from a section of glass tubing, one end of which is covered with a piece of bolting silk and thrust into a section of rubber or tygon tubing. Adults should be collected on the day that they emerge and immediately placed on fresh food.

NOTES OF CAUTION. (1) The sponges in the food sticks must be thoroughly soaked, and especially the distilled water sponge. The adults must have liquid other than that in the food. The humidity in the bottle must be kept high, at least 90% relative humidity. If the rearing bottles are tightly plugged and if the humidity of the rearing room or chamber is not excessively low, the amount of liquid in the three sponges of a food stick will maintain the humidity in the bottles at an adequate level for 7 - 8 days. (2) The flies should not be crowded for they are pugnacious, especially the males. Fighting breaks their wings and increases mortality. (3) The sponge plugs can be repeatedly re-used if they are washed, rinsed and sterilized after removal from old food sticls. (4) The food sticks should be washed, rinsed, and dried after use but will not withstand sterilization. (5) The bananas should be washed in a mild detergent solution and then thoroughly rinsed before they are peeled.

Reference: 1. Wheeler, M.R. and F.E. Clayton 1965 DIS 40:98.

Travaglini, E.C. and D. Tartof. Institute for Cancer Research, Philadelphia, Pennsylvania. "Instant" Drosophila: A method for mass culturing large numbers of Drosophila.

In order to breed large numbers of Drosophila with minimum effort, we have modified Doane's procedure (DIS 45:189) for rearing larvae by substituting cellucotton (absorbent wadding, non-sterilized, obtainable at The Drug House, Philadelphia, Pennsylvania) for the plastic pad used for the substratum on which the larvae feed. Since the larvae ingest the cellucotton when it is soaked with a yeast-sucrose solution, they tend to tunnel through the cellucotton and therefore have a larger surface area to feed upon than the pad surface alone, and because of the easier access to food, it allows larger numbers of larvae to be raised in a box. Also, the cellucotton is disposable after being used.

The procedure is as follows: three layers of cellucotton are placed in the bottom of each polyethylene plastic box (5-1/2" x 7-1/2" x 3-1/2"; Freezette-flat, manufactured by Polly-flex) in whose detachable lid a ventilation hole (3" diam.) has been cut and covered by two layers of double-thick gauze secured with tape. To each box, 200 ml of the following medium is added (40 g of fresh brewer's yeast, 20 g of sucrose, and 140 ml of acid mix A). Acid mix A (0.4% propionic acid and 0.06% phosphoric acid) (Lewis, E.B., DIS 34:117) can be made up in ten liter quantities and stored at room temperature until used. Then, on the surface of each pad, a filter paper (2" diam., Whatman #1) containing 0.5 - 0.7 ml of fertilized eggs (proferably 18-hr embryos) is placed. Care should be taken not to drown or dry out these embryos before they hatch; the filter paper should be damp but not wet! If flies are desired, the boxes are incubated at 25°C in a properly ventilated area for six days and then after pupation, the cellucotton pads are transferred directly to population cages where the flies will hatch; after hatching, the cellucotton pads are discarded. Each box will yield approximately 5-7 g of adult flies.

If larvae are to be harvested, 100 ml of H_2O should be added to the cellucotton in each box just as the larvae begin to climb and another 300 ml H_2O 1 hour before the actual harvest takes place; the water will cause all the larvae to climb out of the cellucotton onto the sides of the box. The larvae are harvested by scraping them from the sides of the box with a spatula. Each box yields approximately 12 g of uniformly sized larvae.

This method has also been adapted to breeding flies in stock bottles over a period of two weeks at 25°C. In order to control the pH of the nutrient medium over this period of time, the yeast-sucrose medium had to be modified. The procedure is as follows: a wad of cellucotton (2" x 8", 2 layers thick) is pushed into the bottom of a bottle and this is wetted by the addition of a mixture of 6 g yeast, 3 g sucrose and 50 ml acid mix A, then 10 pairs of mature adults are put into a bottle. Each bottle yields approximately 1 g of flies.

(Work supported by USPHS grants CA-01613, CA-06927 and RR-05539 from the National Institutes of Health, and by an appropriation from the Commonwealth of Pennsylvania.)