

constriction is to block the tissue in the shaft, thus preventing its entering the larger part of the pipette, and also to act as resistance to the flow of liquid through the pipette. The pipette should have a very sharp point, which can be obtained by grinding on a fine-grained hone.

In our experiments the dissection of the donor-larva is made free-hand in a drop of 0.7% physiological salt solution. The host larvae are anesthetized on a glass slide in a simple glass vessel. After they are etherized and extended, they are moistened with a drip of Ringer, which tends to produce more nearly complete extension. They are then dried with filter paper and after a few minutes adhere to the slide.

The injection is made free-hand under a binocular microscope. Our equipment consists of two binoculars arranged so that they can be used from opposite sides of a narrow table. Two persons cooperate in the operation: one holding the larvae with a blunt curved metal needle, the other making the actual injection. (The complete description of the technic will appear in the American Naturalist.)

Beadle, G. W. Pigmentation of Malpighian tubes in larvae of *D. melanogaster*.

larvae of certain eye-color mutants are pale yellow or practically colorless, while those of wild-type larvae are distinctly yellow. Thus, ca, car, cm, g², lt, pp, rb, and w larvae appear to have very little or no pigment in the tubes. It is clear that these, and probably many more mutants, can be classified in the larval stage. To do this, it is not ordinarily necessary to dissect the larvae; the color can be seen through the body wall. The ability to identify particular mutant types in the larval stages obviously can be used to advantage in cytological studies, transplantation, etc.

During the course of our work on transplantation, it has been noticed that the Malpighian tubes of

Hoover, Margaret E. Some uses of Beadle's Malpighian tubes technique.

Although we have worked in a preliminary way for only a short time with Beadle's suggested technique utilizing the colors of the Malpighian tubes, it seems to offer interesting and important possibilities. The difference between yellow and white tubes can be easily seen in three-day old larvae and with practice the distinction can be made in younger ones. Careful examination with good strong lighting is necessary but the difference can be seen with accuracy. Such a technique can be put to good use in cases where an X-chromosome carrying a deficiency is balanced against dl-49 carrying garnet eye color. If carrying the deficiency die during larval life, the exact extent of survival can be accurately determined by isolating and observing the larvae with yellow Malpighian tubes. Moreover, by first observing the Malpighian tubes of the ♀ larvae used in making salivary gland chromosome preparations of such deficiencies, the use of ♀♀ not carrying the deficiency can be avoided.