2.11). Host collected in bamboo cup at Ban La Wa and Ban Ku Phadu, Kanchanaburi, Thailand.

9. *Coelomomyces* sp. in *Ae. mediopunctatus.* Sporangia 40.76 μm (sd 2.49) × 19.93 μm (sd 1.66). Host collected in bamboo cup at Ban Nong Plong Khong, Kanchanaburi, Thailand.

10. *Coelomomyces* sp. in *Ae. pseudalbopictus.* Sporangia 41.75 μm (sd 3.97) × 20.55 μm (sd 1.45). Host collected in bamboo cup at Ban La Wa, Ban Ku Phadu, and Ban Nong Plong Khong, Kanchanaburi, Thailand.

11. *Coelomomyces* sp. in *Culex fuscocephala.* Sporangia 55.39 μm (sd 5.01) × 27.65 μm (sd 2.73). Host collected in paddy field near Ban Rim On, Chiang Mai, Thailand.

12. *Coelomomyces* sp. in *Cx. tritaeniorhynchus.* Sporangia 43.43 μm (sd 4.31) × 26.77 μm (sd 2.18). Host collected in paddy field near Ban Rim On, Chiang Mai, Thailand.

13. *Coelomomyces* sp. in *Cx. vishnui.* Sporangia 69.81 μm (sd 3.99) × 44.39 μm (sd 2.41). Host collected from ground pool near Bang Phra, Chonburi, Thailand.

14. *Coelomomyces* sp. in *Armigeres longipalpis.* Sporangia 43.44 μm (sd 2.33) × 22.57 μm (sd 2.41). Host collected in bamboo stump near Ban Wang Mo, Nan, Thailand.

15. *Coelomomyces* sp. in *Uranotaenia campestris.* Sporangia 31.50 μm (sd 1.61) × 17.69 μm (sd 1.41). Host collected in small pool in dry stream bed near Ban Pa Daeng, Lampang, Thailand.

16. *Coelomomyces* sp. in *Toxorhynchites gravelyi.* Sporangia 49.64 μm (sd 3.78) × 22.85 μm (sd 1.51). Host collected in bamboo cup near Ban La Wa, Kanchanaburi, Thailand.

17. *Coelomomyces* sp. in *Toxorhynchites* sp. Sporangia 36.25 μm (sd 2.70) × 21:17 μm (sd 1.49). Host collected in bamboo stump near Ban La Wa, Kanchanaburi, Thailand.

The number of species of *Coelomomyces* involved could not be determined. It is possible that one of the forms of *Ae. albopictus* (#7) and that in *Ae. mediopunctatus* (#9) and in *Ae. pseudalbopictus* (#10) were the same species. The sporangial dimensions were very similar, and the hosts were collected from bamboo cups near villages within a few kilometers of each other. The species in *Cx. fuscocephala* (#11) and *Cx. tritaeniorhynchus* (#12) possibly were the same. The spores were essentially the same size and were collected from the same site, although at different dates.

According to Petersen (1977), there is no previous report of a parasitic nematode in *An. nivipes.* McNitt and Couch (1977) included no previous reference to *Coelomomyces* from *An. bengalensis, An. nivipes, Ae. mediopunctatus, Ae. pseudalbopictus, Cx. fuscocephala, Cx. vishnui, Ar. longipalpis, Ur. campestris,* or *Tx. gravelyi* and no previous reference to *Coelomomyces* from Thailand.

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DRIFT RESPONSE OF BLACK FLY LARVAE TO DIMILIN

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Large increases in drift of black fly larvae occur immediately after lethal dosages of chemical larvicides are applied to streams. Both laboratory (Muirhead-Thomson 1978) and field studies (Fredeen 1974, Wallace and Hynes 1975) have shown most of the increased drift occurs within a few hours.

Results of two field tests conducted with Dimilin in northern British Columbia during 1977 showed increased drift of black fly larvae was less dramatic (McKague et al. 1978). In one test numbers of larvae in samples collected 500 m downstream reached a maximum 4 days after a 15-min application of 1 ppm Dimilin. The proportion of larvae with morphological abnormalities also increased to 59% of the sample 6 days following the test. These results, combined with visual observations in the test area, indicated larvae did not detach upon exposure to Dimilin but were gradually removed as they attempted to molt.

During 1978 an additional test was performed using an application rate of 0.7 ppm Dimilin for 15 min. Most of the larvae were final instar *Simulium venustum* at the time of the test. Drift was measured 20 m downstream from the treatment point. During the second 24-hr period following the test a 4–5 fold increase occurred in numbers of larvae captured in the sampler (Figure 1). On the same day the

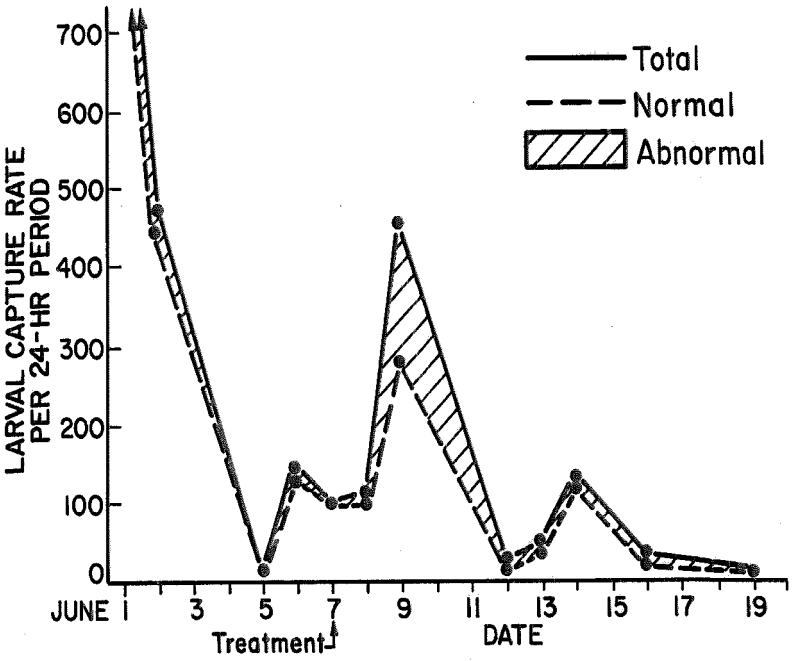

Figure 1. Relative frequencies of normal and abnormal black fly larvae following application of Dimilin at 0.7 ppm. June 7, 1978.

percentage of abnormal larvae or larval-pupal intermediates rose from a background of less than 7% to a post-treatment high of 40%. After 1 week, drift had returned to the immediate pretreatment level.

The results illustrate the delayed drift response of black fly larvae to Dimilin. The time required for larvae to detach from substrates will depend on the lapse between treatment and the next molt. This in turn will depend on other variables such as stream temperature (Mokry 1976) and food supply (Colbo and Porter 1979) which regulate development.

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