resistance in house flies, altered forms of a butyrate-hydrolyzing ali-esterase, is not present in *Culex* or *Anopheles* and may be the reason there is almost no resistance to organophosphates in mosquitoes of these genera.

A 3-year selection of a susceptible strain of *C. tarsalis* with parathion resulted in a strain with not more than 2-fold resistance to the insecticide.

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AN AQUATIC TRAP FOR SAMPLING MOSQUITO PREDATORS

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In studying the natural control of mosquitoes near Belleville, Ontario, it was necessary to investigate the role of predacious arthropods, especially aquatic Coleoptera. A new type of aquatic trap was devised that was particularly effective in capturing water beetles. The trap requires no source of attraction or bait and captures beetles at various depths with litttle disturbance of the habitat. A series of traps may be used to obtain information on beetle activity and numbers and also provide specimens for dissection.

The trap (Fig. 1, top) consists of a holding cage (A), a trap-jar (B), and an anchor rod (C). The holding cage is constructed of 16-mesh brass screening on a frame of ¼ inch x 1/32 inch thick copper angle. Dimensions are 5 inches long and 4 inches wide and deep. The entrance at the front is of screening shaped to form a four-sided funnel with a terminal opening (D)

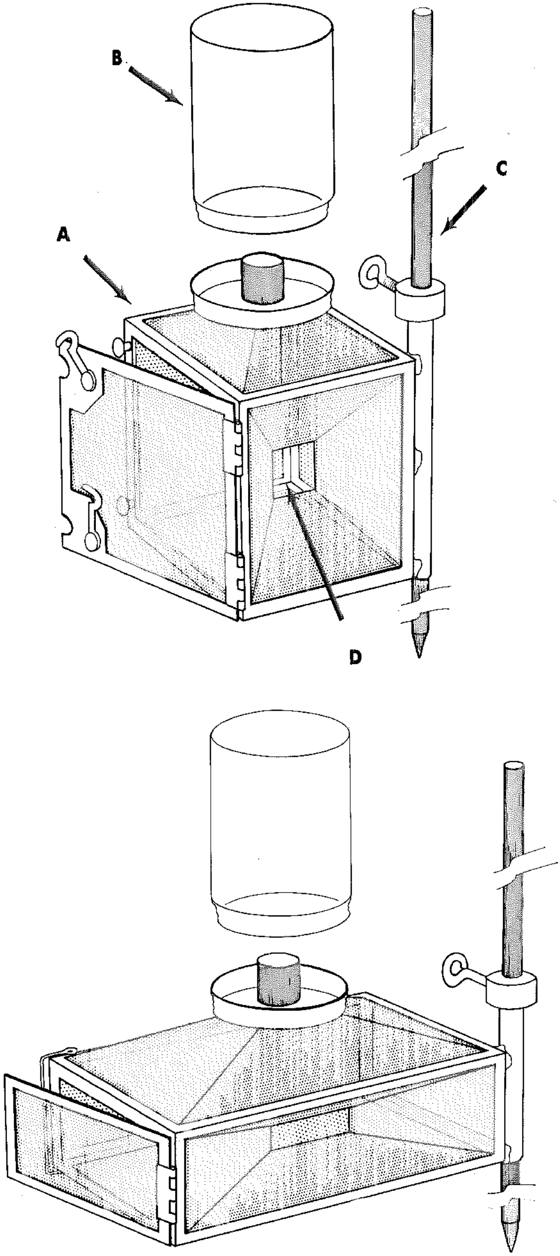

FIG. 1.—*Top,* trap showing holding cage (A), trap-jar (B), anchor rod (C), and terminal opening of entrance (D). *Bottom,* similar trap for use in shallow water.

1 inch square. The slightly pyramidal roof of the cage supports the trap-jar and has an entrance into it through a 1-inch length of ¾-inch copper tubing to which the trap-jar lid is fixed. Access to the cage is provided on one side by a door hung on 1-inch brass hinges and fastened with a hook and pin. The trap is secured to the pool bottom by a ⅜-inch diameter metal anchor rod, of suitable length, which is passed through a support of 7/16-inch copper tubing soldered to a front corner of the holding cage and furnished with an eye-bolt as a set-screw.

A similar trap for use in shallow water (Fig. 1, bottom) has a holding cage of dimensions 8 x 5 x 2 inches, but retains the same areas of 16 square inches and 1 square inch respectively for the entrance and terminal opening.

To set, the trap is immersed in an inverted position and the trap-jar allowed to half-fill with water. The trap is then turned right side up and, while still submerged, the anchor rod is passed through the support and pressed firmly into the pool bottom. The trap is then adjusted to the desired height, but never with the lid of the trap-jar above the surface. The shallow water trap rests on the bottom, with or without a support. The reverse procedure is used to empty the trap: after the anchor rod is removed the trap-jar is submerged, then inverted and lifted from the pool and the trap-jar removed by unscrewing it from the lid. Debris in the holding cage may be removed by opening the hinged door.

In 1963, 18 species of Dytiscidae, 5 of Hydrophilidae, and 2 of Gyrinidae were collected in these traps. They ranged in size from the small *Laccophilus maculosus* (Germ.) to large specimens of *Dytiscus* sp. Relatively few beetle larvae were caught, as the traps were mainly set above the pool bottom, but those that were captured included *Agabus* spp., *Colymbetes sculptilis* Harr., *Hydrochara obtusata* (Say), and *Dytiscus fasciventris* Say. The average catch in 27 traps with 2-day settings was 7 (range 1–26) adult beetles. Larger numbers were trapped, however, when the beetle populations became concentrated in shrinking pools. On one occasion, a trap contained 103 beetles, and on another, 312 of which 300 were of *Agabus erichsoni* G. & H. Other organisms trapped in permanent pools also included 7 species of Hemiptera, 3 of fishes, and immature amphibia (*Rana, Ambystoma* and *Triturus* spp.).

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