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AEDES (FINLAYA) JAPONICUS JAPONICUS (THEOBALD), A NEW INTRODUCTION INTO THE UNITED STATES[1]

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ABSTRACT. *Aedes (Finlaya) japonicus japonicus* is recorded for the 1st time in the United States. Four adult females were collected in light traps at 2 sites in New York and one site in New Jersey during the months of August and September 1998. Notes on bionomics are provided. Illustrations of the adult female, male, and larva are included.

KEY WORDS *Aedes japonicus japonicus*, United States, 1st record, bionomics, illustrations of adult and larva

INTRODUCTION

Evidence suggesting established, propagating populations of *Aedes (Finlaya) japonicus japonicus* (Theobald) in New Jersey and New York is reported here for the first time.

MATERIALS AND METHODS

One female of *Ae. j. japonicus* was captured in a Centers for Disease Control (CDC) light trap on August 13, 1998, in Southold, Suffolk County, NY (41°03′N, 72°24′W). On September 18, 1998, a 2nd female was captured at the same site and a 3rd female was captured in a New Jersey light trap at Brookhaven, Suffolk County, NY (40°46′N, 72°55′W). These sites are located in coastal, rural residential areas on eastern Long Island. A 4th female was captured in a New Jersey light trap on September 17, 1998, at Colliers Mills, Ocean County, NJ. This site is in a rural area on the northern border of the New Jersey Pine Barrens (40°04′N, 74°26′W). Suitable containers that could serve as possible larval habitats were sampled at this site, and yielded larvae of *Aedes triseriatus* (Say), *Culex restuans* Theobald, and *Toxorhynchites rutilus septentrionalis* (Dyar and Knab). No prey larvae were present in the container with *Toxorhynchites*. Although the above adult specimens suffered the usual damage expected in light trap collections, critical morphologic characters for the accurate identification of this subspecies were intact. One of the above females is retained as a voucher at the National Museum of Natural History, Walter Reed Biosystematics Unit (WRBU).

DISCUSSION

Aedes japonicus japonicus is one of 4 subspecies treated in Tanaka et al. (1979). This subspecies is known from Korea (Peninsula and Cheju Do) and Palearctic Japan (Hokkaido, Honshu, Shikoku, Kyushu, Yakushima, and Tsushima) where Tanaka et al. (1979:312, 315) stated that it is one of the most common mosquitoes. The subspecies has also been reported from the USSR by Gutsevich and Dubitskiy (1981). According to Tanaka et al. (1979),

> Larvae occur in a wide variety of natural and artificial containers, usually preferring shaded places and water containing rich organic matter, rock holes appear to be the most favored immature habitat for this subspecies. They are found from early spring to early autumn in Central Japan. Adults live in forested areas and are day biters, but are apparently reluctant to bite man. However, in the laboratory, they readily feed on chicks and mice, but not on reptiles or amphibians (Miyagi, 1972). They overwinter as eggs in northeastern Japan and as larvae in southwestern Japan (Kamimura, 1976b).

Kamimura (1968) observed a large number of females coming to attack him in a forested area of Teine, Hokkaido, in early spring. Miyagi (1971: 147) reported capturing 2 females coming to bite humans inside a house near a cemetery at night, and he also collected females attracted by dry ice in the forest of Nagasaki, Japan, in early spring. In a personal communication to E.L.P. (January 27, 1999), Miyagi states again that he has very often experienced females of *Ae. j. japonicus* biting him in the forest in Nagasaki. This seems to reinforce the idea that if humans are available as hosts, this mosquito will most likely feed on them. LaCasse and Yamaguti (1948:68) reported collecting larvae above 1,219 m. The wide variety of natural and artificial container habitats listed for this subspecies in LaCasse (1948:50, Fig. X) nearly mirrors that reported for the more well-known *Aedes (Stegomyia) aegypti* (Linnaeus) and *Aedes (Stegomyia) albopictus* (Skuse). This brings us to the conclusion

[1] The views of the authors do not purport to reflect the views of the supporting agencies.

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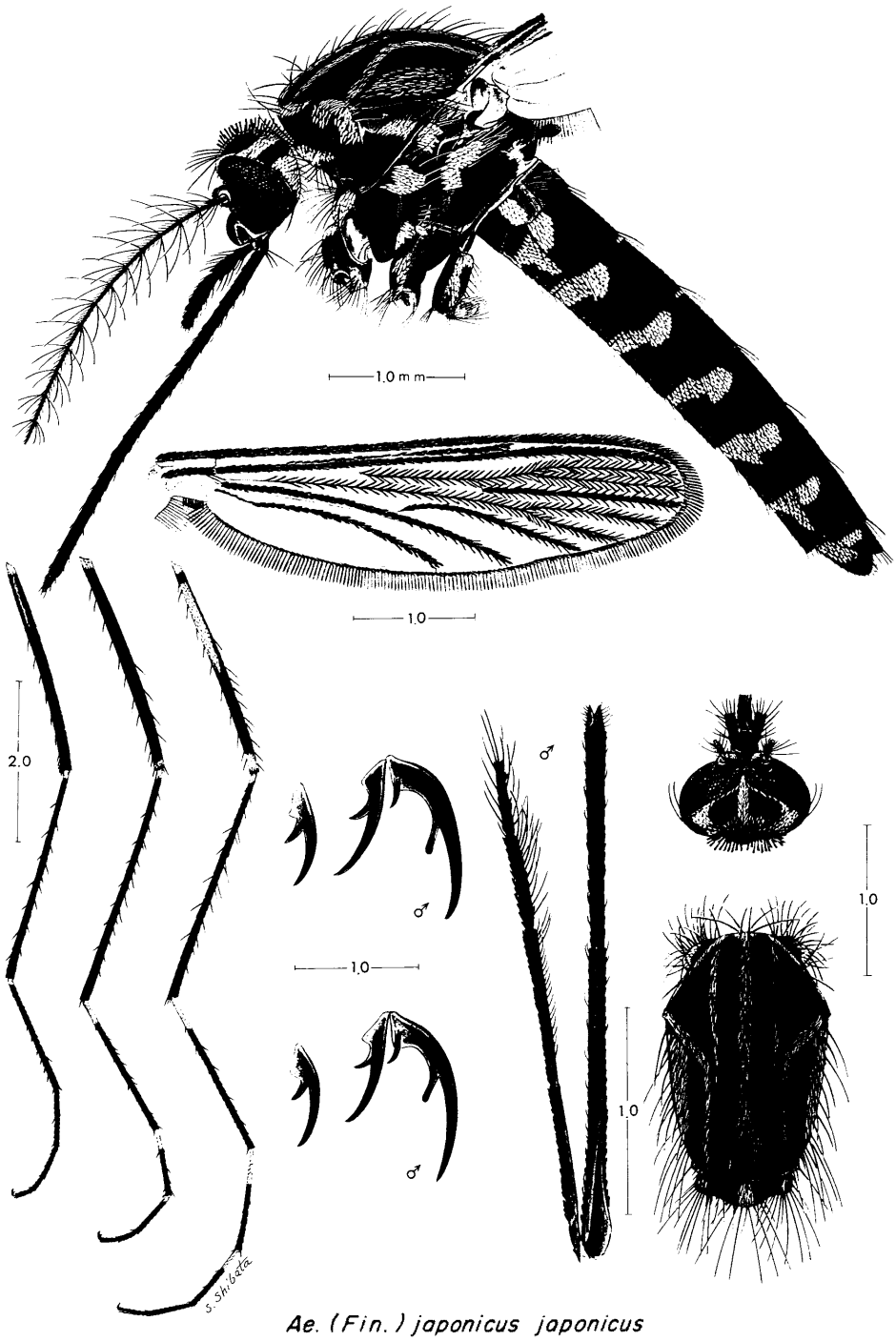
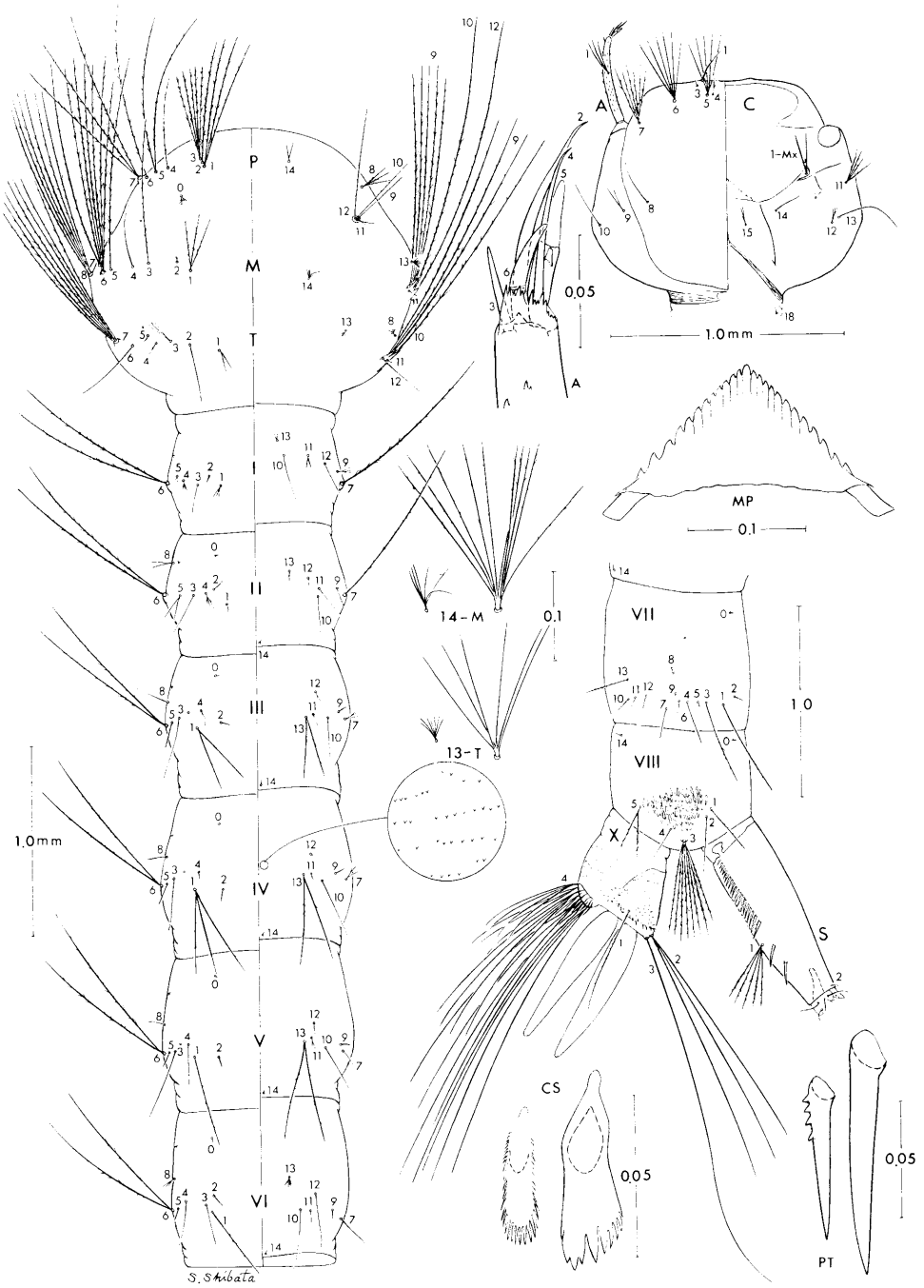


From Tanaka et al. (1979)

Fig. 1. Adult female habitus; male proboscis, maxillary palpus, fore- and midungues.



Ae. (Fin.) japonicus japonicus

From Tanaka et al. (1979)

Fig. 2. Fourth instar showing complete chaetotaxy.

that the most likely mode of introduction into the United States for *Ae. j. japonicus* may have been through the used tire trade.

We know little of the medical importance of the subspecies. Preliminary studies by Takashima and Rosen (1989) showed that *Ae. j. japonicus* had a vector competence to transmit Japanese encephalitis virus horizontally to mice and the capability to transmit the virus vertically to its offspring.

Because the 987-page book by Tanaka et al. (1979) is not readily available to North American workers, we are including their original drawings of the adult female, male, and larva (Figs. 1 and 2 here), so that the subspecies can be identified. These plates are deposited at the WRBU. With the aid of these superb drawings, identification of this mosquito should be relatively easy. We have not suggested characters for insertion in the Darsie and Ward (1981) key to North American mosquitoes because it is being revised.

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