

VI.—*New or little-known Tipulidæ (Diptera).*—XXIX.  
*Australasian Species.* By CHARLES P. ALEXANDER, Ph.D.,  
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THE crane-flies described at this time are from New Zealand, and are based largely on the important collections made by M. André Tonnoir. Additional species were collected by Messrs. Campbell and Harris. I am greatly indebted to these gentlemen for the privilege of studying this important material. The Tonnoir material has been returned to New Zealand for incorporation in the collection of the Cawthron Institute and other collections. The other specimens are preserved in the writer's collection.

*Dicranomyia nelsoniana*, sp. n.

*Male.*—Length about 4 mm.; wing 5.2 mm.

Most closely allied to *D. semicuneata*, Alexander (North Island). Mesonotum shiny dark brown, unmarked. Pleura testaceous-brown with a broad, blackish, longitudinal stripe extending from the propleura to the base of the abdomen. Wings about as in *semicuneata*. Venation:  $Sc_1$  ending opposite the origin of  $Rs$ ,  $Sc_1$  longer than  $m-cu$ ;  $r$  at tip of  $R_1$ ;  $Rs$  elongate, arcuated at origin, in alignment with  $R_{2+3}$ ;  $r-m$  at or near mid-length of cell 1st  $M_2$ , the proximal end of the latter strongly pointed;  $m-cu$  not far beyond the fork of  $M$ . Male hypopygium with the rostriform appendage of the ventral dististyle stouter, the apex obtuse, with several curved setæ; spines of this appendage subequal, but arising from very unequal papillæ, placed longitudinally in an oval pale area, the outer spine arising from an enlarged base that is a little more than one-fourth the total length; the inner or more proximal spine arises from an elongate thickened base that is about two-fifths the total length. Dorsal dististyle moderately curved, the apex acute. Gonapophyses with the mesal apical angle long and slender, the margins smooth.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Mt. Arthur Tableland, Nelson, 4500 feet, December 22, 1921 (*A. Tonnoir*); collector's number 102.

*Dicranomyia plurispina*, sp. n.

Belongs to the *multispina* group; thorax fulvous-yellow, the scutal lobes and postnotal mediotergite blackened;  
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tips of femora blackened; wings tinged with yellow, conspicuously marked with brown; abdominal segments conspicuously annulated yellow and black; spines on rostrum of male hypopygium about 11 in number.

*Male*.—Length about 7 mm.; wing 7.8 mm.

*Female*.—Length 6.5 mm.; wing 7.4 mm.

Rostrum relatively short, brownish ochreous, the palpi beyond the basal segment dark brown. Antennæ short, the basal segment of scape yellowish ochreous, the flagellar segments dark brown, oval. Head obscure yellow behind, the centre of the vertex more infuscated; vertex at narrowest point about one-third the diameter of one eye.

Pronotum obscure yellow. Mesonotal præscutum obscure fulvous-yellow, with a brown median vitta that begins about opposite the level of the pseudosutural foveæ, becoming wider near the suture; lateral margins of præscutum broadly but less distinctly infuscated; scutum testaceous, the centre of each lobe occupied by a large blackish area; scutellum testaceous; postnotal mediotergite blackened, a trifle paler behind. Pleura and postnotal pleurotergite dull reddish brown, a little darker dorsally. Halteres pale brown, the extreme base of the stem paler. Legs with the coxæ and trochanters testaceous with faint greenish tints; femora yellow, the tips broadly and conspicuously blackened; tibiæ yellowish brown, the extreme tips narrowly darkened; tarsi dark brown. Wings with a strong yellow tinge, conspicuously variegated with brown, including a cloud at arculus; a large one at tip of *Sc* and origin of *Rs*; the conspicuous oval stigma; broad seams along the cord and outer end of cell 1st *M*<sub>2</sub>; wing-margin very faintly infuscated; veins dark brown. Macrotrichiæ relatively long and conspicuous. Venation: *Sc*<sub>1</sub> ending shortly beyond the origin of *Rs*, *Sc*<sub>2</sub> opposite this origin; *Rs* long, angulated and spurred at origin; inner end of cell *R*<sub>3</sub> lying a little proximad of cell 1st *M*<sub>2</sub>, the latter rectangular; *m-cu* shortly before the fork of *M*.

Abdominal tergites conspicuously annulated with bright yellow and brownish black, the basal half of the second segment yellow, the apex black, the amount of yellow decreasing very gradually on the posterior segments until the seventh which is largely infuscated; on the more proximal segments the extreme base of each segment is likewise darkened; sternites yellow and paler brown, arranged as on the dorsum. In the male, the median area of the eighth tergite is pale, the lateral portions infuscated. Male hypopygium very similar to *D. multispina*, Alexander;

rostral spines about 11; ninth tergite not produced caudad into a low median lobe. Ovipositor with the dorsal shield entirely black; tergal valves slender, gently upcurved; sternal valves long and straight.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Nelson, Nelson, October 27, 1923 (*A. Tonnoir*).

*Allotopotype*, ♀.

*Dicranomyia sulphuralis chlorophylloides*, subsp. n.

Generally similar to typical *sulphuralis*, Edwards, differing only in the persistent light green body-tints and the more rounded apices of the gonapophyses of the male hypopygium. Typical *sulphuralis* does not exhibit green tints, whereas the present variety possesses and retains them, more conspicuously on the thorax and basal segments of the abdomen.

*Hab.* New Zealand (both Islands).

*Holotype*, ♂, Ohakune, altitude 2060 feet, November 14, 1922 (*T. R. Harris*).

*Allotopotype*, ♀, October 13, 1921 (*T. R. Harris*).

*Paratopotypes*, ♂♂, September 21, 1921; ♂♀, January 24, 1922 (*T. R. Harris*); *paratypes*, 2 ♂♂, Aniseed Valley, Nelson, December 1-4, 1923 (*A. Tonnoir*).

The true status of this fly is still in doubt, but for the present, at least, it seems best to consider it as being a subspecies of *sulphuralis*.

*Dicranomyia fulviceps*, sp. n.

Belongs to the *monilicornis* group; head dark fulvous, the anterior vertex broad; mesonotum shiny reddish; wings subhyaline; male hypopygium with the two spines of the rostriform appendage long and acute.

*Male*.—Length about 6 mm.; wing 6.5 mm.

*Female*.—Length 5.5 mm.; wing 6 mm.

Rostrum relatively long and slender, pale; palpi black. Antennæ black; flagellar segments oval. Head dark fulvous, the orbits and occipital region paler; anterior vertex broad, wider than the diameter of a single eye.

Pronotum pale ochreous. Mesonotum shiny reddish, the lateral margins of the præscutum paler. Pleura pale ochreous, sparsely white-pruinose. Halteres pale, in the type ♂ with yellowish knobs, those of the ♀ darker. Legs with the coxæ and trochanters greenish ochreous; remainder

of legs yellow, very slightly darkened distally. Wings subhyaline, the veins darker. Venation: *Sc* short, as in the group, the distance between *Sc*<sub>1</sub> and the origin of *Rs* being nearly twice the length of the latter vein; *Rs* strongly arcuated, a little more than one-half the similarly arcuated basal deflection of *R*<sub>4+5</sub>; *r* at tip of *R*<sub>1</sub>; cell 1st *M*<sub>2</sub> closed, gently widened distally; *m-cu* shortly before the fork of *M*.

Abdomen reddish brown, in the ♀ darker, but this probably caused by a discoloration of egg-masses within. Male hypopygium with the ninth tergite semicircular in outline, the caudal margin with a broad U-shaped notch, each lateral lobe set with powerful setæ; a group of about seven smaller and more delicate median setæ. Basistyle stout, the mesal lobe conspicuous, cylindrical or bulbous, densely setiferous. Ventral dististyle fleshy, roughly triangular in outline, the apex being rather strongly narrowed; rostrum long and slender, with a row of spinous setæ that become more numerous at the apex; the two spines are near base of rostrum, placed close together in a chitinized plate, closely approximated or feebly united at base, gently divergent apically, narrowed very gradually to the acute tips; spines a little longer than the apex of the rostrum beyond them. Dorsal dististyle relatively large, the tip suddenly narrowed into an acute point. Gonapophyses with the mesal lobe relatively broad, pale, the tip evenly rounded. Ovipositor with the tergal valves long and slender, greatly exceeding the sternal valves.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Nelson, Nelson, November 14, 1923 (*A. Tonnoir*).

*Allotopotype*, ♀, November 12, 1923 (*A. Tonnoir*).

It is possible that the female above described is not conspecific with the type male.

*Dicranomyia tristigmata*, sp. n.

*Male*.—Length about 5 mm.; wing 6·7 mm.

Very closely allied to *D. sponosa*, Alexander, from which it differs in the venation, wing-pattern, and slight details of the male hypopygium.

Wings with a distinct brown cloud in the bases of cells *R* and *M*; arcular region narrowly and conspicuously white; a brown cloud on vein *R*, just beyond the end of vein *Sc*; stigma tripartite, due to the unusual venation of this field of the wing; seam along the cord narrower.

Venation: *Sc* long, ending just before the fork of *Rs*, *Sc*<sub>2</sub> at the tip of *Sc*<sub>1</sub>; *Rs* very strongly angulated and spurred at origin, nearly in alignment with *R*<sub>2+3</sub>, cell *R*<sub>3</sub> being narrow at base; *R*<sub>1</sub> atrophied at extreme tip, with a supernumerary cross-vein without macrotrichia far before the tip of *R*<sub>1</sub> and less than its own length beyond *r*; *r*, the supernumerary cross-vein, and the long tip of *R*<sub>1</sub> beyond it are all seamed with brown to produce a three-parted stigma, as described above; cell 1st *M*<sub>2</sub> open by the atrophy of *m*; cell *M*<sub>3</sub> a little shorter than its petiole; *m-cu* about one-third its length before the fork of *M*. Male hypopygium with the ninth tergite evenly rounded, the extreme apex nearly straight or very feebly concave. In *D. sponsa*, the tergite is broadly and strongly concave.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Karioi, Wellington, in beech forest, April 14, 1924 (*T. R. Harris*).

*Rhodomastix (Sacandaga) sagana*, sp. n.

Allied to *R. (S.) vittithorax*, Alexander (North Island); thoracic stripes dark brown, conspicuous; no macrotrichia on *R*<sub>2+3</sub>; *Rs* only about one-fourth longer than *R*<sub>2+3</sub>, the latter longer than *R*<sub>3</sub> alone; cell 1st *M*<sub>2</sub> open by the atrophy of outer deflection of *M*<sub>3</sub>.

*Male*.—Length about 4.8 mm.; wing 4.5 mm.

Described from an alcoholic specimen.

Rostrum pale, the palpi brownish black. Antennae moderately elongate, if bent backward extending to shortly beyond the wing-root, dark brown throughout; basal flagellar segments oval, the outer segments passing into elongate-oval. Head dark, apparently grey, the front yellowish.

Pronotum brown. Mesonotal præscutum reddish brown with three conspicuous brownish-black stripes that are only narrowly separated behind; lateral stripes narrowed anteriorly, extending to the pseudo-sutural foveæ, behind crossing the suture on to the scutal lobes; scutellum reddish brown; disk of postnotal mediotergite darkened. Plenra reddish brown, anepisternum and sternopleurite marked with darker; meron less infuscated. Halteres pale, the knobs yellow. Legs with the fore coxæ infuscated, the remaining coxæ paler; trochanters brownish yellow; remainder of legs broken. Wings greyish yellow, the base and cells *C* and *Sc* clearer yellow; stigma ill-defined, oval, pale brown; veins darker brown. No macrotrichia on *Rs*,

$R_{2+3}$ ,  $R_2$ , basal section of  $M_{1+2}$ , or basal section of  $M_{3+4}$ ; about 16 on  $R_3$ ; about 45 on  $R_{4+5}$ . Venation:  $Sc_1$  ending just before two-thirds the length of  $Rs$ ;  $Rs$  relatively short for a member of the group, about one-fourth longer than  $R_{2+3}$ ;  $R_{2+3}$  longer than  $R_3$  alone; cell 1st  $M_2$  open by the atrophy of outer deflection of  $M_3$ .

Abdomen pale brown, with a dark brown subterminal ring; hypopygium obscure yellowish. Male hypopygium with the outer dististyle having the outer margin serrulate almost to base, the extreme tip a larger spine; inner dististyle broad, fleshy, the apex narrowed. Gonapophyses decussate, appearing as slender flattened rods, the tips produced into feebly expanded hyaline blades.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Purau, Banks Peninsula, Canterbury, February 1924 (*J. W. Campbell*); an alcoholic specimen.

#### GNOPHOMYIA, Osten-Sacken.

The genus *Gnophomyia* has long been made use of in assigning various aberrant crane-flies from many parts of the world. There can be little question but that most of the types so assigned will eventually be found to require new subgeneric or generic groups for their reception. Two such groups (*Astelobia* and *Aphrophila*) were proposed by Edwards in 1923 as subgenera of *Gnophomyia*, but are now known to be entirely valid genera. During the past few years the writer has described a few species of crane-flies from New Zealand under the common generic term of *Gnophomyia*, with the realization that such species were not strictly consubgeneric, or possibly even congeneric, with the genotype, *Gnophomyia tristissima*, Osten-Sacken (Holarctic). It is now imperative that a new group be erected for such species, and a new subgeneric term, *Campbellomyia*, is herewith proposed. It is very probable that further study will show this group to be rather extensively developed in New Zealand, and that it will be found to deserve full generic rank. The group of genera centring about *Gnophomyia* is rather arbitrarily placed in the tribe Eriopterini, but it must be noted that in many regards the included members have deviated but little from the characters of the tribe Hexatommi, from which the Eriopterini are evidently derived.

#### CAMPBELLOMYIA, subgen. nov.

Antennæ short; second segment of scapæ tumid; flagellar

segments beyond the base oval, with verticils of moderate length that become more elongated on the outer segments. Vertex between the eyes broad, with a small tubercle. Mesonotal præscutum narrowed anteriorly, and produced slightly cephalad over the pronotum. Middle and posterior coxæ closely approximated, the meron much reduced. Tibiæ and basal segments of tarsi with conspicuous semi-erect setæ, especially conspicuous in *G. alpina* and *G. harrisiana*, shortest and least evident in *G. fulvipleura*. Wings with  $Sc_2$  not far removed from the tip of  $Sc_1$ , the latter terminating beyond mid-length of  $R_s$ ;  $R_s$  long, more or less arcuated at base;  $R_{2+3}$  in approximate alignment with  $R_2$ ;  $r$  faint, without macrotrichiæ, approximately its length from the tip of  $R_1$ ; proximal ends of cells  $R_3$ ,  $R_5$ , and 1st  $M_2$  in approximate transverse alignment; cell 1st  $M_1$  relatively large, the veins beyond it correspondingly short;  $m-cu$  beyond mid-length of the lower face of cell 1st  $M_2$ . Longitudinal veins beyond  $R_1$ , with macrotrichiæ back from margins. Male hypopygium with the dististyles two in number, small, closely united basally by membrane; outer style strongly curved, running out into an apical point, the outer margin beyond mid-length with numerous appressed teeth. What would seem from its position to be an inter-basal process is an oval plate, the mesal end produced into a long, slender, recurved, tail-like spine. Ovipositor with long, slender, gently upcurved valves.

Type of subgenus, *Gnophomyia* (?) *alpina*, Alexander (Maorian Subregion).

Other included species are *G. (C.) fulvipleura*, Alexander; *G. (C.) fumipennis*, Alexander; *G. (C.) harrisiana*, Alexander; and *G. (C.) venustipennis*, sp. n., all from New Zealand. This new group is named in honour of my friend, Dr. James W. Campbell, to whom I am greatly indebted for co-operation in making known the extensive crane-fly fauna of New Zealand.

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

Mesonotal præscutum dark brown with three nearly confluent reddish-chestnut stripes; tips of femora narrowly light yellow; wings whitish subhyaline, heavily spotted with brown.

*Male*.—Length about 2.5 mm.; wing 3.1 mm.

*Female*.—Length about 2.8 mm.; wing 3.2 mm.

Rostrum and palpi dark brown. Antennæ dark brown throughout; second scapal segment slightly tumid; flagellar

segments elongate-cylindrical with verticils that are about equal in length to the segments bearing them, becoming more elongate on the terminal segments. Head brownish black.

Pronotum dark brown, yellowish posteriorly. Mesonotum dark brown, the disk of the præscutum with three nearly confluent reddish-chestnut stripes, the lateral margins of the sclerite conspicuously light yellow; remainder of mesonotum rather dark brown. Pleura dark brown, the dorso-pleural membrane yellow. Halteres relatively elongate, pale, the extreme base of the stem brighter yellow, the knobs infuscated. Legs with the coxæ dark brown; trochanters paler yellowish brown; femora brown, the bases more testaceous, the tips rather narrowly but conspicuously pale yellow; tibiæ light brown, the extreme proximal end indistinctly pale yellow; tarsi pale brown, the terminal segments darker. Trichiæ of legs moderately long, but subappressed and not conspicuous. Wings whitish subhyaline, the præarcular region more yellowish; a conspicuous brown pattern distributed as follows: Base of cells *C* and *Sc*; a large blotch at origin of *Rs*, crossing vein *M* into cell *M*; spots at tip of *Sc*; stigma, the latter sending a cloud over the fork of  $R_{2+3}$ ; at tips of veins  $R_2$  and  $R_3$ ; tips of veins  $M_{1+2}$  to *2nd A*, these marginal clouds becoming increasingly larger toward the wing-base; cord and outer end of cell *1st M*<sub>2</sub> seamed; a cloud beyond mid-length of vein  $R_{4+5}$ , but none at margin of this vein, this being the only longitudinal vein that is not clouded at its tip around the margin of the wing; anal angle of wing in cell *2nd A* narrowly infuscated; veins pale brown, a trifle darker in the infuscated areas. Venation:  $Sc_1$  ending near two-thirds the length of *Rs*,  $Sc_2$  near its tip; *Rs* long, gently arcuated at origin; *r* faint, a little more than its length from the tip of  $R_1$ ;  $R_{2+3}$  in approximate alignment with  $R_2$ ; cell *1st M*<sub>2</sub> about as long as the longest vein ( $M_{1+2}$ ) beyond it; *m-cu* beyond mid-length of the lower face of cell *1st M*<sub>2</sub>; vein *2nd A* short, ending opposite the origin of the long *Rs*.

Abdomen black, the hypopygium a trifle paler. Ovipositor with the elongate valves pale yellowish horn-colour; tergal valves gently upcurved to the long tips.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Waiho, Westland, January 17, 1922 (*A. Tonnoir*); collector's number 116.

*Allotopotype*, ♂, January 30, 1922 (*A. Tonnoir*).



*Aphrophila vittipennis*, sp. n.

Closely allied to *A. neozelandica* (Edwards); median præscutal stripe divided; wings whitish, the veins seamed with brown to give the wings a vittate appearance; abdominal tergites narrowly ringed with paler; male hypopygium reddish brown.

*Male*.—Length about 8 mm.; wing 11 mm.

*Female*.—Length about 7.6 mm.; wing 10 mm.

Rostrum and palpi dark brown. Antennæ with the scapal segments pale brown, the flagellum dark brown; flagellar segments short, a little enlarged distally, the relatively short verticils placed on the distal half, the surface of the segments densely clothed with a short, erect, pale pubescence. Head dark grey.

Mesonotal præscutum grey with four dark brown stripes, the usual entire median stripe divided by a delicate carina that extends the length of the præscutum, the ridge narrowly bordered by pale grey; intermediate stripes not reaching the suture; humeral region restrictedly obscure yellow; scutum grey, the lobes dark brown; scutellum and postnotum reddish brown, grey-pruinose, the extreme cephalolateral angles of the postnotal mediotergite tumid. Pleura light grey, the dorso-pleural membrane obscure yellow. Halteres pale yellow. Legs with the coxæ yellowish brown; trochanters obscure brownish yellow; femora and tibiæ obscure brownish yellow, the tips very indistinctly and narrowly darkened; proximal three tarsal segments obscure brownish yellow, the tips narrowly darkened; terminal tarsal segments uniformly dark brown. Wings with a whitish tinge; stigma oval, dark brown; cord, vein *Cu*, and the veins beyond the cord narrowly seamed with paler brown, giving to the wing a vittate appearance; margin of wing and anal angle narrowly darkened. Venation:  $Sc_2$  oblique, placed close to the extreme tip of  $Sc_1$ .

Abdomen blackish, the caudal margins of the tergites narrowly but relatively conspicuously whitish, the sternites less distinctly marked with the same colour; pleural membrane pale; hypopygium conspicuously reddish brown, contrasting with the remainder of the abdomen. Male hypopygium very similar in structure to *A. neozelandica*; spines at base of ædeagus pale and less conspicuous.

*Hab.* New Zealand (both Islands).

*Holotype*, ♂, Aniseed Valley, Nelson, March 22, 1922 (*A. Tonnoir*); collector's number 112.

*Allotopotype*, ♀.

*Paratopotypes*, 3 ♂♂, March 21, 1922 (*A. Tonnoir*);  
*paratype*, ♂, Taumarunui, Wellington, April 24, 1922  
 (*T. R. Harris*).

*Tasiocera cervicula*, sp. n.

General coloration pale brown, the genital segments ochreous; wings with a strong brown tinge; vein *2nd A* ending just before the origin of *Rs*; male hypopygium with the dististyle slender, terminating in a small decurved tooth; gonapophyses lyriform, the lateral margin of each apophyse conspicuously toothed.

*Male*.—Length about 2.4 mm.; wing 4.3 mm.

Rostrum testaceous-brown; palpi brownish black. Antennæ very long, twice the length of the body; scapal segments and base of first flagellar segment paler than the dark brown remainder of the flagellum; flagellar segments elongate-fusiform, each with a long apical narrowed portion, the enlarged bases with very long, outspreading setæ. Head grey.

Mesonotum pale brown, without distinct markings. Pleura testaceous-yellow. Halteres dark brown, the base of the stem paler. Legs with the coxæ and trochanters concolorous with the pleura; remainder of legs brown with dark appressed setæ. Wings with a strong brown tinge, the veins and macrotrichiæ darker brown. Venation:  $R_{2+3}$  a little shorter than the basal deflection of  $R_{4+5}$ ; vein *2nd A* present, ending immediately before the level of the origin of *Rs*.

Abdomen pale brown, the sternites and hypopygium ochreous. Male hypopygium with the basistyles as in the genus; dististyle slender, gradually narrowed outwardly, subangularly bent near mid-length, the extreme apex terminating in a small decurved tooth; immediately before the apex another small denticle; distal half of style with a few weak setæ, some of which are placed on weak tubercles. *Ædeagus* oval, tapering to the obtuse apex. Gonapophyses lyriform, each apophyse sinuous, with the lateral margin conspicuously toothed, including two larger basal teeth and four outer ones; dorsal margin of apophyses sharp, but untoothed; the connection between the apophyses is slightly elevated. What appears to be the tergal plate runs out into parallel flattened blades that are broader than the space between, the apex of each blade obliquely truncate.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Khandallah, Wellington, November 30, 1921 (*A. Tonnoir*); collector's number 140.

*Paratopotype*, ♂.

*Tasiocera triton*, sp. n.

*Male*.—Length about 2.2 mm.; wing 3.4 mm.

Generally similar to *T. cervicula*, sp. n., differing as follows:—

General coloration dark brown, this including the hypopygium. Pleura shiny ochreous. Wings with  $R_{2+3}$  short, about one-half the basal deflection of  $R_{4+5}$ ;  $R_2$  rectangular at origin. Male hypopygium with the dististyle narrow, tapering gradually to the acute straight tooth; margin of style with an elevated ridge that bears a weak tooth near one-third the length of the style. Gonapophyses fused into a transversely rectangular plate, the lateral angles produced caudad and slightly laterad into acutely pointed blades, the median portion with a shorter, more blackened spine. Tergal plate with the blades parallel, narrower, the tips subacute, the space between about twice as wide as the diameter of either blade.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Nihotapu, Auckland, February 23, 1923 (*A. Tonnoir*); collector's number 140.

*Amphineurus (Nothormosia) fimbriatulus*, sp. n.

*Male*.—Length about 3.35 mm.; wing 3.9–4.5 mm.

*Female*.—Length about 3 mm.; wing 4.5 mm.

Closely allied to *A. (N.) subglaber*, Edwards, differing in the structure of the male hypopygium.

Wings relatively narrow, the macrotrichia long and conspicuous; membrane subhyaline, the veins and macrotrichia dark brown. Venation:  $R_{2+3}$  gently arcuated, the basal section of  $R_2$  about two-thirds as long and more strongly arcuated; petiole of cell  $M_2$  about equal to  $m-cu$ . Male hypopygium with the ninth tergite only feebly chitinized, the base very broad, subquadrate, the outer lateral angles produced laterad and slightly caudad into relatively long obtuse arms; caudal margin of tergite gently concave, but the extreme median portion slightly bulging. Basistyle produced into a long, slender, fleshy setiferous lobe as in the group; mesal portion produced into a long, slender, pale, flattened blade, the distal third suddenly narrowed and directed mesad into a slender whip-like portion, before this

narrowed portion the blade rather densely setiferous; outer apical angle of basistyle produced into a very small chitinized beak. Inner dististyle club-shaped at base, the surface here microscopically reticulate, the apical half narrowed into a gently curved slender rod that is very feebly enlarged at apex. Outer dististyle small, relatively slender, and not blackened, narrowed at apex, at the base of the narrowed portion with an acute subappressed spine (thumb). Gonapophyses broad basally, narrowed gradually to the short, straight, acute, black tips, the base of the latter surrounded by a circlet of small setæ. Ædeagus a large, highly compressed blade.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Whangarei, North Auckland, February 20, 1924 (*T. R. Harris*).

*Allotype*, ♀, Nihotapu, Auckland, February 26, 1923 (*A. Tonnoir*); collector's number 134 c.

*Paratopotypes*, 2 ♂♂; *paratypes*, ♂, with the allotype, February 23, 1923 (*A. Tonnoir*); 1 ♂, Wairakei, Auckland, March 6, 1923 (*A. Tonnoir*); 1 ♂, Ohakune, Wellington, March 8, 1923 (*A. Tonnoir*).

*Amphineurus (Nothormosia) nothofagi*, sp. n.

*Male*.—Length about 4 mm.; wing 4.6 mm.

Very similar and closely allied to *A. (N.) gracilientis*, Alexander, differing in certain conspicuous details of structure of the male hypopygium. The ninth tergite is a subquadrate chitinized plate with the lateral margins gently convex, the caudal margin with a shallow U-shaped median notch, the lateral lobes thus formed being short and broad, their apices subtruncate. Outer dististyle with the apex longer, more slender, and more strongly curved, the lateral spine (thumb) approximately as long, even more slender and very gently curved.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Karioi, Wellington, in beech forest, April 14, 1924 (*T. R. Harris*).

*Amphineurus (Nothormosia) hastatus*, sp. n.

*Male*.—Length about 4 mm.; wing 5.2 mm.

*Female*.—Length about 4.2 mm.; wing 5.7 mm.

Closely allied to *A. (N.) gracilientis*, Alexander, from which it differs in the structure of the male hypopygium. Male hypopygium with the lobes of the tergite appearing as flattened parallel blades, the notch between being broadly

U-shaped and much wider than the diameter of either blade. Outer dististyle long and slender, with a long spine (thumb) that bears in its axil a smaller and more slender spine, the whole style longer and narrower than in *A. (N.) otagensis*, Alexander, which likewise has this axillary spine. Basal dististyle a long, feebly sinuous rod that narrows gradually to the acute blackened apex. Gonapophyses subtending the ædeagus, appearing as flattened blades that narrow into long, straight, needle-like points, at the base of this narrowed portion with a small setiferous tubercle, the whole surface of the apophyse at this level with microscopic setæ.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Wellington, March 10, 1923 (*A. Tonnoir*); collector's number 134*j*.

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

*Paratypes*, 3 ♂ ♂, Khandallah, Wellington, November 30, 1921 (*A. Tonnoir*); collector's number 139.

*Amphineurus (Nothormosia) spinulistylus*, sp. n.

*Male*.—Length about 3·8 mm.; wing 4·8–5 mm.

Allied to *A. (N.) gracilisentis*, Alexander, differing conspicuously in the structure of the male hypopygium.

Antennal scape ochreous; flagellar segments elongate, black. Wings with  $R_{2+3}$  gently arcuated, a little shorter than the basal deflection of  $R_2$ ;  $m-cu$  about equal in length to the petiole of  $M_3$ , placed at a short distance before the fork of  $M$ . Male hypopygium with tergite formed of two flattened blades that lie generally parallel but diverge very slightly, the notch between deep U-shaped, the apices of the lobes obtusely rounded. Outer dististyle relatively long and slender, the apex a blackened powerful spine, the lateral spine (thumb) smaller and more acute. Inner dististyle a very slender pale rod, the basal half a little stouter, near mid-length with two small setæ. Basal dististyle a powerful, feebly sinuous rod, the apical two-fifths blackened, the tip densely and conspicuously spinulose, these spines continued down the mesal face of the style to a distance greater than one-half the length of the blackened portion. Gonapophyses terminating in two small, closely parallel, slender, blackened rods that subtend the ædeagus and are approximately equal in length to it.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Nihotapu, Auckland, February 23, 1923 (*A. Tonnoir*); collector's number 134*h*.

*Paratopotypes*, 2 ♂ ♂; collector's number 134*d*.

*Amphineurus (Nothormosia) cacoxenus*, sp. n.

*Male*.—Length about 3·8 mm. ; wing 5 mm.

Closely allied to *A. (N.) horni*, Edwards, from which it differs in the structure of the male hypopygium.

Male hypopygium with the ninth tergite almost as in *horni*, heavily chitinized, with two powerful straight horns that diverge at nearly a right angle from a short common base; margin of tergite at fork slightly wrinkled. Outer dististyle small, cylindrical, very strongly curved, the apex obtuse, the very small lateral spine (thumb) diverging strongly and placed far before the apex. Inner dististyle short, the base feebly squamulose. Gonapophyses subtending the aedeagus and extending far beyond it, appearing as flattened blades, the tips narrowed and blackened; the narrowed portion of each blade is directed caudad and thence mesad (in slides), so the tips are contiguous or nearly so. In prepared slides the space between the apophyses is extensive.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Waiho, Westland, January 16, 1922 (*A. Tonnoir*); collector's number 132.

*Amphineurus (Nothormosia) patruelis*, sp. n.

*Male*.—Length 3·4–3·6 mm. ; wing 4·6–5·2 mm.

*Female*.—Length about 3–3·2 mm. ; wing 4·5 mm.

Closely allied to *A. (N.) horni*, Edwards, differing chiefly in the structure of the male hypopygium.

Ninth tergite with the lateral horns long and slender, gently curved, and widely divergent. Gonapophyses appearing as very broad, flattened plates, each terminating in a long, straight, apical spine that is directed strongly cephalad; on slides, viewed dorso-ventrally, the space between the apophyses is reduced to a small linear or rectangular slit. The species is readily told by these very broad, flattened gonapophyses.

*Hab.* New Zealand (North Island).

*Holotype*, ♂, Ohakune, altitude 2060 feet, October 10, 1921 (*T. R. Harris*).

*Allotopotype*, ♀, November 14, 1922 (*T. R. Harris*).

*Paratopotypes*, 3 ♂ ♂, October 10, 1921; 5 ♂ ♂, November 14, 1922; 3 ♂ ♀, October 15, 1921; 3 ♂ ♂, December 4, 1922 (*T. R. Harris*).

*Amphineurus (Nesormosia) ochroplaca*, sp. n.

General coloration of mesonotum fulvous-brown; pleura

light brown with a narrow, dark brown, dorso-longitudinal stripe; femora dull ochreous-yellow with a relatively narrow brown ring before mid-length; wings extensively pale yellow, with restricted brown markings; abdominal segments uniformly dark brown.

*Female*.—Length about 5.3 mm.; wing 6.5 mm.

Rostrum and palpi black. Antennæ with the scape black, the flagellum brown; flagellar segments oval-cylindrical, with moderately long verticils. Head brown.

Pronotum reddish brown with conspicuous erect tawny setæ. Mesonotal præscutum light fulvous-brown, the lateral margins of the sclerites darker, the disk of the præscutum without markings; extreme lateral margins of the sclerite narrowly whitish; scutum greyish brown; scutellum light brown; postnotum dark brown, still darker anteriorly. Pleura light brown with a narrow dark brown longitudinal stripe extending from the cervical sclerites across the dorsal pleurites to the postnotum; dorso-pleural membrane pale. Halteres pale, the stem with dark hair, the knobs conspicuously light yellow. Legs with the coxæ and trochanters pale ochreous; femora dull ochreous-fulvous with a relatively narrow brown ring before mid-length; tibiæ pale yellowish brown, the tarsi passing into dark brown. Wings extensively pale yellow, the centre of the disk a little paler; brown clouds distributed as follows:—On basal third of cell *C*; stigmal region; before and beyond the cord in the posterior radial and anterior medial cells; wing-apex broadly pale brown; the yellow ground colour extends to the wing-margin as a broad seam to vein  $R_{4+5}$ ; similar pale brown clouds in the anal cells, the centres of the cells remaining of the ground-colour; veins yellowish brown, paler in the yellow areas; macrotrichiæ largely dark. Venation: as in *A. (N.) subfatuus*, Alexander; cell  $M_2$  deeper; vein 2nd *A* shorter.

Abdominal segments uniformly dark brown; genital segment dull ochreous. Ovipositor with the valves long, slender, gently upcurved, chestnut-brown.

*Hab.* New Zealand (South Island).

*Holotype*, ♀, Reefton, Nelson, January 13, 1922 (*A. Tonnoir*); collector's number 175.

*Amphineurus (Amphineurus) pulchripes*, sp. n.

Size large (wing, ♂, 9 mm.); tibiæ yellow, both ends dark brown; wings densely clothed with tawny trichiæ; male hypopygium with the inner dististyle bearing a long curved

spine near mid-length; basal dististyle sinuous, the outer half serrate.

*Male*.—Length about 6 mm.; wing 9 mm.

Rostrum and palpi dark brown. Antennæ light brown, the incisures between the basal segments paler; flagellum broken near mid-length, the organ relatively elongate, provided with conspicuous erect verticils. Head dark, densely covered with appressed flattened tawny hairs.

Mesonotum dark brown, the interspaces with conspicuous tawny-yellow hairs, the humeral region of the præscutum a trifle paler; hairs on posterior sclerites of mesonotum paler and more slender; scutellum with long black setæ. Pleura brown, with conspicuous long whitish setæ; dorsal margin of the postnotal pleurotergite with a group of erect black setæ. Halteres pale, densely clothed with yellow setæ, light yellow on the knobs. Legs with the coxæ pale brown, the posterior coxæ more testaceous; femora rusty-brown on basal three-fourths, the dorsal edge vaguely darkened; a conspicuous brown ring at tips; on the fore legs, the femora appear dark brown with a narrow and indistinct pale ring before and another beyond mid-length; tibiæ with the base and apex dark brown, the latter more broadly so, the intermediate portion, which is about equal in extent to both terminal portions combined, light yellow; tarsi dark brown, the proximal one-third to one-half (fore legs) of basitarsi obscure yellow. Wings ample, densely clothed with long, pale brown setæ to almost conceal the ground-colour, the costal fringe to wing-apex conspicuously light cinnamon-brown; some of the patches of trichiæ on disk are dark brownish black, especially those in the stigmal region, along the cord and outer end of cell 1st  $M_2$ , and in the outer half of cell  $R_5$ . Venation: cell 1st  $M_2$  moderately large.

Abdomen dark brown above, with dark setæ, the pleural region with dense golden-yellow setæ, those on sternites more whitish; abdomen towards apex with dense patches of small flattened scales; hypopygium more yellowish brown. Male hypopygium with the basistyles running out into long fleshy lobes, the outer third much narrowed and abruptly paler. Outer dististyle short, stout, gently curved, tooth-like; inner dististyle a long, curved, black rod, the apex feebly dilated and microscopically serrulate, near mid-length of the style with a long, acute, gently curved spine. Basal dististyle a long, sinuous, chitinized rod, the basal half stouter, from mid-length outward with the margin crested and conspicuously spinous, each spine with a long seta in its axil; near mid-length of the style the crest is higher and



seven or eight of the spines at this point are larger and more conspicuous. Gonapophyses nearly straight, the basal two-thirds a powerful, yellowish, cylindrical structure that expands at the tip, abruptly narrowed into a long black spine, the surface of which appears longitudinally ribbed. *Ædeagus* relatively small, the cruciform arms small and slightly recurved.

*Hab.* New Zealand (South Island).

*Holotype*, ♂, Mt. Arthur Tableland, Nelson, altitude 4000 feet, December 24, 1921 (*A. Tonnoir*); collector's number 187.

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

Division ACALYPTRATA.

I had not intended to deal with any families in this Division, but some material having been sent to me along with calyptrates I consider it best to offer a few notes on these. This may be the more pertinent because the most recent revisions of the families mentioned may not be available to workers in Britain, appearing as they have in the United States and Germany since the war.

Family Sapromyzidæ.

Genus XENOCHÆTINA, Malloch.

This genus contains several New World forms that are distinguished from other genera in the family by the presence of one or two short black bristles on the upper side of the stem of second vein before its furcation with third.

In the material just received from Dr. Guy A. K. Marshall there are two species of the genus, both of which appear to be undescribed.

*Xenochætina setitibia*, sp. n.

*Male and Female*.—Shining brownish black; antennæ, face below on sides and middle, and humeral angles of thorax yellowish brown; legs pitchy, mid and hind tarsi

\* For Part XV., see *Ann. & Mag. Nat. Hist.* (9) xv., January 1925, pp. 131-142.