

OPERATIONAL AND SCIENTIFIC NOTES

OBSERVATIONS ON THE OPERATION OF MOSQUITO LIGHT TRAPS WITH A CYLINDRICAL VERTICAL SCREEN. One of the problems in the operation of light traps by mosquito control agencies is the amount of time required for sorting collections and separating mosquito specimens from heavy accumulations of other, unwanted, insects. Mulhern, in a paper presented before the American Mosquito Control Association at Salt Lake City in 1952, proposed the use of a cylindrical vertical screen of a quarter-inch hardware cloth fitted around the top of the trap cylinder and extending up to meet the underside of the hood, as a means of excluding larger insects.

An experimental trap fitted with this type of screen was operated in the latter part of July of 1958 simultaneously with the regular trap on a location here in Nassau County where the numbers of beetles as well as other insects had been particularly heavy in trap cups since early June. The test trap and the regular trap conformed in every way to Mulhern's specifications and were operated five feet apart for the same period each night for eleven nights. The regular trap, however, was fitted with the old type flat screen. A daily count of the two largest groups occurring in the collections, beetles and moths, was kept along with a rough count of other smaller insects and, of course, the careful count of mosquitoes. The nightly average collection of miscellaneous insects in the test trap during the eleven-night period was 215. The nightly average of insects in the regular trap in this same period was 580.

Five beetles per night was the average number caught in the test trap with an average of nine in the regular trap. The larger species, June beetles and others, were by this time of the season scarce in every trap, and the collections were affected by the fact that even the smaller species such as the Asiatic garden variety were past their peak in the adult stage. It was noted that one beetle slightly larger than the Oriental and Asiatic kinds persisted in collections in both traps. It was identified by Prof. J. Alfred Adams of the New York State Agricultural Experiment Station at Poughkeepsie as the northern masked chafer, *Cyclocephala borealis*, a turf-destroying pest occurring in great numbers in and around New York City and Nassau County.

Moths also are unwelcome invaders in mosquito light trap collections. During the test period an average of 105 moths was noted for each night in the regular trap. The average caught in the test trap was thirty.

Collections of all insects in the regular trap in the five-day period before the test trap was installed averaged 480 per night and on the night before the test began 66 beetles and 121 moths were caught. These counts seem to indicate that the cylindrical vertical screen helped to exclude

miscellaneous insects more efficiently than the old type flat screen.

There was, however, an apparent proportional reduction in the number of adult mosquitoes caught in the test trap. The total collected in the eleven nights in the test trap was 99, including 91 *C. pipiens*, 7 *A. vexans* and 1 *A. sollicitans*. The regular trap collected 194, comprising 176 *C. pipiens*, 13 *A. vexans* and the rest *A. sollicitans*. Thirty-six male adults were taken in the regular trap in the period as compared to 26 in the test trap. Mosquito collection, therefore, in the test trap totaled about 50 percent of collection in the regular trap. Miscellaneous insect collection was reduced by the cylindrical screen by approximately 63 percent and the larger insect collection was reduced by more than 74 percent.—R. J. Hemmings, Nassau County (N. Y.) Department of Public Works.

A NOTE ON THE LARVAE OF *Anopheles subpiectus* AND *sundaicus*. The larvae of *Anopheles subpiectus* Grassi and *An. sundaicus* Rodenwaldt have usually been regarded as more or less indistinguishable, though several attempts have been made to separate them (see Bonne-Wepster and Swellengrebel, 1953). Gater (1934), writing of Malaya, concluded that "for practical purposes the larvae of *A. subpiectus malayensis* Hacker and *A. sundaicus* cannot be differentiated with certainty." However, Christophers (1933, p. 247) refers to Ghosh's (1932) finding that in *sundaicus* mesothoracic hair 5 usually has 3 branches arising near the base, while in *subpiectus* it usually has 2, only rarely 3, and they may arise anywhere along the length of the hair. Preliminary examination here by Mr. A. Ganapathipillai seemed to show that this character might be useful, but when a larger number of larvae, raised from eggs laid in the laboratory, were examined by Mr. Chee Sinn Lim a number of intermediates were found. There the matter rested until an opportunity arose to have some more specimens examined by a Zoology student from the University of Malaya, Mr. Ow-yang Chee Kong.

The combined results of these examinations and a few more of my own showed that in 108 specimens of *subpiectus malayensis* the number of branches on mesothoracic hair 5 varied from 1-3 and was usually 2; only about 12 percent (13 specimens) had 3 branches on one or both hairs and then the third branch was usually small, arising about half way along the hair. In 86 specimens of *sundaicus* the number of branches varied from 2-4 and was most often 3, usually arising near the base of the hair; only about 10 percent (9 specimens) had 2 branches on both hairs. Thus Ghosh's findings are confirmed and the following couplet should identify the majority of the larvae of Malayan specimens of either species.