

BOOK REVIEWS

Ramdohr, P. *The Ore Minerals and their Inter-growths: Second Edition* (English transl. of 4th German Edition). Oxford and New York (Pergamon Press), 1981. xxii + 1205 pp., 637 figs. (two volumes). Price £90.00.

Professor Ramdohr is the world authority on ore mineralogy and this new edition of his major work will be welcomed. In a four-page preface, the author gives a personal essay on the snags that still arise from quantitative data, from measurements that can be carried out much more accurately than are significant considering the variations within the same polished section, using the same polish and the same method; careful microscopic observation is still the best primary method.

After two lengthy chapters on the genetic systematics of ore deposits, the ore textures, and the principles of the classification of ore intergrowths (pp. 1–232), the remaining part of volume one begins the descriptive section of this classic work by covering the elements, intermetallic compounds, alloy-like compounds, and tellurides, leaving the sulphides and sulphosalts, oxides, gangue minerals, and non-opaque oxide ore minerals to the 765 pages of vol. 2. Each mineral is described in a standard format, including general data, polish, reflection behaviour, etching, fabrics (texture), diagnostic features, paragenesis, references, and the strongest lines in the X-ray powder diffraction pattern. There is a 24-page annex in a pocket at the back of vol. 1 containing tables of recently published reflectivity values and vol. 2 includes a locality list of some 3000 typical occurrences, a bibliography with over 1300 references, a brief general index, and a mineral index.

The style throughout is stamped with the Ramdohr viewpoint, and here the thirty-two translators have clearly done great service. The observations from polished sections are enlightened with reference to microprobe determinations and to experimental work or synthetic systems. The preliminary remarks to many doubtful species give a useful pen-picture of the status of the mineral and whether or not there are sufficient grounds for discrediting it. One is never left in much doubt as to available data: thus under the physicochemistry of arsenopyrite it is stated 'not much known'. The author's strictures on the use of methods too accurate for the variations due to complex mixed crystals are applied particularly to hardness measurements. Thus the Talmage hardness using a scale of seven letters for scratch hardness, with the addition of + or – to signify a little above or below the average value, is preferred to the indenta-

tion tests. For useful reflectivity data, values need to be obtained across the whole visible spectrum. It is emphasized also that whoever shuns the use of oil immersion misses an important diagnostic tool and will never see hundreds of details described in this book.

In this monumental work, one man who has travelled widely and collected and examined material from orebodies from all parts of the world, gives us his unrivalled experience and immense knowledge and sets them down together with his own photomicrographs and observations. Every laboratory concerned with the study of ores in reflected light (or indeed under the microprobe) will need these two volumes and all libraries concerned with earth sciences should have them as a standard reference.

R. A. HOWIE

Craig, J. R. and Vaughan, D. J. *Ore Microscopy and Ore Petrography*. Chichester and New York (John Wiley and Sons Ltd: Wiley-Interscience), 1981. xiv + 406 pp., 163 figs. Price £17.95.

It is twenty years since Cameron's *Ore Microscopy* was published and thirty-four years since Edwards's *Textures of the Ore Minerals* appeared (the 1954 revision was not very extensive). For the study of ore microscopy and ore textures these were the best books this reviewer felt he could recommend for purchase by undergraduate students. Craig and Vaughan have now produced an excellent undergraduate/graduate textbook that both combines these two subjects and goes on to provide studies of the principal ore mineral associations with brief discussions of their origins. It has one major drawback from the undergraduate point of view—only a hardback version is on sale at such a high price that many students will rely entirely on their library's copy. The publishers have informed me, however, that a cheaper soft cover edition will be published, but it will not be available for some time.

The book starts with a useful summary of the optics of the ore microscope. This could be improved by including a short discussion on the blooming of lenses and their care and cleaning especially as the book is aimed at students some of whom will, despite warnings, huff on lenses to clean them thus helping in the removal of inorganic blooming compounds! More important is the need for a section on the setting up procedure for optimum illumination—far too many students tend to be satisfied with 'lazy man's illumination'. In