

## SCIENTIFIC NOTE

### FIRST RECORD OF *Aedes albopictus* FROM TRINIDAD, WEST INDIES

DAVE D. CHADEE, FREDERICK HONG FAT AND ROBIN C. PERSAD

*Insect Vector Control Division, 3 Queen Street, St. Joseph, Trinidad, West Indies*

**ABSTRACT.** This is the 1st report of the occurrence of *Aedes albopictus* in Trinidad, West Indies. Eggs collected in 2 ovitraps, 1 in November and 1 in December 2002, were hatched and reared to adults at the Insect Vector Control Division laboratory. Three female *Ae. albopictus* emerged, whereas 6 females were collected by human-bait collections. The implications of these findings are discussed.

**KEY WORDS** Mosquito, *Aedes albopictus*, vector of arbovirus, new record, Trinidad

In 1990, the Insect Vector Control Division, Ministry of Health, Trinidad, implemented a surveillance program for *Aedes albopictus* (Skuse), after reports of the introduction (Eads 1972, Reiter and Darsie 1984) and establishment of breeding populations within the continental USA (Sprenger and Wuithiranyagool 1986, Hawley 1988) and in Brazil (Hawley 1988). The surveillance program in Trinidad targeted all ports of entry and tire shops. Reiter and Darsie (1984) showed the impact of modern transportation systems on the importation and distribution of used tires containing eggs of *Ae. albopictus* within the USA. In addition, Reiter (1998) showed the relationship between the importation of used tires from Japan and Southeast Asia and the transportation of viable eggs of *Ae. albopictus* on a global scale. The risk associated with the importation of used tires and eggs of *Ae. albopictus* into Trinidad was demonstrated with the importation of more than 150,026 used tires from the USA over the period 1989-94 and more than 166,896 used tires from Japan during the period 1988-95 (Reiter 1998).

Within the Caribbean region, immature stages of *Ae. albopictus* have been collected and identified in fast-food containers in Santo Domingo City, Dominican Republic (Pena 1993; Pena et al. 2003); on the wharves of Bridgetown, Barbados (Rodhain 1996); in both natural and artificial containers in Cuba (Broche and Borja 1999); and in the Cayman Islands (Reiter 1998). However, during the period 1990-2001, *Ae. albopictus* never was collected in ovitraps (Fay and Eliason 1966) located at all seaports and airports or during larval surveys at all tire shops in Trinidad. Although the ecoregions described by Moore (1999) were developed for the continental USA, the characteristics of the ecoregions suggest that Trinidad has the ideal climate, ecology, and (suitable natural and artificial) breeding habitats for the establishment and spread of *Ae. albopictus*.

Herewith, we report the 1st collection of eggs and adults of *Ae. albopictus* in Trinidad during December 2002. Indeed, this finding constitutes the 1st record from the country and the collection represents the southernmost locality for this species within the Caribbean region.

On December 5, 2002, while identifying adult mosquitoes reared from 1 ovitrap collected on November 21, 2002, from the Chaguaramas port located on the northwestern peninsula of Trinidad, 2 adult *Ae. albopictus* were identified by using the taxonomic keys of Darsie and Ward (1981) and Darsie (1986). The positive ovitrap was located at Hart's Cut in Chaguaramas (10°40'N, 61°43'W), which houses the Coast Guard Unit of the Trinidad and Tobago Defense Force. On January 13, 2003, another ovitrap located within 800 m from the 1st positive ovitrap and in close proximity to an entertainment center was found positive for eggs of *Ae. albopictus*. Only 1 male *Ae. albopictus* emerged from the immatures reared in the laboratory. Human bait collections conducted at these 2 ovitrap sites resulted in the capture of 6 female *Ae. albopictus*.

Currently, studies are being conducted to characterize the geographical distribution and container preferences of *Ae. albopictus* in Chaguaramas, Trinidad, so that appropriate control strategies can be implemented to eliminate other foci of infestation. This program is especially important because all 4 dengue serotypes are currently circulating in Trinidad and with the addition of another efficient vector of dengue, further problems can be anticipated should this mosquito species become established on the island.

We thank R. Martinez for assistance with the taxonomy of the species; P. Coolman, Insect Vector Control Division for providing assistance in the laboratory; and J. M. Sutherland, Dundee University, Scotland, United Kingdom, for reviewing a draft of the manuscript.

## REFERENCES CITED

- Broche RG, Borja EM. 1999. *Aedes albopictus* in Cuba. *J Am Mosq Control Assoc* 15:569-570.
- Darsie RE. 1986. The identification of *Aedes albopictus* in the Nearctic region. *J Am Mosq Control Assoc* 2: 336-340.
- Darsie RE, Ward RA. 1981. *Identification and geographical distribution of mosquitoes of North America, North of Mexico* Fresno, CA: American Mosquito Control Association.
- Eads RB. 1972. Recovery of *Aedes albopictus* from used tires shipped to United States ports. *Mosq News* 32: 113-114.
- Fay RW, Eliason DA. 1966. A preferred oviposition site as a surveillance method for *Aedes aegypti*. *Mosq News* 26:531-535.
- Hawley WA. 1988. The biology of *Aedes albopictus*. *J Am Mosq Control Assoc* 1(Suppl):1-40.
- Moore CG. 1999. *Aedes albopictus* in the United States: current status and prospects for further spread. *J Am Mosq Control Assoc* 15:221-227.
- Pena CJ. 1993. First report of *Aedes (Stegomyia) albopictus* (Skuse) from the Dominican Republic. *Vector Ecol Newsl* 24:68.
- Pena CJ, Gonzalez G, Chadee DD. 2003. Seasonal incidence and container preferences of *Aedes albopictus* in Santo Domingo City, Dominican Republic. *J Vector Ecol* 28 (in press).
- Reiter P. 1998. *Aedes albopictus* and the world trade in used tires. 1988-1995: the shape of things to come? *J Am Mosq Control Assoc* 14:83-94.
- Reiter P, Darsie RF Jr. 1984. *Aedes albopictus* in Memphis, Tennessee (USA): an achievement of modern transportation? *Mosq News* 44:396-399.
- Rodhain F. 1996. Problems posed by the spread of *Aedes albopictus*. *Bull Soc Pathol Exot* 89:137-140.
- Sprenger D, Wuithiranyagool T. 1986. The discovery and distribution of *Aedes albopictus* in Harris County, Texas. *J Am Mosq Control Assoc* 2:217-219.