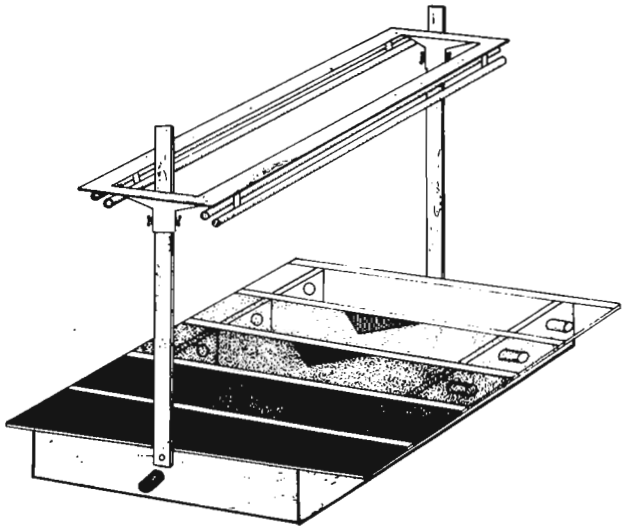
Kekić, V., D. Marinković, N. Tucić and M. Andjelković. Institute for Biological Research, Belgrade, Yugoslavia. Apparatus for a measurement of phototactic behavior in Drosophila at different light intensities.

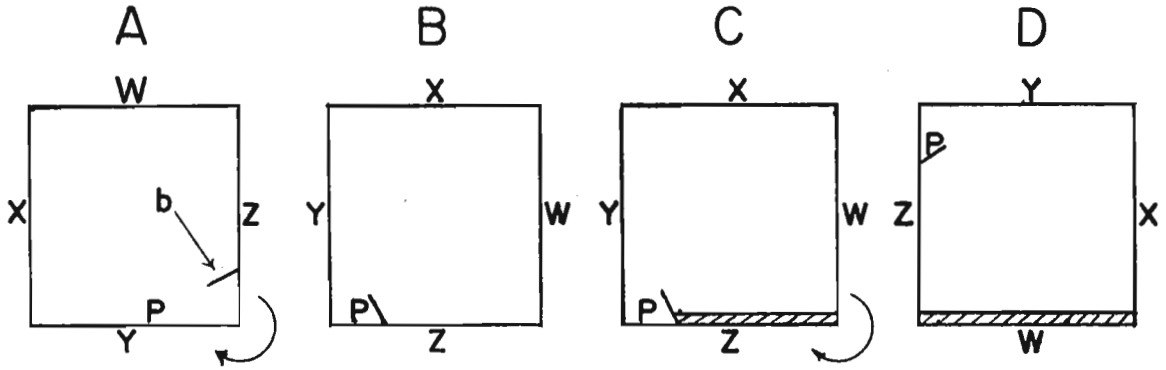


The apparatus contains a few rectangular cells where different light intensities in very broad limits may be simultaneously obtained. Dimensions of each cell are 10 x 40 x 10 cm, and they are connected through a triangular space 12 cm wide. At both sides of each rectangular cell a bottle with culture medium is placed, where the flies can be collected. Every rectangular cell is covered by a glass plate, on which a thin layer of gelatin with a different concentration of ink is resolved, giving in each space a determined intensity of light (this can also be made by using different numbers of thin white paper sheets). As the light source, four neon tubes (40 w each) were used giving the light-spectrum in a range of 400-7000 Angströms. By changing the filters and the distance of the light source, gradual differences in the amount of light in the rectangular spaces from 0 to 5000 lux can be obtained.

Williamson, R. University of British Columbia, Vancouver, B.C., Canada. A screening device for separation of immobilized adults from normal flies.

In order to screen for temperature-sensitive paralytic adult flies from a large population of offspring of mutagenized males, a plexiglass screening box was devised. The following diagrams are end-on views of the box whose only internal feature is a diagonal barrier (b) which runs the length of the box.

Flies which have been raised at 22°C are shaken into the screening box which has been preheated to 29°C. The box is then maintained at this temperature for 1/2 to 4 hours. Any



fly which is immobilized (P) will have fallen to the y surface (A). The box is then rotated 90° so that P falls onto the z surface (B) to the left of the diagonal barrier. A small quantity of vineger and detergent is poured onto the z surface to the right of the barrier (C). The box is then rotated 90° and the active flies which are not behind the barrier are shaken into the solution (D).

Provision must be made for good ventilation.

The design minimizes the deleterious effects of crowding as well as the number of physical obstacles which tend to inhibit free movement. A 6" x 6" x 18" box will easily screen six thousand flies at a time. The apparatus has been successfully used for isolating a temperature-sensitive paralytic mutant.

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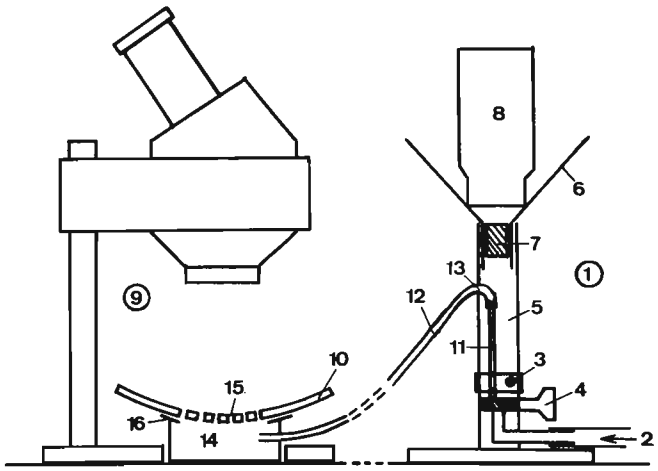
Würgler, F.E., M. Lezzi and U. Graf. Swiss Federal Institute of Technology, Zürich, Switzerland. A device for easily anaesthetising large numbers of flies.

The figure shows a scheme of the device. A bunsen burner equiped for a pilot flame (1) is connected by plastic tubing to a CO_2-cylinder (2). The air inlet (3) of the burner is sealed with Araldit. If the valve of the burner (4) is in position "flame", the carbon dioxide flows through the large tube of the burner (5) and enters a plastic funnel (6) fixed to the top of the burner. A foam rubber stopper (7), through which the gas can penetrate, is placed in the neck of the funnel. Bottles or vials (8) containing flies are put upside down into the funnel. Upon gentle shaking the flies fall into the funnel and are immediately immobilized by the CO_2 and accumulate on the foam rubber stopper. For inspection of the flies under a microscope (9) they are - by removing the funnel - transferred to a concave plastic dish (10). In order to keep the flies continuously in a CO_2-atmosphere, the valve (4) is switched to position "pilot". Now the gas stream passes through the thin tube (11) of the burner. On top of the shortened thin tube a plastic tubing (12) is fixed. This plastic tube passes through a hole (13) in the wall of the large tube (5) and is connected to a cylindrical box (14). From this box the gas stream reaches the flies through a large number of very small holes (15) in the plastic dish. This dish is made by cutting out a circular piece from a conventional plastic bowl. The edge of the box (14) is covered with a strip of rubber (16) to avoid electrostatic loading of the plastic dish resulting from its movements. The use of a heat shielded microscope lamp is recommended. With this device large numbers of flies can be inspected over a very long period without the interruption of work for reanaesthetising and without danger of killing the animals.



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Shorocks, B. University of Leeds, England. A culture medium for rearing Drosophila species.

The following medium is quickly prepared and members of the quinaria group of Drosophila often difficult to breed on standard laboratory media can be reared quite successfully on it.

The following ingredients are required: 100 cc water, 5 g Instant Breakfast Cereal, 5 g brown sugar, 12 g yeast (dried), 3 g agar, 0.3 g nipagin. The Instant Breakfast Cereal, brown sugar and dried yeast are added to about 2/3 of the cold water. After bringing the mixture to a boil and cooking for a few minutes, the agar and nipagin, dissolved in the remaining 1/3 cold water, are added. The whole mixture is cooked for about one minute before being poured into culture bottles.