

## MOSQUITOES AFTER THE FLOOD

FRANKLIN C. WRAY

Technical Director, DesPlaines Valley Mosquito Abatement District, Lyons, Illinois

Three and one-half years ago, in early October 1954, the entire Chicago area received a total of 8 inches of rain in 48 hours and as much as 12 inches in the western suburbs where our district is located. Property damage was estimated at over twenty-five million dollars.

Fortunately, this rain came after the end of the local mosquito breeding season while our district employees were on vacation. Local mosquito control people congratulated themselves that this rain was well timed. We asked ourselves the question "What would we have done if we had had this rain in July or August?"

We had to answer this question last summer when mosquito control in the Chicago area received its supreme test following the record rainfall of 6.16 inches in twelve hours on the evening of July 12, 1957. This set a new rainfall record, the previous one dating back to 1889.

Two more rains of over an inch each came before the end of the month and another 3½ inches during the second week in August, a total of 12½ inches in a thirty-day period. The resulting flooding was estimated at fifteen times the maximum after normal heavy rainfalls. Fortunately, temperatures were abnormally low; only three days were above 90°.

Control measures were divided into three phases—1, Drainage and Inspection; 2, Floodwater Control by Larviciding and Fogging and; 3, *Culex* Control by Larviciding.

1. DRAINAGE AND INSPECTION. No spraying was done for the first four days after the rain, enabling large areas to drain partially, thereby reducing acreage to be sprayed. During this time all inspectors and technical staff were engaged in determining extent and depth of flooding and making spot checks to determine size, amount and kind of breeding. As it was evident that a new hatch of overwhelming

proportions would reach maturity and cause annoyance about July 24, the field men opened as many clogged ditches and drains as possible to increase the speed of runoff of floodwater. Much of this clogging of drains, etc., was caused by silt and debris swept into streams by the down-pour.

Anticipating the extensive annoyance that was due, information explaining the problem, and the fact that excessive annoyance would occur in spite of our efforts, was sent to all local and Chicago newspapers. The papers published this news of the problems of our district, and also of the other districts in the Chicago area. Bulletins were given on several TV news programs. As a result of this publicity, the reaction of the public was favorable and though we received a flood of complaints of annoyance, practically no criticism of our efforts was registered.

*Aedes vexans* larvae were found in nearly every pool of standing water, averaging 700 per dip, except along the river and creeks where the current was too swift. For example, one cornfield, five acres in extent, was completely flooded for the first time. The inspector found *Aedes vexans* larvae here at a rate of 1,000 per dip. Likewise, *Culex pipiens* breeding was found at an abnormally high rate in nearly all polluted areas. The breeding was so extensive that it was necessary to spray all standing water without inspection.

2. FLOODWATER CONTROL BY LARVICIDING AND FOGGING. On July 17, the fifth day after the rain, larviciding was begun, using four mist-blowers and a hand crew with hand cans to spray as much standing water as possible before emergence of the first flight. This work continued without interruption through Saturday and Sunday. By Monday evening nearly all large areas were sprayed. Emergence of the

first flight of adults was widespread by this time. However, another new hatch of *Aedes vexans* appeared on Monday morning making it necessary to begin all over again; working through Saturday and Sunday of the following week.

Fogging operations, terminated the night after the rain, were resumed on the night of July 24 as the first flight had arrived as predicted and was causing annoyance. A new hatch was reported at this time in the Barrington area to the northwest of the District, due to another six-inch rain in that vicinity. Prevailing southwesterly winds prevented annoyance from this source.

*Aedes vexans* annoyance was materially reduced by the first week in August and permitted cessation of fogging from August 14 to 23. Although *Aedes vexans* were no longer a problem, *Culex pipiens* were far above normal, causing many complaints of mosquitoes in houses at night, particularly in Riverside and Western Springs. As the result of the 3½ inches of rain the second week in August, flooded areas were still four times the maximum and without exception breeding *Culex pipiens*. A few *Aedes vexans* larvae were found in some isolated areas because of blocking of ditches with flood debris, causing local flooding.

3. *Culex* CONTROL BY LARVICIDING. The third phase of emergency control measures began on August 6 when *Culex pipiens* annoyance became severe. This condition lasted until the middle of September before flooded areas had receded to normal. Cool nights drove the insects inside, aggravating the annoyance and causing a new flood of complaints. Using one well screened home as a barometer, from 5 to 46 female *Culex pipiens* were killed every

night but one between August 5 and September 23. The large bodies of standing water disappeared imperceptibly making it necessary to continue larviciding until the end of September when cooler weather finally slowed down the reproduction of *Culex*.

*Aedes vexans* should be reduced in numbers during the coming year due to the excessively high water line after the July 12 rain that resulted in flooding and hatching of all viable eggs lying on the ground. With no more eggs to be hatched, *Aedes vexans* annoyance dropped very sharply after the first of August. As a result the only viable eggs lying on the ground next summer will be those laid after the flood of 1957.

Consumption of DDT by our district reached a new high of 46,140 pounds due to the increase in both larviciding and fogging. For the first time since the inception of the fogging program it was necessary to make nine complete coverages of the district and a tenth fogging in two villages, Riverside and Western Springs. Riverside with its winding streets, heavy vegetation and extremely deep lots, has always been difficult to provide with adequate protection, while Western Springs lies on the westerly boundary and receives the full impact of mosquito flights brought by the prevailing southwesterly winds.

This was an emergency never encountered before but the realization that such a situation might arise had often been considered and tentative plans made accordingly.

Our success, such as it was, was due to the flexibility of our equipment and the willingness of our employees, both permanent and temporary, to work long hours and do whatever was required.