AEDES (PROTOMACLEAYA) HENDERSONI Cockerell in MINNESOTA

F.E. Cook, Laboratory Chief and W.I. Barton, Field Supervisor. Metropolitan Mosquito Control District, St. Paul, Minnesota 55114

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.

References

Balfour, H. H. Jr., Siem, R.A., Bauer, Henry and Quie, P. G. 1973. California arbovirus (LaCrosse) infections. I. Clinical and laboratory findings in 66 children with meningeoncephalitis. Pediatrics. 52(5): 680-691.

Breland, Osmond P. 1960. Restoration of the name, *Aedes hendersoni* Cockerell, and its elevation to full specific rank (Diptera: Culicidae) Ann. Ent. Soc. Amer. 61:600 - 606.

Harmston, F.C. 1969. Separation of the females of *Aedes hendersoni* Cockerell, and *Aedes triseriatus* (Say). (Diptera: Culicidae) by the tarsal claws. Mosq. News 29: 490-491.

Zavortink, Thomas J. 1972. Mosquito Studies (Diptera: Culicidae) XXVIII. The New World species formerly placed in *Aedes (Finlaya.)* Cont. Amer. Entomol. Inst. 8(3): 1-206.

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

HAROLD L. FAIRCLOTH, Director,

Citrus County Mosquito Control district, Homosassa Springs, Florida 32647.

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-

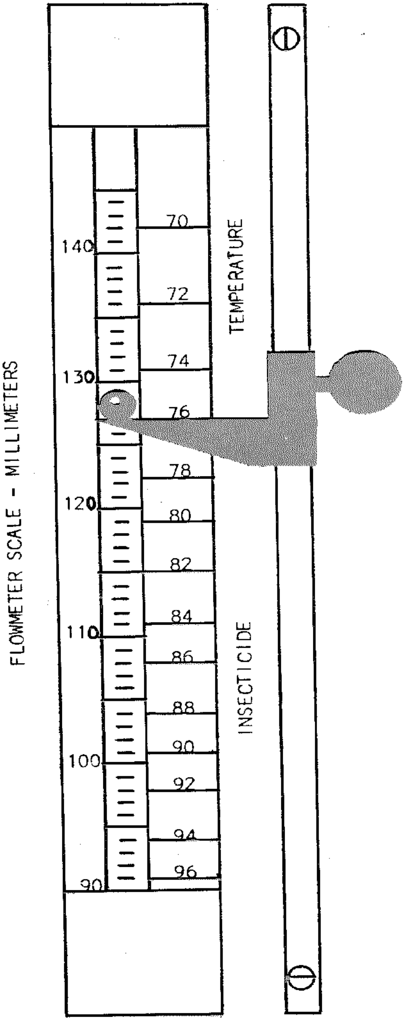

FIG. 1. - OVERALL VIEW OF FLOWMETER.

ture from the thermometer which was located on the panel alongside the flowmeter and set the indicator pointer at the appropriate line on the adjustment chart. The flowmeter was adjusted so that the bottom of the ball rested on the level of the indicator pointer. Once the flowmeter was properly adjusted the operator only had to glance at the thermometer and to the indicator to determine immediately if the correct amount of insecticide was being dispersed.

A MOSQUITO LIGHT-TRAP STABILIZER[1, 2]

JOHN L. McDONALD,[3] J. GRANGER[4] and G.S. OLTON[5]

Probably the most common cause of damage to mosquito light traps is directly or indirectly connected with wind. Traps hung near a building or supporting structure are often damaged by striking such objects if the wind causes them to swing back and forth. However, if the suspending chains or ropes loosen or break and allow it to fall to the ground, severe damage to the light, motor or housing may occur. These damages are not only costly, but specimens are lost or fail to be collected.

In southern Arizona during the months from November to April, wind speeds up to 32 mph are quite common, and "dust devils" (desert whirlwinds) and thunderstorms are common during the summer months. To avoid damage to light traps, we have developed a simple device which not only prevents wind-caused damage, but also provides a trap stand in flat or open areas where objects from which to hang a trap are not available (i.e. houses, trees, posts).

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[3] Graduate student, Department of Entomology, University of Arizona

[4] Shop Foreman, Transportation Section, University of Arizona

[5] Assistant Professor, Department of Entomology, University of Arizona

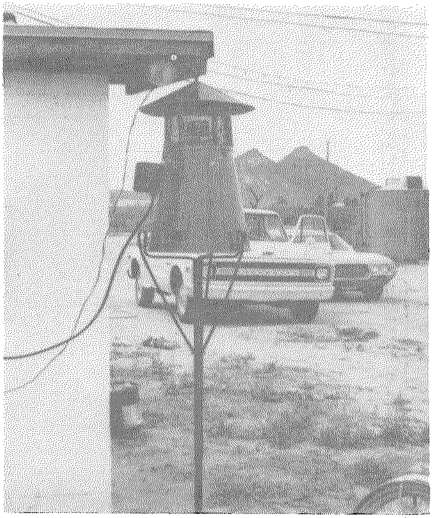

FIG. 1. Light trap bracket close-up of telescoping shaft.

Figure 1 shows a light trap suspended in the ordinary manner but with the bottom held in place by the light-trap stabilizer. The stabilizer consists of two iron pipes, one - a 3/8 inch outer diameter and the other of a slightly greater interior diameter. Both pipes are 4 feet long. A simple platform of slightly greater base diameter than the light trap is made of reinforcing rod welded to one end of the larger pipe. Directly beneath the light trap, the smaller pipe is driven into the ground. This pipe is fitted with a threaded cap to prevent flaring during implacement. The cap is removed and the outer, larger pipe is slid over it. The larger pipe is equipped with a setscrew, which permits it to be telescoped over the smaller pipe to the desired height setting. The outer pipe is raised until the base of the light trap rests lightly on the platform. The trap is held in a non-swinging position by upright "keepers" on the platform. The base of the trap can then be locked or tied to the platform as indicated in Figure 1.

Light-trap stabilizers are quite inexpensive and simple to build, yet highly effective in avoiding wind damage. During the windy months in Tucson, Arizona, none of our traps with stabilizers was damaged, whereas, all traps without stabilizers incurred damage ranging from broken collecting jars to motors which burned out when they fell to the ground while running.