

age in actual control operations. However, based upon results obtained in the Florida mosquito control districts over a period of several years, using recommendations based upon this testing program, it is felt that these tests provide a reasonably accurate measure of effective dosage levels for this type of mosquito control operation.

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A PORTABLE DISEASE TRANSMISSION STUDY HUT

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A sturdy, collapsible hut for studying biting rates and pickup of filarial or other blood parasites from infected, sleeping persons, by mosquitoes, can be constructed of $\frac{1}{4}$ " thick 4' x 8' plywood sheets and right-angled metal beams known commercially as "Dexion." The beam resembles one of the right-angled bed supports for a mattress, except that it has numerous $\frac{1}{2}$ " x $\frac{3}{8}$ " slots which alternate horizontally and vertically. This design permits easy interlocking of the beams with bolts, so as to make a strong supporting framework. By drilling $\frac{1}{4}$ " holes near each edge of the plywood sheet, Dexion beams cut to size can be attached with nuts and bolts to each edge of the plywood, thus making a complete support which also prevents damage during

transportation. The Dexion comes in 10' lengths, and can be cut to size by using a hacksaw or a Dexion cutter.

Each plywood sheet is designated as a "panel." Each side of the hut consists of 2 such panels set vertically, and joined side by side by using bolts having wing nuts. There are altogether 12 panels needed: 8 for the four sides, 2 for the floor, and 2 for the roof.

Since a person must sleep in the hut, it must be of adequate size. Using the standard panels, its dimensions are 8 x 8 x 8', but the sides can be cut down to about 7' in height, after which a 6" slope is cut so as to permit rain runoff. Wing nuts are used with bolts 6" to 12" apart in places where the panels are to be separated or disassembled, otherwise the permanent hexagonal-head nuts are used.

Although the hut can be set on the ground, it is recommended that it be raised off the ground at least 6" by a Dexion frame. Three indented, screened windows, 22" x 26" are cut into three sides (Fig. 1). Each has 2 louvres made

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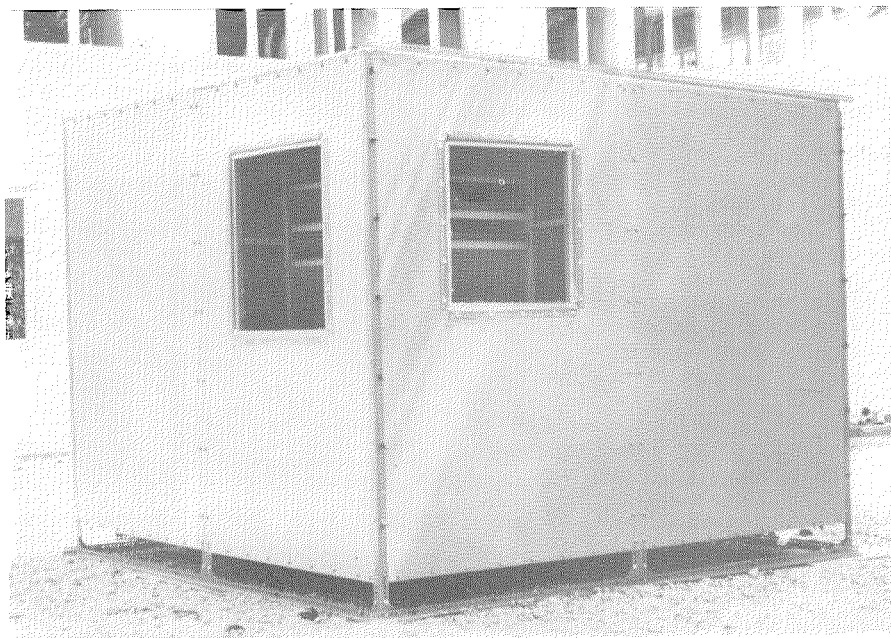


FIG. 1.—Rear panels (4 and 5) and right side panels (6 and 7) of disease transmission hut.

by having a slanted portion overlap a horizontal element, with a $\frac{1}{2}$ " gap permitting entry of mosquitoes. A similar type of louvre was used by Bates (1944) and Snow (1949), and was called an "ingress baffle." The windows are not to be considered as window traps (Worth 1953), but as attractants for mosquitoes because of the simulated "open" window. A side view of the window construction is seen in Figure 2. The screening can be of #18, #20, or #22 gauge. Each window projects 9" into the hut, the wooden framework on which the screening is nailed being made of $1" \times 1\frac{1}{4}"$ laths. Additional non-louvréd simple, screened windows may be added for cross ventilation.

The door opens inwards and is bolted from the inside. An outside hasp permits locking the door when the hut is not in use. For identification and conven-

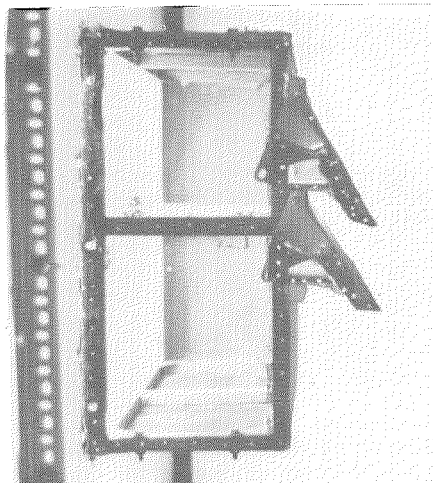


FIG. 2.—Side view showing window construction.

ience in assembling, numbers or codes are painted on the inside and outside surfaces of each panel. In practice, it took 3 men 4 hours to erect the hut, but only 2 hours to disassemble it. A large canvas overlapping the roof on all sides will prevent leakage during heavy rains.

During operation of the hut, the person infected with microfilariae slept from 9:00 p.m. to 6:00 a.m. Before he left in the morning, all mosquitoes in the hut were collected and dissected immediately. Three blood smears were taken just as he retired, to determine the average number of microfilariae per 20 mm. of peripheral blood. Other smears may be taken during the night. For comparison, it is recommended that morning collections also be made when the hut has been unoccupied, because it was found that on occasions fully-fed newly infected mosquitoes flew into the hut when it was unoccupied. This necessitates using a correction factor

in interpreting the results when a person occupies the hut.

Depending on the nature of the investigation, statistical data are tabulated as regards pickup of microfilariae by mosquitoes which fed on the infected volunteer, evidence of prior infection, comparison of results of occupied and unoccupied hut, etc.

Literature on the use and assembling of Dexion may be obtained from Dexion, Inc., 39-27 59th Street, Woodside, Queens, New York, or from Dexion, Ltd., Maygrove Road London, N.W. 6, England.

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THE USE OF LIGHT IN REARING *ANOPHELES QUADRIMACULATUS* SAY FOR BEHAVIORAL STUDIES

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INTRODUCTION. Field tests in which sterile male *Anopheles quadrimaculatus* Say were released to evaluate their effect on natural population levels and reproductive potential have been conducted in two areas in Florida (Weidhaas *et al.*, 1962). Males were reared from a laboratory colony, sterilized with 12,000 r of gamma radiation, and released into the natural population. Sampling of females collected in or around the release area failed to demonstrate that the release of sterile males adversely affected the natural population or caused any appreciable degree of sterility in it.

Further studies (Weidhaas and D. A. Dame, in manuscript) were conducted to evaluate the effect of release of males, sterilized with chemicals, on the mating behavior of individuals in the natural population and in the laboratory colony. These studies demonstrated that there were most likely behavioral differences between the laboratory-reared and wild strains of mosquitoes. Three factors appeared to support this finding: (1) All attempts to mate wild individuals in the laboratory failed; (2) field tests indicated that males from the laboratory colony may not mate effectively in the field with wild