

their associated electron-diffraction contrast effects is presented. Illustrative examples of deformation microstructures observed in quartz, the pyroxenes, and the olivines are provided, and the review article includes an extensive bibliography. Among the research contributions in this section is included an account of deformation in the olivines of peridotites, which is likely to be of particular interest and significance to petrologists.

The final section of the book deals with special applications and techniques and includes a review on the origin of contrast effects in amorphous materials.

This book shows evidence of careful planning and the figures and illustrations are of a very high standard. I believe that the objectives defined by its authors have been largely successful since it does summarize current achievements, provides in most parts a good introduction to the topics of interest, and will certainly provide good selected reading for students of advanced mineralogy. The authors and publisher are to be congratulated.

J. D. C. MCCONNELL

Nicol (A. W.), Editor. *Physicochemical methods of mineral analysis*. New York and London (Plenum Press), 1975. xvi+508 pp., 151 figs. Price \$41.76.

This book is aimed at the mineralogist or mineral technologist who wants to know something of the potentialities and limitations of modern instrumental methods of mineral analysis and the principles underlying them. The term 'mineral analysis' is used broadly, to include a good selection of methods for various aspects of mineral investigation. After an introduction by Nicol and Lakshmanan, the next four chapters deal primarily with methods for bulk elemental analysis. Lawson deals with optical spectrometry, including optical absorption, flame emission, and atomic absorption, and Hendry with X-ray fluorescence. Lakshmanan and Lawson cover radiotracer methods, including neutron activation and isotope dilution analysis, while Nicholls and Wood deal with mass spectroscopy. In the next chapter, Carr-Brion describes the adaptation of X-ray fluorescence and X-ray diffractometry as on-stream methods for process control. The next four chapters deal with methods for the identification, investigation, and quantitative determination of individual phases: X-ray diffraction (Nicol), electron microscopy, including selected-area diffraction (Loretto), infra-red spectroscopy (Farmer), and thermal analysis, including differential thermal analysis, thermogravimetry, and evolved gas analysis (Mackenzie). Southworth deals with the electron microprobe, scanning electron microscope, and related techniques. In the final chapter, Bennett reviews the various methods, mainly for elemental analysis, and summarizes the merits and demerits of each.

The chapters are well written and, unlike too many edited works, the book hangs together well. Inevitably in a book of this type and length, the space given to any one method will probably rarely be sufficient to meet the needs of the person who has already specialized in it. The chief use of the book is probably for the person who wants to know what a particular method is capable of, or whether it will satisfy his own requirements; it should also be useful as a reference book for advanced undergraduate students. For these and perhaps other classes of users it can be heartily recommended. It is expensive.

H. F. W. TAYLOR

Baumann (L.). *Introduction to Ore Deposits*. Edinburgh and London (Scottish Acad. Press: Chatto & Windus), 1976. viii+131 pp., 65 figs. Price £6.00.

Based on a course of ten lectures given in 1969, this book is intended to convey basic knowledge on ore deposits to students in various branches of earth science. Its three major divisions