

many such students would have the time (or the patience) to work systematically through the many exercises here given or whether the necessary equipment would be at their disposal (where, for example, does one procure coloured plastic spheres with radii in the ratios  $1:0.732:0.414:0.225$ ?). It is therefore more likely that the principal appeal of the work will be to teachers as a source of ideas and to those who are more interested in 'recreational mathematics' than in chemistry.

The greater part of the book is devoted to the exercises (103 in all). These are followed by a section presenting the solutions to the problems, and the volume ends with four lengthy theoretical appendices. The work is elegantly produced and copiously illustrated with excellent diagrams.

R. C. EVANS

DOE (B. R.). *Lead isotopes* (Minerals, Rocks & Inorganic Materials: Monograph Series of Theoretical and Experimental Studies, Vol. 3). Berlin, Heidelberg, and New York (Springer-Verlag), 1970. ix+137 pp., 24 figs. Price DM36 (U.S. \$9.90).

IN contrast to some important earlier reviews of lead isotope geochemistry, which have a strongly physico-mathematical bias, Dr. Doe's book is written from a refreshingly geological viewpoint. Most of the work is divided evenly between uranium-thorium-lead dating and the isotope geochemistry of 'common' lead. Radioactive lead isotopes receive a brief mention. Several appendices give tables of isotopic analysis of trace lead in common rocks, and the bibliography selectively covers about one-third of the published literature.

The section on U-Th-Pb dating systematically reviews the various mineral groups to which these methods have been applied. That on common lead surveys the results from old basement rocks and sediments as well as the more widely investigated young volcanic rocks and lead ores. The work relies heavily on tabular presentation of material (not just numerical data), and the text is very readable. Considered as a critical introduction to the literature of lead isotopes (including important Russian work) it will be extremely valuable, even to specialists in isotope geology: the price, however, seems excessive for such a slim volume, and must surely narrow the readership to less than the book deserves.

M. H. DODSON

POUGH (F. H.). *A field guide to rocks and minerals*. London (Constable & Co. Ltd.), 1970. xv+349 pp., 33 figs., 46 pls. (25 in colour). Price £1.75.

APART from one brief chapter on rocks and four rather unconvincing plates figuring common rocks, this book is devoted to the study of minerals. It is in two distinct parts, the first section being concerned mainly with physical properties, crystallography, chemical classification, and simple tests, whereas the second and much longer part is concerned with mineral descriptions. This genuinely pocket-sized book is not intended as a textbook of mineralogy but is a practical book with as much first-

hand observational information as the author could include in a limited space. The 264 photographs, 149 in colour, are a main feature, the minerals being photographed against a uniform background so that their approximate size can be judged at a glance. The attempt to select specimens that are typical of things that might be found by the amateur is to be commended though one doubts whether the pink fluorite octahedra from Switzerland come into this category. Although first published in the U.S.A. in 1953, this is the first publication of this book in Britain.

R. A. HOWIE

MACFADYEN (W. A.) with contributions by KINGSBURY (A. W. G.). *Geological highlights of the West Country*. London (Butterworths), 1970. 296 pp., 26 figs. Price £3.00.

THIS Nature Conservancy Handbook gives a detailed account of ninety geological localities in the counties of Cornwall, Devon, Dorset, Gloucester, and Somerset, each locality having been notified by the Nature Conservancy to the local authority as a Site of Special Scientific Interest. Descriptions of the majority of the sites in Cornwall and Devon of mineralogical interest were contributed by the late Arthur Kingsbury. Details are given of the Botallack Head to Cape Cornwall coast section, which shows fine exposures of contact-metamorphosed and metasomatized rocks in the aureole of the Land's End granite. The magnificent 300-foot high sea-cliff section of Cligga Head with greisen-bordered mineral veins is described, as are Cheeswring granite quarry, Clicker Tor quarry in augite picrite, and the coast exposures at Gurnard's Head and Porthmeor Cove showing contact metamorphism of greenstone and killas. The Lizard peninsula is covered both in general and at the particular localities of Coverack, Kennack, and Kynance Coves. The 'Cornish Stone' or chinastone industry is represented by the Tregargus quarry, St. Stephen-in-Brannel, and spilites are described from the pillow lavas of Pentire Head. From Devon the famous quarries at Meldon in the aplite and in metamorphosed Lower Culm calcareous sediments and tuffs are fully documented and a description is also given of the Haytor and Smallacombe iron mines (although the Devonian limestone at Hope's Nose, Torquay, is a listed site there is no mention of the occurrence there of native gold [*M.M.* 22-159]). So far so good, and this is obviously a book that should be widely available in departmental and Public libraries, but many important localities naturally are not included. There is for example nothing about the world-famous celestine workings around Yate in Gloucestershire and scant mention of the Mendip iron, manganese, copper, and lead mineralization [*M.M.* 26-67]; nor are such classic localities as Roche Rock, Hemerdon Ball, and Treburland to be found. Nevertheless this is a thoroughly useful book, with map references and locality details, and in the wider geological content of its title contains an abundance of useful data on fossiliferous localities in the birthplace of stratigraphical geology.

R. A. HOWIE