

forward motion of the vehicle is decreased or increased respectively.

Economically speaking, the granular applicator when used in conjunction with the sand formulation has reduced the time spent treating an area, caused less physical damage to the area by the vehicle carrying the treatment apparatus and allowed a more effective coverage of the area as compared with a liquid which is often caught up in the vegetation away from the target site.

RECORDS OF *Aedes mercurator* FROM EASTERN JAMES BAY, QUEBEC

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Aedes mercurator was described by Dyar (1920) from specimens collected at Dawson, Yukon Territory, 16 July. The localities of specimens of the C.N.C. (recognized by Wood (1977) as *Ae. mercurator* instead of *Ae. stimulans* (non Walker)) and records from Alberta (Enfield 1977) indicate a western distribution for this species in North America. This holarctic species also is distributed throughout the USSR (Danilov 1974, 1978; Proskouriatova and Markovich 1977).

We wish to report the 1st *Ae. mercurator* found as far east as eastern James Bay and the 1st reported for Quebec. The 1st specimen was a larva collected, 5 June 1977, from a tidal pot-hole at Eastmain (52°13'N; 78°34'W) along the eastern shore of James Bay. This specimen was identified by D. M. Wood, Biosystematics Research Institute, Ottawa, and is presently in the C.N.C. Another larva was found, 1 June 1979, in the same type of habitat at Fort George (53°50'N, 79°00'W). In both cases, the vegetal community was a *Potentilla egedii* and *Pucinellia lucida* unit (Maire et al. 1979). A 3rd larva of *Ae. mercurator* was found, 5 June 1979, in LG-1, where a dam is under construction on La Grande Rivière, 30 km east of Fort George. The larval breeding site was a man made ditch with a muddy bottom which was filled with brown-colored standing water. Rearing of the 4th stage larva yielded a female.

In the Eastmain larval breeding site *Ae. mercurator* was associated with *Ae. implicatus* Vocke-

roth (75%) and *Ae. cantator* (Coquillett) (21%) as dominant species along with a few *Ae. punctator* (Kirby) larvae. In 15 pot-holes located within the same vegetal unit we also found *Ae. flavescens* (Müller), *Ae. campestris* Dyar and Knab and *Ae. dorsalis* (Meigen), all typical species of western Canada. In the springtime *Ae. implicatus* and *Ae. cantator* dominate (Maire and Mailhot 1978) while during summer *Ae. dorsalis* is largely dominant (> 90%) and frequently accompanied by *Ae. campestris* which is relatively constant (about 30%).

In the Fort George larval breeding site, *Ae. mercurator* was again associated with *Ae. implicatus*, the dominant species (33%) along with *Ae. punctator* (14%), *Ae. cantator* (7%) and 1 larva of *Ae. excrucians* (Walker). There were 44% 1st stage larvae not identified.

In LG-1 *Pionips* Dyar dominated (80%) and was associated with *Ae. punctator* (10%), a few larvae of *Ae. excrucians* and 1 larva of *Ae. dorsalis*.

This last locality, although continental, cannot be compared with those reported in southern Alberta by Enfield and Pritchard (1977 a, b) who found *Ae. mercurator* associated with *Ae. euedes* Howard, Dyar and Knab in a temporary pond of the aspen parkland zone, 25 April to 20 May 1975.

The occurrence of *Ae. mercurator* in these 3 James Bay localities is not unexpected as they lie within the potential distributional area previously suggested by Wood (1977): "the species now appears to occur from Alaska and southern Alberta east at least to James Bay."

Moreover *Ae. flavescens*, *Ae. campestris* and *Ae. dorsalis*, which are essentially eastern species, were also found in the same tidal type of habitat along eastern James Bay.

In spite of low larval densities *Ae. mercurator* is probably present all along the eastern part of James Bay, from the littoral up to the lowlands. The boreal character of the species is also confirmed by our records.

We thank D. M. Wood who verified our identifications and Société d'Énergie de la Baie James (SEBJ) which supported our expeditions across the "Territoire de la Baie James" during 1977 and 1979.

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OCURRENCE OF TRICHOMYCETE
FUNGI IN MOSQUITO LARVAE NEAR
KEARNEY, NEBRASKA

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The Trichomycetes are a group of fungi often found associated with aquatic dipteran larvae. The genus *Smittium* has been found in the larval hindguts of various species of mosquitoes as well as midges, black flies and other aquatic Diptera (Lichtwardt 1964, Williams & Lichtwardt 1972). The only other Trichomycete genus reported from mosquito larvae is the ectozoic *Amoebidium parasiticum* which was cultured by Whisler (1960). *A. parasiticum* has a wide host range, all aquatic, and has been reported from Cladocera, larval forms of several orders of Insecta, and small Crustacea (Manier 1969). There is no reported evidence indicating that *A. parasiticum* is harmful to the mosquito host, nor is there evidence that *Smittium* is a true parasite in the usual sense of being detrimental to the host. This may be due in part to the fact that *Smittium* spp. attach to the chitinous hindgut lining which is shed with each molt, therefore removing it from the host during the peak of its growth activity. However, the fungus may be detrimental to young larvae under suboptimal growth conditions (Williams and Lichtwardt 1972). The filament-

ous bacterium *Arthromitus* has been previously observed on mosquito larvae, and we routinely surveyed for its presence (Buchanan and Gibbons, 1974, Leidy 1850). These endospore-containing organisms grow as septate filaments attached by the basal end to mosquito larvae as well as other substrates. We were unable to locate any reference to the frequency of these microbial infections in mosquitoes.

The Platte River valley is occasionally flooded, with a high water table, with much irrigated cropland. Therefore, mosquito populations are a perennial problem, with most of the larvae inhabiting temporary rainwater, floodwater or irrigation water pools. Twenty-two mosquito species were reported in a 3 county area along the Platte River, of which 4 species made up 95% of the individual larvae and adults collected (Nagel 1975).

Twenty-two sites were selected for our study—11 intermittent and 11 relatively permanent pools. Collections were made weekly (n = 28) during the summer of 1977 using pint dippers. All of the 22 sites were shallow water habitats, either ditches or pools. Only 11 sites