

## BOOK REVIEWS

JEFFERY (P. G.). *Chemical methods of rock analysis*. Oxford and New York (Pergamon Press), 1970. xvi+507 pp., 103 figs., 1 pl. Price £7.00.

Although the classic texts of Washington and of Hillebrand have long been outdated, they contain such fundamental material that most analysts continue to use them for reference purposes. But after a gap of several decades without the appearance of any new analytical texts specifically devoted to rock analysis, the need for a modern approach would appear to have inspired several authors and/or publishers at the same time. Thus within two or three years we have had the books of Maxwell (M.M. 37-858), Volborth (M.M. 37-858), Energlyn and Brealey (M.M. 38-776), and Jeffery. Fortunately, the approach in these texts is different. The present work opens with chapters on the composition of rock material, sample preparation, sample decomposition, the classical scheme for the analysis of silicate rocks, the rapid analysis of silicate rocks, and some statistical considerations, and these are followed by chapters on individual elements or groups of elements. This approach inevitably leads to some duplication and one occasionally feels that although the determination of a particular element is adequately dealt with the problems of possible interference from other elements are insufficiently stressed. With the development of spectrophotometric and atomic absorption methods many elements are now determined directly, and consequently the errors for individual elements are no longer accumulative. The direct determination of alumina, rather than its estimation by difference, is a major step forward. In this book we benefit from the experience of a practising analyst who has specialized in the analytical problems of silicate rocks and their individual minerals. Although alternative methods have been described for many of the 60 elements included, some selection of procedures has been made and it is for such informed instruction and practical details that this book can be recommended to geochemists, petrologists, and others concerned with the analytical chemistry of silicates and silicate rocks.

R. A. HOWIE

TASMANIA DEPARTMENT OF MINES. *Catalogue of the Minerals of Tasmania* (revised and amended 1969). Geol. Survey Record No. 9, 1970. 110 pp., 13 plates (5 colour, 8 black and white), Australian \$1.50.

W. F. Petterd's 1910 catalogue, of which this is a revision, contained 356 entries in alphabetical order, which have been retained. 'These have been evaluated and are either accepted, invalidated or classed as being of doubtful validity. As a result 46 of the 1910 listings have been invalidated, at least 20 are regarded as being of doubtful validity and 73 new entries have been made. A number of minerals have had to be carried forward into this text without an extensive check since no specimens were available in the Petterd Collection of the Tasmanian Museum or elsewhere and there

is no access to the localities from which they were reported.' It is a great pity that specimens with 3 cm × 1 cm dufrenoyite crystals, from North-East Dundas, seem to have disappeared.

A serious shortcoming of the present work is that previously unpublished results are not attributed specifically as private communications, although an acknowledgement is made in the introduction to X-ray work by R. J. Ford and D. I. Groves. Thus, a new analysis of bellite (establishing it as a 10:1 mixture of cerussite and crocoite) is given without the name of the analyst or of the institution in which he or she works. Of the other minerals originally described from Tasmanian localities, achlusite is a mixture of paragonite and muscovite (X-ray); batchelorite is a chromian muscovite (M.M. 31-700; Hale, G. E. A., *Papers and Proc. Roy. Soc. Tasmania*, 1958, **92**, 147); dundasite has been reanalysed [M.A. 69-1520; but see M.M. 38-564]; histrixite remains doubtful 'No specimen of the mineral is now available but it appears likely that it was an antimony bearing bismuthinite similar to stibio-bismuthinite associated with chalcopyrite' [but see M.A. 11-296]; johnstonotite is now a variety of spessartine rather than of andradite [M.A. 69-616]; petterdite, previously thought to be mimetite, is adamite (X-ray, on a specimen from the Petterd Coll.); sclerospathite remains as a doubtful member of the halotrichite group [? chromian bilinite] since 'specimens are not available for study'; and weldite is declared invalid without further study [it was previously doubtful]. Stichtite and heazlewoodite remain unchanged as valid species.

Many Tasmanian occurrences are invalidated because the species in question is now shown to have been wrongly identified. In three cases, however, including weldite, the species itself has been declared invalid without re-examination: niccochromite (Shepard, 1877; type locality Texas, Pennsylvania), and steinmannite (Zippe, 1833; type locality Příbram, Bohemia). They are certainly doubtful, but invalidity should be proved rather than assumed.

In some respects the 1910 edition is preferable to the present one, mainly because details of associated minerals tend to have been omitted in several places. On the other hand, mis-spellings such as excherite (escherite) and kilmarcooite (kilmacooite) have been perpetuated without need.

Errors are few, but two require comment: apatite is referred to as a chlorophosphate (not fluorophosphate) of calcium, and halotrichite is mis-spelled 'hallotrichite' on pp. 54, 61, and 89. Regrettably, the variety chromiferous cerussite of 1910 is given a new name, chrome-cerussite.

P. G. EMBREY

THOOR (T. J. W. VAN), general editor. *Materials and Technology*: volume II. *Non-metallic ores, silicate industries, and solid mineral fuels*. London (Longman) and Amsterdam (de Bussy), 1971. xxviii+828 pp., 300 figs. Price £14.70.

This is the second volume of an eight-volume encyclopaedia on materials and their technology written for the non-expert in the particular subject. The twelve chapters and their authors have been listed elsewhere (M.A. 71-834). Although the subject