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A METHOD FOR CULTURING SINGLE
FAMILIES OF *ANOPHELES*
*ALBIMANUS*¹

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Dame et al. (1974) described an efficient method of culturing the mosquito *Anopheles albimanus* Wiedemann suitable for the production of the large numbers needed for mass releases into natural populations. We have been successful in adapting this method so that it is suitable for rearing a small number of mosquitoes, e.g., a single family culture. With this rearing procedure, we usually observe more than 90% survival from larvae to adults. Such a method is very necessary in genetic studies that require an accurate estimate of different phenotypes within a single family.

We isolate individual gravid females in plastic tubes (2.5 x 6 cm) lined inside with a strip of filter paper. The vials contain 5 ml water infused with 0.5 ml of 2% liver powder-yeast (2:1) suspension and are plugged with cotton balls. A 27 x 30-cm rack can hold 56 such vials (Fig. 1-A). Eggs are normally laid within 24 hr. On the third day after isolation when hatching is

almost complete under our laboratory conditions, temperature $28 \pm 0.5^\circ \text{C}$, we open the vials, remove the females, and whenever necessary, take out the strips of filter paper with the eggs to count for hatching percentage estimation. The batches of larvae are then transferred to 16-oz squat-type clear plastic cups (Sweetheart Plastics®) containing 200 ml water (from a subterranean well) infused with a 2-ml volume of 2% liver powder-yeast (2:1) suspension. Well water is used in lieu of distilled water because of high larval mortality observed with the latter. The cups are covered with plastic tops that have a 2-cm hole in the center. The hole is plugged with cotton and allows feeding the larvae without opening the entire lid. These cups are space-saving and can be stacked on shelves. A 25 x 135 x 185-cm wooden rack can hold about 200 cups at a time.

After the initial infusion, the families of larvae are not fed again until the fourth day when a new feeding regimen is followed. The families are given 0.5 ml aliquots of a 2% suspension of hog supplement (40% protein, made by Ralston-Purina®). The hog supplement pellets are roasted at 120°C for 1.5 hr, ground, and sieved through a 300- μm screen. We have observed that preparing and storing the suspension at 7°C for a day prior to use gives better rearing results.

When the first pupae appear which can be observed through the clear plastic cups, the amount of hog supplement suspension added each day is decreased. When more than 50% of the larvae have pupated, the feeding can be stopped al-

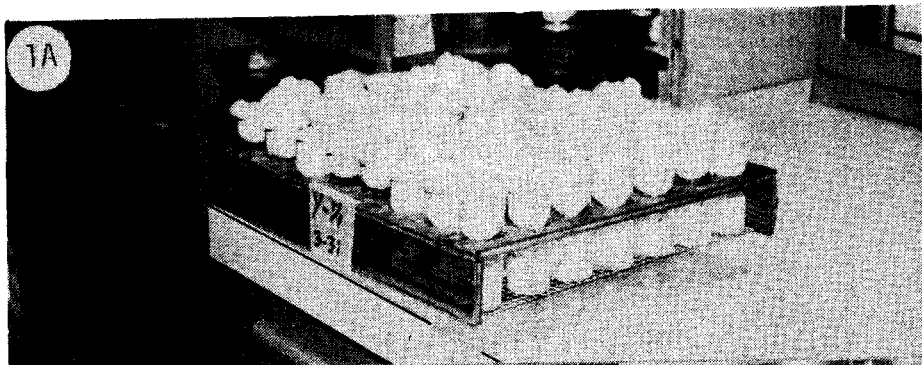
¹ Mention of a commercial or proprietary product in this paper does not constitute an endorsement of this product by the USDA.

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Fig. 1-A. Egging vials in a wooden rack.
1-B. Families of larvae in plastic cups are being fed with hog supplement.
1-C. Transferring adults from cups by a mouth aspirator.



together since there is usually enough food in the cups for the remaining larvae. Also, the pupae survive better in clearer water.

We allow the adults to emerge inside the cups and then aspirate them out through the hole in the lid (Fig. 1-C). This can be done with a mouth aspirator or a mechanical one connected with a vacuum suction.

This method of culturing single families has been very useful in our laboratory, and we routinely employ this method in various genetic experiments with *A. albimanus*. This method as such, or modifications of it, should be useful for other anopheline mosquitoes as well.

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WORLD HEALTH ORGANIZATION FELLOWSHIPS AVAILABLE TO UNITED STATES HEALTH WORKERS

The World Health Organization will make available in 1977 a limited number of short-term fellowships for travel abroad related to the "improvement and expansion of health services" in the United States. This support is to United States citizens engaged in operational or educational aspects of public health employed by governmental (non-Federal) agencies or educational institutions. In selecting applications, a special committee will consider the professional background of the individual, the field and locale of the study proposed, and the utilization of the experience by the applicant on his return. Employees of the Federal Government are not eligible. Applications will not be considered for the pursuit of pure research projects, for attendance at international meetings, nor from students in the midst of training at either the undergraduate or graduate level. Applicants may not be more than 55 years of age.

A fellowship award will cover per diem and transportation. Except in very unusual circumstances, it will be limited to short-term travel programs averaging about two months. Employers of successful applicants will be expected to endorse applications and to continue salary during the fellowships.

Priorities of award will be established up to the total of the funds available. The deadline for the receipt of completed applications is September 30, 1976.

Further information may be obtained from Dr. Robert W. Jones, III, Chief, International Education Branch, Fogarty International Center, National Institutes of Health, Room 2B-55, Building 31, Bethesda, Maryland 20014.