

berlain² discusses holders and implies that the commercial ones are not desirable.

The obvious need is a method of clamping the blade rigidly and yet permitting easy adjustment of the amount of blade projecting. It is also desirable that the angle which the bevel on the razor blade makes with the paraffin block is small so that a true cutting and not a scraping action is obtained. In Fig. 1 is

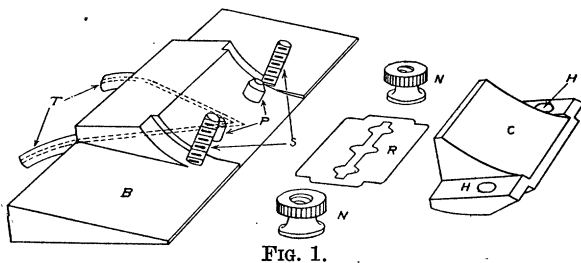


FIG. 1.

shown a blade holder which embodies these requirements.³ The razor blade, R, fits over the pins, P, which project from a milled cylindrical surface in block B. The clamping block, C, is placed over the blade, the screws, S, passing through the holes, H, and is held down by the nuts, N. The bottom of the clamping block is a curved surface having a slightly greater radius of curvature than that in the block, B, to insure a tight clamping at the projecting edge. The pins, P, are eccentrically mounted so that by turning them the amount of blade projecting may be

varied from 0.25 to 1.25 mm. The tubes, T, lead to a hole in the block lying just under the blade and are used for cooling the knife. For cutting thin sections in paraffin, cooling the knife by running cold brine through it will give a much better ribbon and less compression of the sections. The block is dimensioned to fit in the standard microtomes and is mounted so that the face toward the paraffin block is inclined 4°, which will give a clearance angle of about 8° to the cutting edge.

This holder has been in use for over a year and has proven entirely satisfactory. Using razor blades of several makes, it is possible to section whole insects, such as grasshoppers, butterfly pupae and insect eggs, when imbedded in paraffin. It is also possible to make 5 μ sections of plant material, such as insect galls, when imbedded in paraffin.

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INEXPENSIVE GREEN FILTERS

FILTERS which are quite satisfactory for the examination of tissues stained by the Feulgen method can be made by placing one or more thicknesses of green Cellophane between two large microscopic slides and binding the edges with lantern slide tape. Filters of different densities are obtained by varying the number of layers of Cellophane used.

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SPECIAL ARTICLES

HEREDITARY BRACHYDACTYLIA AND ASSOCIATED ABNORMALITIES IN THE RABBIT

DEFORMITIES of the hands and feet are among the oldest recognized hereditary variations in man. They have been reported in apparently unrelated families scattered throughout the world, and appear in a variety of forms ranging from minor brachydactylia to complete absence of hands and feet.

Investigations based on family histories have shown that these are dominant mutations, but the material available for study has been limited and not subject to experiment or control. The mating of individuals showing different forms of abnormality has not been recorded, and the genetic relation of this group of variations is uncertain.

Comparable variations have recently been encountered in the rabbit, and the occurrence of a series of deformities from brachydactylia to acheiropodia in a single line of animals indicates that in this instance they are expressions of a single primary mutation

altered by modifying factors or of a closely linked group of genes. The appearance of the mutation in a laboratory animal naturally adapted to experimental procedures offers an approach to the study of the genetic relations of these abnormalities, and additional interest is attached to these affections because of a closely associated functional inferiority. The purpose of the present paper is to describe the variations as they occur in the rabbit and to report on the progress of genetic studies.

The first deformity of this order was discovered in the offspring of a brother-sister mating of apparently normal animals. These animals were hybrids derived from the crossing of a pure-bred English doe with a male of mixed breed for the purpose of studying the inheritance of a peculiar eye color. Both parental lines had been bred for generations, and there were instances in which matings had been made which should have disclosed the presence of the deformity in either line, but none occurred until the two lines were crossed as indicated above. Subsequently, the

² C. J. Chamberlain, "Methods in Plant Histology," University of Chicago Press.

³ These holders may be obtained from J. R. Dempster, 2204 Glen Ave., Berkeley, Calif.