

Delcour, J. F. A. Janssens Memorial Lab., University of Louvain, Heverlee, Belgium. A rapid and efficient method of egg-collecting.

seems interesting, however, to propose an additional one which is regularly used in our laboratory and which gives the best results. Our starting point was the current observation that an abundant egg-laying happens regularly after renewal of the nutrient medium by transferring flies in fresh bottles. It seemed thus rational to synchronize the period of feeding with the period of egg-harvesting.

Flies are left in empty bottles, without food, for five or six hours. In order to allow good ventilation and to avoid excessive humidity the tips of these empty bottles are provided with a device fixed with cellotape, as illustrated in figure 1; a common cotton plug stoppers the flasks. No damage results from this treatment, even if regularly repeated. This starvation blocks almost entirely oviposition: only a few eggs are deposited on the

One of the most critical needs in performing developmental studies with *Drosophila melanogaster* is to collect a great quantity of eggs of the same age. Several systems, more or less sophisticated, have been described as yet; it

Figure 1

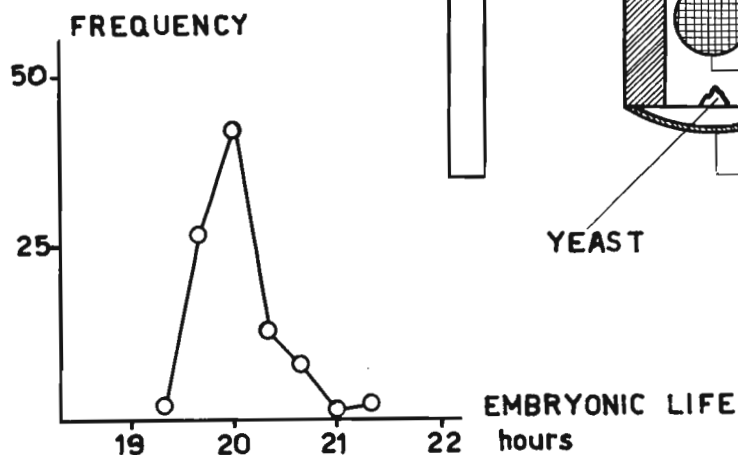
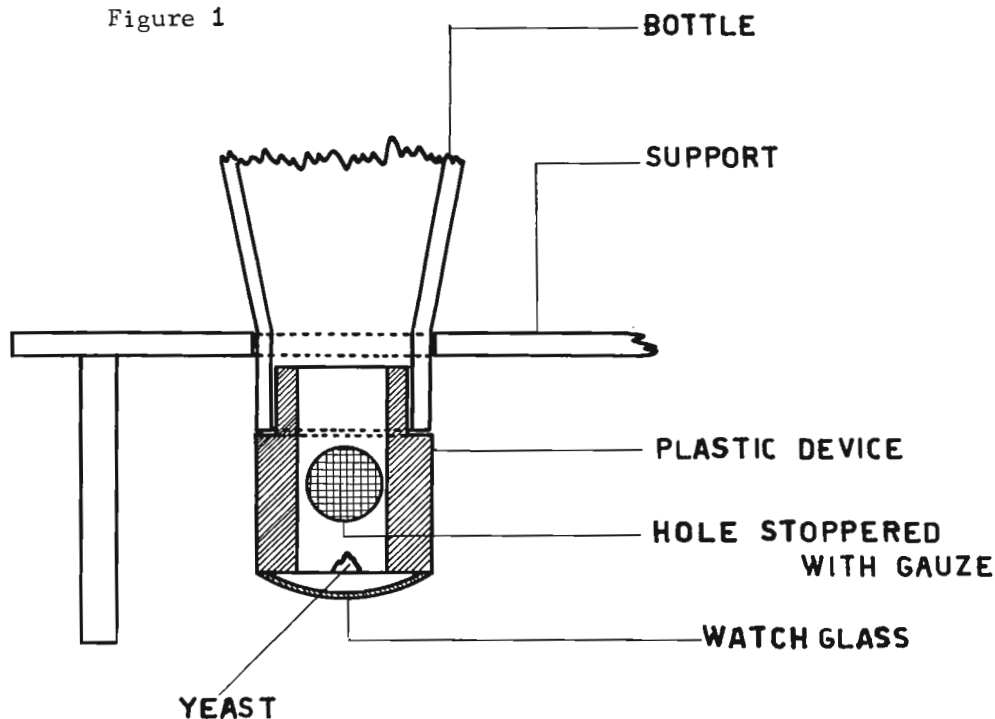


Figure 2

sides of the bottles. At the end of this starvation period cotton plugs are removed and replaced by small watch glasses filled with the classic agar-acetic acid medium* (the upper part of which being cut off to make the surface rough), and furnished with a touch of pasty yeast; these glasses are fixed with cellotape. The bottles are then turned over and placed on a plexiglas support in which holes are perforated: their diameter corresponding to the neck of the bottle, as shown in figure 1. The flies are so provided with food and, at the same time, stimulated by acetic acid: an abundant egg-laying ensues, which is maintained during 3 or 4 hours.

If eggs of the same developmental stage are needed, the first hour harvest is discarded: it contains many eggs which were retained during starvation and which are thus at very variable stages. The eggs laid after the preliminary period are very homogeneous: their real age corresponds to the moment of oviposition, as shown by the unimodal and narrow-shaped eclosion curve in figure 2, which describes the hatching of larvae from 100 eggs collected during 20 minutes after a preliminary period of one hour (Urbana wild stock).

Our system seems to be very simple and rapid: forty bottles can be handled within 10 minutes without difficulty, and twenty thousand eggs of the same age can easily be obtained from young flies during half an hour following the preliminary first hour.

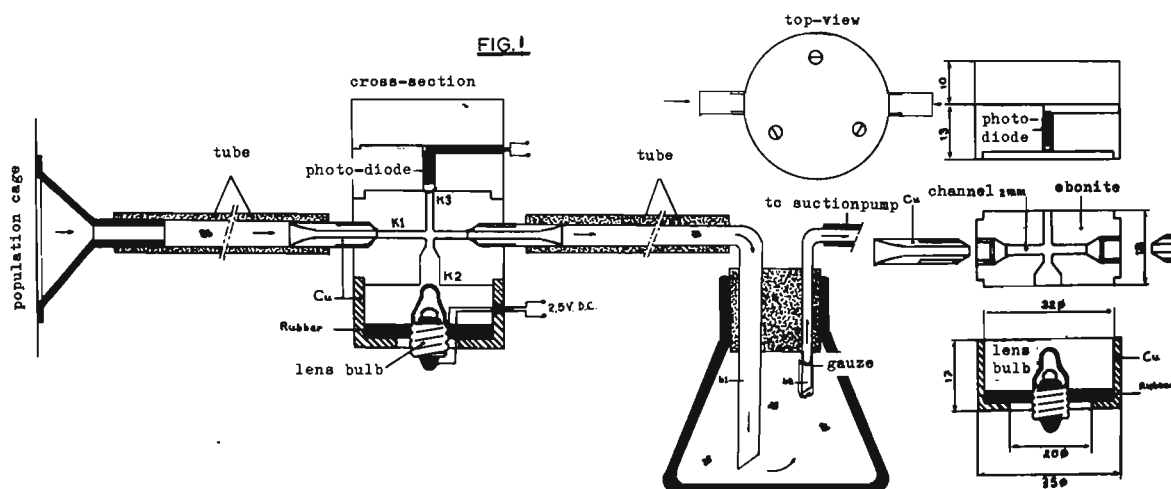
*100 cc water, 3 g agar-agar, 2.5 cc ethylic alcohol, 1.5 cc acetic acid.

Cuperus, P., J. A. Beardmore and W. van Delden. Central Electronics Service and Genetics Institute, University of Groningen, Haren (Gr.), The Netherlands. An electronic fly-counter.

The size of cage populations of *Drosophila melanogaster* can easily be determined, without etherizing the flies, with the aid of the electronic fly-counter described below. The flies are sucked out of the cage by means of a suction pump, pass through a counting head and

are then stored in a bottle. To prevent flies from entering the pump, the opening of the tube from the bottle to the pump is covered with fine gauze.

The counting head (figure 1) possesses two perpendicular intersecting channels; the flies are carried through channel k_1 with a tapered entrance leading to a straight section with a diameter of 2 mm*. The other channel (k_2k_3) is the counting channel and has a lens bulb L (2.2 V - 0.25 A, Philips) fed by D.C. at the end of k_2 . A photodiode (Philips OAP-12) is fitted opposite to L at the end of k_3 . The flies moving through k_1 interrupt part of the beam of light falling on the photodiode.



In the amplifier-discriminator and pulse-shaper, (fig. 2), the photodiode is connected in series with a resistance of 270 k Ω connected to the -15 V. supply. The flies moving through k_1 cause a negative impulse of about 5 V over the photodiode. The pulse width