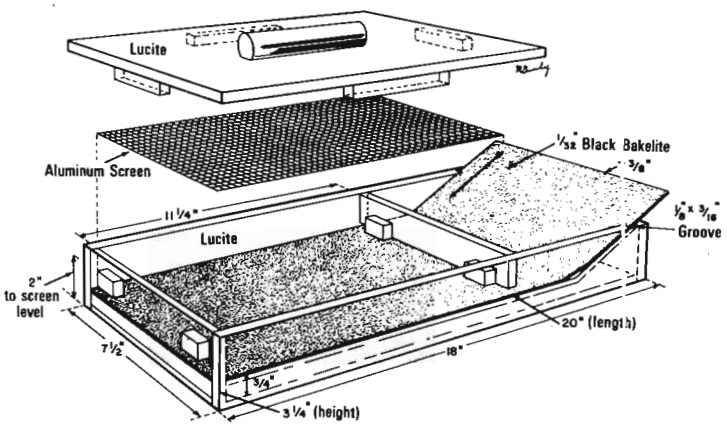
Nash, W.G., T.B. Friedman and C.R. Merril. National Institute of Mental Health, Bethesda, Maryland. An improved ovitron: A means of collecting large quantities of timed embryos.

Large numbers of synchronous Drosophila eggs or larvae are useful for biochemical and developmental studies. Several devices for collection of the eggs have been reported (1,2,3,4,5). We have extensively modified the design of the ovitron of Yoon and Fox (1) to facilitate the collection of large quantities of embryos. Our device consists of a plexiglass box (see Figure) which is filled with Drosophila Ringer (25°C) to a level approximately 1/2" above the aluminum screen (16 mesh). Females are placed on the surface of the Ringer in the 7-1/2" x 11-1/4" area and the lid is applied. Eggs can be collected at 30 to 60 minute intervals for 12 to 18 hours. Just prior to a collection, the sides of the ovitron are gently tapped to free those eggs caught on the screen, allowing them to fall onto the black Bakelite slide which is then slowly removed. The eggs are collected with a moistened camel's hair brush which is gently stroked across the Bakelite slide. The aluminum screen permits most of the eggs to pass while retaining drowned adults. This procedure allows multiple collection of large quantities of timed embryos. Eggs obtained after the first few hours of operation of the ovitron are permeable to macromolecules (1).



Newly emerged females were fed on a diet enriched with honey and yeast for six to eight days to maximize egg laying (2.5 eggs/female/hour). The non-anaesthetized, well fed females were collected, knocked to the bottom of a half-pint milk jar and sprinkled onto the surface of the Ringer solution. Best results were obtained with a maximum of 30 to 50 females per square inch (i.e., 2300 to 3700 flies per ovitron). Greater than 50 females per square inch resulted in massive drowning. At best, we obtain a yield of approximately 9000 eggs per hour per ovitron.

References: 1) Yoon, S. and A.S. Fox 1965, Nature 206, No. 4987:910; 2) Delcour, J. 1969, DIS 44:133; 3) Maroni, G.P. 1972, DIS 48:158; 4) Majumdar, S.K. and D.S. Novy 1972, DIS 47:150; 5) Würgler, F.E., H. Ulrich and H.W. Spring 1968, Experientia 24:1082.

Breugel, F.M.A. van. University of Leiden, The Netherlands. A simple method of injecting larvae of Drosophila avoiding ether treatment.

In standard injection procedures very often an ether treatment is involved. Some larvae become over-etherized and die and the awakening of other larvae covers a rather long uncontrolled time span that might be of disadvantage in some experiments. It is possible to omit ether anaesthesia by using a cold treatment. Alcohol cleaned and dried larvae can be placed in large groups (e.g. 100 individuals) on a glass slide that is mounted on a block of ice out of a normal refrigerator. The thin layer of melting water keeps the slide at about 0°C and the larvae become quiet after a few seconds. The relaxed larvae can be punctured dry or submerged in a drop of insect salt solution with common Drosophila injection tools. An experienced investigator might handle over 300 larvae within one hour. The awakening is quick and the survival perfect. Injection fluid, needles, etc. logically should be as sterile as possible, but the use of antibiotics is not necessary.