



Mineralogical Society of America



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PRESIDENT'S LETTER

Minerals Matter: MSA Viewed through the Petrology Lens



Steven B. Shirey

The logo of the Mineralogical Society of America (MSA) displays mineralogy, petrology, and crystallography in three-fold symmetry viewed down the *c*-axis. Those of you who know me will know that my background is in the petrology “leg” of that symmetry, more than in the mineralogy or crystallography legs. This petrology background gives me a different perspective on why mineralogy is important.

One of the surprises for me during the last few years has been the vigorous debate that erupts from time to time on MSA-Talk. Our society is full of lively discussion, perhaps the most important of which is about the shrinking importance of mineralogy in Earth science curricula. Mickey Gunter, University Distinguished Professor & chair of Geological Sciences at the University of Idaho, sent out a questionnaire on this trend, and it is real. Of the 127 respondents, 67% said that their department does not currently teach a stand-alone, required optical mineralogy course, while the same percentage said they used to teach such a course. Even more disturbing were the departments that did not teach stand-alone, required courses in mineralogy, petrology, or structural geology. Mineralogy faces major challenges to remain central in Earth science curricula at a time when it is being (or has been) minimized in favor of lighter and trendier course content. The concern is about the dumbing-down of education in the field of how the Earth works. A solid mineralogy education is essential for the decision-making skills our students will need, whether as professionals or voting citizens.

Why mineralogy matters is simple and, I think, obvious. Mineralogy, in all its forms, is central to many areas of basic research and societal needs: gemology, education, critical zone studies, evolution of life, volcanic hazards, environmental science, planetary and Solar System exploration, and nanotechnology. Most, if not all, of the geologic processes that we care about on Earth—as mineralogists, geologists, petrologists, geochemists, geophysicists, or geodynamicists—operate on the scale of and have effects that are limited by minerals. Fundamentally these processes should be studied and understood at the mineral scale. Examples are abundant: the origin of life depends on mineral surfaces; mantle melting and elemental partitioning are controlled by mineral equilibrium; mantle convection is the summed effect of mineral creep laws; earthquakes and crustal rupture are controlled by the physical properties of minerals along faults; and mantle and magmatic outgassing rely on mineral/melt diffusivity and solubility.

Fortunately for mineralogy, it is a wonderful time to be able to work at the mineral scale. Technological improvements, some borrowed from materials science and nuclear forensics, give us ever smaller sample extraction, ever brighter synchrotron sources, ever better aberration-corrected electron microscopy, ever higher resolution and signal/noise spectroscopy, ever more sensitive elemental analysis, and ever more accurate isotopic compositions. I ask you, MSA members, as leaders in mineralogy, to share these types of connections between minerals and geologic processes with others on your university faculty, your students, and the lay public. Not only is it relevant, it is exciting—and it can have an impact.

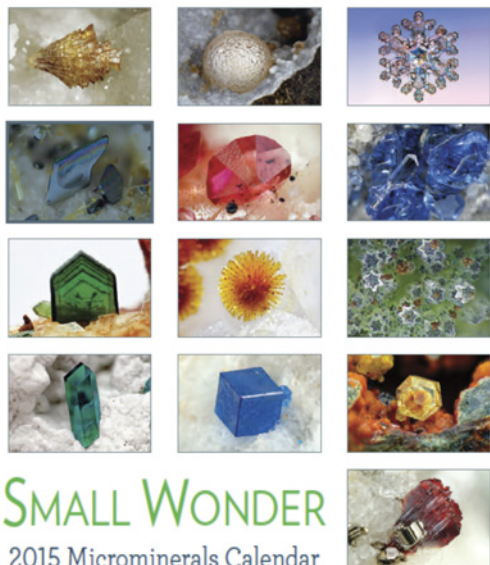
Now for some formal MSA business. As President David Vaughan passes the duties of MSA president to me, I want to thank him, MSA officers Howard Day and Andrea Koziol, as well as MSA councilors Christine Clark, Isabelle Daniel, Ed Grew, Kirsten Nicolaysen, Wendy Panero, and Kim Tait for their service to the Society. They, Executive Director Alex Speer, and all concerned with MSA publications, awards, and activities (see www.minsocam.org/msa/Committees.html for a full list) have shown energy and leadership. Further, I welcome Vice President Becky Lange and new councilors Abby Kavner and Matthew Kohn to the MSA team. Due to the hard work of these individuals, the MSA is in good financial shape and is poised to face the challenges of open access publication, international scientific cooperation outside North America, and the digital and data revolutions going on in our midst. During my tenure as president, I will strive to strengthen the healthy response to these changes and to expand the ties between mineralogy and other Earth science disciplines.

Steven B. Shirey (sshirey@carnegiescience.edu)
2015 MSA President

NOTES FROM CHANTILLY

- MSA announced its 2015 award recipients at the 2014 Annual Meeting in Vancouver, British Columbia, Canada. The Roebling Medal is awarded to Rodney C. Ewing of Stanford University, Stanford, California, USA; the Dana Medal (for 2016) to Patrick Cordier of the Université Lille 1, Villeneuve d'Ascq cedex, France; the MSA Award to Nicholas Tosca of the University of St. Andrews, St. Andrews, Scotland, UK; and the Distinguished Public Service Medal to J. Alex Speer, Mineralogical Society of America, Chantilly, Virginia, USA. The new fellows of the Society are John Ayers, Dante Canil, Leonid Danyushevsky, Denton Ebel, G. Nelson Eby, Ulf Halënius, Takao Hirajima, Cin-Ty Lee, Hans-Peter Schertl, Shiv Sharma, Paul Wallace, James D. Webster, and Michael L. Williams.
- The 2015 recipients of the research grants in mineralogy and petrology from MSA's Mineralogy/Petrology Research Fund are: Huan Cui of the University of Maryland, USA, for his study “Linking Authigenic Carbonate Mineralization in Marine Sediments to the Largest Carbon Isotope Excursion in Earth History,” and Emily Hernandez Goldstein of the University of Texas, Austin, USA, for her work “Trace Element Systematics of Serpentinization.”
- The 2015 recipient of the research grant in crystallography from the Edward H. Kraus Crystallographic Research Fund is Elias Nakouzi, Florida State University, Tallahassee, USA, for “Understanding and Controlling the Non-classical Crystallization Pathways of Silica-Carbonate Biomorphs.”
- All 2013 and 2014 MSA members have been contacted by mail, electronically, or both about renewing their membership for 2015. If you have not renewed your MSA membership, please do so. If you have not received a notice by the time you read this, please contact the MSA business office. You can also renew online at anytime.

J. Alex Speer (jaspeer@minsocam.org)
MSA Executive Director



SMALL WONDER

2015 Microminerals Calendar

The 2015 calendar showcases micromounting, the study and collection of mineral specimens that require magnification. Published by Lithographie, LLC, in cooperation with MSA, it is available from MSA (www.minsocam.org).

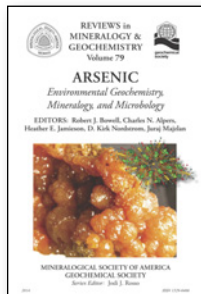
NEW TITLE

Reviews in Mineralogy and Geochemistry

The Mineralogical Society of America
and the Geochemical Society

Volume 79: **Arsenic: Environmental Geochemistry, Mineralogy, and Microbiology**, Robert J. Howell, Charles N. Alpers, Heather E.

Jamieson, D. Kirk Nordstrom, and Juraj Majzlan, editors. i-xvi + 635 pages. ISBN 978-0-939950-94-2



This volume covers arsenic from a variety of perspectives, including mineralogy, geochemistry, microbiology, toxicology, and environmental engineering. The subjects are: an overview of arsenic geochemical cycles; the paragenesis and crystal chemistry of arsenic minerals; arsenic in natural waters; the thermodynamics of arsenic species; arsenic speciation in solids using X-ray absorption spectroscopy; arsenic speciation in environmental media: sampling, preservation, and analysis; microbial arsenic metabolism and reaction energetics; arsenic toxicity and human health issues; the methods used to characterize arsenic bioavailability and bioaccessibility; the characterization of arsenic in mine waste; the management and treatment of arsenic in mining environments; case studies of the geochemistry and mineralogy of legacy arsenic contamination in historical mining environments (Giant gold mine in Canada, the Sierra Nevada Foothills gold belt of California); and the hydrogeochemistry of arsenic in the Tsumeb polymetallic mine in Namibia.

For further description and ordering online, go to www.minsocam.org or contact the Mineralogical Society of America, 3635 Concorde Pkwy Ste 500, Chantilly, VA 20151-1110, USA; phone: +1 (703) 9950; fax: +1 (703) 652-9951; e-mail: business@minsocam.org. The cost is \$45 (\$33.75 for members of MSA, GS, and CMS).

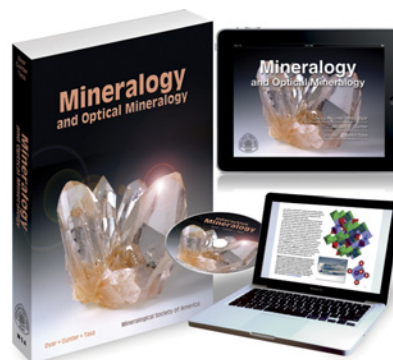


Mineralogy and Optical Mineralogy, M. Darby Dyar and Mickey E. Gunter. Now available in an electronic version, under "textbooks."

Out-of-print Reviews. You can purchase the entire volume of your favorite, previously out-of-print Reviews in electronic or print form. These are: v1 *Sulfide Mineralogy*, v2 *Feldspar Mineralogy*, v3 *Oxide Minerals*, v4 *Mineralogy and Geology of Natural Zeolites*, v5 *Orthosilicates*, v6 *Marine Minerals*, v7 *Pyroxenes*, v9A *Amphiboles and Other Hydrous Pyriboles: Mineralogy*, v12 *Fluid Inclusions*, and v17 *Thermodynamic Modeling of Geologic Materials: Minerals, Fluids, and Melts*. An added advantage: you can word search the electronic versions.

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The "**Mineral Database**" app is also available in the App Store.