

MAYFLY CONTROL

D. B. LIEUX¹ AND J. A. MULRENNAN²

Mayflies are a common phenomenon in many sections of Florida and occasionally certain lake species may become seriously annoying to both lake-side residents and business establishments as a result of their periodic emergence in vast swarms.

Berner (1950) published an excellent treatise on the identification, distribution, ecology, and habits of the *Ephemeroptera* of Florida. However, little consideration has apparently been given to control of these insects, with the possible exception of very temporary control by adulticiding techniques.

Mayfly immatures are aquatic and undergo a hemimetabolous development involving a large number of preadult molts. The nymphal mouth-parts are well developed for chewing and oxygen is obtained directly from the water by means of abdominal gills. These insects are unique in that molting occurs after functional wings have been attained.

During the summer of 1953, a serious mayfly problem emanating from Bear Gully Lake near Goldenrod, Florida (Seminole County) was brought to the attention of the authors as a result of a petition to the Governor of the State from residents on this lake.

Reports received indicated that tremendous swarms of mayflies were emerging at approximately weekly intervals during the summer months, and some residents of this area declared that unless effective relief from these pests was forth-

coming, serious consideration would be given to selling of their homes and moving away from these obnoxious pests.

Specimens collected were subsequently identified by Dr. Lewis Berner as *Hexagenia munda orlando*, which are endemic to the Central Highlands of Florida and confined to lakes of this area.

Results of sampling Bear Gully Lake on January 20, 1954, by means of an Ekman dredge, indicated a population of approximately 125,452,800 nymphs in this lake, which comprises about 200 acres.

It was decided to treat the lake with a suspension (wetable powder) of benzene hexachloride at a dosage of 0.24 lb. of gamma isomer per acre. Dispersal of the insecticide was accomplished on April 13, 1954 by gravity flow from a drum mounted in a small boat which was propelled by an outboard motor. The formulation flow was controlled by means of a valve and discharged through a rubber hose into the turbulent wake of the boat, while traveling in a pattern conducive to maximum distribution of the toxicant.

Post-treatment sampling twenty-three days following treatment of the lake failed to reveal the presence of any living mayfly nymphs. Periodic contact with residents of this area revealed that not a single adult mayfly was observed during the year of 1954 and from all indications complete control of these pests was obtained. Further, no apparent damage to fish or other aquatic wildlife resulted from chemical treatment of the lake.

Literature Cited

¹ Entomologist, Bureau of Entomology, Florida State Board of Health, Winter Haven, Florida.

² Director, Bureau of Entomology, Florida State Board of Health, Jacksonville, Florida.

BERNER, LEWIS. 1950. The Mayflies of Florida. Univ. of Florida Press, Gainesville, Florida.