

Observations on eggs, larvae, pupae and flies

Beadle, G.W. Collection of eggs. For the collection of eggs for measures of egg or larval-pupal mortality, small paper spoons containing food have commonly been used. They have the disadvantages of giving a food mass of unequal thickness and usually with a rounded surface. Detection of all the eggs is often difficult. Small nickel boxes made of sheet material about 0.3 mm. thick and of the dimensions 15 x 40 x 4 mm. with a strip 45 x 10 mm. soldered to the bottom so as to project about 30 mm. have been found to be very useful for egg counts and for collecting larvae of known ages. Standard cornmeal agar (containing animal charcoal, if desired, to increase the contrast) is pipetted into these boxes, filling them level full. They can be used in 20 x 100 mm. vials very conveniently. Examinations under a binocular can be made very rapidly. Experiments with different media with and without yeast indicate that yeast is a very important factor in stimulating rapid egg-laying. Standard food "painted" with a rather heavy suspension of yeast gives very satisfactory results. If it is necessary to have the eggs develop into adults, it is easy to slide the food mass out of the box on a cardboard strip 9' x 70 mm. It can then be transferred with eggs or larvae to a standard culture bottle containing food. With care, no eggs or larvae need be lost in the transfer. (Copied from DIS-4:64).

Marshak, A. Collection of eggs. Instead of using the metal containers for the agar-bone black medium, as suggested by Beadle, I have used strips of wood which can be easily cut and grooved with a buzz saw. The ends are then closed with plastic wood and the whole affair paraffined. The groove is filled with the agar medium till flush with the top and either seeded with yeast or moistened with acetic acid, and placed in a shell vial that is slightly longer than the wood strip. Egg counts can be rapidly and accurately made since almost the whole width of the groove is in the low power field of the binocular dissection scope. The strips may be used repeatedly by cleaning, autoclaving, and reparaftining.

Beadle, G.W. and Boris Ephrussi For collecting reasonably large numbers of eggs over known periods of time, 500 cc Berzelius beakers (without lip), stoppered with cotton enclosed in cheese-cloth, have been found convenient as containers for the adult flies. Eggs are collected on ordinary food heavily seeded with fresh yeast and held in boxes made of 26 gauge "Monel" metal. These are easily made from 2 by 3 inch pieces cut and folded to form a box 1-1/4 by 2-1/4 inches and 3/8 inches deep. A handle projecting 1 inch at one end is useful for handling these boxes with forceps. Young larvae can