



NEW ZEALAND BIOSECURE

Entomology Laboratory



## *Aedes (Macleaya) tremulus* (Theobald) 1903

**NZ Status: Not present in New Zealand**



Adult Female



4<sup>th</sup> instar Larva

### Vector and Pest Status

Ross River, Kunjin and Murray Valley encephalitis viruses have been isolated from *Aedes tremulus* in the laboratory (Liehne, 1991; Scherret et al., 2000; Ehlers, 2010). However, its role as a vector is unclear and there is little to indicate that it is of any concern for transmission of human disease (Liehne, 1991; Russell, 1996). The species was considered a possible vector of myxomatosis in South Australia (Liehne, 1991). The species may be a minor domestic pest in some southern Australia areas (Russell, 1996).

### Incursions and Interceptions

*Aedes tremulus* has been intercepted once in New Zealand at Peter Fletcher Transport Ltd, 160 Waterloo Road, Christchurch on the 8<sup>th</sup> December 2017. A single larva was found alive in used tyres inside a container labelled as earth moving equipment from Sydney Australia.

In Australia, *Aedes tremulus* was recorded for the first time on November 1943 in Liveringa (Liehne, 1991).

### Geographic Distribution

This mosquito can be found throughout the Australian territory and also occurs in New Guinea (Dobrotoworsky, 1965; Ehlers, 2010). This species is uncommon in the

southern parts of Western Australia but is occasionally picked up in collections in the winter and autumn months. In the north, it is a common species in collections, particularly in urban areas (Liehne, 1991).

### Taxonomy

*Aedes tremulus* belongs to the subgenus *Macleaya* Theobald, 1903 (Reinter et al., 2004). Adult females may sometimes be confused with closely related species in northern Australia, for instance *Aedes stoneorum* (Southern Australia, Northern Territory and Western Australia) and the underdescribed species *Aedes (Macleaya)* Marks sp. No. 76. This species is distinguished by the palps being dark at the apex whereas *Ae. tremulus* has the palp apex pale at the tip. It may also be confused with *Ae. aegypti* and *Ae. Notoscriptus* (present in New Zealand), but differs in lacking a well-defined scutal lyre pattern and hind tarsal segment IV with a wide basal white bands and the latter also has a banded proboscis. The small *Aedes (Chaetocruomyia)* species in southeastern Australia, *Ae. calabyi*, *Ae. macmilliani* and *Ae. wattensis*, typically have the scutum generally pale scaled on the anterior half with the remainder dark (Liehne, 1991; Russell, 1996; Ehlers, 2010).

The larvae are also not easily distinguished from *Aedes (Macleaya)* Marks sp. No. 76, nor from the larvae of *Ae. (Chaetocruomyia) elchoensis* (Liehne, 1991).

### Habits and Habitat

Natural breeding places include holes in trees and stumps, especially narrow holes in eucalyptus or melaleucas. This species has successfully moved into urban habitats and has become a container breeder in many parts of Australia (Liehne, 1991; Ehlers, 2010) and can successfully breed in subterranean habitats (Russell and Lyons 2000). It may also breed in sites such as pawpaw stumps, drums, tanks, gutters, rainwater tanks, septic tanks, tyres, etc, often in association with *Culex quinquefasciatus* and *Aedes notoscriptus* (Liehne, 1991; Whelan, et al., 2009; Ehlers, 2010). The eggs are laid singly just above the water surface on the inner surface of the containers, and are desiccation resistant (Liehne, 1991; Ehlers, 2010).

The adult female bites humans throughout the day, with a peak biting period at dusk, In the early and late afternoon it can be a serious pest in some areas. This species will enter houses to bite but apparently rests outdoors. A variety of mammals and birds are used as blood meal sources. Adults do not disperse far and both males and females are often collected in traps. The species is readily taken in ovitraps and light and CO<sub>2</sub> baited traps (Liehne, 1991; Ehlers, 2010). The sticky pipe trap is also effective to detect this species (Kay et al., 2000). Swarms of male *Ae. tremulus* can occasionally be seen in the immediate vicinity of CO<sub>2</sub> baited traps which have been left overnight (Liehne, 1991).

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