

BOOK REVIEWS

Deer, W. A., Howie, R. A., and Zussman, J. *Rock-forming Minerals. Volume 1A. Orthosilicates*. London (Longman) and New York (Wiley: Halsted Press), £50.00. x+919 pp., 373 figs., 79 tables.

In the preface to this second edition of the classic DHZ, the authors state that they have maintained the general principles and organization adopted for the first edition. The enormous expansion of mineralogy, crystallography, and petrology in this Golden Age of Earth Sciences has required a tripling of the number of pages for each mineral. I cannot imagine how these three authors can have assimilated so much information in so short a time since publication of the Pyroxene volume, especially as two of them have enormous day-to-day responsibilities.

In the late nineteen-fifties, I could run through all the rock-forming minerals in an advanced course at Penn State. A quarter-century later, I argue with my good friend Peter Wyllie about the content and style of the Advanced Mineralogy class at Chicago. As an experimental petrologist, he wants me to teach all the rock-forming minerals in ten weeks. I want to delve deeply into the new types of information and the new types of thinking about minerals with the aim of stimulating students to invent new ideas for research. Of course, these two needs are almost irreconcilable, and I believe that the best compromise is to teach thoroughly only a few minerals in any year, and to rotate the minerals in successive years. A student fully grounded in the fundamentals can then go to DHZ for a systematic literature survey for any given mineral, and then to *Mineralogical Abstracts* and *Chemical Abstracts* for an update.

Competing with the present volume of DHZ is Volume 5 of *Reviews in Mineralogy* prepared by five authors, and published in 1980 by the Mineralogical Society of America. The same orthosilicates are covered, except that the actinide ones are not given in DHZ 1A. To obtain a detailed comparison, I took at random zircon (DHZ 1A 24 larger typeset pages, 170 references; RM 45 smaller typewriter-offset pages, 160 references). First, less than half of the references are common. Second, the crystal structure section is more detailed in RM, whereas the paragenesis section of DHZ 1A is not explicitly represented in RM. Third, morphology is covered in more detail in RM, and chemistry (two pages of analyses in DHZ 1A). In short, the two treatments have characteristic strengths which tend to occur also for the other minerals, but to different

degrees. The overlap between the two volumes is not large enough that either one is sufficient on the library bookshelf: in particular, the treatment of olivine is much more detailed and petrologically oriented in DHZ 1A.

Finally, a few details. To check for accuracy, I examined all references to work done in my laboratory (not for egocentricity—just for ease!). The only error detected was G. instead of C. R. Knowles on p. 737. There are numerous phase diagrams, all newly drafted. The tables of chemical analyses could be compressed (mostly six to the page). Some are marked as electron probe analyses, but others are not; incidentally, I am sceptical of most olivine analyses with $Al_2O_3 > 0.1$ wt. %. The petrogenesis section on olivine is thorough and useful on the whole, but some sections need further interpretation (e.g. Table 29 lumps together some disparate types of meteorites and omits some important ones).

To conclude, this is an important volume which should be in all earth-science libraries and on the bookshelf of professional mineralogists. Many of my research projects arose from reading DHZ 1st edition in the evening, and I look forward to many more happy hours with DHZ 2nd edition. The authors fully deserve the honour they received recently from the Mineralogical Society in London. Good luck for DHZ 3rd edition.

J. V. SMITH

Kostov, I., and Minčeva-Stefanova, J. *Sulphide Minerals: Crystal Chemistry, Paragenesis and Systematics*. Stuttgart (E. Schweizerbart'sche Verlagsbuchhandlung), 1982. 212 pp., 144 figs. Price DM 64.00 (\$28.20).

New textbooks in the field of ore mineralogy are to be welcomed, especially when, as in this case, the authors possess a wealth of knowledge and experience of the subject matter. As the title of the book implies, the emphasis is very much on two areas of sulphide studies—crystal chemistry, and what the authors term 'paragenetic trends'.

The first half of this book, following a very brief introduction, is devoted to the crystal chemistry of sulphide minerals. The term sulphides is used in the widest sense so as to include compounds of Se, Te, As, Sb, and Bi and also the sulphosalt minerals. Following an outline of the attempts made by earlier workers to produce crystal chemical classifications of the sulphides, the authors propose their own solution to this problem. Their classification places emphasis on the axial ratios of the unit cell