

Identification Key to Campbell Island Freshwater Chironomidae Larvae

McMurtrie, Sinton & Winterbourn (2014)



Parochlus INFORMATION SHEET

Classification

Class:	Insecta
Order:	Diptera
Family:	Chironomidae
Subfamily:	Podonominae
Genus:	<i>Parochlus</i>
Common name:	midge

Three *Parochlus* species have been described from Campbell Island: *P. renelli*, *P. brevis* and *P. reductus*. *P. reductus* is known only from Campbell Island. *P. brevis* also occurs on the Auckland Islands. *P. renelli* has been reported from the Campbell, Auckland and Antipodes islands.

Only the larvae of *P. brevis* has been officially described, however larvae collected along with an adult male *P. renelli* as part of the 2010–11 Campbell Island Bicentenary Expedition have also been informally described below.

Parochlus renelli Sublette & Wirth, 1980

Distinguishing features

Parochlus renelli can be distinguished from other members of Chironomidae with the following features. Note that as the larvae of *P. reductus* is not described, and without a more detailed description of *P. renelli*, it is not known if the following features would be useful for differentiating between the three species of *Parochlus* recorded from Campbell Island (see Comments section).

- Body slender, grey-white with gut visible through the body wall (Fig. 1); head pale, yellowish (Fig. 2); eye black and roughly circular, but seen to be made up of a complex of three “eyespot” when viewed at high magnification; body length 4.5–5.0 mm.
- Prothoracic and posterior prolegs pale, the latter about as long as the head and with black claws (Fig. 2 and Fig. 3).
- Procerci brown, about half as long as the head and with a tuft of 6–7 dark setae about twice the length of the procercus (Fig. 3).
- Mentum (and mandibles) dark distally, steep-sided and slightly rounded laterally; mentum with single trifold median tooth and 6 lateral teeth.
- Antennae short, 5-segmented: blade on segment 1 reaching to segment 4; Lauterborn organ on segment 2.

Comments

Sublette & Wirth (1980) described a *Parochlus* larva from Campbell Island and attributed it to *P. brevis* based on its being found close to where adults were collected. The larva described here is not the one



FIGURE 1. *Parochlus renelli* whole animal

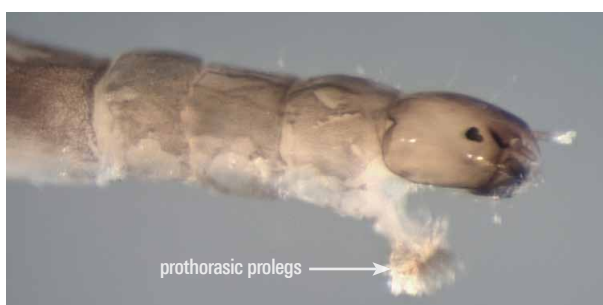


FIGURE 2. *Parochlus renelli* anterior

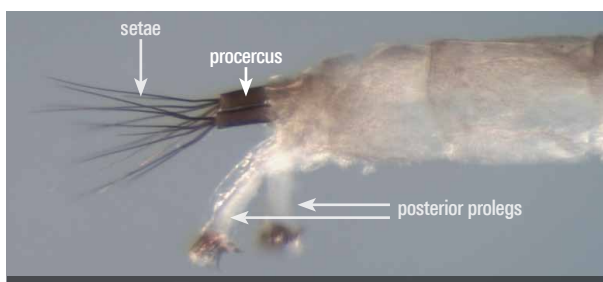


FIGURE 3. *Parochlus renelli* posterior

they described. However, an adult male collected with larvae in 2010 had well developed external genitalia consistent with those described for *P. renelli*.

Sublette & Wirth (1980) examined no *Parochlus* pupae but commented that *P. renelli* could be a species described from a pupa (but not an adult) by Brundin (1966.) However, although Brundin acknowledged examining Campbell Island material collected by J. L. Gressitt and K. *P. Renell* in 1961–62, he does not acknowledge Campbell Island as a source of any newly described species.

Pupae we have examined were not the same as any described from any source by Brundin (1966). They have a body length of about 3 mm; thoracic respiratory siphons that are club-shaped and slightly curved on their long axes. The posterior segment of the body has two long wavy setae on each side and long pointed spurs at the posterior angles. Medially, the abdomen terminates in a bifid point.

Original Description

Sublette & Wirth (1980): Figs 3E,F, 4C-H, 5, 10A. Larvae not described.

Parochlus brevis Sublette & Wirth, 1980

Distinguishing features

Parochlus brevis can be distinguished from other members of Chironomidae with the features described in the Original Description section below. Note that as the larvae of *P. reductus* is not described, and without a more detailed description of *P. rennelli*, it is not known if this description would be useful for differentiating between the three species of *Parochlus* recorded from Campbell Island (Sublette & Wirth, 1980).

Comments

Adults have been collected from beaches on Campbell Island and Auckland Island (from rocks and nearby rata trees).

Original Description

The following is a direct excerpt from Sublette & Wirth (1980), including figures:

Larva (presumptively by locality). Ventral head length: 2nd instar, 0.087, 0.092 mm (2); 3rd instar, 0.112 mm (1); 4th instar 0.184-0.199 mm (5). Length of preanal papilla: 2nd instar, 0.025 mm (2); 3rd instar, 0.051 mm (1), 4th instar, 0.092-0.107 mm (5).

Fourth instar. Head capsule dark brown, with the single eye spots, labial plate, and occipital margin blackish. Labial plate, Fig. 8E. Antenna (Fig. 8F) with a scarcely discernable third segment. Ventral labral structures (Fig. 8G,H) similar to those of other members of the subfamily (cf. Brundin 1966, fig. 27-33); spinulae apparently lacking. Mandible, Fig. 8I,J. Hypopharynx, Fig. 8K. Maxilla, Fig. 8L. Preanal papillae darkened, apparently heavily chitinised, each bearing about 7 long, dark setae and 1 smaller, barely subterminal, weaker seta. Anal gills 4, small, almost spherical in preserved larvae. Posterior prolegs each with a weak medial seat near base. Claws of posterior prolegs darkened, retracted on all specimens available, so that a precise number cannot be determined.

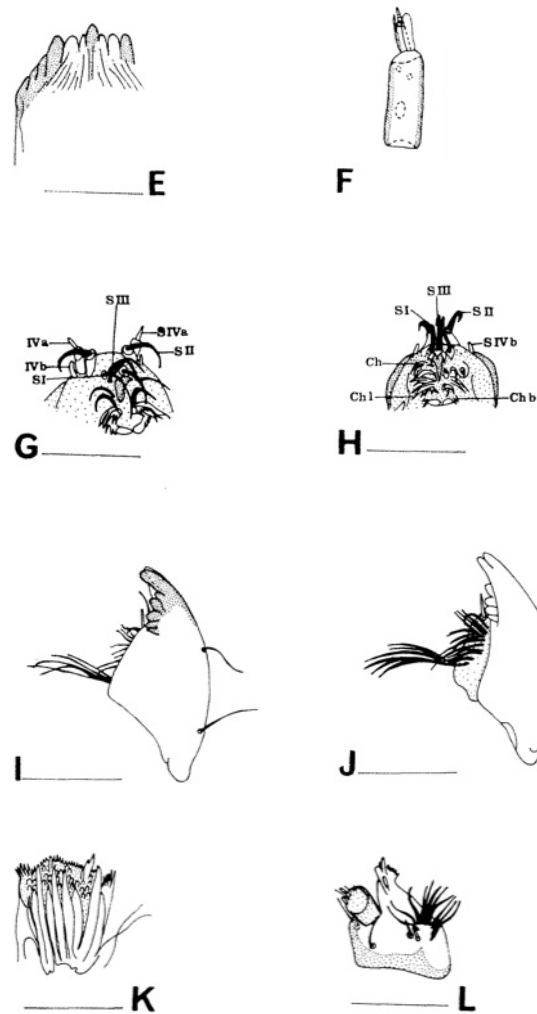


FIGURE 8.

Parochlus reductus Sublette & Wirth, 1980

Distinguishing features

See comments below.

Comments

The larva has not been described for this species, and no larvae that could be attributed to this species were found during the 2010–11 Campbell Island Bicentennial Expedition.

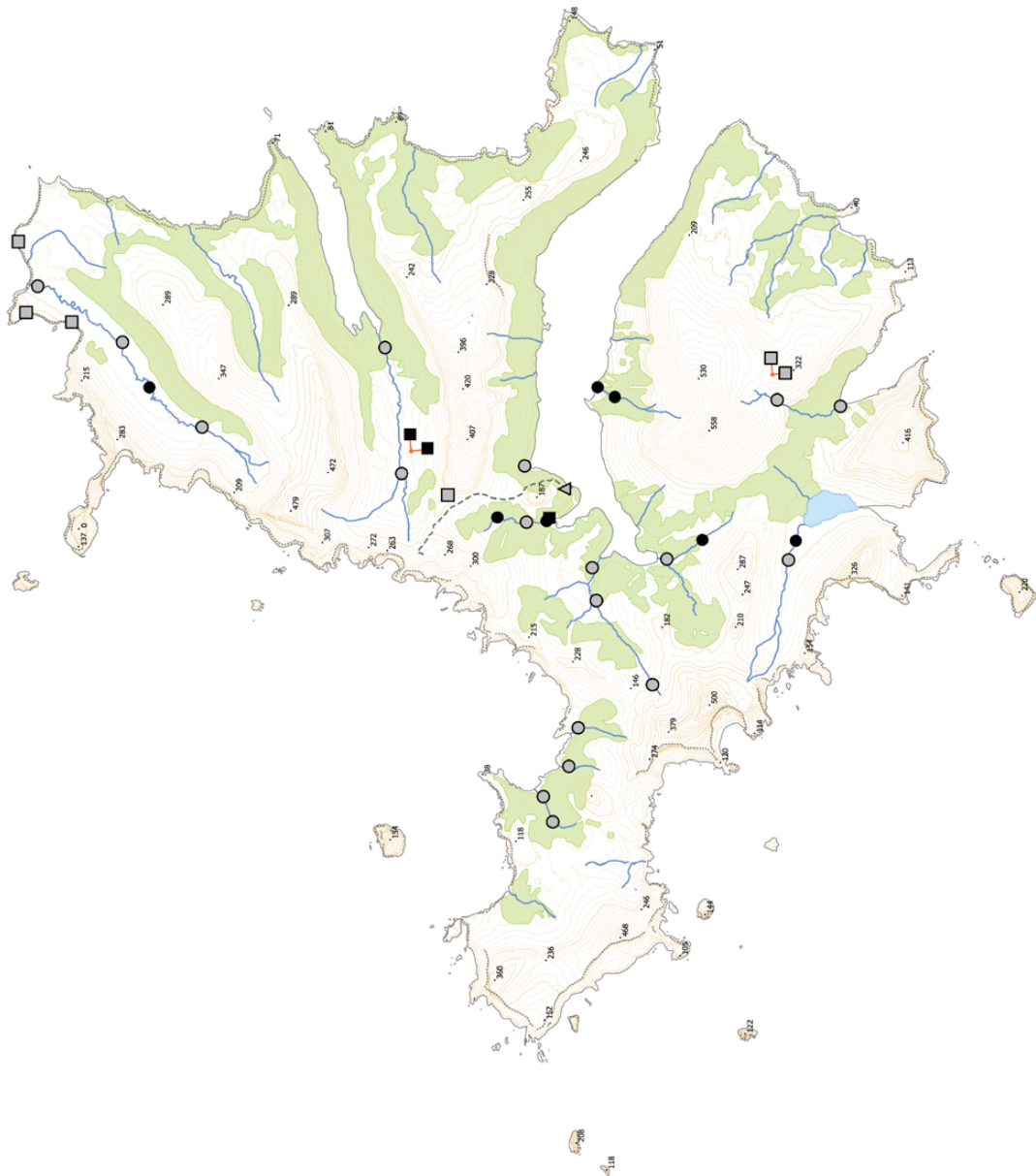
Original Description

Sublette & Wirth (1980): Larvae not described

Biogeographic Information

Presence/absence on streams, tarns, and a seepage sampled on Campbell Island.

Distribution map based on surveys undertaken by EOS Ecology during the 2010–11 Campbell Island Bicentennial Expedition (www.campbellisland.org.nz). Distribution data © EOS Ecology, 2013.



TARN SITES	Present
■	Absent
STREAM SITES	Present
●	Absent
SEEP SITE	Present
▲	Absent
⋯	Cliff edge
—	Tracks
▲	Height points
○	Lakes
—	Streams
■	Scrub

Scale = 1 km

New Zealand Transverse Mercator
 New Zealand Geodetic 2000
 Created on: 3 December 2013
 Created by: Kirsty Brennan

Parochlus rennelli Distribution
CAMPBELL ISLAND
 December 2010–February 2011

Produced by: EOS Ecology
 Project name: Campbell Island Bicentennial Expedition
 Project no.: 06033-EOS01
 Project lead: Shelley McMurtrie
www.eosecology.co.nz



References & Further Reading

- Brundin, L. 1966. Transantarctic relationships and their significance as evidenced by chironomid midges. *Kungl. Svenska Vetenskapsakademiens Handlingar* 11 (1): 1–472.
- Sublette, J. E. & Wirth, W. W. 1980. The Chironomidae and Ceratopogonidae (Diptera) of New Zealand's subantarctic islands. *New Zealand Journal of Zoology* 7: 299–378.

How to Cite this Information Sheet

- McMurtrie, S.A., Sinton, A.M.R., & Winterbourn, M.J. 2014. Lucid Identification Key to Campbell Island Freshwater Chironomidae Larvae: *Parochlus* information sheet. EOS Ecology, Christchurch, New Zealand.

ACKNOWLEDGEMENTS – The creation of the Lucid Key and information sheets were supported by the TFBIS (Terrestrial and Freshwater Biodiversity Information System) Fund administered by the Department of Conservation (TFBIS Contract No. 278), and by EOS Ecology. Invertebrate specimens were collected by EOS Ecology during the 2010–11 Campbell Island Bicentennial Expedition (CIBE), made possible by the 50th South Trust.

