

chemical analysis and to those working full time in the field.

F. BUCKLEY

Evans, A. M. *An Introduction to Ore Geology* (Geoscience Texts, vol. 2). Oxford (Blackwell Science Publ.), 1980. viii + 232 pp., 130 figs. Price: Cloth £16.00, Paper £7.50.

This is the second of the Geoscience Text series edited by A. Hallam in which authors who are experienced teachers as well as of high academic standing have been asked to provide a brief introduction to their subject mainly for undergraduates.

The book is divided into three parts—I Principles (72 pp.), II Examples of the More Important Types of Ore Deposit (115 pp.), and III Mineralization in Space and Time (22 pp.). In Part I, after an introductory chapter on definitions, there is a discussion of the nature and morphology of ore deposits including forms of orebodies; textures and structures of ore and gangue minerals, fluid inclusions and wall rock alteration; major theories of ore genesis; geothermometry, geobarometry, stable isotope studies, palaeomagnetic and radiometric dating and zoning; metallogenic provinces and epochs.

Part II begins with a brief account of the classification of ore deposits. The author points to the recent swing from genetic to environmental-rock association classifications and adopts the latter himself but does admit to a 'whiff of genesis and morphology'. The features outlined are based mainly on Lindgren's 1913 scheme of hypothermal, mesothermal, epithermal, and telethermal deposits.

The rest of Part II consists of eleven chapters in which are described the principal occurrences of ores in a wide variety of different environments—orthomagmatic, carbonatite, pyrometasomatic, disseminated and stockwork, stratified sulphides and oxides in sedimentary and volcanic areas, vein associations, strata-bound, sedimentary, residual and supergene enrichment, metamorphic. The very names of the chapters often have a genetic ring.

Part III has two brief chapters on plate tectonics and the global distribution of ore deposits and ore mineralization through geological time.

This summary of contents of the book indicates that the treatment must necessarily be brief, sometimes almost perfunctory, since some of the topics covered need a volume to themselves. Even major deposits warrant only a page or two so that many of the details and discussion of conflicting opinions on the genesis of the deposits may be lacking.

In a book of this size there must necessarily be some omissions and there will be some who find their own speciality either omitted or briefly

touched upon. However the author has in the main achieved his aim of providing a balanced, short and cheap (certainly for the paperback edition) introduction to an ever expanding and complex subject.

The book is concisely written, well illustrated with clear line drawings and well laid out; there are very few typographical errors. There is a comprehensive bibliography to which the student can turn either because his appetite has been whetted by the succinct summary descriptions or to have some of the more fundamental aspects—such as dating or stable isotopes or fluid inclusions—more fully explained.

It is a timely work in several ways. It emphasizes how an orebody may be the result of a whole series of processes acting over a long geological history; it points to the effects of technological change which have made many uneconomic mineral deposits into workable ore bodies (e.g. Cu concentration 3% in 1900, 0.4% at present); and it comes at a time when many of the long established theories, e.g. the epigenetic origin of many ores, are being questioned and a syngenetic origin is being suggested.

Dr Evans is to be congratulated on this volume which can be strongly recommended to a wide range of readers as a good introduction to ore geology.

R. BRADSHAW

Ballance, P. F. and Reading, H. G., Editors. *Sedimentation in Oblique-Slip Mobile Zones*. (Special Publ. Intern. Assoc. Sedimentologists, no. 4). Oxford and Boston (Blackwell Scientific Publ.), 1980, vi + 265 pp., 121 figs. Price £14.50.

This well-produced volume contains thirteen papers (MA 81-1135) presented in a symposium held at Auckland University in January 1979. We are not told the title of the symposium, but it probably included the phrase 'strike-slip faulting': this or very similar phrasing is used in the titles of six of the papers. The clumsy title of the present book is an example of writing by committee; in the introduction it takes Dr Spörli more than 200 words to define an oblique-slip mobile zone. Those afraid that this book involves some totally new concept may be assured that the title should have been 'Sedimentation in regions of active major strike-faults'. Since these will usually have a vertical component in part, much of the sedimentation is similar to that associated with many other major faults: high sedimentation rates, conglomerates, turbidites, debris-flows, slumps, wedge-shaped layers, mostly set in elongate basins. Of course it is not all quite so simple as this, as the papers by Bluck and Ballance show.

The examples described from the Antalya complex in south-west Turkey, and several of those from New Zealand, involve igneous activity, chiefly volcanism, but mineralization is rarely mentioned. This book is essential for any library on sedimentary facies; others may ignore it.

J. M. HANCOCK

Dennis, J. G., Murawski, H., and Weber, K., Editors. *International Tectonic Lexicon: a pro-drome*. Stuttgart (E. Schweizerbart'sche Verlagsbuchhandlung: Nagele and Obermiller), 1979. vi + 153 pp., 13 figs. Price DM 48.00 (\$29.80).

The earlier review of this book (*Mineral. Mag.* 43, 958, 1980) omitted to mention the basic purpose of this lexicon—to present a survey of the divergent usage of tectonic terms in *six languages* (English, French, German, Italian, Russian, and Spanish). The editors regret this omission.

A. M. CLARK

Hoefs, J. *Stable Isotope Geochemistry* (Second, completely revised and updated edition). Berlin, Heidelberg, and New York (Springer-Verlag), 1980. xii + 208 pp., 52 figs. Price DM 59.00 (\$34.90).

The second edition of Professor Hoefs's *Stable Isotope Geochemistry*, which is still the only general introduction to this important modern development in geology, is a very welcome addition to the literature. The first edition (*Mineral. Mag.* 39, 735–6, 1974) was criticized by reviewers (including the present one) for a number of shortcomings which have now been successfully corrected. In comparison with the first edition the text-length, the number of figures, and the bibliography have all been increased by about 50% but the clarity of the text and the coverage of the subject have been transformed. The book is divided into three chapters: 1. Theoretical and Experimental Principles; 2. Isotopic Properties of Selected Elements; 3. Variations of Stable Isotope Ratios in Nature.

The organization of the third section is slightly idiosyncratic in that extraterrestrial material, igneous rocks, volcanic gases and hot springs, ore deposits, the hydrosphere, the atmosphere, the biosphere, sedimentary rocks, and metamorphic rocks are treated as separate sections and the variations in abundance of different stable isotopes in each of these 'spheres' are discussed in separate

sub-sections. The result is a one-step-at-a-time text which is easy to read and thus probably excellent for students but does have the disadvantage that all the different lines of evidence bearing on a particular problem are rarely drawn together. This is, however, a very minor drawback in a book which can be recommended, really without reservation, as a thorough, easily read and enjoyable introductory text.

R. D. BECKINSALE

Tucker, M. E. *Sedimentary Petrology: An Introduction* (Geoscience Texts Volume 3). Oxford (Blackwell Scientific Publications) and Boston (Halsted Press), 1981. viii + 252 pp., 179 figs. Price £8.50.

In recent years, many texts have been published dealing with the depositional environment and facies of sediments. This book attempts to present a concise up-to-date account of the rocks themselves, with discussions of composition, petrography, sedimentary structures, and diagenesis. In general a better balance than usual is achieved. There are whole chapters on sedimentary phosphates, cherts and siliceous sediments, and volcanoclastic sediments, but in striving for completeness some topics are very inadequately covered, e.g. heavy minerals are poorly interpreted and badly illustrated.

The general tone is one of clear-cut statements in short readable sentences. There are good tables and diagrams and excellent photographs of rocks. The coverage of the literature in general is good, with suggestions for further reading at the end of each chapter in addition to some 600 references in the main list. The author has written this book with undergraduate students in mind and states that all the references cited should be readily available; this, however, does not excuse the complete lack of references to the French literature (which might have included the *Atlas photographique des Mineraux d'Alluvions* by Devismes, 1978).

The book is set out clearly and well printed. Although surely no gastropod has calcite as well as aragonite as a dominant mineral (as stated in Table 4.1), mineralogy and petrology students will find this an easy way in to the land of neomorphism, opal-CT, sabkhas, and wackestones.

R. A. HOWIE