

STUDIES IN PHLEBOTOMIC DIPTERA, No. 1. NEW SPECIES OF SIMULIDÆ  
AND CHIRONOMIDÆ.

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(Figs. 1-3.)

THE sand-flies have, in the case of the Simuliidæ, been greatly neglected in Australia. There have been described, so far, only two species, *S. heriassum*, Skuse, and *S. victoria*, Ronband.

I am now enabled to add another species, thanks to the courtesy of Dr. T. L. Bancroft, who kindly presented a series of dried specimens and also some preserved in alcohol to the Institute.

The Chironomidæ are somewhat better represented, as seventy-six species, distributed in seventeen genera, have been described to date, mainly by Skuse in 1889.

Two new species are described in this paper--one of which was taken by Dr. J. H. L. Cumpston, Director of Quarantine, and kindly presented to the Institute by him. The other was taken by my colleague, Dr. W. J. Young.

The type specimens are contained in the Institute collection.

Fig. 1



Fig. 2

Fig. 3

## Family SIMULIDÆ.

*SIMULIUM BANCROFTI*, sp. n.

(Figs. 1 and 2.)

♀ *Head*: Black with grey tomentum; front with a well-defined median groove; palpi black with black and pale pubescence, first joint pale, apex of second narrower than base, third strongly emarginate on the inner side towards the apex, fourth long, thin, cylindrical; antennæ nine-jointed, first two brownish, first shorter than second, latter about the length of the third, third to the apex black, third broadest and about twice the length of fourth; proboscis black, apex with short, stout pubescence; eyes coppery.

*Thorax*: Black, tomentum grey, pubescence pale; pleuræ black with grey tomentum.

*Abdomen*: First segment deep black, two to six deep black with median apical ash-grey spots, small on the second and increasing in size to the sixth, which is ash-coloured, except for a narrow basal and lateral margin of deep black, seventh ash-grey, with a narrow lateral deep black border, eighth ash coloured, third to fifth also with apices of sides ash-coloured, pubescence black, pale on the pale areas; venter grey with grey pubescence. Halteres pale creamy.

*Legs*: Dark yellowish-brown, tibiae dark brown above, anterior tarsi black, except base of first yellowish-brown, mid and posterior tarsi yellowish-brown, second to fourth with their apices dusky, first posterior tarsi dusky beneath; pubescence pale; apex of tibiae with a stout spine; apex of first posterior tarsi produced into a terminal expansion overlapping the second tarsals beneath.

*Wings*: Clear, pale yellowish at the roots; costa auxiliary and first long veins paler than roots, remaining veins almost indistinguishable from wing membrane.

Length, 2 mm.; length of wing, 2 mm.

*Hab.*—♀: Eidsvold (Dr. T. L. Bancroft).

The wings, legs and abdominal ornamentations render this species abundantly distinct from *S. furiosum*, Skuse, and *S. victorise*, Rouband. It resembles *S. jobbi*, Rouband, from New Hebrides, in having an apical terminal expansion on the first posterior tarsi.

It affords me much pleasure to dedicate this species to its discoverer.

*SIMULIUM FURIOSUM*, Skuse.

Proc. Linn. Soc. N.S. Wales, xiii., p. 1365, 1888 (1889), pl. xxx., fig. 1.

A specimen, on a card, presented to the Institute by Dr. Ferguson, may possibly be this species, but it is in a very poor state of preservation and is more or less covered with gum, which has obscured details, thus rendering its determination indefinite.

*Hab.*—N.S.W.: Narromine (Dr. Ferguson).

## Family CHIRONOMIDÆ.

*CULICOIDES TOWNSVILLENSIS*, sp. n.

(Fig. 3.)

♀ *Head*: Black, with golden pubescence; antennæ blackish-brown, apex of last joint nipple-like, pubescence dark; palpi dark brown, pubescence pale, first two segments longer than third and fourth together, second segment strongly emarginate on its inner edges, first segment with a distinct notch on the outer edge of the basal third; eyes black.

*Thorax*: Dull black, with fairly dense lemon coloured pubescence, scutellum similar; pleuræ black. Halteres with orange coloured knobs.

*Abdomen*: Black, with dark brown pubescence; venter brown.

*Legs*: Femora brown, tibiae and tarsi yellowish-brown, pubescence pale, fairly long on the femora, mid tibiae about two and a half times the length of first tarsi, posterior tibiae about twice the length of first tarsi.

*Wings*: Longer than abdomen, clear, covered with brown pubescence; costa, first and second longitudinal veins brown, the latter reaching the costa considerably in front of the base of the fifth longitudinal fork.

Length, 1 mm. (vix); length of wing, 1 mm.

*Hab.*—♀: Townsville (Dr. W. J. Young).

Described from five specimens taken during the morning while biting. It appears to be most nearly related to *C. minusculus* (Skuse), but is readily distinguished on venational characters alone.

*CULICOIDES MULTIMACULATUS*, sp. n.

♀ *Head*: Black, pubescence pale; antennæ with scape, black, prominent, pedicel yellowish, longer than following joint and about twice as wide, next seven joints pale yellowish-brown, remainder brown, the apical longest, stout, and ending in a blunt point; proboscis and palpi dark-brown, the latter with the second joint swollen, pubescence black.

*Thorax*: Black, with brown tomentum, sides with grey tomentum not reaching the shoulders, with a brown spot superimposed in front of the wing roots and two large grey ones in the centre of the thorax; pubescence pale; scutellum black.

*Abdomen*: Black, with faint grey tomentum, pubescence pale, scanty.

*Legs*: Brown, femora and tibiae with a subapical pale ring, pubescence black; fore tibiae about once and a half the length of the first tarsals.

*Wings*: Brown, longer than thorax and abdomen, with fourteen clear spots, the largest situated behind the apex of the first long vein; veins brown; first and second long veins reaching the costa considerably in front of the base of the fifth longitudinal fork; pubescence black, fairly dense.

Length, 1.5 mm. (six); length of wing, 1.75 mm.

Hab.—Victoria: Portsea (Dr. J. H. L. Cumpston).

This species is more nearly related to *C. marmoratus* (Skuse) than to *C. molestus* (Skuse), the only two known southern forms with spotted wings. It may, however, be distinguished by the spots being more numerous and irregular in size while they appear to be more regular in size in *C. marmoratus* and *C. molestus*. It also differs in thoracic ornamentation.

#### EXPLANATION OF FIGURES.

Fig. 1.—*Simulium baucrofti*, sp. n., head.

Fig. 2.—*Simulium baucrofti*, sp. n., posterior leg.

Fig. 3.—*Culicoides townsvilleensis*, sp. n.

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