

to avoid brittleness in that film, call for modifications in the mounting of sections for grinding under a high-speed wheel. The following procedure has been found successful: the rock slice is placed on a balsam film on the slide, and the mount is turned over and pressure applied to the slide above the centre of the slice. This will orient the slice parallel to the slide surface. With practice a similar pressure applied to a series of slices by this method will achieve a uniform thickness in the balsam film on each of them. The strain on normally prepared Canada balsam produced by a surface-grinding wheel will usually cause it to spring from the slide, and this is overcome by giving the balsam slightly less than the normal 'cooking' when mounting. The degree of 'undercooking' must be discovered by experience, too little 'cooking' resulting in warping and rucking of the balsam film, with damage to the thin slice. When the best conditions are realized there is neither springing nor warping, and the slice is evenly ground.

Grinding technique. As the bases of the rock slices rest on a nearly identical thickness of Canada balsam film, measurement of the progressive grinding of one slice is all that is required in grinding all seven slices. One of the slices is measured by micrometer before it is mounted on a slide. In clamping the seven slides in the chuck this 'master slice' is placed at one end, and the table is raised until the grinding wheel touches it. From this datum level grinding is continued (0.01 inch traverses have been found suitable) until the limit of machine grinding is approached. The two final traverses may be taken at 0.004 inch and 0.002 inch respectively (all these measurements being read from the scale on the height adjustment of the table). Experience suggests that the limit of machine grinding is reached when the slice is 0.006 inch thick. Machine grinding below this thickness causes damage to the slice. Final grinding by hand on fine carborundum completes the process.

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Rockbridgeite from Cornwall and Devon.

THE iron phosphate, dufrenite, has been recorded from a number of localities, its first and hitherto only known British occurrence, at Wheal

Phoenix, Linkinhorne, Cornwall, having been described in 1886.¹ In a recent paper, C. Frondel² has confirmed as dufrenite the identity of the mineral reported from several of these localities, including Wheal Phoenix, but found that the mineral from Midvale, Rockbridge Co., Virginia, U.S.A., previously referred to as dufrenite, as well as some specimens from other localities, were, in fact, a different and distinct species which he named rockbridgeite.

Examination of some dufrenite-like minerals from the Stowe's section of Wheal Phoenix, collected recently by myself, has also confirmed that most of them are dufrenite, but two specimens have proved to be rockbridgeite. The powder patterns of the two latter are distinct from those of the dufrenite and exactly match those of rockbridgeite from the type-locality. Following this, powder photographs were taken of another, similar, dark green fibrous mineral collected by myself in 1936 at East Wheal Russell, Tavistock, Devon; this mineral also has proved to be rockbridgeite. Similar specimens of the mineral from East Wheal Russell had been collected there some time ago by Sir Arthur Russell, who had taken them for what was then all known as dufrenite; I have examined these specimens and have no doubt that they are also rockbridgeite.

These appear to be the first known occurrences of rockbridgeite in the British Isles.

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¹ E. Kinch and F. H. Butler, *Min. Mag.*, 1886, vol. 7, p. 65; E. Kinch, *ibid.*, 1888, vol. 8, p. 112.

² *Amer. Min.*, 1949, vol. 34, p. 513.