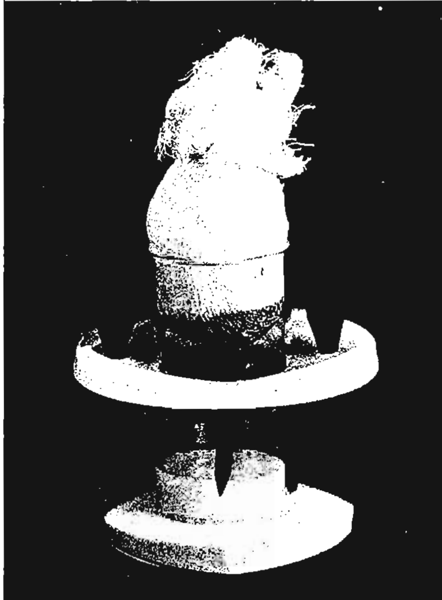
Hedrick, P.W. University of Kansas, Lawrence, Kansas. A culture which allows sand pupation.

Many species of Drosophila prefer to pupate in sand rather than on paper or the sides of a culture bottle. Several types of cultures have been used for these Drosophila but they usually entail transferring the larvae to a second container. The device I am using now for study of niche separation permits larvae to have the option of pupating either in sand or on the side of a chimney. Furthermore, this container permits downward migration of larvae into the sand simulating the behavior of Drosophila larvae in fallen fruit.



The container used is a clear plastic, eight ounce refrigerator container made by Deka Plastics, Inc. (see photograph). In the bottom of the container is placed approximately one eighth cup of sterilized white sand. In order to prevent dehydration of the media, the sand is saturated with water. The media is poured into a 3 inch high, 1-1/2 inch diameter pyrex chimney which has been placed on aluminum foil. After the media has set, the foil is peeled away and the chimney slipped though a hole in the container lid made earlier by a hot pyrex chimney. Larvae or adult flies are placed in the chimney and it is stoppered by a cotton-cheesecloth plug.

One must use an aspirator in order to remove flies from the container. To remove those inside the container, an aspirator tube is placed inside a plug. Flies which emerge outside the chimney, that is pupate in the sand, are aspirated through several holes which have been drilled in the container lid. These are stoppered by golf tees when not is use. Even with saturated sand, I have encountered some shrinkage of the media. This is dependent on the media used, the humidity, and the amount of larvae working. When adult flies are used, I suggest that they be allowed to lay on the media for 24-48 hours before placing the chimney in the container. I am indebted to J.S.F. Barker for suggesting many of the ideas in the design of this container.

Tomkins, J.K. and T. Billington. Monash University, Clayton, Vic., Australia. Analysis of D. melanogaster RNA by acrylamide gel electrophoresis of single fly homogenates.

The acrylamide gel electrophoresis procedure of Loening (1967) as modified by Becker et al. (1971) has been adapted for the analysis of RNA from homogenates of single individuals of D. melanogaster developmental stages. Third instar, pupa or adult individuals have been used successfully in this study. The method permits the resolution of ribosomal and transfer RNA as distinct sharp bands.

An individual of the developmental stage to be studied is briefly washed in distilled water before transfer to a small all-glass homogenizer. Homogenization is carried out at room temperature in 0.1 ml Loening's electrophoresis buffer containing 1% (w/v) sodium dodecyl sulphate (SDS) and 10% (w/v) sucrose. The homogenate is then stood at room temperature for 1 1/2 hours.

Acrylamide gels are prepared by the method of Loening. The gels are pre-run at 5 mA/gel for 1 hour at 4° in electrophoresis buffer containing 0.1% (w/v)SDS. This pre-run is in the direction the sample electrophoresis is to take place. The buffer is then renewed and a further pre-run, in the opposite direction, of 1 hour is carried out.

The homogenate is applied to the gels and electrophoresis at 5 mA/gel in fresh 0.1% SDS buffer is carried out at 4°. After electrophoresis the gels are removed from the tubes, fixed, stained and destained according to the method of Solymosy et al. (1970).

References: Loening, U.E., 1967, Biochem. J. 102: 251-257; Becker, H., C.P. Stanners, and J.E. Kudlow, 1971, J. Cell. Physiol. 77: 43-50; Solymosy, F., G. Lazar and G. Bagi, 1970, Anal. Biochem. 38: 40-45.