

## BOOK REVIEW

**ROCK-FORMING MINERALS VOL. 4A: FRAMEWORK SILICATES: FELDSPARS.** W.A. Deer, R.A. Howie, and J. Zussman. London: The Geological Society, 2001. Hardback, 972 p. USA Distributor AAPG Bookstore: bookstore@aapg.org. £115.00/ US\$192.00, discounts to GSL and AAPG members.

Happy is the book on feldspars that begins with an introduction to the names, in which the ternary solvus of Fuhrman and Lindsley vividly demonstrates that all the juicy names vanish at high temperature. The only one left standing at page 4 is “ternary feldspar”! And that to my mind is a Good Thing. Whether the added “d” in the old “felspar” is a good thing depends on where you live and how old you are. If these authors can do it, so can you.

This new DHZ-II, like the other second editions labeled “A”, is an immensely expanded treatment of the original 1963 topic; like them also, it expands only those minerals in the primary focus. Here, the authors deal with alkali feldspars in 620 pages (88 in the old), plagioclase in 283 pages (72), and Ba feldspars in 34 pages (13). Buddingtonite and reedmergerite are added for good measure in ten pages. Weightier comparisons may be made between this volume at 1733 g, the MSA Reviews in Mineralogy Feldspars-2, at 625 g, the 1984 NATO ASI volume with feldspathoids too at 1,108 g, the seminal and eclectic 1988 Feldspar Minerals 2<sup>nd</sup> Ed. volume by Smith and Brown at 1,818 g, and DHZ-I reckoned at a meager 382 g.

The publisher has been switched from commercial to non-profit, with hearty discounts to sponsoring societies. The lists of contents are similar but for the addition here of very hefty sections on Experimental Work: 250 pages for the alkali feldspars, and 27 pages for plagioclase. Gee, I wonder why so few for plagioclase. Get to work, ye toilers in the lab!

After a very welcome dedication to William Scott MacKenzie, now an old lion of feldspar wisdom, a list of Abbreviations and Symbols once again makes a helpful starting point. Regrettably, the useful but variable atmosphere is equated with the bar, which is weatherproof. (Anybody reporting work at 1 bar [or, much worse, 0.001 MPa!] had better document the method of isobaric pressure control!) Worthy prefaces to both editions are given. The current one cites novel growth in isotopic and environmental aspects of feldspars in the recent literature, while leaving no doubt that what we see at all scales of microscopy is still about the best of what we get. Weathering and diagenesis complement the sedimentary, meteoritic, and lunar environments of feldspar residence, while the occurrence of sanidine in diamond and albite in platinum nuggets are topics unlikely to be found in other feldspar compendia. The book is not intended just for feldspar nuts (they use a more polite

term, of course) but for the general reader in petrology and mineralogy. This is good. It is the indispensable reference.

The placement of references at the close of each major section is a mixed blessing, but you can find them easily enough via the Contents if you seek backwards from the start of the next section. However, there are some surprises, because the half-page Contents is cryptic, and omits at least one section, on “Distinguishing features” (of alkali feldspar) at p. 415. On the other hand, the references are comprehensive and timely (to 2000), for example Aagaard and Abbott to Zhang and Zuddas in 39 pages at the close of the experimental section for alkali feldspar. Here you will find all your old friends and plenty of new ones.

Predictably, many new topics appear that were unknown or embryonic at the time of the 1963 edition. Among these are thermodynamic treatments of plagioclase transitions and Landau theory by the Cambridge workers, and even experimental reversals of the primitive to body-centered transitions in anorthite at high *P* and *T*. Elegant treatments of optimal and other phase boundaries in plagioclase have abounded since the first edition. Needless to say, the treatment of thermometry, reactions, and *P-T* paths in metamorphism is vastly expanded from the original. Textures, twinning, zoning profiles, and rare-earth element patterns are illustrated in profusion. One even finds the melting relations of plagioclase lherzolite at high pressures. Parageneses and occurrences are described with the customary encyclopedic thoroughness.

One could wish for more detailed Contents and page headings to help with navigation through these myriad topics and pages. However, this is a remarkable and durable compendium of the most abundant minerals of the Earth’s crust. I don’t know how these venerable scholars do it; my erstwhile and delightful office-mate at Cambridge, Alex Deer, gave up the bassoon long before finishing his work on *Feldspars*. There must be well over 400 references on plagioclase paragenesis alone, and all these occurrences are given fair treatment. There are over 500 references for experimental work on plagioclase, and possibly 1000 for alkali feldspar experiments. The energy, dedication, and scholarship displayed here will not soon be surpassed.

Oh yes, the index takes me to sanidine in diamond via “additional parageneses” at p. 593, and to albite in platinum, with a little more difficulty, under placer deposits and plagioclase, in the heading of Sedimentary rocks (p. 866). The 19 page index works!

S.A. MORSE  
*Geosciences, University of Massachusetts  
Amherst, MA 01003 U.S.A.*