

quality of laboratory test insects; (3) numbers of biting females; (4) avidity of the biting females; (5) activity of the test subjects; (6) environmental influences; and (7) testing techniques.

These factors can cause considerable variability in the results of tests with insect repellents. However, it would, at this time, be only speculation to attempt to determine what factors could have caused the variance in the repellent activity of deet and "carbamide" in the 2 tests.

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AN IMPROVED BAIT TRAP FOR MOSQUITO COLLECTING¹

RAY E. PARSONS

US Army Medical Bioengineering Research
and Development Laboratory, Fort Detrick,
Frederick, Maryland 21701

The most basic technique of catching medically important or pestiferous mosquitoes or other flying insects has been to use a suitable bait to attract host-seeking females, and human bait has been used for many years to collect anthropophilic species. Later developments included inclosing human or animal baits in nets, cages or traps which, in theory at least, permitted the unhindered entry of mosquitoes, but prevented their escape. Light traps, especially in North America, have for the most part replaced human and animal baits as routine sampling techniques. However, according to Hock-

ing (1971) no really effective attractant has been found to replace a natural host and consequently human bait catches remain the single most useful technique to collect anthropophilic mosquitoes. Service (1976) provides the most up-to-date information on human bait catches and equipment.

The original trap utilizing animal or human bait was the Magoon (1935) trap. Various modifications of this trap have been made over the years, but basically the method of attracting the female mosquito to the bait and collecting it while feeding, landing, or resting after feeding, has not differed significantly from trap to trap. The bait trap described offers the unique potential of collecting mosquitoes attracted to humans without exposure to bites by the mosquitoes. This will allow collections to be made in areas where diseases such as malaria, mosquito-borne encephalitis, etc. are prevalent without endangering the collectors to these diseases during the sampling hours.

¹The opinions contained herein are those of the author and should not be construed as official or reflecting the views of the Department of the Army. Mention of proprietary products is for the purpose of identification only and does not imply endorsement by the Department of the Army.

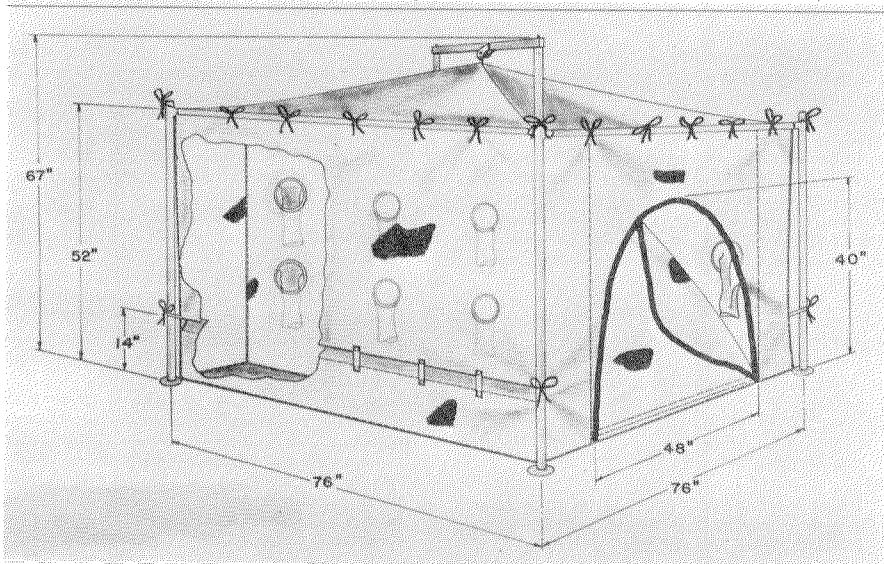


Fig. 1. Mosquito Bait Trap.

A prototype trap similar to the one described was fabricated at the US Army Medical Bioengineering Research and Development Laboratory, Fort Detrick, Maryland and tested in the Panama Canal Zone in March 1977. The trap successfully collected mosquitoes, especially *Anopheles albimanus* Wied., but several basic deficiencies were noted that decreased the overall efficiency of the trap. The trap was modified to correct the identified problems and a final prototype constructed (Figure 1).

The sides of the trap are constructed of non-metallic fiberglass insect screen, 22 mesh count. The sides are 76" x 52" and contain 2" slit openings 14" above the ground. A 3" beveled flap extends from the bottom of the slit and angles up into the inner collection area. This provides free entry for the mosquitoes, yet prevents easy exit from the trap.

The front of the trap is fitted with a brass zippered entrance 40" high with a bottom width of 48". The zipper is double-sided and can be manipulated from inside or outside the trap.

The key to trapping the mosquitoes is the 2 collection chambers located on each side of the trap. They are 76" x 52" x 12" and are sewed into the main trap body. Each innermost side of the collection area is fitted with 6 sleeves, which allows the collector inside to collect the trapped

mosquitoes from inside without exposure to bites.

The trap frame consists of two 1-1/2" side poles 52" long and two 1-1/2" poles 67" long. An aluminum rod 76" x 3" x 1" supports the top and provides overall rigidity for the trap. The trap body is secured to the frame by nylon tie-downs.

The trap can be set up or taken down by 2 persons in 10 min. and is easily transported in a custom made canvas carrying case. The total weight is ca. 30 lb.

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