MOSQUITO CONTROL

For the Mosquito Control Division, the fiscal year 1963 was marked by three outstanding events: (1) a sizeable Federal grant was received to repair control facilities damaged during the March 1962 storm; (2) another year of favorable weather conditions materially reduced the breeding of mosquitoes and the necessity for aerial spray treatment; and (3) the insecticide program was handicapped once again by the absence of an effective, safe, and economical larvicide.

Federal Disaster Program

In October 1962 the Office of Emergency Planning approved the request for money to repair the damage done to mosquito control installations by the March storm. The allocation of $510,500 was in accordance with the terms of Public Law 875, 81st Congress. This amount was earmarked for recleaning the ditch system on some 3,280 acres of marshland and repairing 37 control structures which had been damaged seriously. However, subsequent authorization was received to use a part of these funds on alternative methods of control, provided the cost did not exceed the originally planned restoration program. Moreover, an extension of time for the completion of this work was granted to permit work to continue until September 8, 1963, six months beyond the original deadline.

As a result of this grant, machines were obtained on a rental basis early in November to complete the work as quickly as possible. By the first of December 10 ditching machines, equipped to operate on marsh terrain, were used in ditch cleaning operations. For the remainder of the year these 10 machines, as well as four others obtained for special purposes, operated almost continuously on this project. Loss of time due to adverse weather was less than one percent.

By the beginning of December, six extra employees were hired to assist with this program. Two foremen, one machine operator, one carpenter and three to five hand

Repairing mosquito control ditches adjacent to Rehoboth Bay. The storm of March 1962 had obliterated most of these facilities.

laborers were employed throughout the remainder of the year on this program. Moreover, most of the Division's employees were engaged continually in overtime work, again with the objective of completing the project prior to the aforementioned deadline.

One of the more significant, and initially controversial, aspects of this program was the land fill operation undertaken in June 1963. This involved the filling of a mosquito-breeding marsh on public lands south of Dewey Beach in lieu of cleaning the storm-damaged ditches. The material used was sand with a small amount of blue clay dredged from adjacent Rehoboth Bay. This was the first time such a method of control had been attempted in Delaware, and it is hoped the result will be not only effective but virtually permanent control. By the end of the fiscal year, more than three-fourths of the ditching work had been completed, nearly half of the structures repaired, and the fill operation had been started.

Airspray Program

The total acreage treated by means of aircraft during the fiscal year was only 161,750, divided among the three counties as follows: 70,000 acres in Sussex, 76,250 in Kent, and 25,500 in New Castle. The summer of 1962 was particularly favorable to the limitation of mosquito breeding. Rainfall was below normal until nearly Labor Day. Moreover, no severe tidal influx materialized during the entire summer. During this period both adults as well as larvae were treated because of the availability of effective and safe chemical insecticides for both purposes. Malathion was the chief adulticide and a relatively new product, Baytex, was employed as a larvicide.

However, by the beginning of the summer of 1963, considerable misgiving regarding the use of Baytex had developed. This resulted from extensive testing made during the latter part of the summer of 1962, involving Baytex as applied experimentally to birds known to frequent Delaware marshes. Although no definite conclusions were reached, it was deemed wise to continue this research and to limit the use of Baytex to experimental operations alone. Consequently, the airspray program in June 1963 had reverted once more to a purely adulticide operation.

Although malathion had been employed during the summer of 1963 for this adult work, a new product known as Dibrom had been contracted for, and it was planned to use this chemical extensively during the summer of 1963. The principle reason for this change was the reduced cost of Dibrom as well as its apparent safety to fish life. Supplementing this airspray activity was the use of the Division's fogging machines, also directed solely against adult mosquito populations. A total of 588 gallons of material was consumed; virtually all this effort was made in the smaller towns of eastern Sussex County.

Ditching

In addition to the vast amount of work accomplished on the ditching system by equipment and personnel engaged under the OEP grant, the Division's forces also contributed materially in this field. A total of 762,000 lineal feet of existing ditches were cleaned and 32,500 feet of new ditches were installed. This was achieved despite the fact that at least one, and sometimes two or three, items of equipment were immobilized due to lack of funds to engage the required operators and helpers. It is felt that this project would have totalled well over one million feet had personnel been available to keep all machines in operations when weather permitted. The majority of this work was achieved in the area between the Mispillion River and the Little River, all located in Kent County.

New Castle County

The recently-inaugurated New Castle County program for the control of fresh water mosquitoes was put into full operation during the fiscal year. A superintendent for this work had been engaged on June 4, 1962, and by the end of that month he had hired and trained an inspection force for summer work. At the end of the sum-

mer, upon the release of these inspectors, a small crew of permanent employees was recruited for the purpose of year round permanent control work.

A large crawler-type tractor with backhoe attachments was purchased to supplement hand cleaning operations. Four pickup trucks and one suburban were procured during the summer of 1962, and two additional pickups were obtained in the spring of 1963. During the winter months most of the personnel in New Castle County were employed in ditching operations, but in late March 1963 a program of prehatch insecticide application was inaugurated. This involved the use of hand and machine applicators to disperse five percent DDT dust on known breeding locations. Nearly one ton of this material was consumed in this effort.

Finally, supplementing the normal fixed wing aircraft spraying of insecticide in the County, a contract was executed to permit the utilization of a small helicopter during the summer of 1963. The reason for this innovation was the inaccessibility of many of the breeding areas to conventional aircraft because of industrial installations which precluded close-up work.