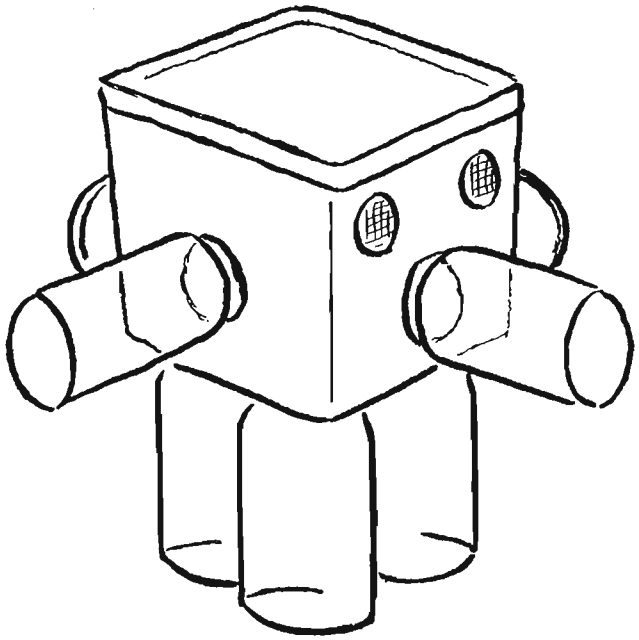
Ayala, Francisco J. Rockefeller University, New York, New York. An inexpensive and versatile population cage.

I have designed a small population cage which is being used in several laboratories for both research and teaching. The cages support populations of 1000-3000 adult flies, which can be easily censused. The cages can be washed and reused. They occupy little shelf space. The cost of materials is less than $1 per cage.



The cages are made of 1-pint flexible plastic containers with lids, available commercially for refrigerator storage. Four holes, 1 1/8" diameter, are cut in the bottom to fit 1-ounce wide-mouth specimen jars with Drosophila medium. Two small ventilation windows, 7/8" diameter, are cut on one side; squares of 40 gauge brass mesh are secured to the plastic by heating them. Opposite the ventilation windows an additional 7/8" hole is cut which remains plugged except when flies are introduced. Etherized flies are placed in 1-cent coin collector plastic tubes, which fit these holes, and allowed to fly into the cages as they recover. To take a census, a plug with a few drops of ether is placed in this window; the cage is inverted and gently shaken until the etherized flies fall on the lid which is then removed.

If more than four food jars are desired, four additional holes can be cut, one on each side of the cage (see figure). If a larger cage is preferred, 1-quart or 2-quart containers may be used which can support more food jars. Using a drill press, I built 40 cages with the help of a student in about three hours.

Schmidt, P. and H. Traut. Institut für Strahlenbiologie, Westfälische Wilhelms-Universität. A method facilitating the counting of Drosophila eggs in experiments on dominant lethals.

In our experiments on dominant lethals we use the following method which facilitates the counting of the eggs.

The food medium blackened by adding powdered charcoal is poured into petri dishes. While the food is still soft small disks (diameter 24 mm) of wire mesh (1.5 x 1.5 mm) are slightly pressed on it. The disks are then tight on the medium surface especially if ordinary meal (yielding a smoother medium surface) is used instead of cornmeal. The wire mesh disks serve as a "raster" facilitating egg-counting considerably. The eggs are viewed at a magnification of 10 times. So far no differences in the number of eggs laid per female have been noted when either an unpainted (but colourlessly lacquered) or a painted copper wire mesh is used. In the former case it is advisable to filter the light of the microscopic lamp by blue glass. The area covered by the disk is then smeared with a baker's yeast suspension. The flies are retained on this area by a glass cylinder (diameter 28 mm, height 80 mm), the upper end of which is closed by cotton. Several cylinders can be pressed into the medium of one petri dish. The use of vials with bottom (instead of glass cylinders) which are inverted on the petri dishes has proved to be unsatisfactory because it results in a depression of the viability of the flies, the number of eggs laid per female, and the hatchability of the eggs.

We prefer to put only one female per cylinder in order to be able to exclude those (probably uninseminated) females laying only non-hatching eggs.