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XVII.—New or little-known Tipulidæ (Diptera).—XIV. Australasian Species. By Charles P. Alexander, Ph.D., F.E.S., Amherst, Massachusetts, U.S.A.

THE crane-flies described in the present instalment are all from New Zealand, and were collected by Messrs. Campbell, Gourlay, Harris, Howes, Lindsay, Tapley, and Watt, to whom my sincere thanks are extended for the privilege of studying their extensive collections of Tipulidæ. The types are preserved in the writer's collection.

Dicranomyia mæsta, sp. n.

General coloration dark brown; wings relatively narrow, brown, the stigma darker brown; conspicuous pale areas before and beyond the stigma; male hypopygium with a group of about ten spines on the mid-apical line of the tergite.

Male.—Length about 6.5 mm.; wing 8.7 mm.

Rostrum and palpi dark brown. Antennæ dark brown throughout; flagellar segments oval. Head greyish brown.

Pronotum, mesonotal præscutum, and scutal lobes uniformly dark brown, only the humeral region of the præscutum a very little paler; median area of scutum and the scutellum pale brown; postnotum dark brown. Pleura dark brown, with a sparse, appressed, microscopic pubescence.

Ann. & Mag. N. Hist. Ser. 9. Vol. xi.

Halteres rather elongate, dark brown, the extreme base of the stem yellow. Legs with the coxx yellowish, the lateral faces slightly infuscated; trochanters obscure yellow; remainder of the legs black. Wings relatively narrow, brown, the stigma still darker brown, oval; conspicuous pale areas before and beyond the stigma; veins dark brown. Venation: Sc short, Sc_1 ending just beyond the origin of Rs, Sc_2 a corresponding distance before this origin; basal deflection of Cu_1 before the fork of M.

Abdomen dark brown. Male hypopygium with the pleurites grooved along the mesal face; ventral pleural appendage relatively small and slender, with a conspicuous lobule on the mesal face before mid-length, the apex and this lobule terminating in powerful spinous setæ; dorsal pleural appendage a powerful, almost straight, chitinized rod, only the apex gently curved. Gonapophyses with the mesal apical angles produced into a slender blackened lobe, the lateral margin of which is microscopically denticulate or crenulate. A close group of about ten powerful spines on the mid-caudal line of the tergite.

Hab. New Zealand (North Island).

Holotype, 3, Ohakune, altitude 2060 feet, February 8, 1922 (T. R. Harris).

Dicranomyia torrens, sp. n.

Male.—Length 7.5-7.8 mm.; wing 10.8-11 mm.

Female. - Length 7 mm.; wing 10 mm.

Generally similar to *D. fasciata*, Hutton, differing as follows:—

Halteres unusually long and slender, the stem pale except at the distal end. Legs with the apices of the femora distinctly pale. Wings with the stigma larger; dark colour in the anal cells occupying all of the cells; spot at origin of Rs not attaining vein M. Venation: a supernumerary cross-vein in cell Sc_1 , the tip of R_1 being atrophied immediately beyond r. Male hypopygium with the mesal face of each pleurite produced caudad and mesad into a long conspicuous lobe. Ventral pleural appendage broad at base, narrowed apically; dorsal pleural appendage gently curved to the acute apex, not strongly bent near mid-length as in fasciata. Gonapophyses pale, the mesal apical angle produced caudad into a long slender lobe. Face of penisguard with two convergent rows of powerful bristles at Ovipositor with the valves dark reddish horn-colour, the acute tips of the tergal valves slightly curved.

Hab. New Zealand (North Island).

Holotype, 3, Ohakune, altitude 2060 feet, November 18, 1921 (T. R. Harris).

 $Allotopotype, \$?.

Paratopotypes, 30 \mathcal{E} \mathcal{G} ; 1 additional \mathcal{E} , November 20, 1921.

"Hanging around a water fall."

Dicranomyia heteracantha, sp. n.

Male.—Length about 4.3 mm.; wing 4.5 mm.

Related to D. seducta, Alexander, differing as follows:— Mesonotal præscutum brownish yellow, Size smaller. with a broad, median, dark brown stripe, the lateral margins of the sclerite being broadly pale (in seducta the disk is largely covered by the three confluent stripes); scutal lobes slightly darkened; remainder of the mesonotum obscure yellow. Pleura pale brownish yellow. Wings with the stigma very pale brown, subcircular in outline. Venation with Rs more arcuated; cell 1st M_2 broader. Male hypopygium with the spines on the rostrum heteromorphous as in seducta. The more distal spine arises from a very elongate base, this base much longer than the rostrum beyond it and nearly as long as the proximal spine itself; the distal spine is about one-half longer than its base and very slender.

Hab. New Zealand (North Island).

Holotype, 3, Ohakune, altitude 2060 feet, January 28, 1922 (T. R. Harris).

Molophilus howesi, sp. n.

General coloration brown, the postnotum and pleura dark brown; antennæ moderately elongate; halteres yellow; wings with a strong brown suffusion; anal veins convergent; male hypopygium with the pleural appendages terminal in position.

Male.—Length about 3.8 mm.; wing 4.4 mm.

Rostrum and palpi dark brown. Antennæ black, the second segment light yellowish brown; antennal flagellum, if bent backward, extending about to the halteres, dark brownish black. Head dark brown.

Pronotum dark brownish black. Mesonotum uniformly brown, the præscutum a little brighter than the scutal lobes, the humeral region and lateral margins obscure yellow; scutellum and postnotum dark brown. Pleura dark brown. Halteres yellow. Legs with the coxæ and trochanters

obscure yellow, contrasting with the dark pleura; remainder of the legs broken. Wings with a dark brown tinge, the base and costal region a little brighter; veins darker brown, with conspicuous macrotrichiæ. Venation: basal deflection of Cu_1 about one-third longer than the deflection of M_3 ;

anal veins convergent.

Abdomen dark brown. Male hypopygium with the appendages terminal in position as in *M. terminans* and allies; a deep slit on mesal face of each pleurite to receive the appendages; lateral pleural appendage strongly curved near two-thirds the length, the apex acute, the angle of curvature filled with a pale membrane; mesal appendage about equal in length but not so stout, slender on basal third, the remainder a little dilated, the surface with tiny appressed denticles.

Hab. New Zealand (North Island).

Holotype, 3, Wainuiomata, near Wellington, February 3, 1922 (Geo. Howes).

Paratype, \$\partial \text{, Taumarunui, October 1, 1922 (T. R. Harris).} This species is named in honour of the collector, Mr. W. George Howes, to whom I am very greatly indebted for invaluable material.

Molophilus irregularis, sp. n.

General coloration shiny orange-yellow; wings with a strong yellow tinge; male hypopygium with the basal pleural appendage profoundly bifid, the lateral arm a strongly curved spine.

Male.—Length about 3.8 mm.; wing 4.7 mm.

Rostrum obscure yellow; palpi brown. Antennæ of moderate length; scapal segments obscure yellow, the

flagellum pale brown. Head yellow.

Mesonotum shiny orange-yellow, unmarked. Pleura yellowish testaceous. Halteres yellow. Legs with the coxæ and trochanters yellow; remainder of the legs broken. Wings with a strong yellowish tinge, more intense at the base, in the costal region, and along vein Cu; veins yellow, with brown macrotrichiæ. Venation: R_{4+5} and deflection of R_5 subequal; vein 2nd A elongate, sinuous.

Abdomen reddish yellow. Male hypopygium very different in structure from any similar species. Apex of each pleurite produced caudad into a cylindrical lobe, the apex terminating in a small chitinized spine, the surface covered with microscopic black hooks which group to form two distinct crests, along the lateral and dorsal margin of

each lobe. Pleural appendages two, the more distal a complex arm shaped somewhat as in *M. quadrifidus*, the dilated head with dense areas of erect spinulæ; basal appendage profoundly bifid, forking immediately beyond the base; lateral arm a chitinized spine that is broad-based, soon narrowed into a strongly curved, acicular point directed caudad and finally mesad; mesal arm a powerful spear-like arm or blade, dilated just before the apex, which ends in an acute straight point.

Hab. New Zealand (North Island).

Holotype, 3, Mt. Ruapehu, altitude 4500 feet, February 27, 1922 (T. R. Harris).

Molophilus tanypus coloratus, subsp. n.

Female.—Length 5 mm.; wing 6 mm.

Differs from typical M. tanypus, Alexander, as follows:— Size larger. Mesonotum darker. A dark brown pleural stripe extending across the mesepisternum and mesepimeron beneath the wing-root. Femora yellowish brown, the tips conspicuously dark brown; incisures between the femora and tibiæ not conspicuously pale. Wings whitish subhyaline, extensively clouded with brown, the coloration being on the membrane itself; the chief brown areas are at the base of Rs, including cells C and Sc; at the stigma, continued along the cord; all veins beyond the cord, with the exception of M_{1+2} , with conspicuous brown seams near their distal ends; conspicuous seams along the basal deflection of Cu_1 and M_3 , along Cu_2 , and near the base and tip of vein 2nd A, the base, centre, and apex of cell 2nd A being pale. A series of brown dashes on the lateral margins of the abdominal tergites.

Hab. New Zealand (North Island).

Holotype, \circ , Ohakune, altitude 2060 feet, July 1921 (T. R. Harris). The type is preserved in alcohol.

Rhabdomastix (Sacandaga) trichiata, sp. n.

Female.—Length about 5.8 mm.; wing 7.2 mm.

Generally similar to R. neozelandia, Alexander, differing as follows:—

Mesonotum shiny dark brown, with a thin yellowish-brown pollinosity, so that the surface appears subshiny, without stripes. Pleura less heavily pruinose. Femoral bases only narrowly pale. Wings distinctly tinged with brown, the stigma distinct; brown suffusions along the cord and vein Cu; other longitudinal veins less distinctly seamed

with brown. Venation: Sc long, ending about opposite two-thirds the length of Rs, Sc_2 atrophied; tip of R_2 about its own length from the tip of R_1 ; m and the outer deflection of M_3 subequal. Macrotrichiæ of wing-veins unusually heavy, occupying the entire length of veins R_{2+3} and R_3 , R_{2+3} having about ten setæ; three setigerous punctures on the distal fifth of the sector. Abdomen uniformly dark brown, the valves of the ovipositor dark.

Hab. New Zealand (North Island).

Holotype, 9, Ohakune, altitude 2060 feet, February 8, 1922 (T. R. Harris).

Rhabdomastix (Sacandaga) callosa, sp. n.

Male.-Wing 4.5 mm.

Generally similar to R. otagana, Alexander, differing as follows:—

Size larger. Head grey. Mesonotal præscutum and scutal lobes greyish yellow, with four indistinct brown stripes; on the mesal cephalic portion of each scutal lobe an oval shiny area bearing two long setæ. Pleura with more extensive dark areas on the mesepisternum and sides of the sternum. Wings with R_3 much shorter, cells R_2 and R_3 being nearly equal along the costal margin (in otagana, cell R_2 is one-half longer than R_3). Macrotrichiæ on the veins more numerous, there being about ten on R_3 , extending almost to the fork of R_{2+3} ; on the medial veins, the macrotrichiæ extend farther basad than in otagana; Cu_2 with about three macrotrichiæ, none on the distal third of the vein. Abdomen broken.

Hab. New Zealand (South Island). Holotype, 3, Otago (Geo. Howes).

Orolimnophila connexa, sp. n.

Female.-Length 8.5 mm,; wing 9.5 mm.

Related to O. eluta, Edwards, from which it differs as follows:—

Coloration of the thoracic præscutum reddish brown, the pleura and postnotum dark brown. Wings more greyish, with clearly-defined brown veins. Venation: R_2 fused distally for a short distance with R_1 ; m from one-half to two-thirds the outer deflection of M_3 . Macrotrichiæ on M and Sc very sparse and scattered, practically confined to the region distad of the origin of Rs; R_2 more transverse in position and with but one or two macrotrichiæ. Abdomen

dark brown. Ovipositor with the valves, especially the tergal valves, shorter and stouter.

Hab. New Zealand (North Island).

Holotype, 3 alcoholic, Ohakune, altitude 2060 feet, July 1921 (T. R. Harris).

Orolimnophila eluta flavida, subsp. n.

Female.—Length 9 mm.; wing 9.3 mm.

Similar to O. eluta, Edwards, from which it differs as follows:—

Head ochreous, darker medially. Wings with a clear light yellow tinge, the veins slightly darker yellow. Venation: Sc_2 farther removed from the tip of Sc_1 ; Rs arcuated at origin; R_2 oblique, close to, but separate from, R_1 at the margin; cell 1st M_2 very small, almost square, tending to be open by the atrophy of the outer deflection of M_3 ; basal deflection of Cu_1 longer. Conspicuous macrotrichiæ on Sc almost to the base; R_2 with a single macrotrichia, situated on the basal half. Abdominal tergites concolorous with the ochreous thorax, the sternites a very little darker. Ovipositor with the tergal valves long and slender.

Hab. New Zealand (South Island).

Holotype, Q, Mt. Grey, Canterbury, altitude 1200-1500 feet, November 27, 1921 (J. W. Campbell and Stuart Lindsay).

Limnophila subtruncata, sp. n.

Male.—Length about 5 mm.; wing 6.3 mm.

Female.—Length about 7 mm.; wing 8.3 mm.

Generally similar to L. truncata, Alexander, differing as follows:—

Size smaller. Wings with the brown pattern a little less extensive. Venation: Rs angulate at origin; r less than its own length from the tip of R_1 ; basal deflection of Cu_1 about two-thirds its length beyond the fork of M. Male hypopygium with the pleurites simple, the mesal apical angle not produced as in truncata; outer pleural appendage blackened, the apex very obtusely rounded to subtruncate; inner pleural appendage with the base enlarged, the more slender apex weakly sigmoid in shape. Gonapophyses appearing as two slender fleshy lobes that lie parallel, one on either side of the comparatively small penis-guard, their surface setiferous.

Hab. New Zealand (North Island).

Holotype, 3, Ohakune, altitude 2060 feet, January 18, 1922 (T. R. Harris).

Allotype, \$\cong\$, Ruapehu, between Ohakune and Camp, February 26, 1922 (T. R. Harris).

Limnophila otagensis, sp. n.

Allied to L. cinereipleura; wing of male over 6 mm.; mesonotum and pleura brown; basal deflection of Cu_1 beyond the fork of M.

Male.—Length 5 mm.; wing 6.2 mm.

Most closely related to the smaller L. cinereipleura, Alex. Rostrum and palpi dark brown. Antennæ brownish black, short, with conspicuous verticils. Head grevish brown, clearer grey on the anterior part of the vertex. Mesonotum brown with a sparse brownish-yellow pollen, the præscutum with indistinct darker stripes. Pleura brownish testaceous, with no distinct tinge of grey, but with a slight indication of a darker longitudinal stripe. Halteres vellow. Legs with the coxe and trochanters brownish yellow: remainder of the legs brown, the terminal tarsal segments black. Wings similar in colour to those of L. cinereipleura: cell M_1 larger; basal deflection of Cu_1 beyond the fork of M a distance approximately equal to one-third its length. Male hypopygium with the outer pleural appendage only a little longer than the inner appendage, unarmed. Gonapophyses appearing as very strongly curved horns, as in this group of species; penis-guard with the shoulders rounded.

Hab. New Zealand (South Island).

Holotype, &, Queenstown, Otago, December 26, 1921 (G. Howes).

Paratopotype, 1 3, with the type; 1 3, January 4, 1922.

Limnophila angusta, sp. n.

Male.-Length about 4 mm.; wing 4.8 mm.

Related to L. cinercipleura, Alexander, and L. deviata, Alexander, differing as follows:—

Wings very narrow, pale brownish yellow, the stigma almost lacking. Venation: r faint, on R_2 about its own length beyond the fork of R_{2+3} , and consequently far removed from the tip of R_1 ; R_2 beyond r straight, R_3 diverging from it, so cell R_2 at the wing-margin is much wider than cell 2nd R_1 ; cell M_1 small; all the cells of the wing are conspicuously narrowed, due to the shape of the

wing. Male hypopygium with the outer pleural appendage simple and acutely pointed at apex.

The body of the type is injured, so the coloration cannot

be described with accuracy.

Hab. New Zealand (South Island).

Holotype, &, Purau, Banks Peninsula, February 19, 1922 (J. W. Campbell).

Limnophila (Metalimnophila) producta banksiana, subsp. n.

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

Related to typical producta, Alex., differing chiefly in slight differences in the venation and structure of the

hypopygium.

Wings with a faint brown cloud at r-m. Venation: r very faint; Sc_2 at tip of Sc_1 and only about one-half longer than it; cell 1st M_2 relatively small with the basal deflection of Cu_1 just beyond mid-length. Male hypopygium with the apical angles of the pleurites produced caudad and mesad into long slender arms as in producta; outer pleural appendage with a small circular apical notch, the lateral arm thus formed narrow and subacute at apex; inner pleural appendage with the pale apex long and slender, bent mesad at a right angle to the remainder of the appendage.

Hab. New Zealand (South Island).

Holotype, &, Mount Fitzgerald, Banks Peninsula, altitude 1500 feet, January 24, 1922 (E. S. Gourlay).

Macromastix flavidipennis, sp. n.

General coloration yellow, the prescutum with three pale brown stripes; vertical tubercle fulvous; wings tinged with yellow, the cells beyond the cord faintly infuscated; abdominal tergites dark brown, the bases obscure orange laterally.

Female.—Length about 11 mm.; wing 18.3 mm.

Frontal prolongation of the head elongate, brown; nasus lacking; palpi brown. Antennæ short, the scape pale testaceous yellow; flagellum brown. Head brown with a capillary dark brown line, the orbits broadly yellowish, deepening into fulvous on the low vertical tubercle.

Pronotum pale brownish yellow. Mesonotal præscutum yellow with three conspicuous but pale brown stripes, the median stripe split anteriorly by a capillary dark brown vitta; a narrow U-shaped dark mark on the cephalic margin of the præscutum; scutal lobes concolorous with the præscutal stripes, the median area paler; median lobe of

scutellum obscure vellow; postnotum darker brown, paler caudally and laterally. Pleura testaceous yellow, clearer yellow posteriorly. Halteres pale brownish yellow, the knobs darker. Legs with the coxe concolorous with the pleura; trochanters testaceous, tinged with green; remainder of the legs dark brown, the femoral bases pale. Wings with a strong yellowish and brownish tinge, the stigma oval, dark brown; cell Sc dark brown, the base and narrow apex yellowish; the wing-base and cells $C, R, M, 1st R_1$ and R_2 are tinged with yellow; cells R_5 , outer end of R_3 , 1st M_2 , M_1 , 2nd M_2 , M_3 , and Cu_1 are slightly more infuscated; cells Cu and the anal cells greyish yellow to subhyaline; very small obliterative areas before and beyond the stigma and in the base of cell 1st M_2 ; veins brown, more yellowish at the wing-base. Venation: cell 2nd R₁ short and broad; petiole of cell M_1 about two-thirds m; m-cu distinct; cell 2nd A

Abdomen dark brown, the sides of the basal tergite yellow; remaining tergites dark brown, the basal lateral angles broadly obscure orange; sternites yellowish.

Hab. New Zealand (North Island).

Holotype, Q, Ohakune, altitude 2060 feet, January 28, 1922 (T. R. Harris).

Macromastix albiplagia, sp. n.

General coloration pale brownish testaceous; antennæ of β moderately elongate; mesonotal præscutum with four brown stripes, the intermediate pair more or less confluent; wings greyish, the costal region brown; cells R and M brown, variegated with white blotches; a very conspicuous white area before the cord.

Male.—Length 10-11 mm.; wing 12-13.5 mm. Female.—Length 10-12 mm.; wing 13-16.5 mm.

Frontal prolongation of the head pale brown, more yellowish basally; nasus elongate, simple; palpi dark brown. Antennæ of male moderately elongate, if bent backward extending nearly to the base of the abdomen; scape and basal two or three segments of flagellum obscure yellow, the remainder passing into brown. Head ochreous to pale brown, paler on the orbits.

Mesonotal præscutum buff or greyish buff with four dark brown stripes, the intermediate pair rather narrowly separated or confluent posteriorly; scutal lobes dark; remainder of mesonotum pale brownish testaceous, the sides of the median sclerite of the postnotum darker; thoracic setæ comparatively short. Pleura pale testaceous, the mesepisternum sometimes indistinctly variegated with brown. Halteres pale, the knobs infuscated except at the extreme Legs with the coxe and trochanters brownish yellow; femora pale brown, the tips narrowly but conspicuously blackened; tibiæ pale brown, the tips narrowly dark brown; metatarsi pale brown, the tips and remainder of the tarsi black. Wings strongly tinged with grey; cells C and Sc bright brown; cell 1st C pale; the wing-base and cells R and M infuscated; a brown cloud on the distal side of r-m; stigma still darker brown; anal cells subhyaline, especially on the basal third; a conspicuous white blotch near the middle of cell M, extending slightly into cell R; a second very conspicuous white blotch before the stigma, occupying cell 1st R_1 , the outer ends of R and M, and the bases of cells 1st M_2 and M_8 , narrowly interrupted along Rs; a small obliterative area beyond the stigma; veins dark brown. Venation: distal section of vein R2 in alignment with the basal section, short; cell 2nd R_1 with parallel sides.

Abdomen with the basal tergite and broad lateral margins of the second segment obscure yellow; medial line and caudal margin of second tergite black; remaining tergites brown, the terminal segments darker; basal sternites yellow, the terminal segments darker. In the female the basal tergites in cases show indications of median and sublateral brown stripes. Pleural appendages of male hypopygium trispinous.

Hab. New Zealand (North Island).

Holotype, 3, Ohakune, altitude 2060 feet, January 18, 1922 (T. R. Harris).

Allotopotype, ♀, February 9, 1922.

Paratopotypes, 40 & 9, January 18-February 14, 1922.

Macromastix albiplagia obliterata, subsp. n.

Male.—Length 9-10 mm.; wing 12-13 mm.

Female.—Length 12-13 mm.; wing 14-16 mm.

Generally similar to typical albiplagia, differing as follows:—

Antennal flagellum entirely brownish black. A linear dark brown mark on vertex. Præscutal stripes sometimes subobsolete, pale reddish brown, in other cases the lateral stripes darker than the median stripe. Wings with cells R and M not conspicuously darkened basally and not

variegated with white; bases of anal cells not pale; obliterative areas before the stigma and cord, and beyond the stigma, very small, almost obliterated.

Hab. New Zealand (North Island).

Holotype, 3, Ohakune, altitude 2060 feet, February 16, 1922 (T. R. Harris).

Allotopotype, \circ .

Paratopotypes, 40 ♂ ♀, February 9-16, 1922.

The general appearance of this fly is very different from that of typical *albiplagia*, but the structure of the antenna and hypopygium is so similar that it seems best to consider the present fly as a subspecies.

Macromastix ohakunensis, sp. n.

General coloration grey, the præscutum with four black stripes; antennæ short, the scape yellow, the flagellum black; wings petiolate, tinged with brown; cell Sc and the stigma darker brown; cell 2nd A narrow; abdominal tergites dark brown, segments 1 to 5 obscure yellow sublaterally.

Female.—Length 7.2 mm.; wing 10 mm.

Frontal prolongation of the head elongate, obscure yellow, the ventral surface more infuscated; palpi dark brown; nasus elongate. Antennæ short; scape light yellow, flagellum black. Head greyish brown, the orbits broadly ochreous.

Mesonotal præscutum grey with four black stripes, the intermediate pair narrowly separated; scutum brownish testaceous, each lobe with two black areas, the more caudal the larger; scutellum with the median lobe obscure brownish yellow, the lateral areas blackened; postnotum brownish testaceous, the caudal margin with two large circular black Thoracic setæ not conspicuous. Pleura light grey, the dorso-pleural membrane more yellowish. dark brown, the base of the stem yellow. Legs with the coxe pruinose, especially the mid-coxe; trochanters obscure yellow; femora and tibiæ obscure yellow, the tips narrowly dark brown; tarsi elongate, darkened apically. Wings petiolate, tinged with brown, the stigma and cell Sc dark brown, cell C a little paler; stigma completely filling cells Sc_1 and 2nd R_1 ; veins dark brown. Venation: basal section of R_2 short, in alignment with the distal section; r provided with abundant macrotrichiæ; cell Cu_1 deep; petiole of cell M_1 about two and a half times m; cell 2ndAvery narrow.

Abdominal tergites dark brown; segments 1 to 5 broadly

obscure yellow sublaterally, the extreme lateral margins of the segments ochreous; sternites obscure yellow, the caudal margin of the segments narrowly infuscated; subterminal segments and ovipositor dark brown.

Hab. New Zealand (North Island).

Holotype, 2, Ohakune, altitude 2060 feet, December 25, 1921 (T. R. Harris).

Macromastix minutissima, sp. n.

Size very small (wing under 8 mm.); general coloration light grey; antennæ short in both sexes.

Male.—Length 5.8-7.3 mm.; wing 7.2-7.4 mm.

Female.—Length 6.2 mm.; wing 7.5 mm.

Frontal prolongation of the head ochreous; nasus very short, the apex obtuse. Antennæ short in both sexes; scape obscure yellow, sparsely pruinose; flagellum dark brown; flagellar segments short. Head obscure grey, clearer on the orbits and genæ.

Mesonotal præscutum light grey, with four dark grey stripes; scutal lobes dark; remainder of the mesonotum very light grey; thoracic setæ relatively short, pale. Pleura pale, mesepisternum and sternum grey, separated by a narrow, pale, longitudinal stripe; posterior pleurites almost whitish; pleurites covered with a microscopic, appressed, woolly pubescence. Halteres obscure yellow, the base of the knobs infuscated. Legs with the coxe whitish yellow; trochanters obscure yellow; remainder of the legs brown, the femora and tibiæ broadly paler basally; legs relatively short and stout. Wings subhyaline; stigma pale; veins brown; all veins caudad of the radial field very delicate. Venation: Rs a little shorter than R_{9+3} ; cell 1st M_2 strongly narrowed distally; petiole of cell M_1 about 2.5 times m; basal deflection of Cu_1 beyond the fork of M, the distance about equal to or less than r-m; cell 2nd A narrow.

Abdominal tergites grey, the lateral margins broadly ochreous; sternites grey, the lateral and caudal margins ochreous; in the female the abdomen is more uniformly ochreous. Hypopygium ochreous, of very simple structure, the ninth tergite unarmed.

Hab. New Zealand (South Island).

Holotype, 3, Mt. Ida, Otago, altitude 4000 feet, February 20, 1921 (Geo. Howes).

Allotopotype, \circ , with the type.

Paratopotypes, 3 3 3, with the type; 1 3 at 4500 feet; 1 3 at 5000 feet, February 19, 1922.

This is the smallest species of Macromastix yet discovered.

Macromastix tapleyi, sp. n.

Size small; antennæ short in both sexes; mesonotal præscutum brownish yellow with three plumbeous-brown stripes; thoracic setæ microscopic; wings fully developed in both sexes, faintly infuscated; cell 2nd A narrow; abdemen pale brown.

Male.—Length 7-8.5 mm.; wing 9-10 mm. Female.—Length 8.5 mm.; wing 9-10.2 mm.

Frontal prolongation of the head yellow, darker laterally; labellæ green; palpi dark brown; nasus conspicuous, entire. Antennæ short; scape yellow; flagellum black, the basal segment brown; basal flagellar segment pyriform; segments beyond the second flagellar elongate-cylindrical. Head pale

brown, yellowish pollinose.

Pronotum greenish ochreous. Mesonotal præscutum brownish ochreous with three plumbeous to dark brown stripes that are rather ill-defined; lateral margins of the sclerites greenish; interspaces more or less infuscated: scutal lobes plumbeous brown; scutellum light green or ochreous; postnotum brownish green or ochreous, darker posteriorly. Mesonotum with microscopic black setæ on the interspaces. Pleura buffy with tints of green. Halteres pale, the knobs greenish brown. Legs with the coxe and trochanters concolorous with the pleura; remainder of the legs brown, the tips of the tibiæ narrowly darkened, the long slender tarsi brownish black. Wings fully developed in both sexes, with a faint brown tinge; cell Sc a little darker; stigma oval, pale brown; veins dark brown. Venation: petiole of cell M_1 a little longer than m: m-cupresent; cell 2nd A narrow, in the female a little more widened distally.

Abdomen pale brown with greenish tints, especially basally; in some specimens the caudal margins of the tergites are narrowly darker brown. Male hypopygium light green; ninth tergite with a V-shaped notch, the surface densely set with microscopic black pegs. Ovipositor with the tergites having a V-shaped median apical notch; apical angles of each half of sternum produced into a slender curved spine.

Hab. New Zealand (South Island).

Holotype, &, Governor's Bay, Canterbury, altitude 80 feet, February 24, 1922 (J. F. Tapley).

Allotopotype, \circ .

Paratopotypes, 28 $\Im \circ \varphi$, January 24-March 1, 1922 (J. F. Tapley); paratypes, $1 \circ \varphi$, Lyttelton, February 2, 1922

(J. W. Campbell); Mt. Ida, Otago, February 20, 1922, 6 3 3 at 4000 feet; 8 3 2 at 4500 feet; 2 3 3 at 5000 feet (Geo. Howes).

The green tints above described presumably fade into ochreous in old specimens. The species is named in honour of the collector of the type-specimen, Mr. J. F. Tapley.

Macromastix campbelli, sp. n.

General coloration light green, the præscutum with three orange-fulvous stripes; wings faintly infuscated; thoracic setæ microscopic; ovipositor with the tergal valves separated by a profound notch.

Female.—Length about 9.2 mm.; wing 11.7 mm.

Frontal prolongation of the head yellow, darker laterally; palpi brown basally, passing into black. Antennæ short, the scape greenish vellow, the first flagellar segment brown, the remainder of the organ black. Head pale brown, whitened on the anterior part of the vertex; no apparent vertical tubercle.

Pronotum light green. Mesonotal præscutum light green with three orange-fulvous stripes; scutum green, each lobe with a conspicuous orange-fulyous area; remainder of mesonotum light green. Thoracic setæ sparse and microscopic. Pleura greenish, testaceous. Halteres brown. Legs with the coxe and trochanters pale, tinged with green; femora pale brown; tibiæ brown, the tips narrowly darkened; tarsi dark brown. Wings with a faint brown tinge; cell Sc and the stigma darker brown; veins dark brown. Venation: as in M. tapleyi.

Abdomen pale brown, the segments more or less tinged with green, especially the basal tergites; terminal segments darkened. Ovipositor very different in structure from that of M. tapleyi, the valves of the tergite separate, the incision between the valves so deep that it extends beneath the caudal margin of the eighth tergite; sternites not produced into chitinized spines.

Hab. New Zealand (South Island).

Holotype, ♀, Purau, Banks Peninsula, February 19, 1922

(J. W. Campbell).

This interesting species is named in honour of the collector, my friend Dr. J. W. Campbell. Macromastix campbelli and M. tapleyi are closely allied, in spite of the different structure of the ovipositor. The green tints, especially conspicuous in campbelli, may fade in old specimens, but the colours seem to be as permanent as in species of the viridis group.

Macromastix ferruginosa ruapehuensis, subsp. n.

Typical material of this fly was sent to Mr. Edwards for comparison with his types of ferruginosa. He reports that "The fartagapa Macromastix is probably a subspecies of my ferruginosa. differing in the brighter yellow head, the rather lighter colour of the thorax, rendering the pale patch on the pleuræ rather less conspicuous, the larger pale markings on the abdomen, the clearer wing-membrane, and the shorter stem to cell $fartagapa M_1$; perhaps also the legs are shorter." The above diagnosis covers the chief points in which this fly differs from ferruginosa, Edwards. I am very greatly indebted to Mr. Edwards for making this and other comparisons of material.

Hab. New Zealand (North Island).

Holotype, 3, Mt. Ruapehu, altitude 4000-5000 feet, January 1921 (M. N. Watt).

Paratopotypes, 20 3 3.

XVIII.—A Filariid from the African Elephant. By H. A. BAYLIS, M.A., D.Sc.

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ONE of the collections of nematodes and other parasites recently forwarded to the British Museum (Natural History) by Mr. A. Loveridge included some material collected by Mr. C. B. Goss from two elephants shot in the Lindi district of Tanganyika Territory. One batch of this material contained, besides several other species, three female specimens of a Filaria (sens. lat.), and as no adult Filaria * has yet been recorded from either the African or the Indian elephant, it is thought desirable to give a brief account of this form. The absence of a male is regrettable, but the female has certain characters which will probably prove sufficient for identification should the worm be collected again. position in the host is given on the collector's label as the "stomach." It may probably be assumed, however, that the Filariids came from the peritoneum or peritoneal cavity, in the neighbourhood of the stomach. The other species in the same batch were determined as Grammocephalus clathratus

^{*} With the exception of "Filaria" smithii, Cobbold, now referred to the genus Parabronema.