

The second and third parts of the book abound with the names of places that exemplify the described geological features, thus enlivening the data and testifying to the author's excellent first-hand knowledge of the island and supplementary reading.

Unfortunately, the text suffers from insufficient checking and care in final compilation. Some forty-five typesetting and spelling errors were counted by the reviewer and these do not include a large number of incorrect cross references to figure numbers, dates of publications, etc. Several minor errors of fact also occur, such as the definition of hypersthene as a magnesium-iron-calcium silicate (p. 99), and the assignment of diopside to the orthorhombic system (p. 309).

The above deficiencies notwithstanding, the *Geology of Ceylon* is a most timely publication, and should be read by all who are interested in the subject or whose work is related to it.

R. L. OLIVER

PANDE (I. C.). *Economic Minerals of India*. Nagpur (Datsuns), 1967. xii+132 pp., 4 figs., 16 photos. Price Rs 6 (9s. 6d.).

This small handbook is designed to serve the elementary needs of Indian university students, whose studies include the mineral resources of India. One chapter provides a general introduction to deposits, while the remainder deals, by use, with a wide range of economic minerals. Each chapter briefly lists the mineralogy, a few properties, and the Indian occurrences of the relevant element or mineral. The book is a series of notes for a short lecture course on Indian deposits and economic minerals in general. Size prevents a satisfactory treatment of either of these topics while the extremely poor reproduction of the photographs leaves some of them unidentifiable.

J. McM. M.

KOSTOV (I.). *Mineralogy*. Author's translation from the original text in Bulgarian, edited by P. G. Embrey and J. Phemister. Edinburgh (Oliver and Boyd), 1968. 587 pp., 505 figs. Price £10. 10s.

This book is divided into two parts. Part I is general mineralogy and occupies 75 pages. Part II is systematic mineralogy and occupies the remainder of the book. Part I consists of a brief introduction to crystal chemistry, a section on morphology, physical properties, and determination of minerals, and finally the genesis of minerals. These sections are of necessity brief and could in the reviewer's opinion have been omitted completely because the space devoted to each topic is so limited as to be very incomplete: e.g. in the genesis of minerals, the topic of metamorphism is dealt with in two pages of text.

In Part II the minerals are divided into twelve classes: elements; sulphides and sulphosalts; halides; oxides and hydroxides; silicates; borates; phosphates, arsenates, and vanadates; tungstates and molybdates; sulphates; chromates; carbonates; nitrates and iodates.

In the preface Professor Kostov states that 'The essential difference from all other

modern books on mineralogy lies in the manner in which the minerals have been grouped: The classification used in this book is based on geochemical-crystallochemical principles and not just crystal chemistry.' The book contains more than 2000 different mineral names and is well up to date with new minerals described up to the middle of 1966. To cover all these minerals in 470 pages (the systematic mineralogy) means that the information on certain minerals has to be somewhat limited; to take only one example the olivine series is treated in one page of text with one page of diagrams. Except as a fairly complete catalogue to minerals the reviewer wonders if such limited data on a very common mineral is what is required by the student of mineralogy.

The inclusion of data on the strongest lines in the X-ray diffraction patterns is a welcome innovation in a mineralogy text and in some cases d.t.a. patterns are given where appropriate, e.g. zeolites, serpentine minerals, and numerous sulphates.

For one who is accustomed to consider refractive index as the most fundamental of the physical properties which can be measured in a transparent mineral, the treatment accorded to this property leaves much to be desired. In the case of the common rock-forming silicates such as the orthopyroxenes or the plagioclase feldspars, the diagrams relating chemical composition to RI are too small to be useful in determining composition in these series. On the other hand diagrams showing the common forms developed and tables of interfacial angles are given for enstatite and it is felt that this treatment is rather out of date. Diagrams, of the type that a few generations of students have used in Winchell's textbook, showing the different values of extinction angles exhibited by amphiboles are drawn in this book; while these undoubtedly offer some comfort to a student faced with the problem of determining the name of a mineral that he considers is an amphibole, they may actually mislead him into thinking that he has actually determined the name of the mineral.

The book from which the translation was made was first published in Sofia in 1957 but this English edition is revised up to 1966. It therefore includes data on such minerals as deerite, howieite, zussmanite, dellaite, rustumite, yoderite, etc., but these data are limited to a chemical formula and a few of the strongest X-ray lines. The bibliography is of necessity limited because of the large number of minerals mentioned and therefore no references are given in the text. There are three appendices—the periodic table, a list of atomic and ionic radii and electronegativity of elements, and the 230 space groups.

The publication is of a very high standard with excellent diagrams and illustrations and is produced on a very high quality paper. The price is correspondingly high and well out of the range a British student would expect to pay for a textbook.

W. S. MACKENZIE

WYCKOFF (R. W. G.). *Crystal Structures*. 2nd edition, vol. 4. *Miscellaneous Inorganic Compounds, Silicates, and Basic Structural Information*. Chichester and New York (Wiley: Interscience), 1968. 566 pp. Price 235s.

This is the fifth volume to appear (vol. 5 already published) in the second edition of