colorimeter which has been set at 0 optical density with water. Then the blank is read and the blank value deducted from the test value, the difference giving the turbidity due to fibrinogen. The fibrinogen concentration of the plasma can be read from the standard graph giving fibrinogen concentration against optical density.

The only reagents used are normal saline and Parfentjev's ammonium sulphate solution prepared by dissolving 133 g. $(\text{NH}_4)_2\text{SO}_4$ + 10 g. NaCl in 1 litre distilled water preserved by the addition of 0.025 g. merthiolate. The standard graph is best prepared by using pooled plasma whose fibrinogen content has been determined by the classical method. Only two points are required when using the above-mentioned instruments and wavelengths, since with these a straight line will be obtained. The use of pure fibrinogen is not recommended, as the complete reconstitution of freeze-dried fibrinogen without appreciable turbidity or loss due to defibrination is not possible in our experience.

The normal fibrinogen content of plasma has been found to vary between 0.113 and 0.385 g./100 ml. with an average of 0.246 g./100 ml., but may be as high as 0.5 g./100 ml. in pregnant women. When the fibrinogen content in post-partum haemorrhage falls below 0.05 g./100 ml., intravenous administration of fibrinogen was found to be indicated, while patients with values of about 0.1 g./100 ml. have responded to transfusion of whole blood alone.

Summary

Technical details for the rapid estimation of fibrinogen applying the turbidimetric method of Parfentjev *et al.* to English colorimeters are given. This method allows the estimation of 0.05 to 0.5 g. fibrinogen/100 ml. plasma with an accuracy of ± 0.013 g. fibrinogen/100 ml. in 10 to 15 minutes. The method can be carried out by any trained technician in a small hospital laboratory and is accurate and quick enough for emergencies.

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A Simplified Method for Polarized Light Observations with the Binocular Microscope

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During the past decade the use of polarized light has become an established accessory to clinical microscopy, and with its general adoption there has been a progressive simplification of the equipment employed. The specially equipped polarizing microscope and the Nicol prism have been wholly replaced by the use of "polaroid" plastic, and with this the factory-made polarizer and analyser have in turn given way to the improvised article.

The recommended procedure for providing these has been largely standardized. A disc of "polaroid" sheet is cut to fit the substage filter carrier, and a second smaller disc is incorporated in a cap to fit over the eyepiece. With a monocular microscope this is wholly satisfactory, but it is quite inapplicable to the binocular instrument. In passing through the system of prisms, the polarization of the light is almost totally lost, and an eyepiece analyser produces only a negligible light extinction. In practice, therefore, one is obliged to change over to a monocular body, and, while with most instruments this is a simple enough procedure, it does constitute a minor inconvenience. There are, moreover, some which lack provision for this change-over.

FIG. 1.—Sectional diagram of screw-cap analyser in working position.

This disadvantage can be completely overcome by the very simple expedient of placing the analysing polaroid screen not over the eyepiece but directly over the slide under examination. Certain objections to this come to mind at once—interference with the definition of the image and scratching of the plastic material in the course of usage. Of these, the first can be discounted (with one exception to be specified) and adequate precautions can be taken against the second. The principal inherent limitation in this method is that it is not suited

to high-power observations, with which the image is somewhat blurred, and if the objective is of particularly short focal length the thickness of the polaroid becomes an obstacle. For the average specimen, however, when one is searching for doubly refractile material, the 2.3 in. objective is the power of choice, and with this there is no difficulty.

To protect the polaroid analyser from minor surface damage and to facilitate its manipulation, an ordinary aluminium screw cap with a single central aperture (as used for blood culture bottles) is taken and the rubber seal replaced with a disc of polaroid. A hole of 6 to 7 mm. diameter is fully adequate and needs no enlarging. For use, the cap is placed inverted on the slide.

A practical advantage of this is that when the objective is focused it dips inside the rim of the cap, and, by so retaining it in position, one has complete freedom of movement for the mechanical stage, and the rotation of the analyser takes place on a central axis. The polaroid can be conveniently held in position in the cap by cutting an appropriate aperture in the original rubber seal and replacing that. A light source of relatively high intensity is, of course, to be preferred.

A Digestion Rack for Kjeldahl Flasks

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A simple and efficient rack for heating Kjeldahl flasks is often needed in many laboratories. Racks heated electrically, and in which a separate control is fitted for each flask, are often advocated, but are very expensive and in practice seldom give good service for a long time. Heating by gas has the advantage that great variations in temperature are possible and control very easy.

The rack to be described has been in use in the laboratory of the Group for the last year, and has proved satisfactory. It can be made with modest workshop facilities, and the cost for materials is trifling. The model described takes eight flasks of 50 ml. capacity, which are heated on a gas burner of the ring type. It is illustrated in the photograph (Fig. 1).

FIG. 1.—The finished holder.

Construction

All parts are cut from galvanized iron sheet, 1 mm. (1/32 in.) thick. They are : (a) An octagonal base with wings at each corner that form recesses to hold the flasks;