MORE ABOUT *CULEX*

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At last year's meeting in Salt Lake City I reported on our district's problems with *Culex pipiens* breeding in the sludge lagoons of the Metropolitan Sanitary District of Greater Chicago. This paper discusses another phase of the *Culex* control problem in our area.

Although the sludge lagoons are by far the largest single breeding place of this species in our District, they are not the only one; our Annual Report lists 111 known *Culex* breeding places—mostly small ditches polluted by septic systems, dumps, and the like.

Culex pipiens have increased in numbers and degree of annoyance during recent years as evidenced by trap catches, field inspectors' observations and complaints of the public.

This year's trap catch of female *Culex pipiens* was the second highest in the last six years, exceeded only by the mosquito population after the flood of July 12, 1957. Traps recorded four or five times as many *Culex pipiens* in June as in previous years.

The increase was a general infestation that could not be attributed to any one source or restricted to any special areas. *Culex pipiens* breeding in the sludge lagoons of the Metropolitan Sanitary District of Greater Chicago was at least 50 percent less than in 1958. These lagoons did not reach normal breeding until the first of July, several weeks after increase in this species elsewhere in the district.

Ninety-five percent of the *Culex* breeding places are in Lyons township—location of numerous new subdivisions. Many of these breeding places are in the immediate vicinity of the adjoining villages of Willow Springs, Western Springs and LaGrange Highlands in the southwest section of the district, sources of most complaints in late August of 1959.

As rural areas are rapidly transformed into suburban residential areas by mushrooming subdivisions, marshes and open field floodwater areas are eliminated with an attendant decline of floodwater mosquito populations. The newly created suburbs, usually unincorporated, create numerous small polluted areas with a resultant increase in populations of *Culex pipiens* and other mosquitoes of polluted water.

Those in Willow Springs will be eliminated by a recently installed sewer. Likewise, construction of a sewer will begin this spring in the LaGrange Highlands area, resulting in a total removal of 25 small polluted breeding areas. The District is now endeavoring to secure cooperation of other local village and township authorities to eliminate the remainder.

Culex breeding began in early June with traps recording three times the average for the past six years, diminished slightly in July and increased again to twice normal in August and September. Every month of the breeding season except July had above normal temperatures.

Rainfall was 4 inches above normal in May, June and July, and then the weather became unseasonably dry during August and September, with a deficiency of 2.6 inches.

This combination of high temperatures and lack of rain is considered a prerequisite to prolific breeding of *Culex pipiens*. Such a condition did occur in 1959, preceded by two months of unseasonable *Culex pipiens* breeding severe enough to require additional larviciding.

The District had been aware of this unusual breeding situation through routine and special field inspections, trap catches and complaints from the public. Few *Aedes vexans* larvae had been noted after June 4, while collections of *Culex*

had been consistently heavy, averaging 15 to 20 per dip with a high of 120 at one location.

The day of reckoning came on August 14 when we were swamped with complaints from communities in the southwestern part of the district. Annoyance by *Culex pipiens* had become so severe that all seven fogging units were diverted to this area, covering it completely in one night.

Known polluted breeding places were inspected, found breeding heavily and immediately sprayed the following day with the usual DDT emulsion. Breeding continued unabated in spite of this spraying. After inspection the following day (August 16) they were resprayed with 8 percent DDT in No. 2 fuel oil, resulting in a 90 percent kill. *Culex pipiens* ceased to be an annoyance in these communities after this initial larviciding with 8 percent DDT in oil.

The scene of annoyance shifted on August 18 to that part of Riverside immediately adjacent to the Desplaines River, a distance of approximately one-half mile.

Literally hundreds of *Culex pipiens* invaded homes along the river bank, but decreased rapidly in number with increasing distances from the river.

At first it was thought mosquitoes had escaped from this area due to faulty inspection. However, further investigation indicated that the dense growths of water plants along banks had prevented good penetration of larvicide from mist blower in boat.

The river for a distance of 1½ miles adjacent to Riverside was sprayed twice with the boat and a hand crew, using standard DDT emulsion.

The by-pass at Hofmann Dam had been opened on August 28 just before the second spraying. The river level dropped 15 inches in 20 hours so that the water had all been pulled out of the weeds along the banks. In spite of this, the kill, using DDT emulsion, had still been less than 50 percent and annoyance continued at a high level throughout the Riverside area.

The only recourse was to spray the river with 8 percent DDT in fuel oil. This was done on September 3 and 4 with both the boat and the hand crew, having previously lowered the river level 18 inches by opening the by-pass a second time. The results were spectacular with a better than 85 percent kill where less than 50 percent had been killed by use of DDT emulsion.

This is a further confirmation of last year's observation that insecticide with fuel oil appeared to obtain a better and longer lasting effect against *Culex pipiens* in our district than use of emulsions or granular preparations.