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New or Little-known Tipulidae
from New Zealand
(Order Diptera)

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NEW OR LITTLE-KNOWN TIPULIDAE FROM
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(ORDER DIPTERA).

PART I.

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In the present paper I wish to discuss certain new and rare species of the genus *Gynoplistia* from the South Island of New Zealand. This genus, which I now interpret as including *Cerozodia* Westwood and *Paralimnophila* Alexander as subgenera, is the largest in New Zealand, with approximately one hundred described species. It seems certain that many additional undescribed forms will be discovered, especially in the Provinces of Westland, Otago, and Southland. Except where stated to the contrary, the types of the novelties are preserved in the writer's collection. I express my sincere thanks to the collectors of the material, Messrs. Campbell, Heighway, Oliver, Philpott, and Tonnoir, and to Professor R. Speight and Dr. Walther Horn, for continued co-operation in making known the fascinating Tipulid fauna of New Zealand.

***Gynoplistia (Cerozodia) laticosta* sp. n.**

Male.—Length about 25mm. ; wing 22.4-23mm.

Related to *G. (C.) pulverulenta* (Edwards) and *G. (C.) paradisea* (Edwards).

Antennae 35 to 36-segmented, the formula being 2+3+29+1 or 2+3+30+1. Legs with the femora reddish brown, the tips not darkened; tibiae similar, the tips narrowly dark brown; basal three tarsal segments similar, the tips narrowly blackened, the last two segments uniformly black. Wings with the costal margin from base to apex uniformly dark brown, the colour including cells *C*, *Sc*, cephalic two-thirds of *R*, at the cord touching cell *1st M*₂ and including all of cells *R*₃ and *R*₄; wing-apex broadly darkened, this including the distal half of cell *R*₅, all of cell *M*₁, and all of cells *2nd M*₂ and *M*₃ except their extreme bases, which are vaguely paler; caudal margin of wing broadly suffused with brown, this including all of cell *M*₄ and the apices of the remaining cells, only the basal third of cell *2nd A* remaining clear; the clear whitish subhyaline central portion of the wing includes a broad longitudinal area that extends from the anal angle of the wing to beyond cell *1st M*₂ and into the basal half of cell *R*₅. Venation: *Rs* very long, exceeding the anterior branch of the sector; cell *1st M*₂ relatively short and broad. Male hypopygium with the outer dististyle terminating in two slender, acutely sharpened points. Inner dististyle with the apical third narrowed into a cylinder that is not conspicuously provided with setae, as is the case in *pulverulenta*.

Habitat.—New Zealand (South Island).

Holotype, ♂, Hillside, Little Stony Creek, Glenorchy, Otago, altitude 2,500 feet, on tussock, January 1, 1925 (F. S. Oliver).

Paratopotypes, 4 broken ♂♂.

In its general features, the present species agrees best with the race *striata* Edwards, of *pulverulenta* Edwards, being distinguished by the greater number of antennal segments and the wing-pattern, in which the broad costal margin is confluent with the uniformly darkened apex and caudal margin, leaving the discal area uniformly pale. The structure of the dististyles is quite distinct from *pulverulenta*.

Gynoplistia (Gynoplistia) romae sp. n.

General coloration black, the mesonotal praescutum with a polished black shield that is comprised of the confluent praescutal stripes and anterior scutal lobes; legs chiefly darkened, clothed with long erect setae; wings (♀) reduced, blackened, their bases yellow.

Female.—Length about 17mm.; wing 3.6mm.

Rostrum and palpi black. Antennae black, the second segment of scape and extreme base of first flagellar segment paler; flagellar segments 1-11 with a stout pectination, these becoming shorter and more slender on the outer segments, the longest (about flagellar segment four or five) approximately one-third longer than the segment, the outermost becoming mere protuberances; terminal segments broken. Head dull black; eyes large.

Mesonotal praescutum with the lateral portions reddish brown, the disc covered by a polished black dorsal shield that is comprised of the praescutal stripes and centres of the scutal lobes; parascutella blackened, the scutellum reddish; postnotum blackened. Pleura brownish grey, the dorso-pleural region dull black; pleurotergite reddish brown, with a black longitudinal stripe. Halteres pale, the knobs weakly infumed. Legs with the coxae pale, the fore coxae more blackened; a dark basal area on middle coxae; trochanters yellowish brown; femora reddish brown, more blackened outwardly, especially on dorsal face; tibiae and tarsi chiefly brownish black; legs with conspicuous erect setae. Wings (♀) rudimentary, the basal third yellow, the remainder blackened, more brownish along the costal border. Venation distorted.

Abdomen shiny brownish black, including the shields of the ovipositor, the tips of the valves paler.

Habitat.—New Zealand (South Island).

Holotype, ♀, Kumara, Westland, picked off timber slabs from mill, November 2, 1929 (J. W. Campbell).

This interesting *Gynoplistia* is named in honour of Miss Roma A. Campbell, daughter of my friend, James W. Campbell, to whom I am vastly indebted for kindly help and advice on the New Zealand crane-flies. I cannot associate this very peculiar female with any male so far discovered, and must consider it to be undescribed.

Gynoplistia (Gynoplistia) fulgens Hutton.

1900. *Gynoplistia fulgens* Hutton; *Trans. New Zealand Inst.*, XLVII., 47, pl. 4, fig. 19.

Both sexes of this rare fly were taken by Mr. Tonnoir and Mr. Philpott on Mt. Arthur Tableland, Nelson, altitude 4,500 feet, December 27, 1921, and February 2, 1923. I am taking this opportunity of giving a more complete description of the male and of describing the female as allotype.

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

Rostrum and palpi brownish black. Antennae black throughout, 20-segmented, the formula being 2+2+11+5; branches of flagellar segments three and four long, at least four times the segment, the longest branches, on flagellar segments five and six, approximately six to seven times the segment; terminal segment longer than the penultimate. Head shiny coal-black.

Pronotum black. Mesonotum shiny black, with vague greenish reflections; pseudosutural foveae broad, more purplish, opaque; scutellum more reddish brown. Pleura black, the mesopleura heavily dusted with grey; postnotal pleurotergite produced outward into a relatively conspicuous reddish brown tubercle. Halteres orange-yellow. Legs with the coxae black, sparsely pruinose, especially the middle coxae; trochanters brown; femora black, the bases conspicuously fulvous-yellow, this including approximately one-third the segment, a little less extensive on the fore legs; posterior femora more clavate than the others; tibiae black, the posterior tibiae more brownish with the tips narrowly blackened; tarsi black. Wings subhyaline, more yellowish toward the base; stigma elongate-oval, pale brown; seams at origin and fork of *Rs* barely indicated; prearcular region and area behind vein *Cu* pale flavous; veins dark brown. Venation: *Sc*₁ ending about opposite end of *R*₂₊₃₊₄, *Sc*₂ close to its extreme tip; *R*₂ very faint, placed at extreme outer end of stigma, subequal to *R*₁₊₂, cell *R*₂ thus very small; *Rs* long, arcuated at origin; *R*₂₊₃₊₄ shorter than basal section of *Rs*; *R*₂₊₃ perpendicular at origin, with a weak spur at proximal end of stigma; cell *M*₁ about one-third longer than its petiole; cell *1st M*₂ subquadrate; *m-cu* about one-half its length beyond the fork of *M*; vein 2nd *A* sinuous.

Abdomen dark purple; hypopygium dark, the styli paler. Male hypopygium (Fig. 1) with the basistyle, *b*, relatively short and stout, the apex produced into two rather short lobes, a setiferous

lobe that narrows to a blunt apex and a flattened glabrous blade that is obtusely rounded; interbase (Fig. 2) a spear-shaped blackened structure that lies parallel to the mesal face of the basistyle, the apex acute or subacute; a small tooth on lateral face just before the tip and another on mesal margin at near one-third the length. Outer dististyle, *od*, glabrous, appearing as a flattened blade, the apex suddenly curved and narrowed; inner dististyle, *id*, shorter, similarly narrowed to the long obtuse apex, the outer margin of terminal portion with four or five long setae, the surface with many other smaller setae. Gonapophyses, *g*, lyriform, each appearing as a sinuous flattened blade, slightly dilated beyond midlength, the tip narrowed and more infuscated. Aedeagus short and straight, from a dilated base. Anal tube conspicuous.

Female.—Length about 18mm.; wing 15mm.

Generally similar to the male, differing in the following regards:

Antennae 18-segmented, the formula being 2+2+8+6; longest branch a trifle more than twice the length of the segment that bears it; branch of tenth flagellar segment a trifle shorter than the segment. Head behind the antennal fossae shiny black.

Anterior pronotal sclerite blackened, the posterior notum yellowish castaneous. Mesonotal praescutum largely shiny greenish black, the humeral angles extensively light brown, shiny, except for the nearly concolorous pseudosutural foveae; scutal lobes similarly greenish black, the posterior lateral angles paler; scutellum and postnotal mediotergite chestnut-brown. Pleura brown, sparsely pruinose; pleurotergal tubercle well developed, as in the male. Ovipositor with the valves moderately long and slender, the tergal valves only slightly upcurved.

Allotype.—Mt. Arthur Tableland, Nelson, New Zealand, altitude 4,500 feet, February 2, 1923 (A. Philpott); Tonnoir No. 27d.

Allotype returned to A. L. Tonnoir, in collection of the Cawthron Institute.

Gynoplistia (Gynoplistia) otamana sp. n.

Thorax opaque reddish brown; head black; antennae (♂) 14-segmented, with eight long-branched segments; legs short and stout, reddish brown; wings with a sparse brown pattern; cell *Ist M*₂ open by the atrophy of basal section of *M*₃; male hypopygium with the apical lobes of basistyle very small, setiferous almost to tips; both dististyles terminal in position, the outer style terminating in a spatula, the inner a hook.

Male.—Length about 5mm.; wing 5.8mm.

Rostrum blackened. Antennae (♂) relatively large, 14-segmented, the formula being 2+2+6+4, dark brown throughout; branches elongate, the longest (about flagellar segment three) about

three times the length of the segment; terminal three segments oval, the last larger; segments and branches with an abundant covering of setae. Head black, sparsely pruinose.

Mesonotum opaque reddish brown, sparsely pruinose. Pleura reddish brown, with a grey pruinosity. Halteres broken. Legs with the coxae and trochanters reddish; remainder of legs reddish brown, the tips of the femora and tibiae vaguely darkened; terminal tarsal segments dark brown; legs short and stout, the femora strongly clubbed, the segments clothed with long conspicuous setae. Wings yellowish subhyaline, with a sparse brown pattern, including stigma; dark areas at origin of *Rs*; before midlength of cell *M* and near outer end of cell *Ist A*; along cord and at *m*; veins pale, some of the longitudinal veins seamed with brown. Venation: *Rs* long, angulated at origin; *R*₂₊₃₊₄ subequal to basal section of *R*₅; cell *M*₁ present; cell *Ist M*₂ open by the atrophy of the basal deflection of *M*₃, the medial field beyond the cord thus pectinately branched; *m-cu* about two-thirds its length beyond the fork of *M*; cell *2nd A* relatively narrow, the vein not strongly curved into the margin.

Abdominal segments reddish brown, darker laterally; sub-terminal segments darker, more blackened; hypopygium yellow. Male hypopygium (Fig. 3) with the dorsal and ventral faces of basistyle at apex produced into very small lobes that are setiferous almost to their tips, only the extreme margins obtuse and glabrous. Dististyles two in number, terminal in position, the outer, *od*, a spatulate blade, the inner, *id*, subequal in length, terminating in a gentle hook. Interbases appearing as a long pale flattened blade, the tip abruptly narrowed into an acute twisted point. Aedeagus, *a*, small.

Habitat.—New Zealand (South Island).

Holotype, ♂. Otago (ex Coll. Osten Sacken).

Type in the Deutsches Entomologisches Museum.

Gynoplistia otamana is very different from all known New Zealand species of the genus. The character of cell *Ist M*₂ open by the atrophy of *M*₃ may be an abnormality of the unique type. If a constant character it is one found nowhere else in the genus.

Gynoplistia (Gynoplistia) clavipes Edw.

1924. *Gynoplistia clavipes* Edwards; *Trans. New Zealand Inst.*, LIV., 326, figs. 90, 169.

Specimens from Aniseed Valley, Nelson, December 1-4, 1923 (A. Tonnoir). A few additional details to Edwards' characterisation of the male hypopygium (Fig. 4) may be given.

Basistyle, *b*, rather stout, terminating in two bladelike lobes, the setiferous lobe a little longer, broader and less perpendicular, the outer margin without setae; glabrous lobe erect, much darker

than the other. Interbasal blade, *i*, conspicuous, the caudal end free, the apex appearing somewhat like a Ginkgo leaf (Fig. 5), the margin irregularly crenulate, the surface with numerous longitudinal or diverging ridges. Outer dististyle, *od*, unusually long and slender, bent angularly just before the tip, the extreme apex more narrowed and decurved, microscopically squamulose. Inner dististyle, *id*, with more than the outer half cylindrical, provided with abundant microscopic setae. Gonapophyses (Fig. 6) very long, dilated just beyond midlength, thence narrowed to the blunt tip. Aedeagus, *a*, from a broad base, narrowed rapidly to the apex.

***Gynoplistia (Gynoplistia) dimidiata* Alex.**

1922. *Gynoplistia dimidiata* Alexander; *Ann. Mag. Nat. Hist.*, ser. 9, IX., 154-155.

A male from Nelson, December 26, 1923 (*A. Philpott*).

Male hypopygium (Fig. 7) as in the group. Basistyle, *b*, relatively stout, the entire mesal face densely covered with setiferous tubercles, the caudal end produced into a broad lobe, the cephalic end (Fig. 8) a smaller subpendulous lobe; end of basistyle with the usual two lobes, one setiferous, the second smaller, narrower, glabrous. Outer dististyle a flattened blade that is dilated outwardly, the surface reticulated, the extreme apex narrowed into a decurved beaklike portion that is microscopically squamulose. Inner style nearly equal in length, the distal portion with numerous small setigerous punctures, near the apex with a single larger puncture that bears a long curved seta. Gonapophyses, *g*, very long and slender, bladelike, narrowed gradually to the acute tip. Aedeagus, *a*, broad-based, the actual organ relatively short, on either side with a group of long straight setae.

***Gynoplistia (Gynoplistia) wakefieldi* Westw.**

1881. *Gynoplistia wakefieldi* Westwood; *Trans. Ent. Soc. London*, 1881: 372, fig. 5.

Male hypopygium (Fig. 9) with the ninth tergite evenly and gently convex. Basistyle, *b*, elongate, with conspicuous setae. Interbasal process, *i*, entirely pale, the mesal face very densely set with erect slender yellow spines, these becoming smaller to obsolete on the margins of the area. Outer dististyle, *od*, slender, angularly bent near midlength, the apex shallowly bifid, the smooth outer lobe about equal in length to the inner spiculate arm. Inner dististyle, *id*, shorter, at near two-thirds the length produced into a long blade that is provided with microscopic setulae; near midlength of the style, at the base of the terminal prolongation provided with numerous setae. Phallosome, *p*, appearing as a massive central structure that divides into two divergent arms, these dilated basally, suddenly narrowed at tips, the extreme apices microscopically spiculate.

***Gynoplistia (Gynoplistia) heighwayi* sp. n.**

Antennae 17-segmented, in male with ten branched segments, in female with five pectinate segments; thorax pruinose; wings brownish yellow, very sparsely marked with brown; in the female, wings much reduced; male hypopygium with the interbasal process smooth-margined.

Male.—Length about 13.5mm.; wing 13mm., its greatest width 2.9mm.

Female.—Length about 18-20mm.; wing 8.5mm., its greatest width 1.5mm.

Rostrum and palpi dark brown. Antennae 17-segmented, the formula being 2+4+6+5; brown, the branches and outer segments of the flagellum brownish black; flagellar branches arranged in a gentle spiral and the formula might perhaps be indicated by the formula 2+10+5; terminal flagellar segment elongate, one-half longer than the penultimate. In the female, the antennae are likewise 17-segmented, the formula being 2+5+10, the pectinations being a little shorter than the segments alone. Head grey, the vertex extensively variegated with brown.

Mesonotal praescutum dark brown, sparsely pollinose, leaving lateral stripes and a less evident capillary median stripe of the ground-colour; scutal lobes grey pruinose, the centre of each lobe remaining shiny brownish black; scutellum heavily brownish grey pruinose; postnotum dark, sparsely pruinose. Pleura dark, pruinose with grey, leaving certain patches of the ground-colour exposed. Halteres pale, the knobs dark brown. Legs with the coxae light brown, sparsely pruinose; trochanters obscure yellow; femora dark brown, their bases more yellowish, before the apex with a very vague obscure yellow ring that is subequal in width to the dark tip beyond it; tibiae brownish yellow, the tips slightly more darkened; tarsi yellowish brown, the tips of the segments infuscated; terminal two segments uniformly dark brown; tibial spurs long and slender. Wings of the male relatively narrow, of the female considerably reduced in size, as shown by the measurements; wings strongly tinged with brownish yellow, the costal region more saturated; stigma and small spots at origin of *R*s and on the anterior cord darker brown; conspicuous longitudinal hyaline streaks in cell *R* near vein *M*, crossing cell *1st M*₂ into cell *M*₃; a similar but shorter streak in cells *M* and *M*₄, crossing *m-cu*; veins dark brown. Venation: *R*s elongate, strongly arcuated at origin; cell *R*₂ very narrow and parallel-sided on basal third, thence gradually widening; *r-m* distinct; cell *M*₁ about equal to its petiole.

Abdominal tergites brownish grey, the caudal margins of the segments narrowly paler, becoming more broadly so on the outer segments; basal sternites paler brown, the subterminal segments somewhat darkened; hypopygium obscure yellow. Male hypopy-

gium with the basistyle relatively stout, the interbasal lobe appearing as a smooth-edged structure that is produced at cephalic end into a small beaklike projection, the margin of the lobe narrowly edged with black. Outer dististyle smooth, broad-based, a little expanded beyond midlength, the apical third very gradually narrowed to the blunt apex. Inner dististyle with the basal two-fifths a little wider than the outer portion.

The female is similar to the male, differing in the sexual characters described, notably the reduced wings. The pale femoral ring is scarcely indicated. Ovipositor with the valves very long and slender, almost straight.

Habitat.—New Zealand (South Island).

Holotype, ♂, Cooper's Knob, Port Hills, Canterbury, January 1925 (J. W. Campbell).

Allotopotype, ♀.

Paratypes, 2 ♀♀, Hilltop, Banks Peninsula, Canterbury, January 16, 1925 (A. Tonnoir); returned to Mr. Tonnoir for the Canterbury Museum Collection.

I take great pleasure in naming this distinct *Gynoplistia* in honour of Mr. W. Heighway, who has collected many rare Tipulidae in the vicinity of Christchurch.

EXPLANATION OF FIGURES.

PLATE XLV. :

a = ædeagus; b = basistyle; g = gonapophysis; i = interbasal process; id = inner dististyle; od = outer dististyle; p = phallosome.

Fig. 1.—*Gynoplistia fulgens* Hutton; male hypopygium.

Fig. 2.—The same; interbasal process, enlarged.

Fig. 3.—*Gynoplistia otagana*, sp. n.; male hypopygium.

Fig. 4.—*Gynoplistia clavipes* Edwards; male hypopygium.

Fig. 5.—The same; interbasal process, enlarged.

Fig. 6.—The same; ædeagus and gonapophysis, enlarged.

Fig. 7.—*Gynoplistia dimidiata* Alexander; male hypopygium.

Fig. 8.—The same; interbasal process, enlarged.

Fig. 9.—*Gynoplistia wakefieldi* Westwood; male hypopygium.

