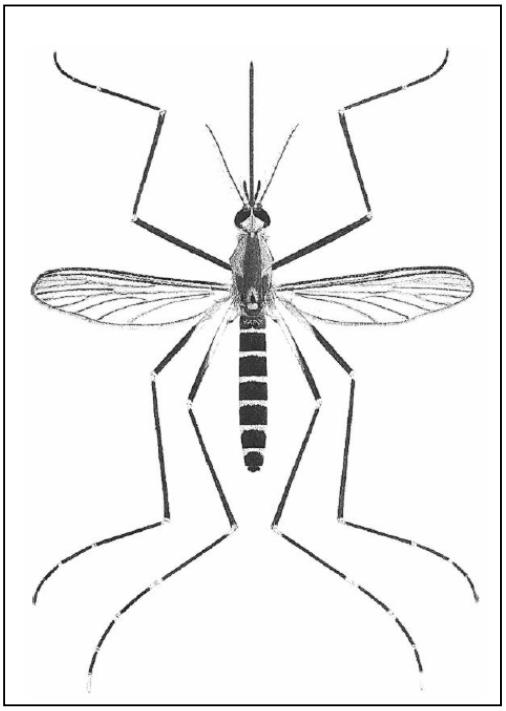
NEW ZEALAND BIOSECURE
Entomology Laboratory

A DIVISION OF SMS SOUTHERN MONITORING SERVICES LIMITED

Aedes (Finlaya) atropalpus (Coquillett)

rock pool mosquito

NZ Status: Not present – Unwanted Organism



(Diagram ex Carpenter and LaCasse, 1955)

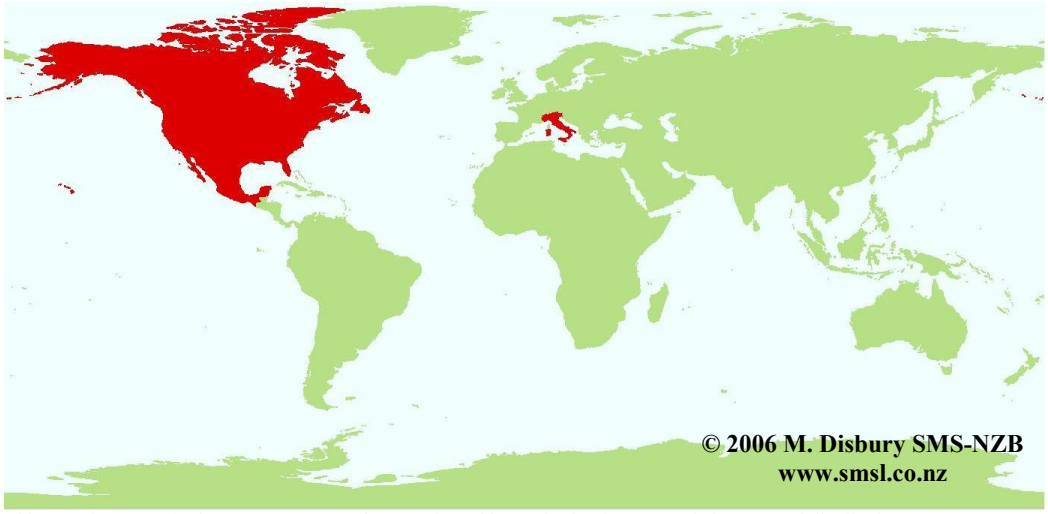
Vector and Pest Status

This mosquito is a vector of Japanese encephalitis (JE), Murray Valley encephalitis (MVE), Western equine encephalitis (WEE), Eastern equine encephalitis (EEE) (Davis, 1940; King et al., 1960), La Crosse encephalitis (LAC), St Louis encephalitis (SLE) and West Nile virus (WNV) in the laboratory (Turell *et al*., 2001). It has also been shown to transmit avian malaria (*Plasmodium gallinaceum*) in the laboratory (Trembley, 1946) and is capable of vertical transmission of SLE (Pelz and Freier, 1990).

Geographic Distribution

Aedes atropalpus is found in southern Canada, the United States, Mexico, Central America (Carpenter *et al*., 1946) and Italy (Romi *et al* 1999). In the United States it is found in the states of Arkansas, Missouri, North Carolina, Tennessee, Virginia,

Arizona, Connecticut and District of Columbia, Maine, Maryland and Massachusetts, Georgia, South Carolina, Minnesota, New Hampshire, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, Rhode Island, Texas, Vermont and Wisconsin. The major range expansion of this species has been attributed to the recent adaptation of this species, breeding in tyres (Berry and Craig, 1984).



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

Incursions and Interceptions

This species has not yet been intercepted in New Zealand. It is of concern due to its recent establishment in Italy, where it has adapted to breed in tyres (Romi *et al*., 1997).

Taxonomy

This species belongs to the subgenus *Finlaya.* It is part of a species complex belonging to *Aedes atropalpus* group (*Ae. atropalpus, Ae. epactius*, *Ae. perichares* and *Ae. nielseni*), based on distinctive features in morphology, physiology and behaviour (O'Meara and Craig, 1970). All 4 subspecies were inter-fertile when crossed in the laboratory (O'Meara and Craig, 1970).

Habits and Habitat

Aedes atropalpus is most commonly associated with rock pool habitats. It is also known to breed in artificial containers (mainly tyres) in areas away from rock pools (King *et al*., 1960; Berry and Craig, 1984). Larvae have been collected in the United States in February, March and September (Carpenter *et al*., 1946).

This species will bite humans and birds, commonly bites during the day and is a persistent biter close to breeding sites (Carpenter *et al*., 1946). *Ae. atropalpus* is autogenous (King *et al*., 1960; Bowen *et al*., 1994) and diapause occurs at the egg stage (Juliano and Lounibos, 2005).

Desiccation resistant eggs are laid singly above the water level (Juliano and Lounibos, 2005), and are apparently firmly attached to the rocks so as to withstand winter floods (Carpenter *et al*., 1946), however in subsequent generations after an overwintering period they are laid directly on the surface of the water (http://www.rci.rutgers.edu/~insects/atro.htm). Observations of this species indicate the adults do not disperse far from the breeding site (Carpenter *et al*., 1946).

References

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