

A Statement of the Mosquito Problem

By Thomas J. Headlee

Introduction

Many attempts have been made to state the nature of the New Jersey Mosquito problem, and the writer would not venture upon another if it were not for the fact that many of us who live so close to mosquito work, forget the general outlines of the problem as a whole and many of those who attend this convention are not familiar with even the principal phases of this problem. In the discussion which follows, the writer will deal with this subject under four main heads.

1. Physical features and climatic phases of the mosquito problem of New Jersey.
2. Human psychology phase of the mosquito problem.
3. Progress in the practical work of control.
4. Portion of problem yet to be solved.

Physical Features and Climatic Phases of the Mosquito Problem in New Jersey

Influence of Physical Features

Aside from broods which may migrate from outlying areas, the physical features and the climate of any area of land surface are the dominant factors which determine the presence or absence of mosquitoes in troublesome numbers. If the area in question is large, migration has little effect upon the mosquito conditions within the area as a whole, and is largely confine to border raids.

New Jersey is so situated with regard to her neighbors that raiding mosquitoes bred without her limits only occasionally, and then rarely, in any considerable extent, influence mosquito prevalence even along her borders. There seems evidence to indicate that actual flights of mosquitoes bred upon the low-lands south of Philadelphia, and bred upon the salt marshes of the Delaware shore make their way into southwestern and southern borders of our state. Before the marshes of Staten Island were drained, and possibly of certain other parts of Greater New York, flights of mosquitoes bred upon those marshes, in some instances made their way into adjacent borders of New Jersey. I think it may be safely said that as far as raiding mosquitoes are concerned from adjacent States, New Jersey has returned quite as abundantly as she has received, and probably had rather the better of the contest.

Salt Marsh and the Up-Land Divisions

There exists within the State of New Jersey 296,000 acres of salt marshes, a large portion of which, before anything was done to it was capable of turning out brood after brood of salt marsh mosquitoes, more or less throughout the summer. With the exception of small and detached broods arising from specially shut in and favorable localities, the spring brood begins emerging in extreme south Jersey about the first of May and appears progressively later as we go north, until May 5th, when it shows itself in the Hacensack Valley. Thereafter, each monthly high tide that floods the meadows initiates the development of a brood, and unless the water is taken in off promptly, or the tide had been high

enough to distribute the killfish all over the marshes, the broods thus initiated produce adult mosquitoes which rise and are distributed inland for many miles.

These broods, depending upon their size, can and do penetrate distance as ranging from a few miles to forty miles inland. We are compelled, therefore, to say that a zone of territory approximately forty miles wide, extending from north to south along the coast marshes was originally subject to infestation by mosquitoes which were bred upon these marshes.

Since fully three-fourths of the entire population of our state lives within the forty mile zone, and since the numbers of mosquitoes emerging from these marshes are so much larger than broods from any other source whatever, we are compelled to conclude that the dominant mosquito control problem of the state is concerned with the suppression of the salt marsh breeding species. The solution of this problem had been complicated by the activities of man, so exhibited in the building of railways and roadways across these marshes, the establishment of fills at various points upon them and the pollution of their waters with the delivery of raw sewage from adjacent populations into their streams and waterways.