'bleaching' action of the alkali solution may remove the iodine in the brucite as well as the colour of the reagent solution. However, if an excess of the alkali solution is avoided when applied to remove the iodine in solution even very fine brucite will retain its stain. The reagents can be applied directly to a freshly exposed surface when in the field.

The Alizarin Red S test, which involves a reaction between calcium ions and the reagent, produces a red precipitate floating in the reagent solution. On a rough rock surface this could flow into pits and produce confusing results with apparent calcite where none exists. Thus this test is best confined to thin sections or polished slices. A technique found particularly useful by the writer has been to cover only half the slide by a cover slip, then the section is preserved for use with normal petrological techniques as well as providing a surface for applications of stains.

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A rotatable microscope slide ring holder for petrographic analysis

TRAVERSING of a thin section in petrographic analysis is normally effected with a mechanical stage and in petrofabric analysis with a universal stage. Neither of these stages easily accommodates thin sections on slides of uncommon dimensions or even accepts the larger sizes. Moreover, when accommodation is possible, traversing directions are invariably parallel to slide edges, regardless of whether the slide is held in a mechanical stage or in a sledge of a universal stage. The ring holder device described here was designed to overcome these limitations by

permitting the traverse of a thin section of uncommon dimensions in any chosen direction.

Ring holders are circular plates, $\frac{1}{16}$-in. thick, with cutouts machined to accommodate slides of any size or shape. Brass plate is a suitable material for this device because it can be machined readily to desired dimensions. Whatever the diameter of the ring holder may be, it is inserted in the jaws of the mechanical stage (fig. 1). Since most standard mechanical stages will not securely grip a ring holder more than three

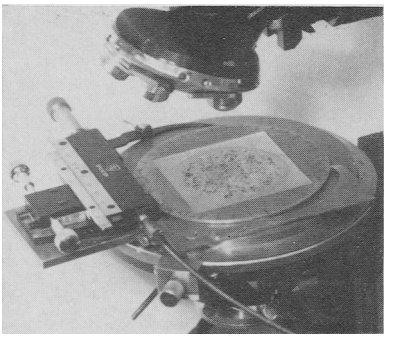

FIG. 1. Rotatable microscope slide ring holder with inserted 2-in. diameter thin section.

inches across, one of the jaws must be lengthened. The arrangement in fig. 1 depicts a 4-in. ring holder, which will accommodate a $2\frac{1}{2}$-in. square slide. By combining mechanical stage movement with ring holder rotation, a petrographer may traverse any chosen direction in a thin section.

The author has found the ring holder device to be useful for relating fabric features in rock to physical property measurements. The features can be studied in any direction across a thin section of uncommon dimensions, providing that its greatest dimension does not exceed a distance of about 50 to 55 mm, the maximum right–left translation distance in most standard mechanical stages. Petrographic features such as grain dimensions, frequency of mineral occurrence with respect to foliation and bedding, grain orientation, inclusion trains, etc., may be traversed readily. Moreover, the device permits rotation of a thin section to traverse any random direction, for measurement of internal boundaries as described by Smith and Guttman (1953).

Use of a ring holder device need not be confined to petrographic work. It may find application in biologic, metallurgic, or ceramic microscopy

whenever it becomes necessary to have the option for traversing any direction in a mounted sample.

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A continuous density separator for mineral separation

A CONTINUOUS density separator in which the heavy liquid is recirculated by an air jet has been described by Jones (1965). We have found that a cheap electrically driven centrifugal pump instead of the airlift system gives a more easily constructed and more easily managed separator.

Our construction is shown in fig. 1. The feed hopper is of the type as described by Faul and Davis (1959). The separating vessel is made from a standard separating funnel equipped with an overflow tube. The light fraction is collected in a funnel fitted with sieve cloth with a suitable mesh size. The heavy fraction must be drained off at intervals. The pump used is made by Heidolf and has a maximum capacity of 1·5 litres per minute. The flow of the liquid is controlled by a pinchcock on the P.V.C. tube leading from the pump to the mixing funnel. The separator has given satisfactory results with mineral grains in the 100– to 200-mesh size-fraction.

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