A LOW COST FLOATING CAGE TO TRAP EMERGING MOSQUITOES UNDER URBAN OR RURAL CONDITIONS

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Several authors such as Service (1970, 1976) and Pritchard (1980) have developed a variety of traps for emerging mosquitoes. These are conical or box type traps which float upon or are attached to the substrate. The mosquitoes are removed from the trap by a collecting jar on top or by aspiration, or both. The present investigators conceived on similar lines a simple design for a low cost trap for collection of mosquitoes emerging from open pit-latrines and ditches beside human dwellings in urban and rural areas of developing countries such as India.

The cage, 17 cm in diameter is fabricated from two white conical plastic electric lamp shades and white cotton gauze (Figs. 1 and 2).

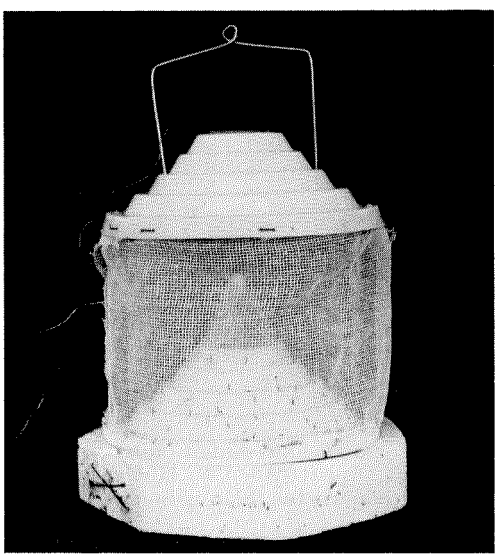

Fig. 1. Floating cage trap.

These two lamp shades are arranged one above the other 15 cm apart with their apices directed upwards. Two pieces of teakwood, 25 cm in height, are used as supports to keep the shades

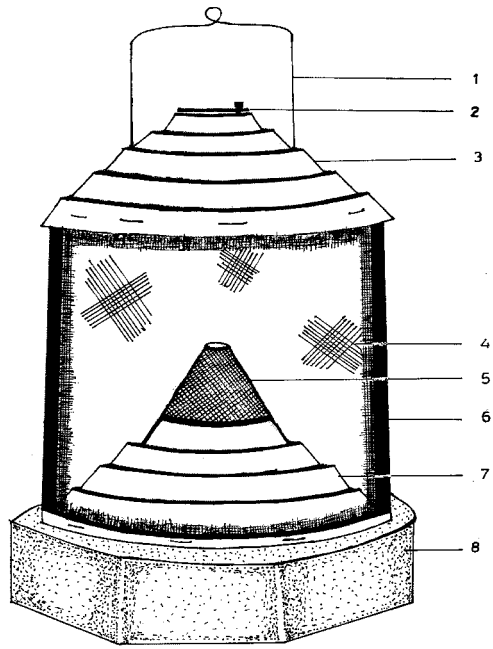

Fig. 2. Diagram of floating trap showing components. 1) Handle, 2) Hinged door, 3) Upper lamp shade, 4) White cotton gauze, 5) Cone trap (1 cm porthole), 6) Teakwood support, 7) Lower lamp shade, 8) Styrofoam rim.

apart. The lamp shades are firmly screwed to these pieces. The top of the upper shade is provided with a hinged door which helps in removing trapped mosquitoes at the end (Fig. 2). This hinged door has a provision for rubber tubing to be inserted into the cage to allow the mosquitoes to be anaesthesized with CO_2. The upper shade is also provided with a wire handle for easy carrying of the entire cage.

A plastic cone trap with a 1 cm diam. porthole is attached to the opening at the apex of the lower lampshade. The two shades and their wooden supports are encircled with cotton gauze making it mosquito-proof, except for the underside of the lower lamp-shade. A heptagonal expanded polystyrene (styrofoam) rim 1–2 cm thick, outer diam. 19 cm and inner diam. 17 cm, was fixed to the lower edge of the lower shade with the wire clamps (Fig. 2). This lightweight rim allows the entire cage to float on the water. The weight of the cage, which is 23 cm tall and 54 cm in girth, is only 150 gm. The cost of the entire cage is around 6 Indian rupees (=US $ 0.60) besides labor charges.

[1] Published with the assistance of a grant from the S. C. Johnson Co., Racine, WI.

After confirming that larvae were present, the trap was lowered into an open pit-latrine or ditch on a plastic thread tied to the wire-handle until the plastic base reached the water surface (Fig. 3). The plastic thread was attached to the wall of the pit-latrine in order to prevent movement of the trap. Pupae gather directly beneath the trap as it provides the necessary shade. This was demonstrated by laboratory experiments conducted indoors and outdoors (unpublished data). When the adults emerge, they escape through the lower lampshade and conical plastic trap into the cage (Figs. 1 and 2), and once they enter they cannot escape. After one or two days the cage was lifted out and a cotton plug was inserted at the opening of the conical plastic trap of the lower lampshade to prevent any escape of mosquitoes. The trapping capacity of this cage depends upon the availability of pupae in that particular pit-latrine or ditch. The entire trap can be placed in a freezer to kill the mosquitoes or they can be anaesthetized with Co_2 introduced by rubber tubing on top of the upper lampshade as already described. This trap is used in areas where open pit-latrines (lacking lids) or ditches are situated close to the human dwellings.

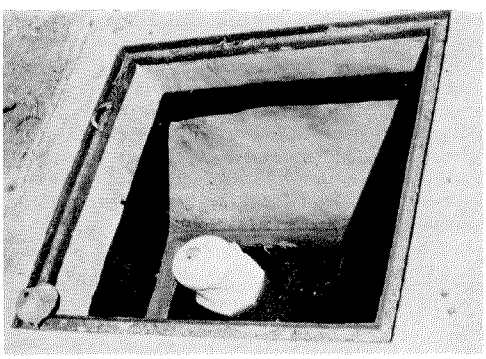

Fig. 3. Trap in use inside the pit-latrine of S. V. University campus, Tirupati, India.

The present cage has been used several times on our University Campus for trapping mosquitoes; all were *Culex quinquefasciatus* Say which is the only species breeding in pit-latrines (Table 1).

The first author gratefully acknowledges the Indian Council of Medical Research, New Delhi, India, for their fellowship (Grant no. 70/166/80 ECD–II). Thanks are given to the Head of the Department of Zoology, S. V. University, for providing necessary facilities.

Table 1. Adult *Culex quinquefasciatus* collected with the emergence trap from pit-latrines on the S. V. University campus, Tirupati, India.

Date (1984	Duration (hr)	No. of mosquitoes trapped
March 6	24	26
March 8	36	120
March 9	18	31
March 10	28	87
March 12	36	169
March 14	48	240

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SUSCEPTIBILITY OF *ANOPHELES QUADRIMACULATUS* AND OTHER MOSQUITOES TO *BRUGIA PATEI* (NEMATODA: FILARIOIDEA)[1]

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Brugia patei was described by Buckley et al. (1958) from the lymphatic systems of dogs, cats and Genet cats on Pate Island off the coast of Kenya. It was brought to England by these authors in the mosquito vectors, *Mansonia africana* (Theobald) and *Mansonia uniformis* (Theobald), and there it was maintained in cats. Subsequently, Laurence and Pester (1961a, 1961b) showed that laboratory colonies of *Ma. uniformis* and *Anopheles gambiae* Giles, both common mammal-biting mosquitoes in Africa, could be successfully infected with *B. patei,* and later, Laurence and Pester (1967) adapted *B. patei* to *Aedes togoi* (Theobald), a species present in China, Korea, Siberia and Japan. Oothuman et al. (1974), however, described its abnormal development in *Anopheles atroparvus* Van Thiel, a western European species. In early 1970, *B.*

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