

canithorax from the walls of the feeders and revealed fair numbers feeding on man in the open until dark. Results of diurnal catches on man in tupelo bottom at Cypress Woods Corporation on May 31, 1957, indicated *C. furens* was mainly active at ground level and *C. paraensis* in the forest canopy.

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FIELD TESTS WITH ORGANO-PHOSPHATE GRANULAR INSECTICIDES AGAINST MOSQUITO LARVAE IN LAKE COUNTY, CALIFORNIA

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The control of mosquito larvae with insecticidal sprays is frequently unsatisfactory when tall or dense plant growth occurs in the water. Much of the insecticide adheres to the plants and never reaches the water surface.

Herbicides can sometimes be used to reduce plant growth, making the water surface more accessible. This is done frequently, but such operations are costly and time consuming. When a rapid cleanup of a mosquito infestation is desired, in habitats characterized by dense vegetation, granular insecticides can often be used effectively (Rees, D. M., *et al.*, 1953; Rees, B. E., 1953; Labrecque, *et al.*, 1956). When properly applied, the granules sift down into the plant growth, ultimately reaching the water in a reasonably uniform pattern of distribution.

EXPERIMENTAL. The efficacy of Dylox and Guthion granules was evaluated

against *Culex tarsalis* Coquillett and *Anopheles freeborni* Aitken larvae on the Anderson Ranch, Lake County, California in July, 1957. The granular materials were seeded by hand on 1/8 acre plots marked off into quadrants that contained low-growing lake margin vegetation. Granule size was from 30 to 60 mesh. Calcined montmorillonite, a member of the bentonite group, was used as the carrier for the insecticides.

Pre-treatment and post-treatment counts were made by taking 20 dips in each plot with a dipper six inches in diameter, equipped with a three-foot handle. Second, third, and fourth instar larvae were included in the counts for each species. Twenty-four hour mortality counts were made on each plot. The results of the tests are shown in Table 1. Dylox at 0.25 lb./acre and Guthion at 0.1 lb./acre were tested twice; the result of each individual test is shown in the table.

Guthion at 0.1 lb./acre produced considerable mortality of *Gambusia* sp.; at 0.25 lb./acre mayfly naiads were also killed. Dylox at 1.0 lb./acre produced no

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TABLE 1.—Results of field trials with granular insecticides against second to fourth instar *Culex tarsalis* and *Anopheles freeborni*

Compound	Concentration lb./Acre	24 hr. % Mort. <i>C. tarsalis</i>	24 hr. % Mort. <i>A. freeborni</i>
Dylox	0.25	65 and 88	37 and 29
"	0.5	100	96
"	1.0	100	100
Guthion	0.1	100 and 87	20 and 0
"	0.25	100	83
"	0.5	100	100

mortality of *Gambusia*, Odonata naiads, or giant water bugs (Belostomatidae); mortality to mayfly naiads occurred at 0.5 lb./acre.

It is noteworthy that in these tests *A. freeborni* was more difficult to control than *C. tarsalis*. Usually the reverse situation holds.

CONCLUSION. Under conditions comparable to those experienced in these experiments Guthion could be used at 0.5 lb./acre, or Dylox at 1.0 lb./acre, in granular form for successful control of both *Culex tarsalis* and *Anopheles freeborni*. Dylox would be preferred to Guthion in situa-

tions where it is desirable to preserve predators of mosquito larvae.

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PUBLICATION ANNOUNCEMENT

The Proceedings of the Tenth International Congress of Entomology, held in Montreal, Canada, in August, 1956, are expected to be ready for distribution in late 1958. The price is \$75.00 postpaid for the set of four volumes. Since a limited number will be printed only orders received before May 1, 1958, can be guaranteed.

The Proceedings will contain nearly 700 scientific contributions, many accompanied by illustrations. The four volumes, comprising over 4200 pages, will constitute an indispensable work of reference for many years since most of the material is not being published elsewhere.

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