

substances in medicine, will find the core of this book on pp. 51–205. Here are reproduced the archaic German text of the 1535 edition of Rösslin's *Kreutterbüch* or herbal, and the parallel English translation. Aside from the first chapter, which gives instructions in the art of polishing stones, the remaining ninety-two chapters treat the substances themselves in alphabetical order commencing with the 'Adamas' or diamond and ending with 'Zignites', a stone merely identified by Rösslin as 'a glass-colored stone'. In between are a bewildering number of mineral substances: gemstones, ornamental stones, earths, inorganic materials as pearl, amber, coral and jet, stones of peculiar shape, several metals, inorganic compounds as alums and salts, *bezoars* and other calculi, the lodestone, petroleum, etc., all of which were believed to possess properties that made them of value in the pharmacy of the time.

According to Belkin and Caley, this work 'marks the end of the medieval viewpoint in writing about nature', noting that unlike Agricola's *De Natura Fossilium* of 1546, it is essentially a synthesis of earlier writings in similar vein by such as Silvaticus, Vincent of Beauvais, Albertus Magnus and others. While the bare bones of Rösslin's text, written in the curt style typical of herbals, is easy enough to follow and appreciate, it is the vast quantity of complex ancillary material provided by Belkin and Caley that doubles the size of the book. There is a bibliography of several hundred items of great value for anyone interested in further research of medieval lapidaries but marred by visual confusion caused by failure to use bold face type to clearly distinguish entries, a biography of Rösslin, bibliographical notes on other editions of his work, a comparison of his work with other herbals of the period, and an analysis of Rösslin's editorial procedures in the preparation of his book. A very large and complete commentary follows the original text and its translation, and in turn is followed by various appendixes, an *index verborum* of the German text, and name and subject index. In short, this work fulfills its aim to paint a picture of the contemporary state of German medical knowledge in so far as it concerns the use of mineral substances in medicine. Its value as a permanent reference work is unquestioned.

J. SINKANKAS

Deer (W. A.), Howie (R. A.), and Zussman (J.). *Rock-forming minerals. Vol. 2A. Second edition. Single-chain silicates*. London (Longman), 1978. x + 668 pp., numerous figs. and tables. Price £25.

In the 15 years since its first appearance, 'D. H., and Z.' has established itself as by far the most significant work of reference ever to be put into the hands

of the petrologist. For once it can be said without appearing trite that a work has become a classic in its own time, certain volumes at least having been reprinted as many as six times since their original publication. And now the indefatigable authors are well under way with the task of bringing their work up-to-date: with this first volume of the new series to appear, one is again left amazed at the sheer industry of these three leading scientists who have been able somehow to find the energy and the time to undertake, not merely a revision but a complete re-write, in the midst of three unusually busy lives.

The familiar five-volume first edition of D. H., and Z. is so often referred to as 'encyclopaedic' or 'monumental'. What about the first instalment, then, of the second? Encyclopaedic it certainly is, in even greater measure, but how can a work that has evolved and grown so radically in the 15-year interval between the two editions be likened to so static an object as a monument? Quite apart from the personal achievement of the authors in producing it, this second edition of part of Volume 2 bears most impressive testimony to the unprecedented growth and vigour of petrology and mineralogy during the past one-and-a-half decades.

In 1963 Volume 2 of D. H., and Z. dealt with all the chain silicates in a volume of 379 pages, costing £4.75 (95s. in old money). In 1978 Volume 2A of the second edition treats only the single-chain silicates in a volume of 668 pages, costing £25. It is still extremely good value. The volume covers pyroxenes (544 pp. as against 161 pp. in the earlier edition), wollastonite (17 pp.), pectolite (11 pp.), bustamite (11 pp.), rhodonite (14 pp.), pyroxmangite (14 pp.), sapphirine (26 pp.), aenigmatite (15 pp.), rhönite (4 pp.), and serendibite (3 pp.). The amphiboles will presumably form the substance of Volume 2B, as the pyroxenes of Volume 2A.

The amount of information given on the single-chain silicates has roughly trebled and comparisons between the two editions show how not only the volume, but also the depth of knowledge has increased, especially of course in the important and much-researched pyroxene group. There is very much more crystal structural and chemical detail; many more phase diagrams of relationships in systems of petrogenetic importance carried out under wider ranges of temperature and pressure; much more concern with thermodynamic considerations—all this information digested, set in context, and commented upon lucidly and concisely without becoming dull or obscure. Indeed, despite the greatly increased length, the reviewer has if anything found the new edition a more readable book to browse in than was its predecessor.

The organization and layout of the extensive

material relating to the pyroxenes is more satisfactory than in the first edition (see *Min. Mag.* 33, 525), the minerals now being divided into Mg-Fe pyroxenes (orthopyroxene and pigeonite), Ca-pyroxenes, Ca-Na pyroxenes, Na-pyroxenes, and Li-pyroxenes. This much better reflects their common paragenetic associations and simplifies finding the information one is looking for. Much modern work, including of course more recent crystal structural results of a fundamental kind, is also incorporated into the sections dealing with the non-pyroxenes towards the end of the volume.

The section dealing with orthopyroxenes, running now to 141 pages, may be taken as a fair sample of the whole. It lists seventy-six chemical analyses—twice as many as the earlier edition—only one of which confesses to being a microprobe analysis. It has twenty-one pages of references, as against the previous four. The whole text is expanded in like proportion: the familiar optical properties diagram for the orthopyroxenes appeared as fig. 10 on p. 28 in the first edition; in slightly revised form it appears as fig. 74 on p. 109 of the second.

The reviewer, given limited time for his task, is conscious that he can give but a superficial impression of a lengthy work of reference. But readers will want to know, especially in view of the price, whether this new edition of D. H., and Z. is going completely to supersede the old. The answer clearly is that it will. While older editions of some standard texts in descriptive mineralogy may retain much of their usefulness, this will inevitably be less so in the case of D. H., and Z., the main strength of which is its usefulness to the interpretative petrologist as an up-to-date, complete, and well-documented source of information and ideas that unlike, say, optical data, change continually and radically as the subject advances. Petrology and mineralogy are in a very different state now from that in 1963, and this second edition—virtually a new work—must again be regarded as an essential tool to which everyone working in the field must have ready access.

The present volume is attractively printed and well set out, giving a rather more 'modern' impression than the first edition. The reviewer has spotted few typographical errors—though it is unfortunate that the word 'lead' appears twice instead of 'led' in the Preface: this slip is not symptomatic of the whole. Figure captions are now printed in heavy type as, less understandably, are the lists of oxides, ions, etc. in the tables of analyses. The diagrams are, as before, of high quality, many being entirely new and most of the others revised. The occasional half-tone photographs printed in the ordinary text have reproduced quite well and there is a coloured

frontispiece, the slight over-all greenish cast of which detracts a little from its impact. The binding, if durable, is horrid: glossy boards with no separate dust cover and which (in the review copy) are easily bent and creased: at £25 the purchaser might reasonably expect the decent cloth binding and dust cover of the first edition. And why have Longmans, rather like the Rover division of British Leyland, abandoned their famous '1724' house sign with its elegant three-masted vessel in favour of a nasty stylized symbol a computer might have drawn?

Apart from the binding, this volume is a triumph for all concerned, and we hope fervently that the authors' energies will maintain momentum until the whole enterprise has been completed for the second time. But it will be like painting the Forth Bridge. . . .

E. A. VINCENT

Potter (P. E.) and Pettijohn (F. J.). *Paleocurrents and Basin Analysis* (second corrected and updated edition). Berlin, Heidelberg, and New York (Springer-Verlag), 1977. xiv+426 pp., 167 figs., 30 pls. Price DM 55,70.

I have little but praise for this excellent book. It has been up-dated to 1976 by inserting supplementary chapters after each original one, but the whole is kept within 425 pp. and embellished with thirty splendid plates. Some of the more important literature from France, Germany, and the Soviet Union has been used, as well as an extraordinary range of work in English, with an emphasis on the quantitative. There are brief abstracts of many of the more recent papers.

Inevitably, the very recent but vital research of Vail, Mitchum, and Thompson on seismic analysis of basin development could not be included, but the authors were always more concerned with the finer details of basin analysis than with the broad picture. Nevertheless, there is a curious absence of any mention of the effects of transgressions and regressions, or changes of sea-level, on basin structure. It is relatively thin on the factors that control the distribution of mineral species in sediments. On the other hand, the chapter on 'The Sedimentary Model' includes a thorough coverage of the application of plate theory to basin and facies development.

With these minor strictures, a mineralogist with any interest at all in clastic sediments will find this book invaluable for its succinct summaries and its survey of references. The price of around £15 is reasonable; students can use it both as a systematic text and for the pleasure of browsing through it.

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