

A COPEPOD PREDACIOUS ON MOSQUITO LARVAE

DAVID D. BONNET AND TOMIO MUKAIDA

Division of Sanitation, Department of Health, Territory of Hawaii

The tree hole breeding cannibal mosquito, *Toxorhynchites* (= *Megarhinus*) *brevipalpis* Theobald, from South Africa has recently been introduced into the Territory of Hawaii as an aid in the control of the forest day mosquito, *Aedes albopictus* (Skuse). A laboratory colony has been established and groups of adults and larvae are being released from time to time⁽¹⁾.

During the early developmental stages (1st and 2nd instar), a high mortality occurred which seriously hampered the production of larvae and the development of a flourishing colony. It was believed, at first, that this mortality was the result of improper food during these early stages and efforts were made to provide various type of microorganisms, including protozoans, rotifers, copepods (nauplii and

adults), Cladocera, and 1st instar mosquito larvae of *Aedes* and *Culex* sp. Direct observations were made of food taken by the *Toxorhynchites* larvae and they were observed to ingest protozoans, rotifers, copepod nauplii and the young larvae of other mosquitoes.

It was noted, however, that the presence of adult copepods in the culture jars resulted in a high mortality of the mosquito larvae. The copepods were observed to attack the larvae and kill them in rapid succession. The mosquito larvae would be clasped usually just posterior to the thoracic segment and the body contents sucked out. Subsequently the empty larval skin would be discarded. In a few instances, two or more copepods were seen to attack simultaneously a single mosquito larva of the 3rd and 4th instar and

kill it. The copepod appeared actively to hunt the mosquito larvae, and tests with varying numbers of *Aedes* larvae in 100 cc. of water indicate that a single copepod can destroy from 15 to 20 2nd instar mosquito larvae in a 24-hour period.

The copepod has been identified as the cosmopolitan species, *Mesocyclops obsoletus* (Koch), which has been reported from Norway, Russia, Netherlands, Hungary, Asia, Brazil, Argentina, North America and Australia and is found principally in fresh ponds. It has also reported in brackish water in India⁽²⁾. In Hawaii, it has been found commonly in pools, streams and swamps, and undoubtedly destroys young *Culex quinquefasciatus* larvae which occur in such situations. The role played by this copepod in the biological control of *Culex* is not known, but it is probably of minor im-

portance. This copepod has not been found occurring naturally in tree holes, water-holding plants, or other containers in Hawaii and hence would not be a factor in the biological control of our *Aedes* mosquitoes. It has been necessary, however, to eliminate this copepod from our mosquito cultures in order to maintain the colony of *Toxorhynchites brevipalpis* and this note has been prepared to bring the attention of other workers to a copepod which is actively predacious on mosquito larvae in laboratory cultures.

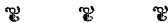
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