

## BOOK REVIEW

DANA'S NEW MINERALOGY (Eighth Edition). By Richard V. Gaines, H. Catherine W. Skinner, Eugene E. Foord, Brian Mason, and Abraham Rosenzweig. (1997) 1819 p. John Wiley & Sons, Inc., New York. \$250.00.

As the collection manager for the U.S. National Collection I have a constant need to refer to the volumes of *The System of Mineralogy* of J.D. and E.S. Dana. As with almost every major collection, private and public, the National Collection is arranged according to the Dana System. The arrangement of the National Collection is based on the sixth and seventh editions due to the lack of a silicate volume in the seventh edition. Answering public inquiries concerning minerals is made easier having the Dana volumes there for quick reference. Finally, when a researcher requests a certain composition for a mineral, I use the analysis sections for a check on which locality may have produced that mineral with that composition. However, the Dana's volumes have their limitations. For example, there have been many new species added since 1943 and 1951 (the dates of publication for Volume 1 and Volume 2 of the seventh edition, respectively), as well as a few discredited species. Also, as mentioned above, the silicates were not covered in the seventh edition, requiring those who arrange their collections by the System to keep the sixth edition handy. There has been an incredible amount of work done on the chemistry and crystal structure of minerals since the publication of the seventh edition. And finally, there have been many new finds of minerals not just on planet Earth but on the Moon as well. Although these problems are solved somewhat by the use of other references (the *Encyclopedia of Minerals*, 2nd ed., by Roberts, Campbell, and Raup, 1990, Van Nostrand Reinhold, New York, and the *Handbook of Mineralogy* by Anthony et al., 1997, Mineral Data Publishing, Tucson, Arizona) are two that come to mind), nothing has the depth of coverage that the Dana volumes have. The appearance of *Dana's New Mineralogy* was a complete, and pleasant, surprise to me. When I was first introduced to the project by one of the authors five years ago the stated intent was to produce an updated and new edition of *Dana's Textbook of Mineralogy*. Instead the authors have written an eighth edition of the venerable *System of Mineralogy*. The question I asked myself was would this book be as useful to me in my daily tasks as the previous editions? Having asked the question I decided to review this book with my specific needs in mind: Collection arrangement, public inquiries, and research requests.

First, the minerals are arranged essentially as they were in the seventh edition for the nonsilicates in this edition. The classification numbers have been expanded and updated using Ferraiolo (1982, *A systematic classification of nonsilicate minerals*, Bulletin of the American Museum of Natural History, New York, with various supplements) to incorporate the new species and leaving room for future new species. The silicate classification is new and was developed by two of the authors (Rosenzweig and Foord). While most people would not think twice about this feature I am, as are those in a position like mine in other museums, very concerned about the placement of species. The silicate section is of particular interest to me in this regard just as a check on how we did including silicate species described since 1892 into the collection. As far as new species in general, in the introduction to the book it is stated that all minerals described up to December 31, 1995 have been included. A quick check revealed that there are nine species missing from the volume that were described before this date (alarsite, arsenogorceixite, barberiite, baumhaurite-2a, belkovite, coombsite, fluorrichterite, harrisonite, and potassium-fluorrichterite). However, this minor inconvenience aside, the book is extremely helpful to anyone who has charge of the arrangement of a large collection.

The main reason for having a new edition of the System is to update and add to the mineral descriptions. When answering public inquiries I like to give a brief description of the mineral's properties, where it is found, and tell about the mineral's uses or other interesting facts. Occasionally we will get an inquiry using a synonym to which I give a brief history of that name and when the name was changed. This kind of information is routinely obtained in the sixth and seventh editions. Using *Dana's New Mineralogy* I will only be able to give some of this information. Some of the descriptions are lean and no nonsense (e.g., arsenopyrite) while others are quite long (e.g., beryl). The crystallographic data, physical properties and chemistry run together without a break. Users unfamiliar with crystallography or mineralogical descriptions will need to familiarize themselves thoroughly with the format of presentation chapter. While the derivation of the mineral's name is given, the synonymies that were included at the beginning of each entry in past editions have been dropped. The presentation of locality data is unusual. A table in the format chapter gives abbreviations used in the main body of the text for geographic names. However this is applied only to the United States, Canada, Mexico, Australia, and Brazil. Other countries that are

divided into states or provinces (e.g., Peru) have those names spelled out. The locality data also presents the user with outdated names of provinces and states (e.g., Saxony instead of Sachsen). Finally, the chemical analyses that were given in past editions have been dropped from this one. This is curious to me, as I would have thought they were necessary to understanding the crystal structure data and the derivation of the given chemical formula. For my purposes I will have to rely on other references when attempting to fulfill a specific request for researchers. As for answering public inquiries I will be able to use the book for some but not all.

I will use the book because there is a lot of new data for old species as well as good descriptions of new species, but not to the extent that I used previous editions of the System. I am somewhat annoyed that India paper was used as this type of paper has the habit of folding and creasing easily. It would also be irresponsible of me not to mention the typographical errors present in this book. When I first randomly opened the book I

noted that the chemical formula for radtkeite was given as  $\text{Hg}_2\text{S}_2\text{I}$  (actual formula  $\text{Hg}_2\text{S}_2\text{ClI}$ ), not an auspicious beginning. There are other typos but it should be pointed out that it is not the fault of the authors. Instead the publisher, and in particular the editor, is to blame for allowing the book to be printed with this many typographical errors. Future printings should include an error sheet or, better yet, should be corrected before release. The price of the book may be more than most individuals are willing to pay, however it should be obtained for public, university, museum, and laboratory libraries.

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