

# FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 50 No. 2

SUMMER 2022

## President's Report

by Bill Stephens, PG  
President, FM-PA Chapter  
1st VP and Region 4  
Regional VP, EFMLS

The FM-PA Chapter has been very busy the first half of this year. I'm pleased to report that we have secured our venue for our annual symposium and field trip, November 12 & 13, 2022, and we will be returning to the Bright Side Opportunities Center in Lancaster PA; the meeting will be hybrid so feel free to join us remotely if you cannot attend in person. See the flyer below.

Our Symposium is a great value, particularly for students and licensed professionals needing inexpensive continuing education credits (5). The talks/speakers and field trip venue are TBD. Dr. Steve Lindberg (UPJ) and I are working on a talk for the New Paris Quarry near Bedford, PA, known for fluorite and fossils, and long utilized as a training site for the University of Pittsburgh at



Johnstown (UPJ). Dr. Lindberg regularly leads trips to the site for collecting and geologic education, and since being purchased by the neighboring farm landowner, it is likely that it will remain preserved for that function far into the future. The quarry is no longer active.

Steve and I met years ago when I started attending the Field Conference of PA Geologists (FCPG) to help maintain my PG licenses and he has also long been associated with the Treasures of the Earth facility in PA, and after he hosted a pre-conference field trip to that facility where they make replicas of dinosaurs and of course sell rocks, I invited him to speak at the Delaware Mineralogical Society's "Symposium at the Show", which I ran a few years ago. He's a great, engaging speaker and I look forward to him speaking at our symposium this fall.

I reached out to Steve about using the New Paris Quarry as a test site earlier this year while I was engaged in a mission to test out the effective mapping limits of the Mavic2 Pro drone, which is much easier to deploy than the Inspire 2, and test out using a spreadsheet developed by Oneida University that computes strike and dip data from three coordinate points (got wind of this tool from Dr. Martin Helmke (WCU) a couple years ago while working on a quarry project for one of my clients). Some of you may be aware that in my daily professional life, part of my



## FRIENDS OF MINERALOGY - Pennsylvania Chapter SYMPOSIUM November 12, 2022 Lancaster, PA FIELD TRIP November 13

**Symposium** for mineral collecting enthusiasts on **Saturday Nov. 12, 2022**

Hybrid Symposium - **ONLINE** or **IN PERSON** at

Bright Side Opportunities Center, 515 Hershey Ave., Lancaster, PA 17603

Talks by knowledgeable speakers on **Pennsylvania Mineralogy and Geology**

Sales by Select Dealers - Silent Auction - Give-away Table - Conversation

Registration: watch for registration form on our web site

Professional Geologists: Five Professional Development Hour credits available for full lecture attendance

**Field Trip** Location to be announced. **Sunday Nov. 13** Open only to symposium registrants.

Watch for details, registration form, changes and updates on our **web site:**

**[www.rasloto.com/FM](http://www.rasloto.com/FM)**

For newsletters and field trips during the year, please join our chapter!

**See "Join FM" on the web site**

company services is surveying, and I own survey grade GPS equipment and a robotic total station with which I can take both prism and reflector-less measurements. I have always wanted to test out "shooting" inaccessible beds, joints and faults using the survey equipment but needed the 3-point solution math to do it. The spreadsheet works perfectly and I modified it a bit so I could export the output more efficiently. The tests run on the New Paris Quarry, both the flight (digital orthomosaic at <1" pixel resolution with 1-foot contours as exports), and the strike and dip data were remarkable. The spreadsheet output can also be used to reconstruct a geologic section on dipping beds. Chime in to our symposium this fall, and you will get to see some of this data.

The big event for me this year so far, and a big deal for many clubs in the region, was the machine dig I ran at Mount Pleasant Mills for recovery and study of the geology of Wavellite at that quarry. Ryan Klockner was a big help and participated in the specimen recovery. See pages 4-5 for a separate article with more details. The re-opening of this pit has been a boon for collectors so far this year. I plan to offer an updated talk on this event at the symposium where a detailed discussion of the geology and trace mineral composition of wavellite at this remarkable occurrence will be discussed, and my work on the mapping and structural geology of this quarry will be illuminated. Plan on some eye-popping specimen pics. Ron Sloto has had his article on the site accepted for publication by the Mineralogical Record, but the date for publication has not yet been released.

Ron has also published another book! This time on the mines and minerals of Bucks County, Pennsylvania, which is available from Amazon (see page 11). Man, what would we do without Ron? He's amazing. And he has access to some cool instruments for study at West Chester University (WCU).

Some of our Board members, namely Bill Kochanov, PG and others have initiated an effort to revisit and assess the status of historic collecting sites once featured in the now out-of-print PA Geological Survey "Mineral Collecting In Pennsylvania" book of the 1970's, commonly referred to as G-33 for short. As may be expected, most sites are closed, locations lost or redeveloped for other uses, flooded and the like. Our efforts are designed mainly to determine if access is still possible, and if so, obtaining permission to access and perhaps collect at these sites. An update on progress will be forthcoming.

All for now. Cheers and Happy Hunting!

Sincerely, Bill Stephens, PG, FM-PA Chapter

## Friends of Mineralogy - Pennsylvania Chapter

# SYMPOSIUM ON PENNSYLVANIA MINING AND MINERALOGY

## IN PERSON and ONLINE

Mineral Collecting Enthusiasts Meet and Learn

**Symposium Nov. 12, 2022      Field Trip Nov. 13**  
Bright Side Opportunities Center, Lancaster, PA

Please Register in Advance  
<https://www.rasloto.com/FM/>

The Friends of Mineralogy - Pennsylvania Chapter will hold their 2022 Symposium and field trip on the second weekend in November. Mineral collectors in attendance on Saturday will check in at the Bright Side Opportunities Center, 515 Hershey Ave., Lancaster, PA 17603. Activities, including informative talks by knowledgeable speakers on minerals, geology and mining in Pennsylvania and beyond, are planned. Online attendance is also being planned. On Sunday, a field trip for those registered for the symposium will provide an opportunity for mineral collecting at a location to be announced. The field trip is open only to symposium registrants. Safety equipment will be required.

All interested mineral collectors are invited to register and attend. As usual, a few invited mineral dealers will be present, and there will be a silent auction, give-away table, refreshments, and plenty of opportunities for visiting with fellow enthusiasts. Lunch is available at restaurants within short driving distance, and there is adequate parking. Arrangements are still being made, so please see the web site <https://www.rasloto.com/FM/> for any updates, details, and the registration form.

Dates: Saturday & Sunday, November 12-13, 2022

Location: **Saturday, Nov. 12:** Bright Side Opportunities Center, 515 Hershey Ave., Lancaster, PA 17603.

**Sunday, Nov. 13:** collecting trip, to be announced

Registration:

\$25/person for non-members (or join for 2023 and get the member rate),

\$15/person for current FM-Pa members;

free for college students with ID, and younger students.

Parents must provide supervision of minors.

Please register in advance; a form will be available on the web site <https://www.rasloto.com/FM/>

Professional Geologists: lecture attendance qualifies for 5 Professional Development Hours toward license renewal.

Web Site: <https://www.rasloto.com/FM/>

Contact: e-mail: <[bstephens@stephensenv.com](mailto:bstephens@stephensenv.com)>

## FM-PA Invites Mineral Presentations for Nov. 12 Symposium

Friends of Mineralogy - Pennsylvania Chapter (FM-PA) is an organization devoted to the advancement of serious interest in minerals and related activities. Members include mineral collectors, professional mineralogists and curators of public and private collections. The bond uniting these people is a love of mineral specimens and a desire to spread appreciation and knowledge of minerals.

FM-PA invites submissions of abstracts to be considered for presentation at our annual Symposium. The Symposium is scheduled for Lancaster, PA, on Saturday, November 12, 2022, both in-person and online, with presentations of approximately 45 minutes including time for questions. Presentations on Pennsylvania minerals or mineral localities, or other topics of interest to mineral collectors, are invited. Abstracts may be up to two pages and should include a title and the author's name and affiliation as they should be presented. The final abstract for publication may include illustrations of sufficient resolution to look good in print; a biographical sketch and photograph of the author are also welcome, within the two-page limit. We provide an honorarium of \$100 for each presentation. Information on our previous Symposia can be found at our web site <https://rasloto.com/FM/> under 'Symposium'.

Contact Bill Stephens <[bstephens@stephensenv.com](mailto:bstephens@stephensenv.com)> or another Board member if you might be interested, or to submit an abstract for consideration.

Please submit abstracts by **July 31, 2022**.

## 50<sup>th</sup> Year of FM-PA!

Note the volume number of this Newsletter - we are in the Chapter's 50<sup>th</sup> year (including the earlier incarnation of the Chapter, "FM-Region 3"). Our webmaster Ron Sloto has 50 years of this newsletter available on the chapter web site, <<http://www.rasloto.com/FM/>>.

Any reminiscences or stories from our 50-year history would be welcomed for publication in this Newsletter; see 'From the Editor' on page 12.

## FM-National News

News on the next (Feb. 2023) FM-TGMS-MSA Tucson Mineral Symposium, with the theme of Silicate Minerals, is in the first National-FM newsletter of 2022 <<https://www.friendsofmineralogy.org/>> (the second issue should be available soon).

The Outreach Committee has been busy: "We encourage you to start making use of the **FM National Calendar of Events**, which can be found here: <<https://www.friendsofmineralogy.org/calendar-of-events/>>. The calendar is designed to aggregate all mineral-related events happening across the country in one easy-to-access (and filter!) location. Events include field trips, symposia, educational talks (both live and remote), mineral shows, and more! Events are not limited to FM Chapters – any organization is welcome to be included. If you would like to ensure your organization's events are being shared on the calendar, please reach out to us at <[fmnationaloutreach@gmail.com](mailto:fmnationaloutreach@gmail.com)>!"

"**Social media outreach** efforts will continue — in addition to continuing our #MineralMonday series, we have led off the year with a new series of educational posts introducing elements of crystallography by discussing habits of quartz crystals.

You can view this content on the following platforms:

Facebook:

<https://www.facebook.com/FriendsofMineralogy>

Instagram:

<https://www.instagram.com/friendsofmineralogy/>

Please join us in the Friends of Mineralogy community group on Facebook:

<https://www.facebook.com/groups/friendsofmineralogycommunity/>

For those not using social media, recent content is also displayed at the bottom of the "Welcome" page of the web site."

FM National announces a new partnership with the Young Mineral Collectors and Geology365 in introducing the **Mentorship Program**. See pages 14-16 of that newsletter.

The Mineralogical Society of America affiliate section lists free links to all **American Mineralogist** issues 1914-1999 <<http://www.minsocam.org/msa/ammin/toc/>>. The **Handbook of Mineralogy**, authored by John W. Anthony, Richard A. Bideaux, Kenneth W. Bladh, and Monte C. Nichols, is now online and free to anyone at <<http://www.handbookofmineralogy.org/>>. In addition, it is being updated by Kenneth W. Bladh to include new minerals and now has 5082 species. See pages 26-27.



## Report on Re-opening the Mount Pleasant Mills, Snyder County, Pennsylvania, Wavellite Occurrence

by Bill Stephens, PG

Friends of Mineralogy-PA Chapter President  
EFMLS 1st VP & Region IV RVP

Many of you are aware of the Wavellite deposit at the National Limestone Quarry (NLQ) at Mount Pleasant Mills (MPM), Pennsylvania, located approximately 40 minutes north of Harrisburg in Snyder County, Pennsylvania. Many of you have seen my PowerPoint presentation at least once. © For those of you that haven't and by way of refresher for those that have, green was discovered by the Quarry owner Eric Stahl in the early 2000's while clearing a perimeter roadway on the southerly, upper bench of the quarry along the southerly property line. He invited a local rockhound/expert collector or two to investigate, they did some digging and confirmed the species to be wavellite. They mined a bit, word got out and clubs began asking permission to come and dig.

Wavellite and associated species identified at the site including planerite are phosphates, largely of mineralogical interest, though non-specimen grade wavellite had been mined around the turn of the 20<sup>th</sup> century at another site in Pennsylvania for matches. It blew up and that was that (Stefanic, Michael, Masters Thesis). The type and classic locality for specimen quality wavellite in the US is in Arkansas, and pretty much any mineralogy/ mineral book you pick up that has examples of wavellite will show a color specimen from Arkansas. What we now realize is that specimens from NLQ-MPM rival any from Arkansas in size and quality, and the deposit is just being explored. MPM wavellite is not documented in the literature beyond an abstract two paragraphs long in a proceedings book from the mid-2000's.

I first visited this site in 2015 (I think) and had great success. I went back several times as the first time the adit was open and we were able to get at the veins in solid rock, not spoils. I and others got some killer specimens. I prepared my first PowerPoint presentation that year and have updated and amended it every year since. In 2017 I started considering developing a peer-reviewed article, probably for Mineralogical Record and teamed up with Ron Sloto, formerly of the USGS and now retired but doing

independent research at West Chester University on Pennsylvania minerals, to work toward the goal of publishing the definitive guide to MPM wavellite. A death in the family while onsite followed by other work-related commitments and the COVID forced me to post-pone my efforts until this year. Ron had already submitted his article, which has been accepted for publication in the Mineralogical Record.

I spoke with Eric again after several years, explained what I wanted to do and paid to conduct excavation work for specimen recovery and geological work before the first club was scheduled to arrive April 9<sup>th</sup>, 2022. Over the last few years the site and road have become overgrown, and fresh specimens unobtainable on short half-day club trips, and as productivity dropped off to near nothing, so did the digging. As part of the excavation mission, I had Eric's son clear the road, so it was passable for any vehicle, and remove the waste overburden and expand the hole first downward, and then forward. We built up the ramped portion of the roadway with waste spoils to soften the grade change which left room to place new spoils in the old mined-out section and allow room to build a pad for the track hoe over the mined-out area.

Machine-assisted excavation and documentation of wavellite veins was conducted 5 days over a period of about a month, with other geologic work ongoing. Take a look at the images below showing the quarry and westerly wavellite pit as of April 13, 2022.

My geological work is on-going and you may see me up there some Saturday during a club dig. If you are interested in going, you must belong to or join a club that is scheduled to or can schedule a trip with the quarry owner. Safety meeting and the owner's orientation and Christian testimony usually take place at the Middleburg quarry and collecting usually starts at Middleburg and ends up at MPM. Both quarries produce nice calcite, strontianite, some fluorite and occasional celestine, but the wavellite is only on the upper bench at MPM. No individuals are permitted in the quarry and safety gear as well as insurance and sign-in sheets are required. If you want to know more about this site feel free to shoot me an email, check out my Facebook page or contact the quarry owner to schedule your club for a trip. Happy Hunting!



Needs some cleaning, but greening. Love the shimmer.





Wavellite "Astroturf"©

Check out some of these pictures of Mount Pleasant Mills wavellite specimens which have only been pressure washed. Photos by the author.



"Pina Colada" wavellite



"Peas Popping"



## Some Minerals from the Phoenixville Mines, Chester County, Pennsylvania (Is It what the Label Says It Is? Part 2)

Ronald A. Sloto, P.G.  
West Chester University

### Introduction

The 2021 Friends of Mineralogy Pennsylvania Chapter Symposium field trip reawakened my interest in minerals from the Phoenixville lead mines. As I looked over the minerals in my collection, I wondered if some of them were really what was on the label. I decided to investigate.

Analyses were performed at the West Chester University Center for Microanalysis and Imaging, Research and Training (CMIRT). Imaging and chemical analyses were done using an FEI Quanta 400 environmental scanning electron microscope integrated with an Oxford AZtec X-ray energy dispersive spectrometer. Samples were unpolished and uncoated.

This article, hopefully, will also serve as a guide to the identification of some of the minerals from the Phoenixville mines. The Phoenixville mines and their minerals were described by Sloto (2009).

### Yellow Pyromorphite

Mimetite, lead arsenate chloride [ $\text{Pb}_5(\text{AsO}_4)_3\text{Cl}$ ], is the arsenate analogue of the lead phosphate chloride pyromorphite [ $\text{Pb}_5(\text{PO}_4)_3\text{Cl}$ ]. One of the minerals in my collection is yellow hexagonal crystals on matrix



Figure 1. Yellow pyromorphite crystals from the Brookdale mine (RS-328).



Figure 2. Yellow and green pyromorphite crystals from the Chester County mine (RS-2693).

(RS-328, fig. 1). I collected it at the Brookdale mine and identified it as mimetite based on the yellow crystals. A second specimen, which was from the Chester County mine, had sections of small yellow hexagonal crystals (RS-2693, fig. 2) among green pyromorphite crystals. Mimetite has been reported from the Phoenixville mines as yellow hexagonal crystals (Sloto, 2009, p. 150). SEM-EDS analysis did not indicate the presence of arsenic and indicated the presence of phosphorus; therefore, the yellow crystals in figures 1 and 2 are pyromorphite.

### Vanadinite

Vanadinite, lead vanadate chloride [ $\text{Pb}_5(\text{VO}_4)_3\text{Cl}$ ], is the vanadate analogue of pyromorphite and mimetite. Two specimens in my collection, RS-2712 (fig. 3) and RS-1301 (fig. 4), both from the southwest Chester County mine, were labeled vanadinite, and SEM-EDS analysis indicated that they were correctly identified.

I acquired a specimen (RS-3357, fig. 5) of stolzite [ $\text{Pb}(\text{WO}_4)$ ] at the auction of a well-known mineral collector to add a Phoenixville stolzite to my collection. Stolzite has been reported from the Phoenixville mines (Sloto, 2009, p. 152). Unfortunately, SEM-EDS analysis (fig. 6) showed my stolzite to be vanadinite.





Figure 3. Vanadinite from the southwest Chester County mine (RS-2721).

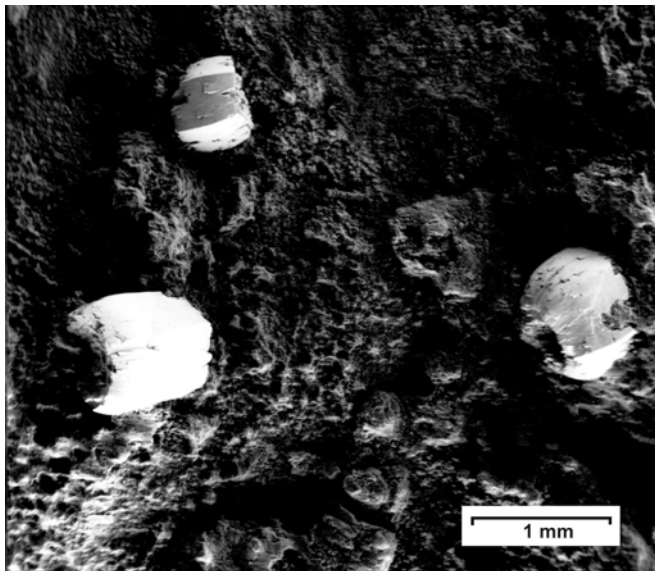


Figure 4. Scanning electron microscope image of vanadinite from the southwest Chester County mine (RS-1301).

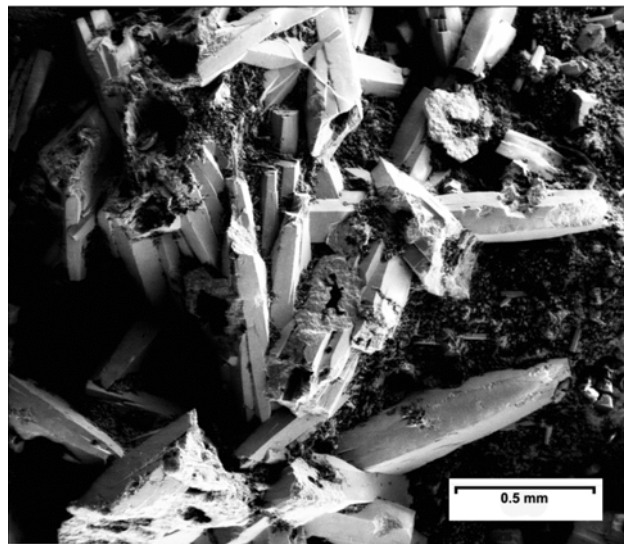


Figure 6. Scanning electron microscope image of vanadinite from the southwest Chester County mine (RS-3357).



Figure 5. Vanadinite from the southwest Chester County mine. It was labeled as stolzite when I purchased it (RS-3357).



## Anglesite and Cerussite

Anglesite and cerussite form clear to white transparent to opaque crystals at the Phoenixville mines. Both fluoresce yellow under shortwave ultraviolet light; therefore, fluorescence is not a good diagnostic.

Cerussite, lead carbonate ( $\text{PbCO}_3$ ), is more common and generally more easily identifiable than anglesite, a lead sulfate ( $\text{PbSO}_4$ ). Anglesite typically forms blocky crystals in cavities in galena (figs. 7 and 8). Cerussite may be associated with galena (fig. 9), or it may be found on matrix without galena (fig. 10). Eight specimens in my collection were labeled anglesite. After analysis, I now have four anglesites in my collection; the other four were cerussite.

I collected the cerussite in figure 10 from the Brookdale mine dump in 1984, and originally labeled it

anglesite. It was collected at the time the Thompson farm, where the Brookdale mine is located, was being converted into a golf course. In the January 1992 issue of the Lapidary Journal (the one with the Phoenixville pyromorphite on the cover), there is a true story on page 73 about some mineral collectors (who shall remain nameless) that bribed a heavy equipment operator with beer to dig a deep trench through the middle of the Brookdale mine dump. I was one of those collectors, and this specimen came out of the bottom of that trench!



Figure 7. Anglesite from the Wheatley mine (RS-805).



Figure 8. Anglesite from the Wheatley mine (RS-1673).



Figure 9. Cerussite from the Wheatley mine (RS-1052).



Figure 10. Unusual dark gray cerussite from the Brookdale mine. Self-collected in 1984 (RS-329).

## Descloizite

Descloizite is a lead zinc vanadinite hydroxide [ $\text{PbZn}(\text{VO}_4)(\text{OH})$ ]. It is found at the Phoenixville mines as a dark brown crust (Sloto, 2009, p. 147). My collection included two specimens labeled descloizite, both from the Chester County mine. One was actually descloizite (RS-3942, figs. 11 and 12), and one was vanadinite (RS-3706, figs. 13 and 14).





Figure 11. Descloizite and pyromorphite from the Chester County mine (RS-3942).

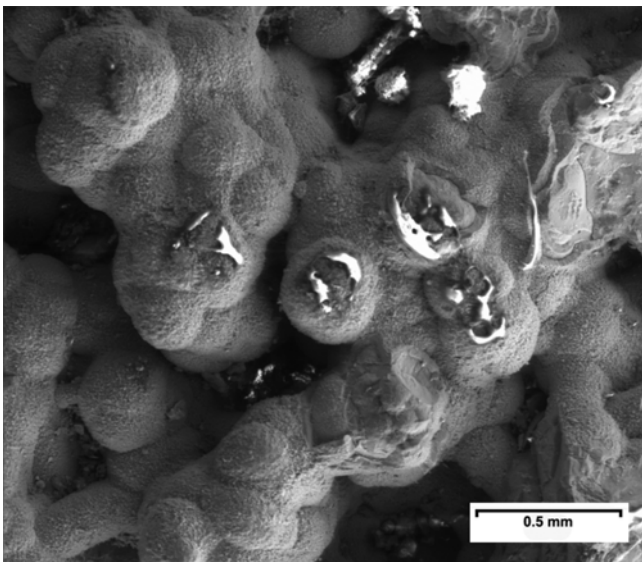


Figure 12. Scanning electron microscope image of descloizite from the Chester County mine (RS-3942).

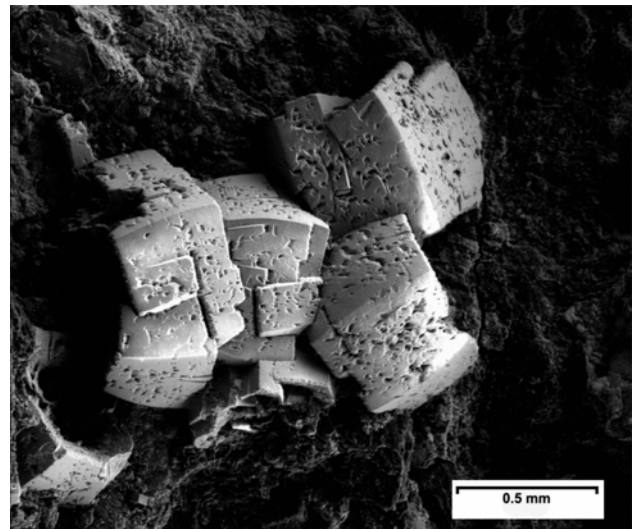


Figure 14. Scanning electron microscope image of vanadinite from the Chester County mine (RS-3706).



Figure 13. Vanadinite from the Chester County mine (RS-3706).

### Azurite and Linarite

Azurite and linarite are blue minerals that are often confused, especially when massive. Azurite is a copper carbonate hydroxide [ $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$ ], and linarite is a lead copper sulfate hydroxide [ $\text{PbCu}(\text{SO}_4)(\text{OH})_2$ ]. Both can form blue crystals that look similar. The presence of lead and sulfur in an analysis of a blue mineral is a good indicator of linarite. At the Phoenixville mines, azurite is usually associated with malachite (fig. 15), and linarite is often associated with galena (fig. 16) or chrysocolla (fig. 17).

### Other Minerals

I checked a few other Phoenixville minerals in my collection and found them to be accurately labeled. A whitish crust on galena from the Wheatley mine was accurately labeled as serpierite (fig. 18). A yellowish crust on galena from the Wheatley mine was accurately labeled as native sulfur (fig. 19). A massive blue mineral from the Morris copper mine in Phoenixville was accurately labeled as chrysocolla (fig. 20).



## Reference

Sloto, R.A., 2009, The Mines and Minerals of Chester County, Pennsylvania: available from Amazon.com, 469 p.



Figure 15. Azurite and malachite from the Charlestown mine (RS-3128).



Figure 16. Linarite and galena from the Wheatley mine (RS-3146).



Figure 17. Linarite and chrysocolla from the Chester County mine (RS-3136).



Figure 18. Serpentine on galena from the Wheatley mine (RS-3361).



Figure 19. Native sulfur on galena from the Wheatley mine (RS-3146).



Figure 20. Chrysocolla from the Morris copper mine in Phoenixville Borough (RS-3362).



## Bucks County Minerals Book Published by Ron Sloto

### THE MINES AND MINERALS OF BUCKS COUNTY, PENNSYLVANIA



RONALD A. SLOTO

The Mines and Minerals of Bucks County, Pennsylvania, a recently published book by FM member Ron Sloto, provides a comprehensive description of the mining history and mineralogy of the county. It pulls together over 300 years of mining and mineral history under one cover. It is richly illustrated with 400 figures - old and new photographs, old maps, mine plans, and photographs of minerals from museum, university, and private collections. Many of the old photographs have never been published before. This book describes nearly 175 mines and mineral localities. It includes the known history of each mine and locality and a list of reported minerals. The locations are shown on a set of USGS topographic maps. Because many of the mines had several names over the course of their history, a comprehensive cross-index is provided. An extensive bibliography also is included.

Ninety-one different mineral species have been reported from Bucks County. Extensive coverage is provided for the two most prolific mineral localities in the county-the New Galena lead mines in New Britain Township and Vanartsdalen's quarry in Lower Southampton Township. Many of the past mineral industries in Bucks County, such as lime burning and production of paving blocks, are described.

The new book is available from Amazon.com [search Ronald Sloto] in paperback and hardcover. The "Look Inside" feature shows the Table of Contents and several pages typical of the illustrated content. Earlier books in this series are also available. See <https://www.amazon.com/s?k=ronald+sloto>

## Pennsylvania Geology Magazine First Issue of 2022 available

The new issue ( Vol. 52, no. 1, Spring 2022) of Pennsylvania Geology Magazine, from the Pennsylvania Bureau of Geological Survey, includes the article, **Historical Perspectives on Iron-Ore Mining in Kishacoquillas Valley, Mifflin County, Pennsylvania.** It was written by Paul T. Fagley, now-retired Environmental Education Specialist at Greenwood Furnace State Park, who researched local mineral resources and fossils and presented popular interpretive programs for many years. The comprehensive article covers the history, geography, and geology of the area, then examines the iron ores and their formation in detail, with photographs of the various types, and reviews the mining history of the various "ore banks." This is not only of academic interest, but of historical importance: "In the first half of the nineteenth century, iron from the Juniata Valley of south-central Pennsylvania carried a reputation as among the finest in the world. More than hyperbole, Juniata Iron's reputation was well deserved... The expanding railroad industry especially favored Juniata Iron prior to the introduction of modern steel... At [the peak of production around 1828], the Juniata Iron District was producing almost half of the iron in Pennsylvania, which equaled about 20 percent of the national output."

**Active Volcanoes . . . In Pennsylvania?** by Adam J. Ianno of the Survey, in the same issue, is not about the Precambrian, but "ice volcanoes" along the shore of Lake Erie during February, 2022. At the Lake Erie shore, "Ice volcanoes form when waves break against fast ice, gradually building up a large levee that is tallest near the water and slopes gradually away. The irregular scalloped shape of this ice levee causes waves to focus energy on the recessed surfaces of the levee that are more inland. Here, the water, slush, beach sand, and ice blocks crash against the funneled surface, resulting in some of this material being deposited on top of the ice levee and frozen into place, and the remainder draining through a lake-facing vent. Even one wave can add several centimeters of new material to a volcano. With enough time and sustained wind, a large ice volcano of up to 5–10 meters can form."

## UPCOMING EVENTS

**Some events are still being rescheduled.  
Confirm details of events before attending.**

**July 16-17, 2022:** Annual show, by Gem City Rock & Mineral Society. Zem Zem Shrine Temple, 2525 W. 38th Street, Erie PA; Sat. 10-6, Sun. 10-5.  
<https://www.facebook.com/301824213169516/>

**Sep. 23-25, 2022:** EFMLS Annual Convention and Central PA R&M Club Show. Harrisburg Consistory, 2701 N. 3rd Street (next to Zembo), Harrisburg, PA 17110 <https://rockandmineral.org/annual-show/>

**Oct. 1, 2022:** Fall Mineralfest, by PESA. Macungie Memorial Park, Macungie, PA 18062. Sat. only, 8:30 a.m. to 3:00 p.m. <http://www.mineralfest.com/>

**Nov. 5-6, 2022:** Gemarama, by Tuscarora Lapidary Society. Theme: A Rainbow of Possibilities. HALL D at the Greater Philadelphia EXPO Center, 100 Station Avenue, Oaks, PA 19456. Sat 10-6, Sun. 10-5.  
<https://www.lapidary.org/gemarama/>

**Nov. 12-13, 2022:** FM-PA Symposium, Lancaster, PA (12<sup>th</sup>) and Field Trip (13<sup>th</sup>) See p. 1-3.

## From the Editor

David Glick

THANK YOU to everyone who has been providing material for the Newsletter! Everyone else - join the fun! Feel free to contact me at [xidg@verizon.net](mailto:xidg@verizon.net), or 814-810-2116 days and evenings. Mail can be sent to 425 Armagast Rd., Bellefonte PA 16823. Materials for the Fall issue should be submitted by September 15.

Materials related to Pennsylvania mineralogy, collecting or collectors are invited for this newsletter: articles, long or short; announcements from FM-PA committees; photographs of specimens, field localities, collections, etc.; reports on publications about PA minerals or by PA authors, or actual book reviews; or other items within the mineralogy and mineral collecting areas of interest. Photographs should be of good resolution (at least 1000 pixels across) without much JPEG compression, so that they will look good in print. Please provide captions including photographers' names.

We are producing four issues each year; your material is needed! If you know people who have interesting material, please encourage them to submit it.

## DONATIONS WELCOMED

The FM-PA Chapter is a 501(c)(3) nonprofit organization; donations are gratefully accepted and should qualify for deduction from your federal income tax. Donations of any size help to offset the general operating costs of the Society, helping to keep dues low.

### FM on the WWW

Please explore the FM-PA Chapter web site at  
[www.rasloto.com/FM/](http://www.rasloto.com/FM/)

**Can you help with a new Facebook site?  
Please contact Bill Stephens**

### National News

The Bulletin of Friends of Mineralogy, links to other chapters, and much more can be found on their web site:

[www.friendsofmineralogy.org](http://www.friendsofmineralogy.org)

## Friends of Mineralogy - Pennsylvania Chapter Administrative Directory

### OFFICERS and BOARD OF DIRECTORS members

President	Bill Stephens	<a href="mailto:bstephens@stephensenv.com">bstephens@stephensenv.com</a>	(302) 286-0406
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