

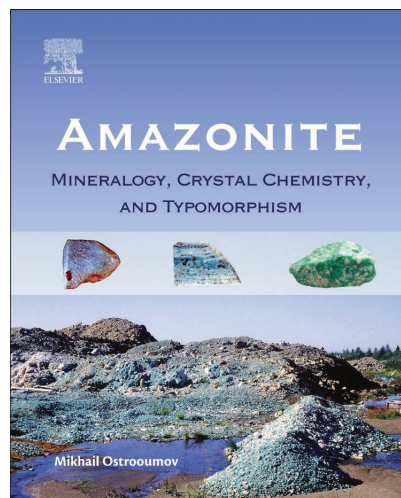
BOOK REVIEW

Book Review: Amazonite: Mineralogy, Crystal Chemistry, and Typomorphism. (2016) By Mikhail Ostrooumov. Elsevier. ISBN: 978-0-1280-3721-8, 228 p. \$120.

This new book is a translation of the original Russian language edition, which the author Mikhail Ostrooumov published in 2008 together with his colleagues A. Platonov and V. Popov (Ostrooumov et al. 2008). The Russian version was based on a precursor volume, which became a bibliographic rarity shortly after its publication in 1989 (Vochmentzev et al. 1989). The 2008 version, and the English translation reviewed here, expand upon the 1989 edition of the monograph by including subsequent research results, making corrections, and by adding more recent references.

The book is dedicated to amazonite, a variety of potassium feldspar that, due to its distinct colors, has intrigued humans since antiquity, as has been noted by the renowned mineralogist Alexander Fersman. The recent discovery of Neolithic, and possibly even older, amazonite beads in archeological sites in Israel (Bar-Yosef Mayer and Porat 2008) highlights the fascination with this green, greenish-blue, or blue mineral. At that time (10 500–8200 B.P.), i.e., during the transition from hunting and gathering to agriculture in the Near East, the earliest farmers had to make great efforts at obtaining the raw materials from far-away places. It is clear why this variety of potassium feldspar presents such a captivating subject for a series of monographs.

Ostrooumov is an authority in amazonite research and has undertaken numerous scientific investigations on samples from various parts of the world. A quick search for scholarly articles on amazonite, to my surprise, did not reveal a large body of scientific literature. This paucity of research articles on amazonite, therefore, explains why Ostrooumov refers to only 51 papers on the subject, 28 of which are his own. Of the 51 references, only four post-date the original Russian edition from 2008. Most of the listed references are in Russian and therefore, the current monograph in English is invaluable to non-Russian readers. Throughout the book, the author makes reference to many studies by Russian scientists, but unfortunately he does not give full citations (providing only the names of the researchers). Consequently, it is mostly impossible for the reader to find these reports, which seem to contain critical field observations and geological information, as well as extensive laboratory data. This problem is exacerbated by the fact that only a few of the described localities are displayed in maps in the current book, so unless one is already



familiar with a particular geological landmark, one would have difficulty locating it.

In Chapter 1, the author provides a comprehensive history of research on amazonite, including the evolution of theories explaining its distinctive color. Chapter 2 is dedicated to the geographic distribution, the geological setting, and the genetic types of amazonite-bearing rocks. Here the author introduces the readers to the three main rock types (leucogranite-alaskite, subalkaline-leucogranite, and alkaline granite), in which amazonite is formed or with which it is associated (veins, dikes, metasomatically overprinted rocks). This chapter also contains English descriptions of various amazonite deposits, providing geological and mineralogical data, which would be difficult to obtain without access to the original Russian literature. Chapter 3 represents a compilation of amazonite-bearing mineral parageneses and some of their geochemical characteristics. The author is to be commended for his extensive compilation of the morphological, crystal-chemical, structural, and physical data that are presented in Chapters 4 and 5. A significant portion of these two core chapters is devoted to the unusual color and the considerable color variations observed in amazonite from various geological settings and localities. Ostrooumov also describes the various techniques that can be used to study, characterize, and understand the color. The author discusses in detail the possible causes of color variation and how the color may change as a result of exposure to heat and/or radiation. Also in Chapter 5, readers

are presented with a discussion of the formation of amazonite and the role of metasomatism in the context of the different host-rock types. The final book section, Chapter 6, explores the possible application of amazonite as a prospecting tool for rare metals and rare earth elements, and its ornamental use in jewelry, decorative objects, and construction.

One of the drawbacks of this monograph is the quality of English; the syntax suggests a word-for-word translation from the Russian, resulting in many awkward sentences. Evidently the publisher did not enlist a native English speaker to edit the volume. Equally surprising is the generally very poor quality of diagrams and figures. Except for the diagrams depicting new spectroscopic data, the diagrams throughout the book appear to have been copied and pasted directly from the 1989 edition without any alteration or improvement. The same applies to geological maps, cross-sections, and outcrop views of amazonite occurrences, which unfortunately are very difficult to read and unattractive. Moreover, the figure captions are sparse in content and inadequately explain the old-fashioned numbering used for the symbols or shading displayed within the figures. More serious, however, is that most of the drawings and maps and none of the color photographs exhibit a scale bar, which is simply unacceptable. The reader is left guessing about the size of some of the depictions of beautiful amazonite specimens. In addition, the author in many instances does not specify the units of percentages, so that the reader has to ponder whether the values are indicated in vol%, wt%, or mol%. These drawbacks

suggest the lack of careful editorial handling. Better editing could have turned this unique book into a much more useful resource that would inspire the curious readers to explore the marvelous world of amazonite.

Despite the considerable flaws, this book represents a starting point for mineralogists, geochemists, and ore geologists who attempt to understand the complex geological settings in which this amazing variety of potassium feldspar, amazonite, forms. The monograph would be a valuable addition to departmental libraries, where it could serve as a useful reference manual for post-doctoral fellows and research scientists with an in-depth knowledge in mineralogy, mineral chemistry, and mineral physics.

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RETO GIERÉ
Department of Earth and Environmental Science,
University of Pennsylvania
240 S. 33rd Street, Philadelphia,
Pennsylvania 19104-6316,
U.S.A.