

# Identification Key to Campbell Island Freshwater Invertebrates

McMurtrie, Sinton & Winterbourn (2014)



## *Austrosimulium campbellense* Dumbleton, 1973 (1972)

INFORMATION SHEET

### Classification

Class: Insecta  
Order: Diptera  
Family: Simuliidae  
Genus: *Austrosimulium*  
Specific name: *campbellense*  
Common name: blackfly, sandfly

### Distinguishing Features

Simuliidae larvae can be distinguished from other Campbell Island Diptera larvae by the following features:

- a distinct, sclerotised head with two retractile dorsolateral fans of fine rays (Fig. 1)
- abdominal segments 5 to 8 swollen (Fig. 2), the posterior segment with a X-shaped anal sclerite and circle of minute hooks, surrounded by semicircular sclerite (Fig. 3).

### Comments

The variation in size of larvae and number of gill filaments on pupae suggest the possibility of cryptic species (pers. comm. Doug Craig). Specimens recorded as *A. vexans* from Campbell Island by some earlier researchers are in fact *A. campbellense*.

According to Craig *et al.*, (2012) differentiation between *A. campbellense* larvae and those of *A. vexans* and *A. unguatum* relates to the hypostomal teeth that protrude more distinctly beyond the lower edge of the hypostoma in the latter two species.

Bar coding molecular analysis is in progress on *A. campbellense* collected during the 2010–11 Campbell Island Bicentennial Expedition.

A number of the larvae collected during the 2010–11 Campbell Island Bicentennial Expedition were infected with a common blastocladiid fungus, *Coelomycidium* sp. Infection by this fungus can be recognised by marble-like structures which pack the body of the *Austrosimulium* larvae and create a speckled appearance (Craig *et al.*, 2012) (Fig. 4). The presence of this fungus on Campbell Island is a new distribution record and the southern-most record for New Zealand.

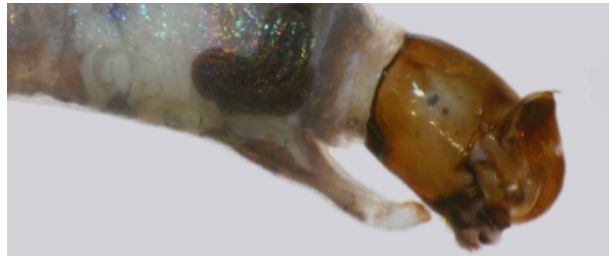


FIGURE 1. *Austrosimulium campbellense* head and thorax, showing developing pupal gill (photo: Douglas Craig)



FIGURE 2. *Austrosimulium campbellense* whole animal

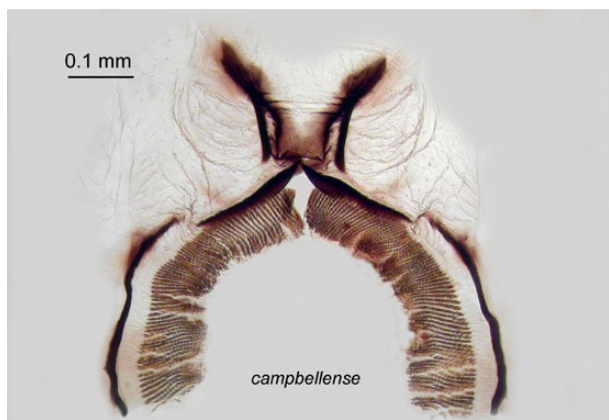


FIGURE 3. *Austrosimulium campbellense* posterior anal sclerite and circlet of hooks (photo: Douglas Craig)

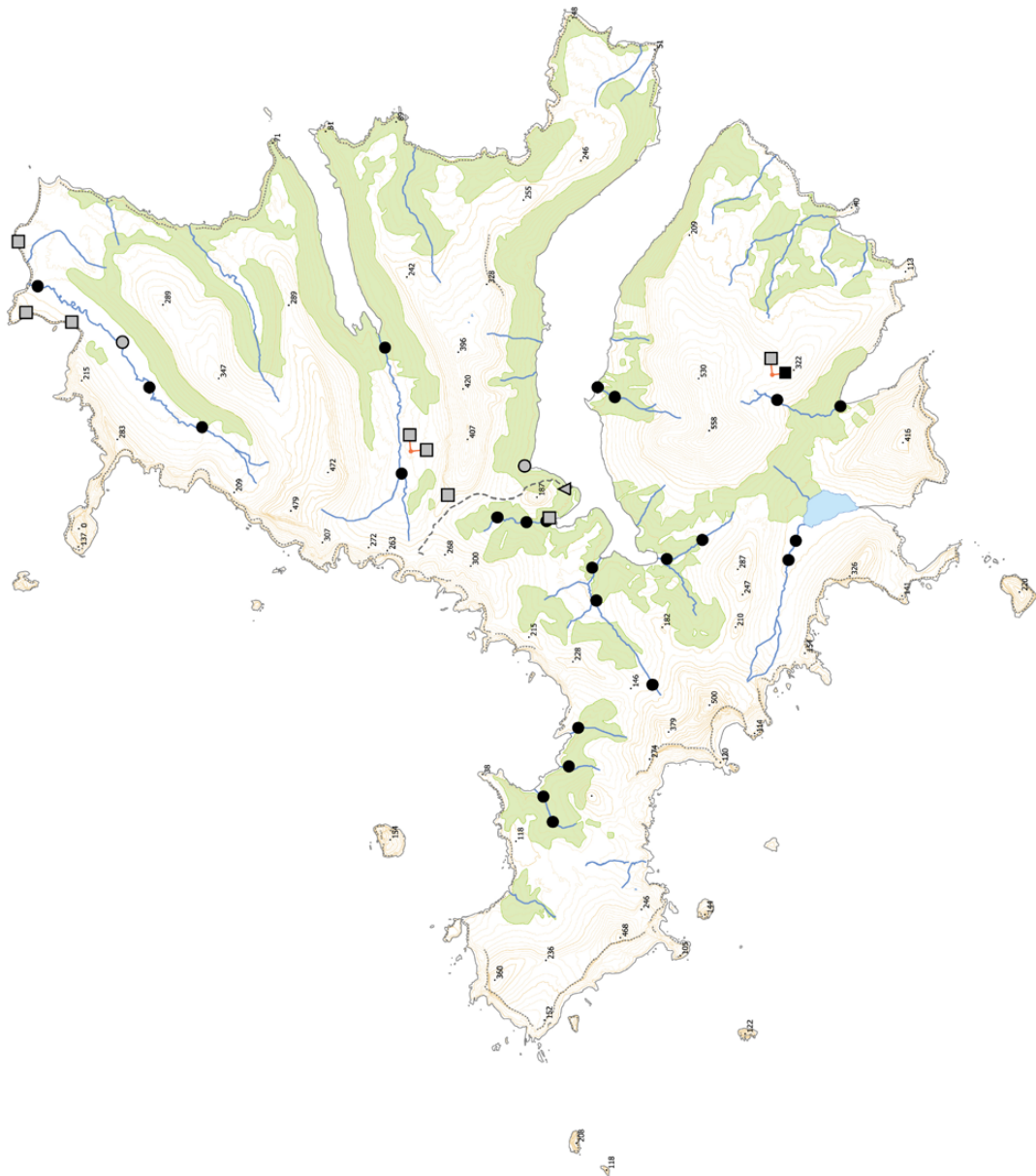


FIGURE 4. *Austrosimulium campbellense* infected with *Coelomycidium* fungus (photo: Douglas Craig)

## 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](http://www.campbellisland.org.nz)). Distribution data © EOS Ecology, 2013.



<b>TARN SITES</b>	Present	Absent
■	□	
<b>STREAM SITES</b>	Present	Absent
●	○	
<b>SEEP SITE</b>	Present	Absent
▲	△	
-----	Cliff edge	
---	Tracks	
370	Height points	
○	Lakes	
—	Streams	
■	Scrub	

Scale = 1 km

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

***Austrosimulium campbellense* 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](http://www.eosecology.co.nz)



## Original Description

The following is a direct excerpt from Dumbleton (1972), including figures:

Gill spot (Fig. 196) with less than seven terminal filaments, none of these reflexed apically; mesal hypostomal tooth (Fig. 172) shorter, not as prominent as the large lateral teeth. Antenna as in Fig. 186; semicircular sclerite apices as in Fig. 211

Craig *et al.* (2012): A much more comprehensive larval description than that originally provided by Dumbleton (1972) can be found in Craig *et al.* (2012).

## References & Further Reading

Craig, D.A., Craig, R.E.G. & Crosby, T.K. 2012. Simuliidae (Insecta: Diptera). *Fauna of New Zealand* 68: 336 pp.

Dumbleton, L.J. 1972. The genus *Austrosimulium* Tonnoir (Diptera: Simuliidae) with particular reference to the New Zealand fauna. *New Zealand Journal of Science* 15: 480-584.

## How to Cite this Information Sheet

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

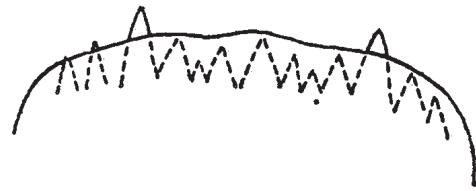


FIGURE 172. *A. campbellense* mesal hypostomal tooth



FIGURE 186. *A. campbellense* antenna

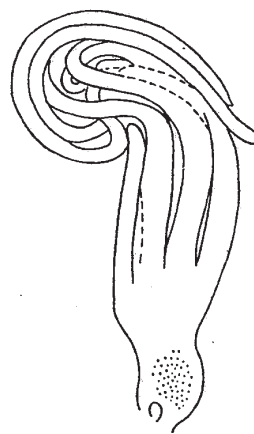


FIGURE 196. *A. campbellense* gill spot



FIGURE 211. *A. campbellense* semicircular sclerite apices

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