



NEW ZEALAND BioSECURE

Entomology Laboratory



Aedes (Ochlerotatus) antipodeus
(Edwards, 1920)

winter mosquito
the singer
bush mosquito

NZ Status: Endemic



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Male



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Female

Vector and Pest Status:

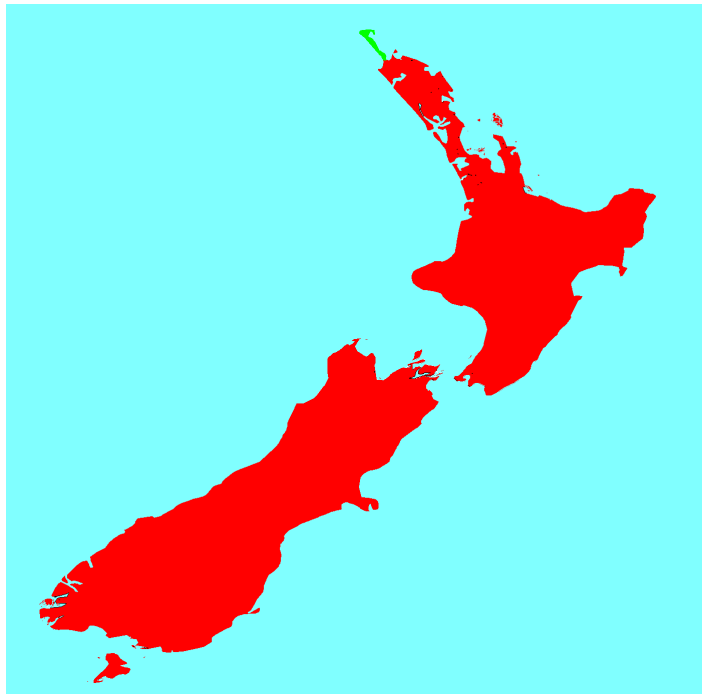
The vector status of *Aedes antipodeus* is not currently known. It has been reported to be a nuisance biter of man and can cause allergic reactions (Marks and Nye, 1963; Weinstein *et al.*, 1997; New Zealand BioSecure, unpub. data), but has not been observed to bite livestock (Holder *et al.*, 1999). Additional potential hosts are yet to be identified (Holder *et al.*, 1999).

Geographic Distribution

Aedes antipodeus is an endemic species first collected in 1916 by A.E. Brooks and areas (Graham, 1939), it ranges from as far north as Kaitaia to the south as far as Stewart Island (Marks and Nye, 1963; Dumbleton, 1968). It has not been recorded from the Chatham Islands.



Map 1



NB. This map denotes the general areas where this species has been recorded, not actual distribution.

Incursions and Interceptions

Aedes antipodeus has not been intercepted at New Zealand's borders.

Taxonomy

Aedes antipodeus belongs to the subgenus *Ochlerotatus*. It was elevated to the proposed new genus *Ochlerotatus* by Reinert (2000) and Reinert *et al.* (2004) but disagreement with the change has seen all species placed back into the genus *Aedes* subgenus *Ochlerotatus*, pending further research.

Within New Zealand, the subgenus *Ochlerotatus* contains two native species, *Aedes antipodeus* and *Aedes subalbirostris* (Marks and Nye, 1963). Adults of *Ae. antipodeus* can be distinguished from *Ae. subalbirostris* by having a non-mottled femora, an entirely dark proboscis (Belkin, 1968), and a pattern of longitudinal golden lines along the thorax (Marks and Nye, 1963) with the median line running from the front margin of the thorax to just before the scutellum where it forks (Belkin, 1968).

The banded tarsi separate this species from *Ae. australis* (Nye and McGregor, 1964) but can make it appear similar to the introduced *Ae. notoscriptus*. It can however be differentiated from this species by its entirely dark proboscis and when visible, the scale pattern of the scutellum (Nye and McGregor, 1964).

Larvae of *Ae. antipodeus* may be separated from *Ae. subalbirostris* by a continuous row of equal shaped pecten teeth (Marks and Nye, 1963). Additionally, the internal scales of the patch are spatulate and fringed in shape while the outer comb scales are more spine like (Marks and Nye, 1963) (Belkin, 1968).

Habits and Habitat

Aedes antipodeus is usually located in country and damp bush habitats (Graham, 1939). It can be found breeding in shaded ephemeral floodwater ground pools created after a rain event (Belkin, 1968; Dumbleton, 1968). Larvae have also been found in reservoirs, swamps, margins of semi-flooded streams and streambed pools (Belkin, 1968) and in fringes of saltmarsh habitat (New Zealand BioSecure, unpub. data, 2007).

Eggs of *Ae. antipodeus* are desiccation resistant, laid on slime or mud, and hatch out around 24 hours after a rain event or when there is sufficient water available (Graham, 1939; Lee *et al.*, 1984). Larvae can therefore be found teeming in new ground pools even if there is an apparent absence of adults in the vicinity (Baber, 1934).

Larvae are able to complete development even with a water temperature as low as 5°C. At 11°C larval development can be completed within three weeks and development may actually be slowed with increasing temperatures (Lee *et al.*, 1984). This ability to breed at such low temperatures may be attributed to their more southern distribution or occurrence at higher altitudes (Graham, 1939; Lee *et al.*, 1984).

Adult females are active year round (Marks and Nye, 1963) with breeding occurring mainly in the cooler months of March to October (Lee *et al.*, 1984), hence the common name the "winter mosquito". However adult males have been found during the summer which suggests that limited breeding could occur year round (Belkin, 1968). The apparent inhibition of breeding during the summer could be due to their habit of breeding in ephemeral pools which are less likely to be flooded in summer and may also dry out too quickly (R. Cane, New Zealand BioSecure, pers.com., 2007).

Low numbers of adult individuals collected in samples suggests that individual populations are relatively small (Belkin, 1968). Reported as a nuisance biter, these mosquitoes will bite day or night, indoors and out (Baber, 1934; Derraik *et al.*, 2005).

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