surface of water in the bowl and were left for 48 hours for oviposition. They were then withdrawn and examined. The rate of oviposition response i.e. in terms of number of eggs deposited was assessed by the counts or the size of the dark spots present on the surface of the timber.

The results showed that the heaviest egg laying took place on deodar (*Cederus deodara*) followed by Shivan (*Gmelina arborea*); Nana (*Lagerstroemia lanceolata*); Sissum (*Dalbergia latifolia*); Gurjan (*Dipterocarpus turbinatus*); Dhaman (*Grawia tiliaefolia*) and Siris (*Albizzia lebbek*). The remaining timbers, namely, Gugal Dhup (*Alianthus malbericum*); Dhavada (*Angoeissus latifolia*); Pisa (*Actinodaphne hookeri*); Babul (*Acacia arebica*); Lal Khair (*Acacia chunira*); Kakad (*Gargua pinnata*); Phanas (*Atrocarpus integrifolia*) and neem (*Melia azedirechta*) showed either insignificant oviposition or none at all. It is thus clear from the above that the *Aedes* mosquitoes show a definite preference for oviposition on some timbers as opposed to others. Such timbers can be usefully utilized as artificial devices (ovitraps) in conducting survey. programs of *Aedes* species thereby recognizing the latent danger in any locality, if the species so isolated happens to be a recognised vector.

References

Beckel, W. E. 1955. Mosq. News 15:224–228.

Christophers, S. R. 1960. *Aedes aegypti*—The yellow fever mosquito. Cambridge University Press, U.K.

Fay, R. W. and Perry, A. S. 1965. Laboratory studies of ovipositional preferences of *Aedes aegypti*. Mosq. News 25:276–281.

Macdonald, W. W. 1965. Seminar on the ecology, biology, control and eradication of *Aedes aegypti* 16–20 August 1965, Geneva, Switzerland.

Petersen, J. J. and Rees, D. M. 1966. Selective oviposition response of *Aedes dorsalis* and *Aedes nigromaculis*, to soil salinity. Mosq. News 20: 168–174.

Snow, W. F. 1971. The spectral sensitivity of *Aedes aegypti* (L.) at oviposition. Bull. Ent. Res. 60:683–696.

A PORTABLE BOX TRAP FOR THE COLLECTION OF *GAMBUSIA AFFINIS*

LT. D. A. EHRHARDT AND LT. L. L. SHOLDT

U. S. Navy Environmental and Preventive Medicine Unit No. Two, Norfolk, Virginia 23511

The use of mosquito fish, *Gambusia affinis* (Baird and Girard), for the biological control of mosquitoes is receiving increased attention by a number of agencies, including the military. The U. S. Navy has initiated a project to assist naval shore activities along the East Coast in utilizing mosquito fish as an adjunct to their mosquito control programs. To accomplish this, activities are visited and assistance is provided in selecting and stocking suitable locations with *Gambusia*. Sources for the fish are generally available in the area visited, however, their collection often presents some difficulty.

The use of aquatic nets, minnow seines and minnow traps was usually found to be inefficient and time-consuming. The box-style traps described by Caton and Sjogren (1969) and Stains (1970) were effective, but too cumbersome for easy transportation and use in outlying areas. To fulfill the need for a less permanent and more portable collection system, a modified box trap was designed which was lightweight, collapsible, and easily assembled in the field by one man. It is anticipated that such a design will be of use to agencies which do not require permanent traps and have limited storage facilities.

The portable box trap (Fig. 1) was patterned after one described by Stains (1970). It was constructed of ¾" x 1⅜" cypress slats covered with eight-mesh or four-mesh hardware cloth. The eight-mesh (⅛ inch) hardware cloth was generally used for collecting large numbers of males and females. In cases where only the larger, mature females were desired, a trap covered with four-mesh (¼ inch) hardware cloth was used, as the smaller males and immature females could easily pass through the screen. Approximately 4 man hours were required to complete the trap. The total cost for materials was about twenty-five dollars.

The trap was constructed in a series of steps (Fig. 2) to insure a propert fit of all pieces. In step A, the two trap sides were completed with outside measurements of 35¼" x 55½". All corners were joined using 2½" finishing nails and secured with polyvinyl resin white glue. The hardware cloth was trimmed to the proper dimensions and attached with a hand-operated stapler and ½" staples.

The two trap ends, step B, measured 25½" x 35¼". Double wood slats were utilized at the top and bottom of the trap ends to allow space for the turn buttons to function. The center slat was carefully measured in order that the funnel and flat inserts could be freely interchanged. Finally, small strips of hardware cloth were stapled in place over the double slats.

The bottom of the trap was completed in step C after minor adjustments were made to insure a uniform fit of the side and end pieces. After the hardware cloth was secure, the trap sides and ends were placed in position upon the bottom piece. By taping the parts together with masking tape, the hook and eye latches could be accurately secured. Fourteen latches were used; 2 in each corner and 6 along the bottom. To hold the funnel and flat inserts in place, a total of 10 turn

[1] The opinions or assertions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

buttons were fastened to both sides of each trap end as shown in Fig. 2, B.

In step D, four rectangular frames were constructed with outside measurements of 14⅞″ x 23⅞″. Two of the frames were fitted with hardware cloth to make the flat inserts. For each funnel insert, two triangles of hardware cloth measuring 13⅞″ x 15″ and two measuring 12″ x 23″ were cut (Fig. 2, E and F). The base lines of the four triangles, which corresponded to the inside measurement of the rectangular frames, were stapled in place. Wax covered string was used to draw the sides together into a pyramid. The string was tied at the base of each corner and then woven upward through the hardware cloth using a chain stitch.

Diverging lateral weirs made of minnow seine nets were used to direct the fish into the trap (Fig. 1). Two 4′ x 10′ seine nets were cut in half for each end of the trap and fastened in place with ½″ staples. Unlike hardware cloth weirs, the seine nets readily conformed to the contoured beds of collecting areas, were easily installed, and reduced the bulk and weight of the trap.

The trap worked equally well in shallow and deep water. Approximately fifteen minutes were required for assembly. In shallow water, the funnel inserts were placed in the lower trap openings. After collection was completed, they were carefully exchanged with the flat inserts. By quickly installing the flat insert behind the funnel as the latter was pulled up through the interior, the fish could be removed with no interference from the protruding cones. In deep water, the funnel inserts were used in the upper openings while the flat inserts closed off the lower. Removal of the captured fish was easily accomplished after the trap was pulled close to shore.

ACKNOWLEDGMENTS

The authors wish to acknowledge the able assistance of Mr. Andrew Michael.

Literature Cited

Caton, J. R. and R. D. Sjogren. 1969. A modified box trap for the capture of *Gambusia affinis*. Calif. Vector Views 16:69–70.

Stains, G. S. 1970. An improved method for trapping large numbers of *Gambusia*. Calif. Vector Views 17:97–99.

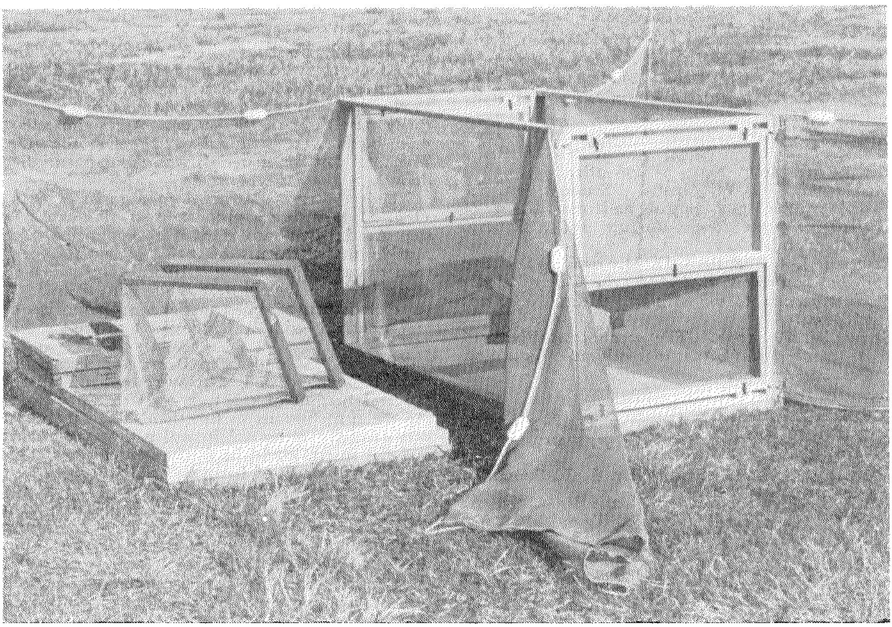

Fig. 1.—Portable box trap, assembled and disassembled.

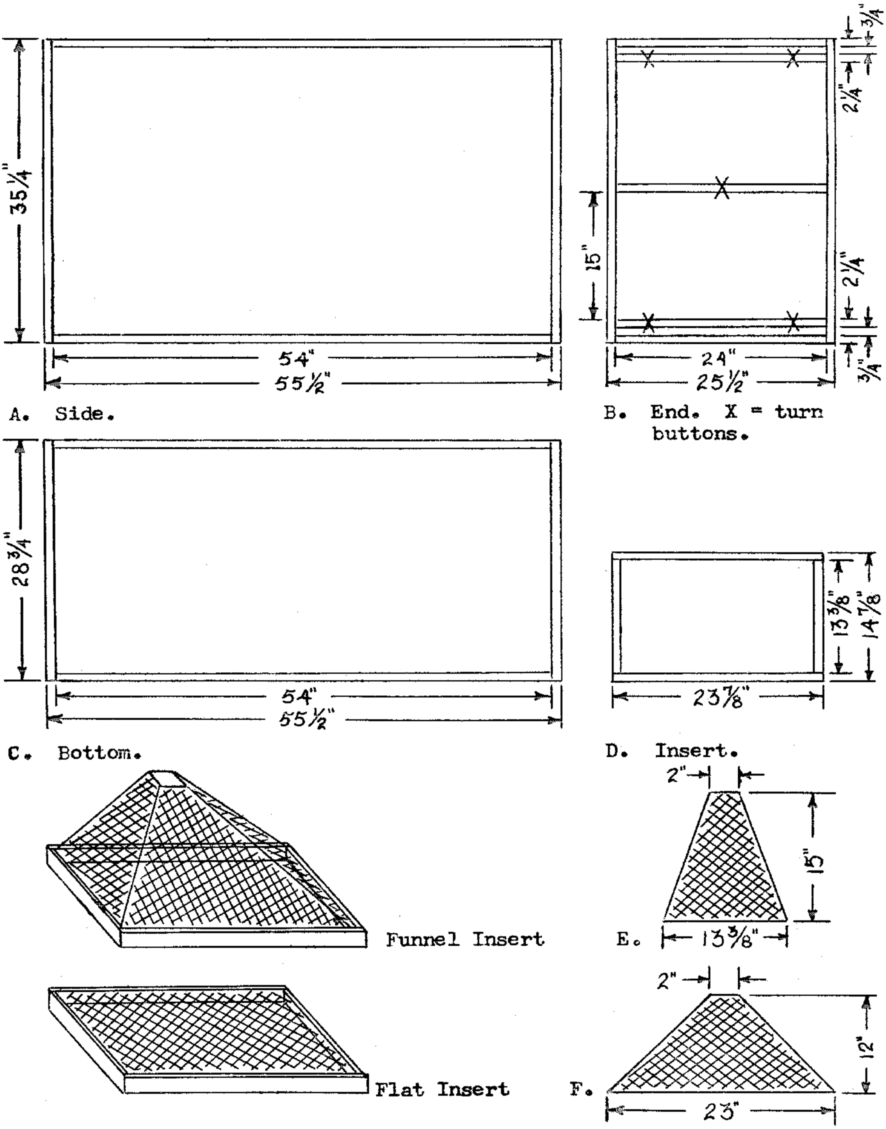

FIG. 2.—Specifications for construction of a portable box trap.