

Fam. EPHYDRINIDÆ.

Ephydra aquaria.

An aquatic fly abounding on the surface of pools and on the damp banks of streams on the sea-shore. From my observations, they are to be found from January to May (1909). The larvæ live in saline pools on the sea-shore, and have been described by Dr. Benham in the *Trans. N.Z. Inst.*, vol. xxxvii, p. 308.

Domina metallica.

A minute fly about 2 mm. in length. This species is not common, only two specimens having been obtained, during August and September (1908).

EXPLANATION OF PLATES XXVIII AND XXIX.

PLATE XXVIII.

- Fig. 1. *Odontomyia chloris.*
- Fig. 2. *Sarcophaga impatiens.*
- Fig. 3. *Limnophora rapax.*

PLATE XXIX.

- Fig. 1. *Syrphus novæ-zealandiæ.*
- Fig. 2. Abdomen of *Syrphus ortas.*
- Fig. 3. Abdomen of *Melanostoma fasciatum.*
- Fig. 4. *Saropogon fugiens.*
- Fig. 5. *Helophilus trilineatus.*
- Fig. 6. *Itamus varius.*

ART. XXVII.—*A New Species of Empis.*

By DAVID MILLER.

[Read before the Otago Institute, 12th October, 1909.]

THIS is the first of a series of papers dealing with new species of New Zealand *Diptera*, as they accumulate in my collection.

Fam. EMPIDIDÆ.

Genus EMPIS, Linæus.

Hutton, *Trans. N.Z. Inst.*, vol. xxxiii, p. 30.

Empis otakouensis,* sp. nov.

Male and female. Head spherical (fig. 2), borne by a short neck; eyes bare, dichoptic; ocelli present; occiput with short bristles, elongated at the ocelli to form two pairs of vertical and a single pair of post-vertical bristles, directed forward; fronto-orbital bristles short, extending to the base of the antennæ; frons, vertex, and occiput dark brown, covered with silvery-grey tomentum; first and second joints (*e*, *f*) of antennæ bristly, not elongate, same colour as the frons, third joint (*c*) not bristly, elongated,

* The name "*otakouensis*" is derived from that of a Maori village known as Otakou, situated a short distance from Tairaroa Head, and not far from the locality where this species was found.

darker than the preceding, bearing a shorter terminal style (*d*); face covered with silvery tomentum, oral margin surrounded by long silvery hairs which extend posteriorly toward the occiput; proboscis (*a*) rigid, tapering to a point which is bifid, directed downwards, about one and three-quarters the length of the head, dark brown, shiny; palpi (*b*) about as long as the proboscis, club-shaped, silvery grey, bearing long silvery hairs.

Thorax: pleuræ brown, covered with silvery tomentum; metapleuræ with a tuft of hair, dorsum brown, with two darker longitudinal stripes; bristles short anteriorly, but longer posteriorly; a medium-sized bristle on each of the alar frena near the wing-bases; humeri silvery, as also are the hairs and the margin of the dorsum; scutellum silvery grey, with several medium-sized marginal bristles; halteres light brown. Wings tinged with grey, veins brown and faintly margined with brown, main vein grey toward the base, a brown elongate spot at the junction of the first longitudinal with the costa (fig. 1), fork of third longitudinal vein curved forward before meeting the costa; auxiliary vein evanescent at the tip so as not to meet the costa. Legs covered with weak bristles and silvery hairs, the posterior pair being the longest; coxæ same colour as the pleuræ, not elongate; femora, tibiæ, and tarsi very dark, almost black in certain lights, covered with grey tomentum and with silvery reflections, the posterior metatarsi (*a*, fig. 4) and distal extremity of the femora (*b*) swollen; pulvilli and ungues distinct.

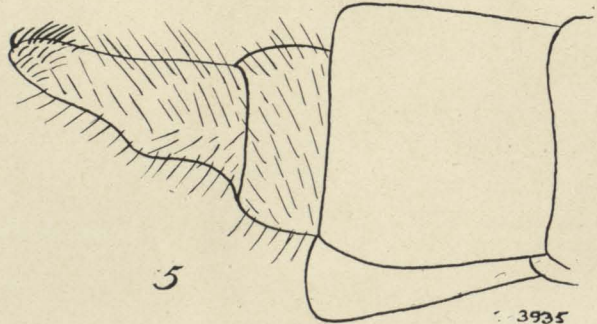
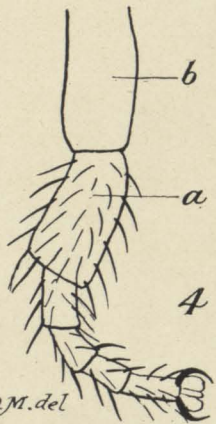
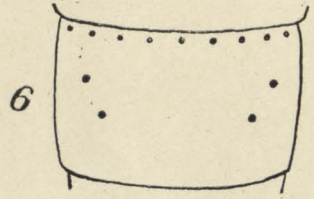
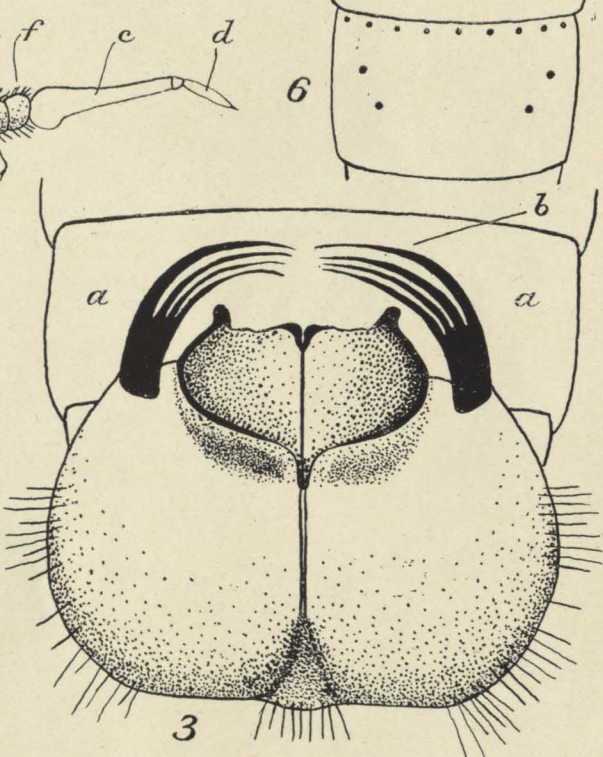
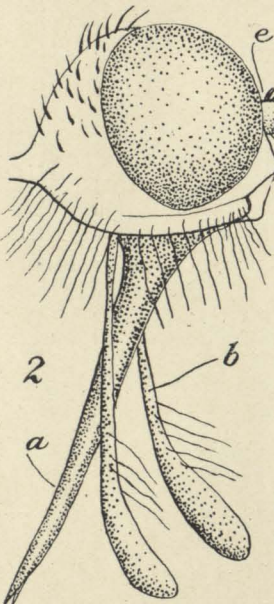
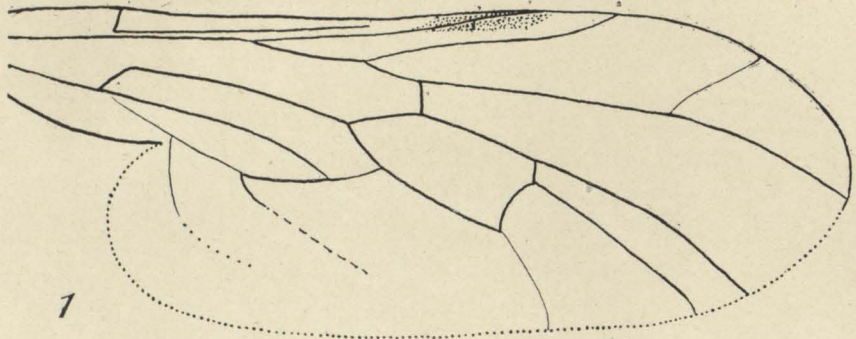
Abdomen linear, grey, margins of segments with silvery hairs, longer in the male, a system of black spots on each segment, a row existing along the anterior margin together with two median pairs, one on each side toward the margin (fig. 6). Genitalia of male (fig. 3) much swollen, recurved dorsally, covered with long hairs, bearing two sets of shiny reddish-brown claws (*b*); abdomen of female tapering to a dark point bearing a clump of short bristles directed forward (fig. 5).

Length of ♂ and ♀, 8 mm.; of wing, $7\frac{1}{2}$ mm.

Hab.—Common during the summer on the sandhills of the sea-beach, having been captured on Murdering Beach during January, and also on Ocean Beach in the following month (1909).

EXPLANATION OF PLATE XXX.

- Fig. 1. Plan of venation of the wing (magnified).
 Fig. 2. Side view of head: *a*, proboscis; *b*, palpi; *e*, *f*, 1st, 2nd antennal joints; *c*, 3rd joint; *d*, terminal style (magnified).
 Fig. 3. Dorsal view of male genitalia, showing the claws (*b*) and abdominal segments (*a*) (magnified).
 Fig. 4. Posterior leg of male, showing portion of femora (*b*) and swollen metatarsus (*a*) (magnified).
 Fig. 5. Side view of the posterior abdominal segments of a female (magnified).
 Fig. 6. Dorsal view of 6th abdominal segment, showing the arrangement of the spots (magnified).



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EMPIS OTAKOUENSIS.—MILLER.

Face p. 236.