A MOSQUITO SURVEY OF LAKE BLOOMINGTON*

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A survey was started in September 1946 to determine the species of mosquitoes and their possible breeding places at Lake Bloomington, Bloomington, Illinois. Although only occasional visits were made between the months of January 1947 and May 1947, a thorough investigation was made during the fall and summer months of the year 1946-1947.

Adult and larval stations were established at fifteen locations around the lake which covered an area of about twenty square miles. Parts of this territory are used for summer camps, and many permanent shore camps and homes have been erected around the lake. The banks and nearby shores are wooded, but farming areas surround the lake beyond the wooded area. It is from the draining of these fields and two large streams, Money Creek and Hickory Creek, that the lake receives the greater portion of its water supply. Generally the stations chosen were small streams which were formed by drainage ditches and ponds which were formed by backwater of the lake. Two of the stations were located at the edge of the lake. Although these stations by no means exhausted all of the breeding places of such a large area, they were typical of all of the places where mosquitoes might be found. The wooded area was inspected for possible breeding places of tree-hole species of mosquitoes. Culverts, bridges, and buildings used as dwelling places for campers and visitors to the lake were inspected for adult mosquitoes.

Larvae and pupae were collected by dipping and were brought into the laboratory for identification and rearing. Larvae in the second and third instar stages and pupae were reared into adults. Fourth instar larvae were mounted and identified.

The purpose of the survey undertaken at Lake Bloomington was to establish what species of mosquitoes were present in that area. Collections were made to determine the relative annual abundance of the various species with information as to breeding places and the extent of the control of the problem.

The larvae of *Anopheles quadrimaculatus* Say and *Anopheles punctipennis* (Say) were found in slow moving fresh water. At some stations these larvae disappeared when the water in the pools became stagnant during the summer drought. This was believed due to the stagnation of the water because at the same inspection time larvae were found in moving water a short distance from the pool. Adults of *A. quadrimaculatus* were located abundantly in culverts near streams where the larvae were found. The adults were collected in larger numbers than the larvae of this species.

Anopheles punctipennis has a variety of feeding places but prefers margins of pools and streams and edges of the lake. This species was found breeding at seven of the fifteen stations inspected. Although in most cases the water was moving slowly where they were found, at two locations the water had become

* This is an excerpt from a thesis presented in partial fulfillment for degree of Master of Science in Education at Illinois State Normal University, Normal, Illinois. The author wishes to acknowledge the counsel of Dr. Donald T. Ries under whom this phase of the work was done.

stagnated. The larvae were feeding on the algae which grows in the streams and ponds. Although this species was found in greater numbers in the larval stages, the *A. quadrimaculatus* outnumbered this species in the adult collections. Other species which were found in the adult stage included *Anopheles barberi* Coquillet, *Culex pipiens* Linneaus, *Culex restuans* (Theobaldi), *Culex apicalis* Adams, *Culex salinarius* Coquillet, *Aedes vexans* (Neigen), and *Aedes canadensis* (Theobaldi).

Of the genus Culex the species *C. apicalis* was found in greater numbers both in the adult and larval stages. This genus was found breeding in much the same waters as the *Anophelines* but at stations where water seemed most stagnant the *Culicines* persisted while the *Anophelines* died out. The species *C. apicalis* was found abundantly in all the stations inspected both in the fall of the year and summer. The larvae were more abundant than the adults. *C. salinarius* were found in very small numbers. This species was found in grassy pools. The larvae of this species were found at one station. *C. restuans* was found in the fall of the year in a pool that was littered with decaying leaves.

Of the genus *Aedes, A. vexans* was found more abundantly than the other species. The principal breeding places were temporary ruts that had filled with rainfall and grassy lands that contained a temporary water supply. The larvae of *A. canadensis* were found rather sparsely in the fall of the year and only at one station in the spring. This was the earliest species collected in the larval stage. The spring of 1947 was unseasonably cold thus limiting the development of other species. During a warm period in April this species was found in a grassy area where pools had formed from recent rainfall. The pools were small, but many larvae were present.

There has been no attempt in this survey to make a complete study of the mosquito problem at Lake Bloomington, since there was insufficient time to apply to the many problems to be solved. Due to lateness in starting the problem, the survey is incomplete for the month of August and nearly so for the month of September; thus leaving without inspection the two months in which the incidence of mosquitoes is highest. Tables were made giving a count of the relative abundance, and can be used as evidence of the predominance of different species. Only those which were brought into the laboratory for identification were recorded.

A list of the larvae collected in the order of their abundance:

Anopheles punctipennis
Culex apicalis
Aedes vexans
Anopheles quadrimaculatus
Aedes canadensis
Culex pipiens
Culex restuans
Culex salinarius

A list of the female and adult in order of their abundance:

Anopheles quadrimaculatus
Anopheles punctipennis
Culex apicalis
Anopheles barberi
Culex restuans
Culex pipiens
Culex salinarius