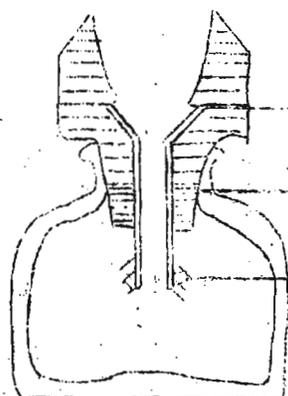


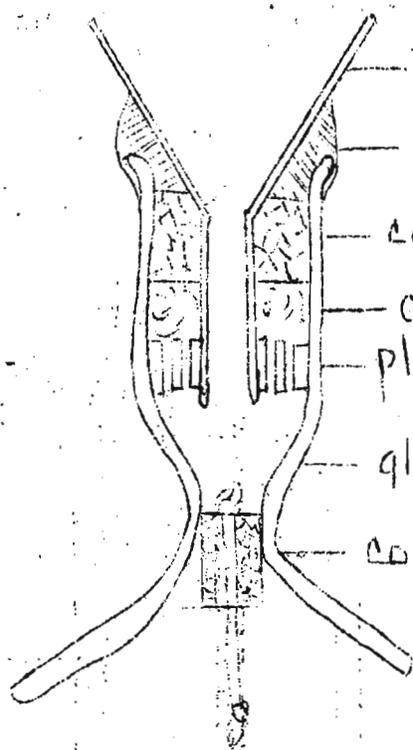
down to form a narrow upper lip all around. The stem of the glass funnel is cut to a suitable length and fire polished.

Walter's Crucible Holder as stopper for etherizing bottle



rubber stopper
glass funnel
gauze

Demerec, M. Etherizing bottle.



white enamelled funnel
metallic solder
cork
cotton
plaster of Paris (perforated)
glass vessel
cork stopper

The following drawing represents an actual size cross section of the etherizing bottle used in our laboratory. The design is a slight modification of an early Bridge's design. Ether is poured in through the bottom hole. A few drops suffice for one hour's work.

Specifications:
Funnel: White enamelled 1/8 quart improved funnel manufactured by the Vollrath Co., Sheboygan, Wis., obtainable in hardware stores or could be ordered through a hardware store. Top is cut off to fit the culture bottle and bottom cut off to fit the glass vessel. Cost 30-40 cents.
Glass vessel: Can be made by any glass-blower.

We ordered it from Eck & Krebs, 131 West 24th Street, New York, at 50 cents a piece. (Copied from DIS-2: 62)

Miokey, George H. Etherizer.

A very simple type of etherizer may be constructed from a pure aluminum, seamless funnel, 2 in. across top, (may be purchased for about 75 cents per dozen at any hardware store) and a A.C. glass carbureter bowl (genuine A.C.

service part no. 854004, 15 cents each; A.C. Spark plug Company Flint, Michigan).

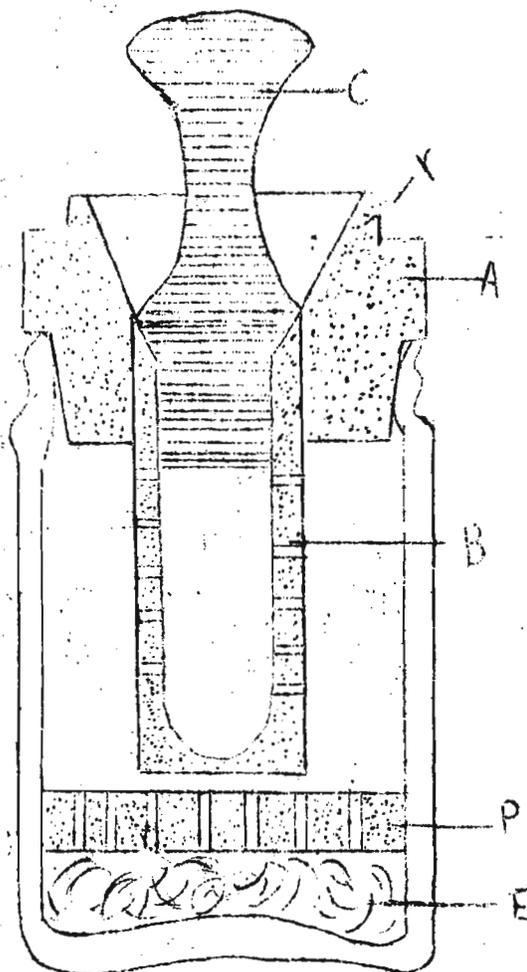
The top of the funnel must be trimmed down to a slightly larger size than the diameter of the cup then bent over the latter's edge. Around the funnel tube a mass of cotton covered with cheese cloth is wound tightly and held in place with fine wire or with string. Finally, the lower tip of the tube is slit in several places upward to the cotton and the resulting "fingers" bent up to help hold the cotton securely. This etherizer is probably best adapted to use in a laboratory where little fly work is done or to elementary students use, because of its simplicity and cheapness, but it is not suited to prolonged *Drosophila* work because of loss of ether.

Doubtless the improvement described by Stern in DIS-1 and by Domerec in DIS-2 on Bridge's original etherizer ('32, Amer. Nat. 66: 250-273), leave little to be desired in the way of an etherizer; nevertheless, through numerous experiments we have developed a new model based upon Muller's suggestions in DIS-2. The accompanying sketch represents an actual size section of our special design.

The glass bottle is an ordinary specimen jar (Cenco no. 10373 wide mouth bottle, diam. 2-1/8", ht. 3-1/4"; screw cap size no. 53; 40 cents a dozen) hence may be replaced very readily if broken. The upper portion, funnel and tube, is made of Bakelite turned on a small lathe. Part A is fashioned from Bakelite BT-45-005 at 60 cents a pound, and parts B and C are of Bakelite BT-61-893 at \$2.75 a pound, (procured from the Bakelite Corporation, 247 Park Avenue, New York City). The latter grade is used for the tube and stopper because it can be polished to a highly transparent quality.

This screw cap jar has a diameter about equal to that of the mouth of a milk bottle and the threads give a nice grip, thereby making it convenient, after the milk bottle has been inverted over the rim (r), to hold it in place with one hand and knock the whole against a large rubber stopper.

Merely the friction of a tight joint is sufficient to hold the tube (B) in the top (A);



The bottom of the hole drilled in the tube should not be pointed but must be rounded so as to prevent flies being caught. Very small holes are drilled into the side of the tube (B) to allow ether vapor to enter from the glass jar. Cotton should be packed in the bottom of the glass jar (E) and held in place by plaster of paris (P) which should be perforated. If the tube is polished, it is possible to see the flies from the side and to tell when they are anaesthetized. Ether may be added either by pouring it into the tube or by dropping it onto the plaster after removing the top (A).

It is necessary to add ether only about once a day, or even at longer intervals if the stopper remains in place when not in use. Not only is the saving in ether remarkably economical but also valuable in regard to the comfort and well-being of the investigator. Indeed, this latter consideration was the chief reason for developing our new design.

Muller, H. J. Etherizing bottle.

The type which I have found most practical all

round (and at the same time the easiest to construct, repair and clean) consists of a glass containing-vessel (whose shape may be chosen according to the convenience of the operator), into the neck of which is firmly fitted, preferably through the mediation of a hollowed-out cork, a funnel, preferably of metal, with an upper end wide enough to fit against the mouth of the widest-mouthed culture vessel used. To the narrow end of the funnel, below, a large gelatine capsule of the same diameter,

and containing numerous fine needle-holes, is glued on. In the space between the bottom of the suspended capsule and the bottom of the containing vessel is packed a mass of dense cotton, (which must not touch the capsule). Flies go in and out through the same opening, without manipulation or any stoppers being necessary and are quickly etherized by the diffusing ether. The ether used need usually be added to the bottle but one a day, as a minimum is lost (an advantage both economically and physiologically). If desired, glass can of course be substituted for the gelatine, but the latter has considerable durability and the ether can be poured in directly through the gelatine sieve. The latter is later wiped quite dry with a paint brush. (copied from DIS-2:62)

