

## THE OCCURRENCE OF *ANOPHELES QUADRIMACULATUS*, *ANOPHELES OCCIDENTALIS* AND *ANOPHELES* *WALKERI* IN VERMONT

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*Anopheles quadrimaculatus* Say is known to be widely distributed throughout Eastern United States. It has been previously reported in all of the eastern states except Vermont (Johnson, 1925; King and Bradley, 1941). Collections which we have made during the 1945 season indicate that *A. quadrimaculatus* occurs in the State of Vermont and is rather common in the Lake Champlain Valley. The writer has identified males, females and larvae of this species from five localities ranging from East Dorset in the southern part of the state north to Burlington.\*

*Anopheles occidentalis* Dyar and Knab has been known to occur in southern Canada and northern United States as well as in the Pacific Coast region. In the East it has been reported in Connecticut, Maine, Massachusetts, New Hampshire and New York (King and Bradley, 1941). We now have a record of this species from Danby (Rutland County), Vermont where a single female was collected from an animal shed on August 31, 1945 by C. A. Wilson. One male and nine females of *A. punctipennis* Say were collected from this same shelter.

*Anopheles walkeri* Theobald has a rather wide distribution in Eastern United States and is known from all of the New England States except New Hampshire and Vermont (King and Bradley, 1941; Knutson, 1943). Two larvae of this species have now been identified from Hubbardton, Vermont, where they were collected in association with *A. quadrimaculatus* larvae on August 26, 1945.

Collection data for *A. quadrimaculatus* and *A. walkeri* are summarized as follows:

Burlington (Chittenden County), August 25, 1945. One male\* and 13 females of *A. quadrimaculatus* were collected from a small turkey shelter located a short distance west of State Route No. 127 and about four miles north of Burlington. One female *A. punctipennis* was also collected from this shelter.

East Dorset (Bennington County) August 31, 1945. Three males\* and four females of *A. quadrimaculatus* were collected from under a bridge by C. A. Wilson. From this same bridge one male and one female of *A. punctipennis* were also taken.

Hyde Manor (Rutland County) August 26, 1945. Approximately 500 anophelin larvae were collected in 40 dips from the shallow marginal waters of Lake Horton. The collections were made along State Route No. 30 about two miles south of Hyde Manor. From this collection, 2 fourth instar larvae were identified and all were found to be *A. quadrimaculatus*. Thirty-three additional larvae were reared and identifications were made from the adults thus secured. All of these specimens were also *A. quadrimaculatus* (11 males and 16 females).

Hubbardton (Rutland County) August 26, 1945. A collection of larvae was made from the shallow waters of Lake Bonaparte along State Route No. 30 just south of Hubbardton. In 30 dips, 150 anophelin larvae were taken. Fourth instar larvae which were identified were

\* Identification verified by genitalia.

*quadrimaculatus* (9) and *A. walkeri* (2). Seven other larvae which were reared were found to be *A. quadrimaculatus* (3 males and 4 females).

Brandon (Rutland County) August 29, 1945. A larval collection was made by C. A. Wilson from a pond along U. S. Route No. 7 about four miles south of Brandon. Five fourth instar larvae which were identified from this collection were *A. quadrimaculatus* (2) and *A. punctipennis* (3). Twenty additional specimens which were reared were found to be *A. quadrimaculatus* (1 male) and *A. punctipennis* (9 males and 10 females).

The specimens of *A. occidentalis*, *A. walkeri* and a sample of those of *A. quadrimaculatus* referred to above have been

deposited in the U. S. National Museum, Washington, D. C. The remainder of the specimens are preserved in the collection of the District No. 1 office of Malaria Control in War Areas, U. S. Public Health Service, New York, New York.

#### Literature Cited

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