

OPERATIONAL AND SCIENTIFIC NOTES

CULEX TARSALIS IN NEW JERSEY¹

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Culex tarsalis Coquillett is widespread in the western and central United States (Carpenter and LaCasse 1955) but to date, relatively few collections have been reported east of the Mississippi River (Carpenter 1968, 1970, 1974). A single larva collected in Pennsylvania, (Brief 1970) represents the only documented collection which is close to New Jersey's border. New Jersey has maintained an extensive mosquito surveillance program since 1932 through the efforts of the individual county mosquito extermination commissions and the N. J. Agricultural Experiment Station (Headlee 1945) but *C. tarsalis* has never been reported.

On August 26, 1975, a single female *C. tarsalis* was detected in a light trap collection from Beach Haven, N.J. The specimen was in relatively good condition and was saved for confirmation. Mr. Thomas Mulhern, Executive Director of the American Mosquito Control Association, Inc. concurred with the identification when he visited the Ocean County area several weeks later, and the identification was later confirmed by Mr. Robert Lake of the Department of Entomology and Applied Ecology at the University of Delaware. The specimen was deposited in the mosquito reference collection of the Headlee Research Laboratories at the Department of Entomology and Economic Zoology, Rutgers—The State University in New Brunswick, New Jersey.

Beach Haven is primarily a resort community located on Long Beach Island, a barrier beach in the southern portion of Ocean County. Subsequent light trap collections from the area failed to reveal additional specimens and no *C. tarsalis* were taken by Ehrenberg pigeon traps which were operated nightly over a 2-week period in the vicinity of the original collection. The failure to capture additional *C. tarsalis* suggests that the specimen may have been accidentally introduced by one of the many tourists who visit the resort area each summer.

The eventual introduction of *C. tarsalis* to New Jersey would have considerable public health significance since the mosquito is considered to be a major vector of both St. Louis encephalitis and western encephalitis (Hammon and Reeves 1942, Bellamy and Reeves 1963, Rowley et al. 1971). Human cases of St. Louis

encephalitis have occurred in New Jersey (Goldfield et al. 1965, Kandle et al. 1967) but the disease appears to be restricted to an urban-suburban cycle in the eastern U.S. where members of the *Culex pipiens* complex serve as the major vectors (Chamberlain 1958). The introduction of *C. tarsalis* could lead to accelerated transmission in years when the virus is active by instituting the rural cycle of the disease which is common in the western states (Longshore et al. 1956, Chamberlain 1958).

The single *C. tarsalis* collected at Beach Haven, N. J. does not in itself represent a health hazard or a reason for undue concern. The collection does, however, point to the need for surveillance. Surveillance programs provide the main mechanism to locate exotic specimens and provide an opportunity to initiate control measures before a species can become permanently established.

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