

TEN YEARS OF MOSQUITO CONTROL PROBLEMS AND PROGRESS AT NORFOLK, VIRGINIA*

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The opportunity to be present at a gathering of so many men, distinguished in their field of endeavor, is a privilege that I appreciate very highly. Not only are the friendships made here both pleasant and valuable, but the interchange of thoughts, ideas and information which is the fundamental purpose of these meetings is undoubtedly the foundation on which the rapid advancement of our profession is laid.

The individual problems that we have to meet will differ greatly since the wide

variety of climate and terrain to be found between Canada and Florida, California and New Jersey could not make it otherwise, yet our common interest binds us together as members of one family. The very nature of our work is such that it never ends; for if we relax our vigilance for a month or a week much of our success may be undone. Being forever on the alert leads to study and research and I am sure that each of us is now applying new methods, new equipment and even new materials that were quite unknown

ten years ago but have been developed through cooperative effort to the point where we can justify our contention that mosquito breeding can be definitely controlled.

I know that I, for one, am greatly impressed with the progress that has been made when I look back to the beginning of our work in Norfolk in 1933.

Our city is quite low and flat, and includes within its boundaries scores of acres of tidal marshland. The salt marsh mosquito had been part of our history for so long that it was accepted as a native son; and we had been inclined to put up with its attacks as an affliction intended to restrain our justifiable pride in other civic blessings.

Then in 1933 a tropical hurricane struck us with great force. Much damage was done along miles of our water front; water was impounded in previously dry areas; natural drainage facilities were disrupted; and much marshland appeared to offer itself to mosquito breeding for the first time. The result was an increase in mosquito population that could not be ignored.

The initial task of dealing with this situation was a tremendous one; but Federal funds were available at that time for various public works, including mosquito control, and application was made by our Director of Public Welfare, Dr. H. G. Parker, for assistance in this emergency. With accurate foresight that has marked the administration of his department, he did not rest on the temporary measures that Federal funds would procure, but proposed to build upon them a permanent agency for providing protection for our people. It has been my privilege to work with him continuously in this endeavor; and the public support it has been accorded is ample proof of the soundness of his policy and the success of our efforts.

In 1933 we were primarily engaged in relieving an emergency condition and it was necessary to develop methods as we went along. It was natural to turn to New Jersey for expert advice and we were fortunate that such a man as Mr. R. E. Dorer was then available to give us the

benefit of his knowledge and experience. Even so, we found that certain methods suitable to Jersey marshes required some revision before they gave the best results in Virginia tidal areas. Our forces grew until we had some 900 men equipped with hip boots and shovels; and, while in many cases they also had to be protected by gloves and head nets, in the course of time we drained off the impounded water and laced many of our tidal marshes with the ten-inch ditches that had been so effective in New Jersey.

By the time the C. W. A. went out of business, and the F. E. R. A. quit in favor of the W. P. A., we had learned quite a bit about the alphabet and even more about mosquito work. We decreased the number of our workers and increased their efficiency by proper direction and supervision until a well balanced organization was created. It was also found necessary to make radical changes in the type of ditch to insure proper tidal flow in our marshes, and in most cases the system of the drainage layout was considerably revised. Many miles of marsh ditches were installed which are still functioning satisfactorily; and in time practically all the breeding areas of the salt water species were eliminated within the city limits, although we are still annoyed occasionally by flights that come in from outside areas.

Of course this initial program was primarily directed only against the salt marsh mosquito; but while the work was in progress our organization began to make a study of the other phases of control work and the species it must combat. Thanks to Dr. Parker, city funds had been made available to carry us through the difficult periods between the death of one Federal agency and the birth of the next. Now we were ready to begin a campaign to control all the various species that can plague a city like ours; and it was largely due to his belief in the value of our work and his foresight in planning for a permanent bureau to carry it on, that the City Council provided the initial appropriation to make this possible.

Our first equipment left much to be

desired, as it had largely been discarded on other jobs. However, it worked and it continued to work until little by little it was retired to the junk pile and replaced with new. Surface drainage was in a bad condition in many acres included by the city limits and ground water was prevalent everywhere, as may be judged by the fact that we spread some 85,000 gallons of oil per season in those early days. The work of our winter maintenance men has been largely responsible for more than cutting this figure in half.

Of course this field work could reach only a small portion of the strictly domestic species such as the *Culex pipiens* and the *Aedes aegypti* which were causing much annoyance. For this purpose it was necessary to select and train a group of inspectors, and to bring our story to the public in such a way that they would cooperate. On both counts we have met with considerable success. Our inspectors have come to be recognized and welcomed by most residents as "the man with the dipper" who makes no trouble and is often a friend indeed. Through the sympathetic attitude of the Garden Clubs, Civil organizations and the Press we have been able to tell the public something of what we have done and are trying to do. The good people of Norfolk have reacted most favorably; and since they have learned that we welcome their "service requests" over the phone they have helped us to eliminate many a serious source of breeding that an inspector might never find alone.

During the last few years we have probably been no more handicapped than others in mosquito work—or those in business and industry in general, for that matter. We have all been harassed by the same shortages of men and materials and equipment; and while drainage in the Norfolk area has suffered heavy casualties from wartime construction, the exceptionally fine cooperation from the Navy Medical Department has more than compensated for damage done.

It should be of interest although no surprise that two members of our Association have been closely identified with this Navy

cooperation. First is Lt. Comdr. Albert A. Weathersbee, who has been the officer in charge of mosquito work here under Rear Admiral McMullin and Captain Huff of the Medical Corps for the past year. He has done a remarkably fine job during a very difficult period, and is the type of man with whom it is a pleasure to work. We felt his loss keenly when he was transferred to duty elsewhere a short time ago and any area to which he may be assigned will be fortunate to acquire a man of his capability and experience.

It seemed most unlikely that Weathersbee's place could be adequately filled, but fortune smiled on us at just the right time. Our good friend, Donald MacCreary, was in charge of mosquito work in this Fifth Naval District in 1942, and we had lately learned that he was back in the States after a tour of foreign duty. We made inquiry, and developed the fact that it was not only quite possible but much in order for him to be returned to duty in Norfolk. So now it is Lt. Comdr. MacCreary who is continuing the fine work that has been carried on in his absence, and no one could be more pleased about it than we are. He will be under the command of Rear Admiral Luther Sheldon, Jr., our new District Medical Officer, who is a former Norfolkian and has made it evident that he has the interest of this community very much at heart.

The problem of *Anopheles quadrimaculatus* in this particular war area is in the capable hands of Mr. R. E. Dorer and the Public Health Service, but our *Aedes aegypti* breeding has caused us considerable concern. The theory formerly was generally accepted that Norfolk was situated too far north to offer a serious *aegypti* threat. However, we saw it very differently and last summer we were instrumental in bringing an official survey group to Norfolk which fully bore out our findings on the *aegypti* situation. We found outdoor breeding last year as early as June 8 in a junk yard and as late as November 24 in some of the transformer vaults of the Power Company below the downtown streets. During the late summer breeding

of this species was highly prolific in many of the older sections of the city and following the recommendations made on reports by the survey group we have reason to hope that the "*Aedes aegypti* Control" that has been established by the Public Health Service will give us help this summer in combatting what is now a very real potential danger.

Our active breeding season in Norfolk usually runs for only about six months; but there are many such special problems that carry over into the other half year, and call for special knowledge and training to find the source and eliminate the annoyance. Together with maintenance work on existing drainage systems and the extension of new ones to eliminate danger spots, our inspection and labor personnel have little opportunity for vacations. However, our technical department has found time to develop many plans for improving our field methods. A well equipped

laboratory keeps an identification check on all samples which are brought in regularly; and a simple but quite adequate system of records not only keeps our story up-to-date and easy to read, but in numerous cases has operated as the detective that has helped to solve unusual problems.

As I look back to 1933, it is a satisfaction to realize how far our local organization has come in that time; and we are only one of many that have made similar progress. It is certainly true that such advancement depends largely on meetings such as these, where the cooperative effort of all of us who have the same interests can be directed to the same end, which is improved results. New ideas, new methods and new materials will soon be opened up to us as war security can be relaxed; and it is my hope that our Association will take the lead in making such discoveries available to all.