

CACHE VALLEY VIRUS FROM
Aedes sollicitans IN NEW JERSEY¹

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Mosquito-borne viruses of the Bunyamwera serogroup (Bunyaviridae: *Bunyavirus*) have been implicated as the causative agent of disease in man on four continents (Berge 1975). In Africa, Bunyamwera, Germiston and Ilesha have been associated with febrile illness often accompanied by a rash. In Europe, Calovo, a strain of Batai, was serologically associated with fever cases. In South and Central America, Guaroa and Wyeomyia have been isolated from patients with fever. In North America, a patient in Indiana with encephalitis showed a diagnostic rise in titer of Tensaw antibody (McGowan et al. 1973). Tensaw virus has been reported from the southeastern United States, but not Indiana. Cache Valley virus (CV), a serologically

related virus, is recognized from much of the rest of North America, including the Midwest. This note reports the isolation of CV virus from *Aedes sollicitans* (Walker) in New Jersey.

During 1982, 12,606 *Ae. sollicitans* collected in southern New Jersey were tested in suckling mice for eastern equine encephalomyelitis virus (Crans et al. 1986). Cache Valley virus was isolated from 10% of the pools tested from Cape May County; the minimum field infection ratio was 1:900. All infected pools contained 100 (except one with 38) nonblooded adult female *Ae. sollicitans*. The positive pools were collected between September 13 and October 7. The isolates were identified by complement-fixation and neutralization tests.

The association between CV virus and *Ae. sollicitans* has been demonstrated in the field and in the laboratory. Cache Valley virus has been recovered from this species in Virginia (Buescher et al. 1970) and New York State (Srihongse et al. 1980). Yuill and Thompson (1970) demonstrated that *Ae. sollicitans* could be infected by feeding on as little as 0.3 BS-C-1 cell ID50; the ID50 for this species was calculated as 23 TCID50. They were able to transmit the

¹ New Jersey Agricultural Experiment Station Publication D-40101-01-85.

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virus to suckling mice in as few as 6 days after the infective blood meal. Thus, the association between CV virus and *Ae. sollicitans* has been demonstrated in nature and experimentally in the laboratory.

Aedes sollicitans is a mammalophilic species that feeds primarily on deer and other large ungulates in New Jersey (Crans 1964). High rates of antibody to CV virus have been detected in deer in Connecticut, New York, Virginia, Wisconsin, North Dakota and Texas (Berge 1975, Main 1981). CV or CV-like virus strains were recovered from a caribou and a horse in Wisconsin (Hoff et al. 1970).

Aedes sollicitans also readily bites people. Its reputation as a nuisance species in coastal regions is well deserved. Antibody to CV virus was detected in people in New York (Whitney et al. 1968), Virginia and Maryland (Buescher et al. 1970). However, with the possible exception of the Indiana case, this virus has not been associated with human disease. Cache Valley virus is not routinely included in the battery of antigens used by most state and private virus diagnostic laboratories. We suggest that this virus be considered as a possible etiologic agent of undiagnosed fever and encephalitis cases in North America.

This study was supported by USPHS grant number A1 10984, New Jersey State Mosquito Control Commission grant number C-29013 and the U.S. Hatch Act. The authors acknowledge the assistance provided by the staff of the Cape May County Mosquito Extermination Commission throughout this investigation.

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