

The text is liberally illustrated by nearly 130 diagrams and line-drawings together with some 30 plates of excellent quality. The list of references at the end of each chapter is extensive and there are five tables listing published accounts of specific structures. Indeed the outstanding features of this book might be summarized as illustration and documentation. It is all the more surprising, therefore, to find some familiar papers missing from this plethora of quotation. Two that are noticeable by their absence are Knill's contribution (*Journ. Sed. Petrology*, 1959) to the concept of the filling of turbidite basins and Crowell's account of the Kimmeridgian boulder-beds of Helmsdale, Sutherlandshire (*Trans. Edin. Geol. Soc.*, 1961), a vignette of the integrated application of linear structures and fabric elements of localized subaqueous sliding. The rather frequent typographical errors are a source of minor irritation as are other errors that can hardly be typographical, such as ascribing the crossbedding of Shotton's classic study to the *Old Red Sandstone* (p. 86). To compensate, the index is reasonably comprehensive and is divided into three sections, dealing with authors, formations, and subjects.

While the appeal of this book is clearly greatest for the specialist sedimentologist it is fair to say that perusal of the volume, used either as a text or as a reference tool, would be of value to all who have to deal with sediments and sedimentary bodies.

G. KELLING

BUERGER (M. J.). *The precession method in X-ray crystallography*. London (Wiley), 1964. xvi + 276 pp. Price 102s.

The precession method was devised and developed in Professor Buerger's laboratory and so it is appropriate that he should write the most complete account of its use that has yet appeared. The book, which is clearly written and well-produced, includes many excellent drawings and photographs, useful tables, and a comprehensive coverage of the literature. The text deals in detail with the theory of the method, the practical handling of the apparatus, and the interpretation of the photographs. There are also chapters on cone-axis photographs, errors, intensity determinations, the Lorentz factor and absorption, and an appendix on heating and cooling techniques. There is no doubt that any user or prospective user of the precession technique will find this book invaluable.

J. ZUSSMAN

MARSHALL (C. E.). *The physical chemistry and mineralogy of soils. Vol. I, soil materials*. London (Wiley), 1964. vii + 388 pp. Price: 90s.

This is volume I of a two-volume series dealing with the Physical

Chemistry and Mineralogy of Soils. It deals with the physical chemistry of clay-water systems, the mineralogy of the coarser parts of soils, the colloid constituents, the organic matter, and then the physical properties of the soils.

The book is of a very special nature and has been written, by one of the world's leading exponents, for the specialist in the soil field. From the mineralogist's point of view the chapters on mineralogy are a well-written summary of clay minerals and silicate chemistry. The chapters on the clay-water systems where cation exchange, vapour pressure, osmotic pressure, Donnan equilibrium, suspension effects, hydrolysis, electrophoresis, and oxidation and liquid junction potentials are dealt with, are useful reading for the mineralogist. The diagrams dealing with the atomic structure of the silicate minerals are well produced and it is a pity that the electron micrographs used were not of this high standard.

The author is to be complimented on bringing together many diverse subjects, and volume II is awaited with anticipation.

H. G. MIDGLEY

PELLETIER (R. A.). *Mineral resources of South-Central Africa*. Cape Town (Oxford University Press), 1964. 277 pp., 56 maps, figures, and plates. Price: 70s.

This book is directed towards a less specialized reader than the recently published 'Mineral Resources of Africa' by de Kun, and also covers a more restricted part of the continent. In fact, the title is somewhat misleading: South, Central, and Eastern Africa would have been more appropriate. However, the author includes an outline map of the area on the book-cover to guide the reader.

The whole book is profusely illustrated with black-and-white maps and sections of excellent standard, with numerous photographs, including two in colour, and also a folding litho-coloured geological map of Africa south of Rhodesia. The maps are well selected and include index maps of regional areas, showing mineral distribution and general regional geology; and also more detailed maps of individual mining areas, and in places, generalized mine plans and sections through them. The large format of the book prevents the illustrations from being finicky and crowded.

The text first describes the geology of the region as a whole and indicates its mineral production and potential: it also includes a table of correlations of formations between the various countries, which many may disagree with. There is also a chapter on the general and the mining