

Clancy, C. W. Two methods of ligating Drosophila larvae.

Larvae of *Drosophila* may be ligated with fine, human hair at any desired

segment by placing two surgical-dressing forceps on a table under a wide field binocular microscope in such a manner that the jaws support between them a previously prepared loop of hair. The loop, into which the etherized larva is placed by means of a small camel's hair brush moistened with saline solution, lies in the center of the binocular field dipping into a small drop of saline lying on a thick glass slide. If the larva has been properly etherized, i.e., quickly and sufficiently, it will relax and extend itself the moment the saline solution touches it. Orientation with respect to the segment at which ligature is desired is made with the brush or by moving the forceps holding the loop. The surface tension of the drop of water tends to hold the larva and aids in placing the loop.

In case the exact position of the ligature need not be determined at the time of tying, an even simpler and more rapid procedure may be carried out that eliminates both the binocular and the forceps. A heavy glass rod (1.0 cm. in diameter and 25.0 cm. long) is clamped to a ring stand by one end so that the opposite or free end extends horizontally toward the hands of the operator and can rest comfortably on the table and at the same time hold the loop of hair at the same level as the rod. The larva, etherized, relaxed, and extended, is first placed in a small drop of saline on the upper surface of the rod. Surface tension of the water holds the larva and enables one to slip the loop around it and tighten the knot in the desired position.

In connection with a preliminary study of pupation, several hundred larvae have been tied by the above two methods. When tied shortly before pupation the larvae survive and go through preliminary pupation changes.

Ephrussi, Boris and G. W. Beadle A technic of transplantation for Drosophila anlagen.

A technic of transplantation in *Drosophila* has been elaborated. By means of this technic

imaginal discs of eyes, legs, wings and ovaries can be successfully implanted into larvae shortly before pupation.

The actual technic consists of the injection of the desired organ into the body cavity of a larva by means of a glass micro-pipette connected with the capillary tube and syringe of the standard Chambers' micro-manipulator. The pipette is made in drawing out with a micro-burner a glass capillary with an external diameter of about 0.7 mm. and a wall thickness of about 0.1 mm. to a finer capillary shaft of an external diameter from 0.1 to 0.16 mm. The bore of the shaft should be from 0.06 to 0.12 mm. The length of the shaft should be about 2-3 mm. At its base a constriction is made in the bore by heating with a horizontal micro-flame. The function of this