SCIENTIFIC APPARATUS AND LABORATORY METHODS

IMPROVING THE STAINING ACTION OF IRON HAEMATOXYLIN

IRON haematoxylin, the most useful stain available to the cytologist, has during the past few years caused a great deal of trouble for a number of microscopists through its erratic behavior. Sometimes the desirable crisp black and white contrasting stain would be obtained, but more often it was not. The cytoplasm would retain the stain with the resulting muddy appearance seen all too often of late years. Stock solutions became turbid and lost their staining action in a few weeks.

Three years ago it occurred to the writer that if neutral solutions were essential to blood stains, neutrality might be a factor in the successful use of iron haematoxylin. Our distilled water was known to be slightly acid (about pH 6.6). A trace of sodium bicarbonate was added to a fresh 0.5 per cent. solution of haematoxylin. The straw-colored solution changed at once to the rich dark red wine color recognized as typical for an aged sample of this stain. Sections stained in this solution differentiated perfectly.

This 0.5 per cent. solution remains clear for about six months or occasionally longer and stains well as long as it is clear. These results have been obtained equally with haematoxylin crystals of pre-war Grueb-ler make or with the recent C. P. product of McAndrew and Forbes of America. After a solution of 0.5 per cent. haematoxylin becomes turbid the staining action is uncertain and the solution should be discarded. Even though six months should mark the functional life of the solution this does not seem serious in view of the successful behavior of the stain during this period.

Inasmuch as there appears to be a rather wide latitude in the quantity of bicarbonate that may or should be added to the solution of stain, it has not seemed worth while to determine the exact quantity added nor the pH obtained. In practise, to a liter of solution a very small quantity of sodium bicarbonate is lifted on the point of a scalpel and dropped into the solution. This rule of thumb procedure has never failed to work, although the quantities of alkali added must have varied considerably.

The making of a 0.5 per cent. solution is greatly facilitated by preparing (according to the directions given in Kingsbury and Johannsen's "Histological Technique") a 10 per cent. stock solution of haematoxylin dissolved in 95 per cent. alcohol. This solution keeps indefinitely and 5 cc of it in 100 cc of water gives a staining solution of the proper strength. To this solution the sodium bicarbonate is added.

This procedure has been in use for three years in this and neighboring laboratories and has given uniform results.

ROBERT T. HANCE

UNIVERSITY OF PITTSBURGH

A DEVICE FOR MOUNTING ANATOMICAL PREPARATIONS

A SIMPLE and convenient method for mounting anatomical preparations is as follows: A plate is made by melting hard paraffin and pouring it into a form (as a box top, etc.) where it hardens to form a plate from one fourth to one half inches in thickness. During the process of melting, enough lampblack is added to give the mixture a deep black color, which is, of course, an advantage where a dark background is desired. To prevent curling of plates after immersion in preservative, two glass rods are embedded parallel to each other, one on each side of the plate, just before the process of hardening is begun. These rods may be of various diameters, but we have found that those from 5 to 8 mm in diameter are quite satisfactory. The length of the rods will depend upon the length of the plate as they are placed lengthwise within the plate (Fig. 1 a a). Before the rods

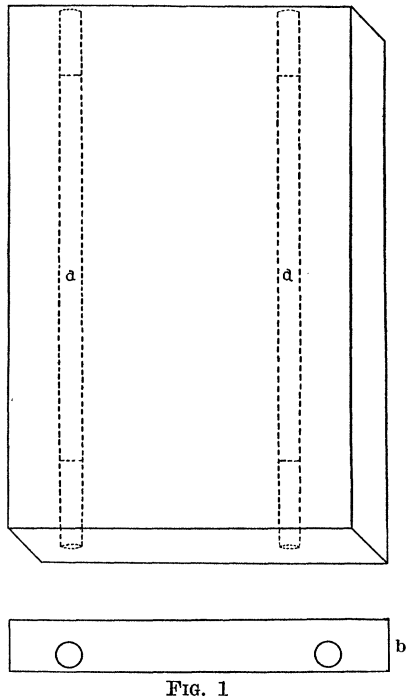

FIG. 1

are dropped in the melted paraffin a loop or two of heavy twine is wrapped around each end of each rod so that the rods will be suspended near the middle of the plate after it hardens (Fig. 1 b). Care must be taken to smear the inside of the box form with glycerine so that the hardened plate can be removed easily from the form.