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# A NEW CAVE-INHABITING CRANE-FLY (Tipulidae, Diptera) FROM NEW ZEALAND

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*Summary*

A new species of crane-fly (Tipulidae : Diptera) *Gynoplista (Gynoplistia) troglophila* is described, from a cave at Paturau, West Nelson. Relationships with allied species are discussed.

## INTRODUCTION

Recently the author has received from Mr J. I. Townsend an exceptionally interesting and beautiful crane-fly that was taken in a cave in West Nelson, New Zealand. Study of the two specimens available shows it to represent an undescribed species of the vast genus *Gynoplistia* Westwood, one of the most characteristic and distinct genera of these flies in the Southern Hemisphere. The specimens were collected by Messrs Kershaw, Holloway, and Marchant, members of the Nelson Speleological Group, being found in a dry upper level of Wet-neck Cave in Paturau. The holotype specimen has been returned for inclusion in the collection of the Entomology Division D.S.I.R. in Nelson.

## *Gynoplistia (Gynoplistia) troglophila,* sp. n.

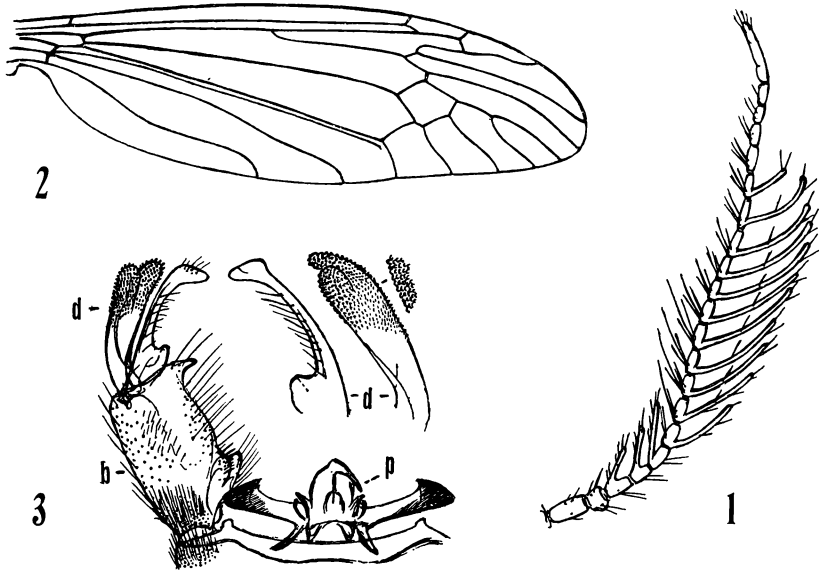
Allied to *hiemalis*; size large (wing of male about 25 mm); antennae of male 21-segmented, with 14 branched segments; mesonotal praescutum cinnamon brown, disk with three brownish gray stripes; legs brown; wings faintly yellowed, with a conspicuous brown pattern, including abundant dots in virtually all cells; the larger ocelliform pattern greatly restricted to virtually lacking.

MALE. Length about 25–27 mm; wing 24–26 mm; antenna about 6·5–6·8 mm.

Rostrum light cinnamon brown; palpi black. Antennae 21-segmented, the formula being 2 + 3 + 11 + 5; black, scape brown, extreme tips of the individual flagellar segments pale; longest flagellar branches about five times the segments; branch of first segment about one-half longer than the segment, of the fourteenth segment variable in length, from subequal to or nearly one-half longer than the segment, much shorter in the type; terminal segment elongate, nearly equal to the preceding three combined, on ventral surface with a light constriction suggesting an incomplete additional segment; flagellar segments with branches in a gentle spiral, the basal three or four directed ventrally, the remainder more laterad; vestiture of segments abundant, involving both the stems and the branches, on

the more proximal segments the longest verticils unilaterally arranged, about twice as long as the segment; the general distribution of setae on the organ as shown (Fig. 1). Head rich cinnamon brown, antennal fossae more blackened; anterior vertex impressed medially, broad, slightly more than twice the diameter of the scape.

Pronotal scutum cinnamon brown, scutellum above dark brown, posterior declivities light brown. Mesonotal praescutum with the ground cinnamon brown in front, darker behind; disk with three brownish grey stripes, the median one vaguely infuscated medially; interspaces with long erect black setae, the lateral ones paler and more delicate; scutal lobes dark brown, their centres with two confluent brownish gray areas, the posterior one much larger; central area of scutum light gray pruinose; scutellum infuscated medially, sides light gray, with long erect black setae, parascutella brownish yellow with fulvous centres; postnotum cinnamon brown, more pruinose anteriorly. Pleura dark brown, with a more cinnamon brown longitudinal stripe extending from the propleura over the ventral anepisternum and dorsal pteropleurite on to the pleurotergite; long erect black setae on propleura, anepisternum, ventral sternopleurite and metapleura. Halteres elongate, fulvous yellow. Legs with coxae brown, grey pruinose, especially behind, with long delicate setae; trochanters cinnamon brown; remainder of legs fulvous brown, not or scarcely patterned. Wings (Fig. 2)




*Gynoplistia (Gynoplistia) troglophila,* sp. n.

FIG. 1—Antenna of male.

FIG. 2—Venation of male.

FIG. 3—Male hypopygium.

(Symbols. *b,* basistype; *d,* dististyles; *p,* phallosome)

with the ground faintly yellowed, cells *C, Sc* and $Cu_1$ (the narrow strip between the cubital branches) dark yellow, unpatterned; disk with a conspicuous brown pattern, including larger and darker spots in radial field, including about five in cell *R,* in the holotype these arranged in pairs with more yellowed interspaces, including two in base of cell *R,* a second pair at origin of *Rs,* and a third at fork of *Rs,* the last more concentrated and larger; marginal darkenings at ends of veins $R_3$ and $R_4$; a solid dark brown oval spot at fork of *Sc*; very narrow darkened seams on cord and outer end of cell 1st $M_2$; all cells except as above indicated with small circular paler brown spots and dots, more numerous and more or less confluent in cells *R,* $M_4$ and outer end of Cu, restricted to virtually lacking in cell *R,* proximal half of $R_1$ and centre of *1st* $M_2$; cell *1st A* with a partial ocellus near outer end, including darkened edges and a paler dusky centre; cell *2nd A* more uniformly pale brown, the outer third with about nine circular brown spots; veins bright yellow, darkened in the marginal cloudings, whitened in the obliterative areas of anterior cord and basal section of vein $M_3$. Longitudinal veins behind *R* unusually glabrous; a few scattered elongate setae on central third of outer section of vein $R_5$; costa with dense trichia, with fewer on *R* and $R_1$. Venation: $R_{1+2}$ pale but evident; $R_{2+3+4}$ short, about one-third to one-half the basal section of $R_5$; *r–m* short (in paratype) or obliterated by punctiform contact of veins $R_5$ and $M_{1+2}$ (in holotype); cell $M_1$ nearly three times its petiole; *m–cu* for distad, at near five-sixths the length of $M_{3+4}$.

Abdominal tergites light cinnamon brown, lateral borders narrowly infuscated, surface with abundant short setae; sternites concolorous, setae longer and more conspicuous. Male hypopygium (Fig. 3) with the dististyles, *d,* much as in *hiemalis,* the broad outer style bilobed apically, the outer half with abundant microscopic blunt spicules. Basistyle, *b,* with a small fingerlike lobe; cephalic end of mesal face in general region of the interbase irregularly bilobed, with long setae. Outer lateral parts of the ninth sternite-tergite and outer cephalic part of basistyle with a dense concentration of black setae.

*Holotype,* ♂, Wet-Neck Cave, Paturau, West Nelson, New Zealand, August 6, 1961 (D. Kershaw, A. Holloway, J. Marchant). *Paratopotype,* ♂.

Other members of the *hiemalis* group include *Gynoplistia (Gynoplistia) hiemalis* (Alexander) and *G. (G.) ocellifera* Alexander, both of the North Island of New Zealand. The three species may be separated by use of the following key.

MALES only.

1. Wings with abundant brown spots or dots in almost all cells; ocelliform darkened pattern virtually obsolete, best indicated in cell *R* and near outer end of cell *1st A*; antennae 21-segmented, and with 14 branched segments.

***troglophila* sp. n.**

Wings without brown dots in the cells excepting a restricted series in cell *M*; darkened ocelliform pattern conspicuous; antennae 20-segmented, with either 12 or 13 branched segments.

2. Antennae with 12 branched segments; darkened wing pattern diffuse, the margins ill-defined, not well contrasted against the ground.
*ocellifera* Alexander

Antennae with 13 branched segments; darkened wing pattern clearly defined, contrasting with the whitened ground.
*hiemalis* (Alexander)

The female sex is known only in *hiemalis*. This has the antennae 17-segmented, with 10 branched segments. The wings are greatly reduced, narrow and straplike, subequal in length to the halteres (length of body 24 mm; wing 2·5 mm). It seems certain that all known species of the *hiemalis* group will be found to have subapterous females. All known species are adult during the winter or cold weather period of low sun. The occurrence of the present fly in caves is of unusual interest and it seems possible, at least in certain cases, that the species is a true cave dweller, although it may perhaps be found outside the caves in other instances. Mr Townsend (*in litt.*) has discussed the possibility that the present specimens may have entered the cave where found by accident, since both specimens were found dead in a dry upper level of the cave. He indicates that *Gynoplistia (Gynoplistia) tuberculata* Edwards has been found in several caves at Paturau and appears to be a true troglophile.

In order to complete the data the records for the two other species are summarised.

*Gynoplistia (Gynoplistia) hiemalis* (Alexander)

*Cerozodia hiemalis* Alexander; Ann. Mag. nat. Hist., (9) 11: 108; January 1923.

*Gynoplistia hiemalis* Alexander; Ann. Mag. nat. Hist., (9) 13; 372; 1924.

*Gynoplistia (Gynoplistia) hiemalis* Alexander; Philipp. J. Sci., 38; 187; 1929.

The type, a female, was taken at Ohakune, 2060 ft, in July 1921 by T. R. Harris. Other specimens, including the male sex, were found by Harris in June 14–22, 1923. John G. Myers discovered the species in the Wainui State Forest, Wellington.

*Gynoplistia (Gynoplistia) ocellifera* Alexander.

*Gynoplistia ocellifera* Alexander; Ann. Mag. nat. Hist., (9) 12: 111–112; July 1923.

The type was from Raurimu, taken June 7, 1922, by Harris.

ACKNOWLEDGMENTS

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