spot plate that each contained one fourth instar Anopheles barbirostris. After one hour, 51 of the 90 C. p. quinquefasciatus had been devoured; after 15 hours, 86 of 90 had been consumed.

A fourth instar larva of Anopheles barbirostris was placed in a small container with many first instar larvae of C. p. quinquefasciatus and observed for one hour under a stereoscopic microscope. This one Anopheles barbirostris consumed 25 larvae in the first 20 minutes, 37 in 30 minutes, 37 in 45 minutes, and a total of 46 in 1 hour. The first C. p. quinquefasciatus consumed passed through the digestive tract of the predator in 2 minutes, one or two were subsequently passed every 1 to 2 minutes, and 31 passed through in 1 hour. In another observation a fourth instar Anopheles barbirostris devoured 34 larvae and passed the first in 13 minutes and passed 15 in 30 minutes. Generally the fourth instar larvae of Anopheles barbirostris were observed to consume 14 to 18 first instar C. p. quinquefasciatus as rapidly as they could catch them; thereafter, they consumed larvae only after they had eliminated previously eaten larvae. However, several Anopheles barbirostris continued to catch and kill large numbers without consuming them after they had consumed about 15.

Fourth larval instar of Anopheles barbirostris were also observed to consume a few second instar larvae of C. p. quinquefasciatus, but they were much less efficient predators of second instar than of first instar larvae. Moreover, third instar larvae of Anopheles barbirostris that occasionally attempted to prey on first instar larvae of C. p. quinquefasciatus were always unsuccessful.

Thus, fourth instar larval of Anopheles barbirostris are predacious and probably consume large numbers of early instar mosquito larvae and various sized larvae of Culicidae spp. that breed in tree holes.

Literature Cited


AN Aedes vexans GYMNANDROMORPH

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When he compiled his list of gymnandromorphs, Bates (1960) commented that they were "probably very rare" in proportion to the vast numbers of mosquitoes that had been examined up until that time. Brust's (1966) appended list, Taylor et al., (1966), and Meadows (1966), along with a few more descriptions of individual specimens, substantiate the relatively infrequent occurrence of such anomalies in nature. The total number of reported gymnandromorphs, and particularly the limited variety of species represented, remains small.

As a severe pest mosquito resulting from flood waters, Aedes vexans (Meigen) has received much attention from mosquito workers, but no sexually aberrant types have been described in the literature. An anteriorly-differentiated form of A. vexans was collected in Salt Lake County 23 June 1968, in a New Jersey type light trap hung 5 feet above the ground in a grape arbor surrounded by shrubs and trees. The head of the specimen was entirely male with normal antenna and palpi. The tarsal claws appeared to be male. The terminal abdominal segments were characteristically female. Two ovaries were present, with no yolk in the oocytes. There was a bursa copulatrix, accessory gland, and spermatheca. The hind gut contained six rectal papillae indicating a female digestive tract.

Notes on the Biology of Coelox terricola

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In the summer of 1968 an attempt was made to colonize Coelox terricola Walker. From mid-June to late July, 8,000 fourth instar larvae were collected and identified. The identified larvae were placed in enamelled pails (6" x 15" x 4") containing filtered lake water and food (Otolota and Harwood, 1961) in an outdoor cage measuring 6' x 4' x 6', which had a ½" plywood top and bottom, was covered with white netting, and had a polyethylene sheet over one side and the top for protection from wind and rain. Frogs and 10 percent sucrose were provided. The mosquitoes blood-fed readily and laid egg rafts, but did not

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