

SOME FURTHER NOTES ON *Aedes (Ochlerotatus) sticticus* (MEIGEN) IN MINNESOTAF.E. COOK,¹ M.M. BODINE² AND E.P. WERMERSKIRCHEN³

Since its inception 1958, the Metropolitan Mosquito Control District has, as far as possible, practiced *species* control. What species are causing the problem? What can we find out about their habitats and biology that will help us in our control work? Of course, *Aedes vexans* is number one on our "ten most wanted" list, but *Aedes sticticus* is also a pest of considerable importance in the district (a six-county district surrounding the twin cities of St. Paul and Minneapolis), as stated by Barton (1966). Fluctuations in population and distribution of species are therefore of considerable interest. Bite collections provide us with the best index for determining this, since *A. sticticus* females are active and aggressive biters. Examination of bite collection data from 1966 to 1973 indicates a gradual but definite rise in the population of this mosquito in two of the counties, Anoka and Scott. After peaking at a high of 27.5% in 1964 (2,632 of 9,552 specimens), the population fell in 1966 to 1.4% (148 of a 10,232 specimen total) in Anoka County and to 0.45% (21 of a 4,647 total) in Scott County. Since that time, there has been a gradual rise in the population to 8.3% (404 of 4,867 specimens) in Anoka County and to 11% (758 of a 6,856 total in Scott County) in 1973.

The brushy and wooded flood-plains of the numerous rivers and streams of Anoka and Scott Counties provide the ideal habitat for this essentially riparian mosquito. Its eggs remain viable under drought conditions for a long period of time. We had one batch of eggs that yielded a 100% hatch when immersed 5 years after oviposition. The sharp decline of the population in 1966 as indicated by the bite collections coincided with a decrease in district-wide average summer precipitation (May 1 to October 1) from 27.9 inches in 1965 to 14.4 inches in 1966. The high 1965 precipitation resulted in extensive flooding

of the flood plains of the rivers and streams. Many areas which had not been flooded for some years were inundated, and numerous eggs which had lain dormant under drought conditions were immersed; so we had a real "*sticticus* problem." Large numbers of females mean large numbers of eggs deposited in bands following the receding water, with many in places remote from the normally flooded areas - an "egg-bank" for future years. Therefore, in 1966 when the precipitation was much less, many eggs were not inundated and the population declined. Since 1967 the precipitation has averaged 18 to 19 inches per season except in 1969 when it was only 9.7 inches for the summer, and there has been a concomitant rise in incidence of *sticticus*.

Sticticus is considered to be a single-brooded species in our latitude. Hatching occurs in late spring and the largest number of adults appear generally during the last 2 weeks of June. However, eclosion is not inhibited by the higher temperatures of mid-summer, and eggs not inundated by early spring flooding will hatch if flooded later. This happened in 1972. Greater than normal precipitation during July produced extensive flooding, and there were two peaks in the adult population, one, as usual, in June from the spring flooding, and a second in mid-August.

Aedes sticticus - fierce, aggressive biter, strong flyer, producer of sturdy, long-lived eggs - is a worthy adversary for any district, and presents a real problem to one with the topography of ours, so the more we can find out about it as a species, the better we'll be able to cope with it.

References Cited

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