obscure brownish yellow; femora obscure yellow, the tips conspicuously blackened; tibiæ pale brown, the tips narrowly blackened; tarsi black. Wings with a pale yellowish tinge; cells *C* and *Sc* faintly infuscated; stigma oval, brown; veins pale brown, the major veins before the cord more yellowish.

Sparse macrotrichiae on  $R_{2+3}$  and the extreme tip of  $R_s$ ; numerous trichiae on basal section of  $R_{4+5}$ ; no trichiae on veins  $M$  and  $Cu$  proximad of cord. Venation:  $Sc_2$  less than half its length from tip of  $Sc_1$ , ending beyond three-fourths the length of  $R_s$ ;  $r$  on  $R_{2+3}$  close to or some distance before the fork and on  $R_1$  about twice its length from tip.

Abdomen brown, the three subterminal segments brownish black to produce a broad annulus; hypopygium obscure yellow. Male hypopygium of the general type of *A. flavopygialis*; dististyle moderately broad, with a long, slender, subterminal spine, in addition to the stouter apical one. Larger plates of gonapophyses fused together apically, the caudal margin with a U-shaped notch, the extreme caudal margin narrowly darkened, each lobe formed being obtuse to subacute. Smaller plate of gonapophyses reduced to a single slender spine, the tip moderately acute.

*Hab.* New Zealand (Both Islands).

*Holotype*, ♂, Wairakei, Auckland, March 6, 1923 (*A. Tonnoir*); collector's number 115 b.

*Allotype*, ♀, Nelson, Nelson, January 1, 1920 (*A. Philpott*).

*Paratopotypes*, 2 ♂♂; *paratype*, ♂, Nelson, Nelson, January 1, 1920 (*R. J. Tillyard*).

The allotype and paratype of *Aphrophila monacantha* had earlier (*Ann. & Mag. Nat. Hist.* (9) vol. ix, pp. 150-151, 1922) been included in the type-material of *A. flavopygialis* (Alexander), to which species the present fly is most closely allied. Of the eight species of *Aphrophila* known to the writer at the present writing, all but *monacantha*, *luteipes*, and *flavopygialis* have been taken in the Province of Nelson. There can be but little doubt that the last-named species likewise occurs, since it is entirely regional (Wellington to Westland and Otago).

#### IX.—Some Orthoptera from Pamir and adjacent Countries.

By S. P. TARBINSKY.

THE material on which this paper is based has been collected principally by Prof. N. V. Bogojavlensky during his expeditions to Pamir in 1895, 1898, and 1901. N. Bogojavlensky's collections, which are preserved in the Zoological Museum of the Moscow University, have been already partly determined by Mr. N. Zubovsky, but the results of this study