AEDES (PROTOMACLEAYA) HENDERSONI Cockerell in MINNESOTA

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During the summers of 1971, '72, and '73 the laboratory and field personnel of the Metropolitan Mosquito Control District in central Minnesota assisted Drs. Henry Balfour, Robert Siem, and Henry Bauer of the University of Minnesota and the Minnesota Department of Health in their investigation of California encephalitis caused by the LaCrosse subtype in our area. Our contribution to the investigation was the collection and identification of mosquito adults, larvae, and eggs from three sites in Carver County closely adjacent to the Hennepin County line, where cases of California encephalitis occurred. During the course of the investigation, it became obvious that we should know whether we were dealing with *Aedes triseriatus* (the principal vector of California encephalitis) or the very similar *Aedes hendersoni* (a non-vector) or a mixed population of these two treehole species. Careful comparison with specimens from laboratory colonies very kindly sent to us by Dr. Paul Grimstad of the Russell Laboratories, University of Wisconsin, showed that all specimens collected from this area were *Aedes triseriatus*. Certainly all the larvae were, and we were reasonably certain of the adults. We used Breland's key (1960) with its excellent illustrations of scutal scale patterns and Harmston's (1969) pictures of claw conformation in addition to comparison with University of Wisconsin specimens.

A. *hendersoni* did not seem to be present in nearby Carver County, but did it occur in any or all of the 6 counties of our district? An extensive survey of treeholes and artificial containers throughout the district was undertaken. The only previous record of *hendersoni* for Minnesota was a single female collected in 1940 at Detroit Lakes, Becker County, some 200 miles north and west of our district (Zavortink, 1972). Larval collections were made from 327 treeholes plus a nearly equal number of artificial containers (chiefly tires), and only 5 contained *hendersoni*. These were determined after careful comparison with colonized specimens. Three of the collections were from Scott County, one from Dakota County, and one from Hennepin County. All were from treeholes. Only one collection (from Scott County) was pure *hendersoni*. All the others were mixed with *triseriatus*. *Triseriatus* was found in 361 collections, so it was clearly the predominant species. No adult specimens that could be positively identified as *hendersoni* were collected. However, on the basis of 25 4th-instar larvae from 5 different collections we know that the species is present in our district.

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A TEMPERATURE ADJUSTMENT CHART AND INDICATOR AS AN AID IN THE OPERATION OF GROUND ULV EQUIPMENT

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This simple but efficient device was installed on the flowmeters of all ULV units operated in this district in the spring of 1972. The original units placed in operation were not equipped with an indicator pointer so one was constructed. We used 3/8" stainless steel stock as a rod and a piece of sheet metal cut and bent to conform to rod and flowmeter and welded to a set screw. This locked the pointer at the desired location on the flowmeter. The temperature adjustment chart was prepared from the temperature conversion curves provided by the manufacturer with each unit. Since it was necessary to adjust the flowmeter with each 2° F change in the temperature of the insecticide, the charts were made of 2-degree temperature increments and attached to the flowmeter with the correct temperature placed at the appropriate level on the flowmeter with transparent tape. The operator could read the fluid tempera-