Biology. A discussion of the oxidation and spin state of iron in haemoglobin and of the structural information obtained from studies of iron-sulphur proteins.

Lunar Mineralogy (by S. S. Hafner). The determination of the oxidation state of iron in lunar rocks and of the relative proportions of superparamagnetic and ferromagnetic iron metal in the soil. The author discusses the determination of site populations in pyroxenes and plagioclases and their use as indicators of cooling history. Because of the restriction to lunar material there is no discussion of a number of important mineral groups (amphiboles, garnets, and micas, for example) for which Mössbauer data are available.

Metallurgy. Information on order–disorder and structural arrangements in alloys. Phase equilibrium and precipitation studies.

Much of the introductory chapter is, unfortunately, duplicated in chapters 2, 3, 4, and 6 to the exclusion of more than a brief discussion of Mössbauer isotopes other than ^{57}Fe. Description of non-crystalline states and of the effect of pressure on the Mössbauer effects in solids would also have been of interest. Despite these criticisms the book is a useful source of information and references for those wishing to find out about the applications of Mössbauer techniques.

B. J. WOOD

Anderson (B. W.). *Gemstones for Everyman.* London (Faber & Faber), 1976. 368 pp., 29 figs., 25 pls. (9 in colour). Price £15·00.

The *sobriquet—maestro*—is not usually employed in assessing scientific attainment but a sufficient aesthetic *aura* surrounds precious stones to permit its occasional use for a gemmologist. It is peculiarly appropriate for the writer of this latest book on gemstones. The author, already well known for his *Gem Testing*, which has demanded eight editions since 1942, has the experience of forty-six years in the London Precious Stone Laboratory, which, although it explains the origin of his confident authority, fails to reveal the source of the limpid lucidity that permeates this delightful book—sufficient that it is there for the reader's pleasure.

The first third of the volume comprises an easily digested general section concerning definitions and nomenclature, occurrence and extraction, cutting and polishing, followed by some elementary crystallography, optical mineralogy, and physical properties of gemstones, the whole accurately pitched at a selected level for 'everyman'. It must not be criticized for failing to attain a depth that was not intended. Indeed there is a deftness and surefootedness in the way these topics are disposed of that testifies to the author's proficiency as a teacher. Here, as in the whole book, the narrative is ornamented with light-hearted asides and digressions, which impart a sort of breeziness to the writing altogether quite refreshing. A condensed account of the history of diamond extraction (9 tons in 1971), how to detect a genuine crystal ball from a spurious glass example and what to pay for it, is information to be savoured by the curious and not easily come by.

The middle third of the book deals with the conventional precious and semi-precious stones in more detail than the title of the book would lead us to expect. Geographical varieties are described together with the history of their discovery and exploitation. This account is well illustrated, the coloured plates of gems being admirably faithful. The astonishing predilection for deception in the jewellery trade must warn all mineralogists that gemmology is not some minor accomplishment lightly to be taken up for the purposes of passing an opinion but a specialism to be respected in its own right. The question of imitation composite and synthetic gemstones forms a chapter in the last third of the book, which also deals alphabetically with the minor semi-precious stones, often of more interest to collectors of facetted stones than for their demand in the jewellery trade. This section contains superb digressions on taaffeite and

kornerupine. It is followed by information on pearls, including the method of valuation, which rivals the calculation of the date of Easter. The chapter incidentally contains an account of the establishment and development of the formidably named Gem Testing Laboratory of the Diamond, Pearl and Precious Stone Trade Section of the London Chamber of Commerce and Industry. A useful glossary, an alphabetical list of gemstones and their main physical constants, together with a nomenclatural list completes this very useful book.

One has to scrape the barrel somewhat to criticize the author's achievement of what he intended to do. I find commas before conjunctions irritating. In biological nomenclature, generic names (of pearl-producing oysters, for instance) should commence with a capital letter. The largest beryl crystal of gem quality weighs 110·5 kg and, as the author informs us, weighs more than 1 cwt. He might have mentioned that it also weighs more than 2 cwt.

But 'sniffings and girdings' seem ungenerous after having derived so much pleasure from this fine book in which the author has done so well for his public. At £15 a copy the publishers evidently hope to do well for themselves. F. HODSON

Raguin (E.). *Géologie du granite*. 3rd edition. Paris, New York, Barcelona, and Milan (Masson), 1976. xi+276 pp., 65 figs. Price 96F.

Readers will recall the now discredited hypothesis of granitization, on which so much discussion was fruitlessly expended in the decades up to 20 years ago. Some veterans of this debate, reluctant no doubt to acknowledge the error of their ways, now extend the term granitization to describe even the formation of granite magma by melting. Professor Raguin, in the latest edition of his well-known book, uses the term to mean any process at all by which granite is formed. He acknowledges a substantial role for magmatic processes in the formation of at least some granitic intrusions, but his text is permeated by the nomenclature and preoccupations of the granitization era, and he still believes that many granites were formed from pre-existing solid material in place.

Never mind, everyone is entitled to his own point of view. The real faults of this book are in its omissions. The chemical and mineralogical compositions of granites are not discussed. Experimental studies of the relevant synthetic systems are passed over in half a page. Isotopic evidence on the origin of granites is hardly mentioned at all. Indeed, one looks in vain for a quantitative treatment of any aspect of the subject. There are very few references to recent publications except those of French authors, and there is no proper index. In short, whatever your opinion of granitization, you will not be able to obtain an up-to-date picture of the geology of granite by reading this book. A. HALL

Strens (R. G. J.), Editor. *The Physics and Chemistry of Minerals and Rocks*. London and New York (John Wiley—Interscience), 1976. xvi+697 pp., 241 figs. Price £19·50.

This book is based upon what was clearly a very successful NATO Advanced Study Institute on 'Petrophysics' held at the University of Newcastle-upon-Tyne in April 1974, under the direction of Professor S. K. Runcorn. The title of the book is more cumbersome but more accurately represents the subject-matter of the symposium. Forty-one papers are published dealing with three main themes summarized in the editor's preface as: transport properties including electrical and thermal properties and convection; the dependence of the macroscopic properties of rocks and minerals on their microstructures; and the reactions, properties, and structures of minerals, particularly those containing transition metal ions, at high pressure.