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AEDES ATROPALPUS IN ABANDONED TIRES IN JEFFERSON COUNTY, KENTUCKY[1]

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Answering a complaint as an employee of the Louisville—Jefferson County Department of Public Health Mosquito Control Project, the junior author collected 31 mosquito larvae from abandoned tires behind a tire store in downtown Louisville, Kentucky, on 27 July, 1978. The senior author identified all the larvae as *Aedes atropalpus* (Coquillett). More larvae were taken on 11 and 18 August and reared and identification of the adults substantiated the original determination. During the 18 August visit the tires were treated with a suspension of chlorpyrifos (Dursban®) in water. No other mosquito species was found cohabiting the tires during these 3 visits.

No more larvae were found in these tires until 11 September, when 11 *atropalpus* larvae were recovered along with several *Culex pipiens* Linnaeus and *Cx. restuans* Theobald. At another site about a block away, other tires were found to harbor 16 *Ae. atropalpus,* along with *Ae. triseriatus* (Say), *Cx pipiens,* and *Cx. restuans* (collections on 7 and 18 September). No collections were made after 18 September, and the Health Department had by that time initiated legal measures to force the owners to remove the old tires.

Although *Ae. atropalpus* had not been reported from Kentucky by Covell (1968), a single specimen was reported from Cumberland Falls, Whitley Co. (in southeastern Kentucky) by Zavortink (1972), collected by N. E. Good on 12 August, 1948. Our collections of this species represent the first record for Jefferson County, and apparently for the lower Ohio Valley area, representing a larval population extending from 27 July to 18 September, 1978. More important, here is solid evidence that *Ae. atropalpus* will breed in old tires. Breeding sites for this species are usually characteristic of those cited by Zavortink (1972): "holes in rock and concrete, and in rock-filled pools."

Larval and adult specimens referred to here are deposited in the collection of the University of Lousiville. This addition brings to 42 the number of mosquito species recorded from Jefferson County, Kentucky. The authors thank Maj. Edward S. Saugstad, U. S. Army, for his input.

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A METHOD FOR DEMONSTRATING MOSQUITO EGG HATCH TO LARGE AUDIENCES USING A 35 mm SLIDE PROJECTOR[1,2]

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Demonstration of mosquito egg hatch and other phases of mosquito biology usually requires providing microscopes for each individual or for small groups of individuals. This does not pose a serious problem in the laboratory-classroom; however it can be time-consuming if not impossible when large audiences are involved, particularly away from the classroom.

The method herein described involves construction of a small glass cell which can be

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mounted in a metal or plastic 35 mm slide holder for projection. The dimensions of the cell are not critical but will be determined by the size of the cover slip used to form the second side of the glass cell. Normally 2 pieces of glass measuring 34 mm x 37 mm come with the slide holder. One was used to form one side of the cell. A rectangular cover slip measuring 22 mm x 30 mm was used to form the other side of the cell. The two sides of the cell were separated by a length of 22 gauge wire which was bent into a rectangular shape slightly smaller than the dimensions of the cover slip as shown in Fig. 1. (Generally when wire is pulled off a spool it has many bends or kinks. These can be simply removed by clamping one end of the wire in a vise and pulling on the other end until the wire stretches slightly.) Two pieces of small diameter tubing are placed in the small opening left in the wire frame. The shorter of the two tubes provides a channel for air to escape while water is introduced with a hypodermic syringe into the longer one. Length of tubes is not critical, however, the longer tube should be of such length that water can be injected into the cell while the slide is in the projector. The parts of the cell should be put together in the following order: a) Place larger glass plate on flat surface. b) Place wire separator in position on glass plate. c) Place mosquito eggs within area enclosed by wire separator. (Fig. 2A). d) Place cover slip and tubes in position (Fig. 2B and 2C). e) Seal all sides with 5-minute epoxy. f) Place glass cell between 35 mm frame halves and tape halves together (Fig. 2D).

The finished slide (Fig. 2E) can be placed in a 35 mm projector and the dry eggs can be viewed on the screen. While projecting, water can be introduced into the cell and shortly

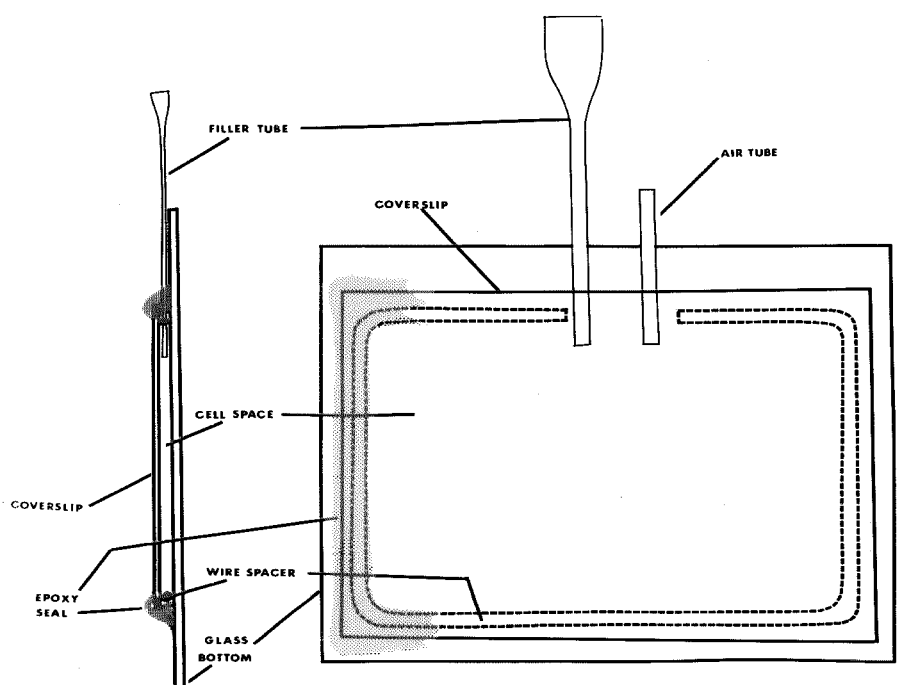
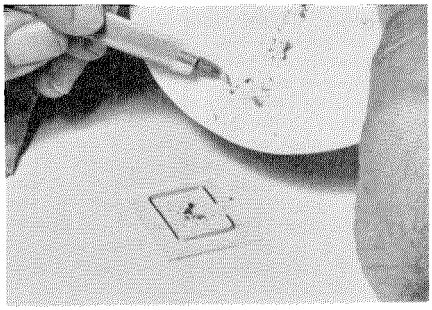
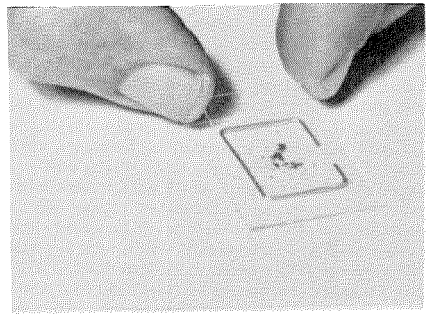
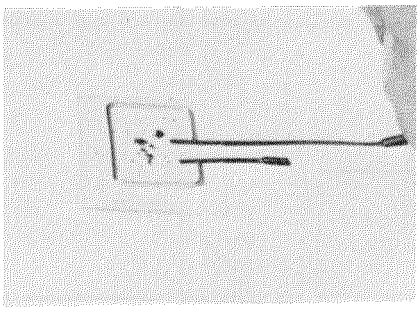
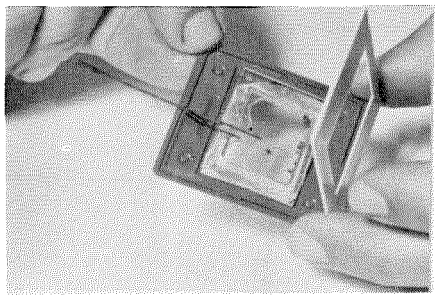


Fig. 1. Details of cell construction.









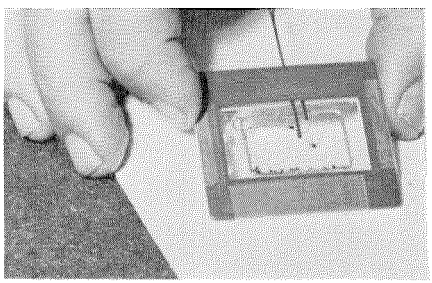


Fig. 2(A-E). Placing *Ae. aegypti* eggs in area surrounded by wire spacer, 2B. Placing coverslip in position, 2C. Placement of tubes, 2D. Placing assembly between halves of 35 mm slide holder, 2F. Finished slide.

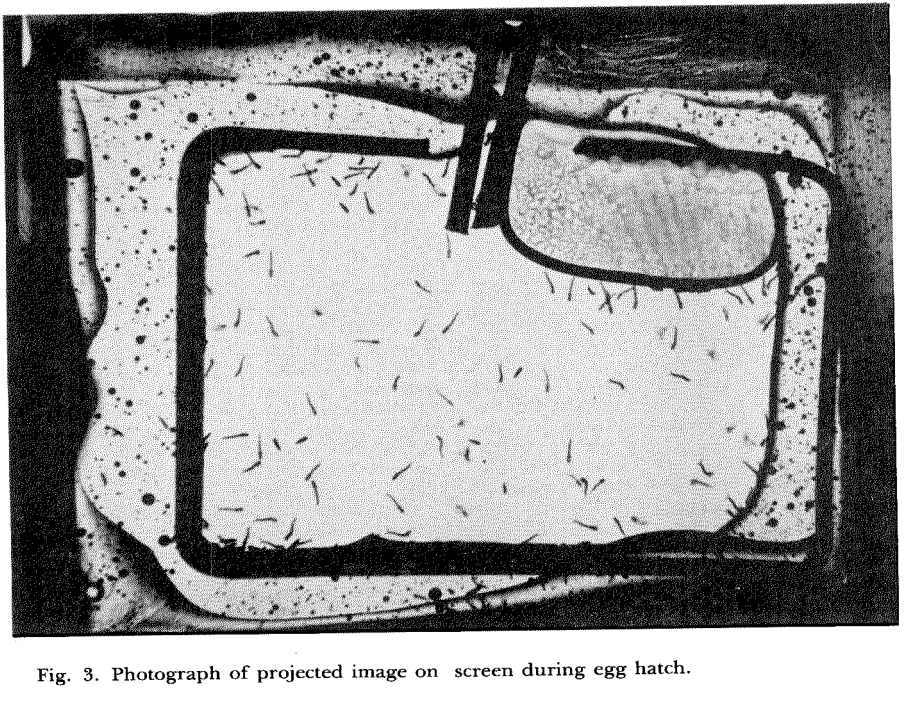


Fig. 3. Photograph of projected image on screen during egg hatch.

thereafter, egg-hatch can be viewed on the screen as though it were a motion picture (Fig. 3). What better way to dramatically illustrate to an audience what happens following a flooding rain or tide!

The projected image is inverted, therefore the unhatched eggs appear at the top of the screen, while the water surface appears at the bottom. In this work, conditioned *Aedes aegypti* eggs were used and egg-hatch commenced within 3–10 minutes after flooding.

Slight modifications in the cell structure have also been used for viewing various immature stages. Modified cells are sealed on 3 sides only and can be used more than once. With the proper spacing of the two pieces of glass, pupae as well as larvae can be held in a flat plane and carefully examined while alive. Mouth brush movements as well as various other events can be easily and clearly observed.