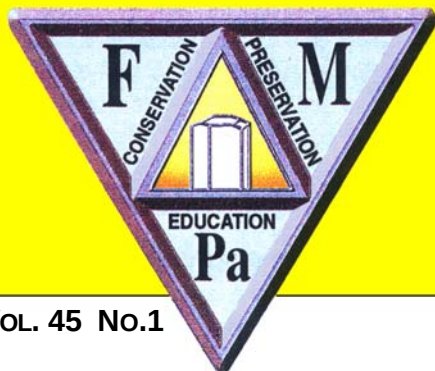




FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 45 No.1

SPRING 2017

Phoenixville Field Trip April 15

Friends of Mineralogy - Pennsylvania Chapter announces a mineral collecting field trip, with thanks to the Delaware Mineralogical Society for their invitation and information:

If you plan to attend,
Please RSVP by April 8 to
Joe Marchesani
Jmarch06@comcast.net

**Field Trip: Pickering Valley Golf Course
Phoenixville, PA
Date: April 15, Saturday; 9:00 - 1:00**

The Site:

There are 3 old lead mines on the property of the Pickering Valley Golf Course. The golf course allows collecting at these sites. You have to walk across the golf course to get to the sites, but the sites themselves are in woods and overgrown for the most part. It's best to collect before leaf-out and mosquito-out.

While moving about and collecting we must not distract golfers. Try to stay "out of sight" as much as possible. Collecting at these sites is difficult. They have been well picked over for 50 or more years and you've got to dig deep to find specimens. And there's absolutely no guarantee the site you pick to dig will have any collectable minerals. Tom Pankratz dug two pretty big holes last November and got one thumbnail specimen. No doubt about it, this is probably the toughest site we'll ever go to. But it is an old classic site and if enough of us go, somebody will hit it rich and hopefully share.

The Wheatley Mine

Mindat lists (<https://www.mindat.org/loc-4075.html>) 37 species and varieties. These workings represent the consolidation of several earlier workings on the same deposit (Wheatley lode). It was a lead-silver mine. Mining took place from 1851 to the 1860's (owned by Mr. Charles Moore Wheatley) and again from 1917 to 1920 (Eastern Mining & Milling Co.). The rock here is adamellite, a granitic intrusive rock of Precambrian age;

the mineralization is Triassic period or earlier). Mines include the Wheatley, Brookdale and Phoenix mines.

The Chester County Mine

The second largest mining operation within the Phoenixville mining district, located just to the west of the Wheatley Mine, which was the largest. Mindat provides a detailed history and lists 8 species <https://www.mindat.org/loc-10041.html>

Mining took place in 1847-1854, and again in 1918-1920 (the South West Chester County Mine), which was the last mining activity in the district.

The Brookdale Mine

Mindat lists (<https://www.mindat.org/loc-8890.html>) 22 mineral species. This was a lead mine and one of the "Wheatley mines," on the Wheatley lode, worked from October 1852 to about 1865. According to Gordon, the Brookdale Mine was about 1/2 mile southwest of the Wheatley Mine.

Minerals found at the 3 sites include:

Anglesite	Cuprite
Chalcopyrite	'Limonite'
Galena	Vanadinite
Pyromorphite	Brochantite
Ankerite ?	Descloizite
'Chlorite Group'	Malachite
Goethite	var: Argentiferous Galena
Quartz	Calcite
Aragonite	Dolomite
Chrysocolla	Mimetite
Hematite	var: Auriferous
Silver	Chalcopyrite
Aurichalcite	Cerussite
Copper	Erythrite
Hemimorphite	Pseudomalachite
Sphalerite	var: Ferroan Dolomite
Azurite	Chalcanthite ?
Covellite	Fluorite
Hydrozincite	Pyrite
Sulphur	Wheatleyite
Baryte	Wulfenite

More from post-Symposium Cornwall trip



Stilbite pocket, approximately 3 inches across, found by Mike Royal on the Iron Valley Golf Club field trip, November 6, 2016, Cornwall, PA.

Photo by Mike Dunton.

Another Use for Rocks

Chapter member and earth science teacher Dan Leppold authored an article entitled "Stein Beer: Last Call" in the December 2016 issue of Brew Your Own magazine. In making stein beer, hot rocks are used to heat the wort. The full article can be found at <https://byo.com/stories/issue/item/3499-stein-beer-last-call>



A hot chunk of Pennsylvania Triassic diorite hits the wort.
D. Leppold photo

Visit the FM-PA Facebook page, Created by Treasurer Ron Sloto

<https://www.facebook.com/pages/Friends-of-Mineralogy-Pennsylvania-Chapter/1174230635931641>
Members and friends are invited to *Like* the page, post, and generally provide a good level of activity.

Board of Directors News

At its November 5 meeting, the Board voted to create a Family Membership category with the fee set at \$25 per year. This is now included in our membership application, available at <http://www.rasloto.com/FM/>

Anyone knowing of old localities that might be productive for field trips is asked to contact Joe Marchesani (see page 4).

It's never too early to plan for our annual symposium. If you could give a presentation on Pennsylvania mines or minerals, or a related topic of interest to our Chapter, or know of someone who might, please contact Joe Marchesani (see page 4).

South Penn Rock Swap & Sale SPRING SWAP - MAY 6, 2017

South Mountain Fairground, west of Arendtsville, PA on Route 234. For GPS, use address: 615 Narrows Road, Biglerville, PA 17307

Admission \$1, Students Free. Sponsored by Central Penn & Franklin County Rock & Mineral Clubs.

Contact: tsmith1012@comcast.net

Lower Bucks County Rock & Mineral Club Earth Science Show & Sale May 13

New Location: Christ United Methodist Church, 501 Wistar Rd., Fairless Hills PA 19030

Art Small Collection:

Please be sure to mark your calendar for our Earth Science Show & Sale on May 13, 2017. We have recently acquired an older mineral collection that will be sold at the club table for very reasonable prices. There are many Florida, New England, New Jersey, New York, North Carolina, Pennsylvania, etc. and worldwide localities many of which are no longer accessible. So mark your calendar and spread the word.

Classifieds

FOR SALE: I am preparing to sell a large percentage of my worldwide collection and thousands of Pennsylvania specimens, many self collected and old classics. There's plenty of variety, and plenty for different levels of collector interest. Anyone interested should call to set up an appointment. Thanks,

Skip Colflesh, Hershey, PA
phone 717-805-2027

Banded Pseudomalachite from the Perkiomen Mine Whim Shaft, Audubon, Montgomery County, Pennsylvania

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

The Perkiomen mines consisted of four shafts on or near the Audubon Mill Grove Estate in Audubon, Montgomery County, Pennsylvania: the Ecton mine, the Perkiomen mine whim shaft, the Perkiomen mine (also known as the new Perkiomen Mine), and the Wetherill mine (also known as the old Perkiomen or United mine). The precise date that lead ore was discovered on the Mill Grove property has not been firmly established. Local tradition holds that lead ore was discovered before the Revolutionary war, perhaps as early as the 1730s. Reports concerning a lead mine at Audubon were published in several newspapers in 1804. The Perkiomen mines were last worked in 1858.

The whim shaft was located at 40° 07' 50" N latitude and 75° 26' 21" W longitude. The shaft was 492 feet deep and was connected with the Perkiomen mine at the 60- and 120-foot levels. The location is now a residential development, and the shaft and dumps no longer exist.

A lustrous, bright green, banded mineral (fig. 1) from the whim shaft was acquired by the author in 2016. The specimen, which originally came from the Joe Varady collection, likely was collected by Varady on the whim shaft dumps. It was labeled as malachite. This specimen was analyzed as part of a study of green and blue-green minerals from the Perkiomen mines. It was analyzed by scanning electron microscope/energy dispersive X-ray spectroscopy (SEM-EDS). The analysis was done on an FEI Quanta 400 environmental scanning electron microscope integrated with an Oxford INCA 400 X-ray energy dispersive spectrometer at the West Chester University Center for Microanalysis and Imaging, Research and Training. The sample was the unpolished, uncoated specimen shown in figure 1. Analytical accuracy of unpolished, uncoated samples is approximately ± 5 percent. Eighteen spectra were

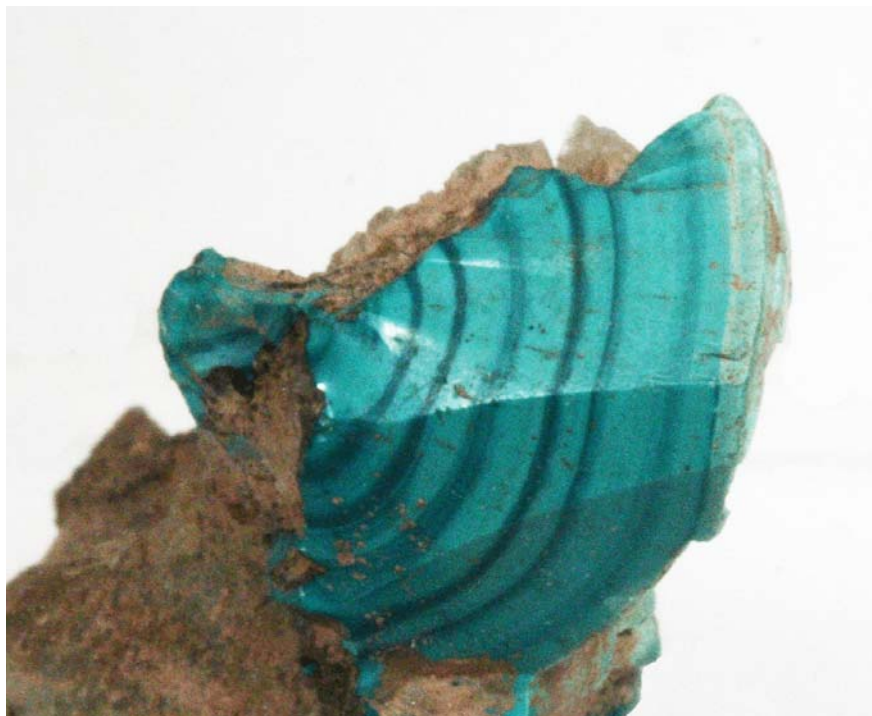


Figure 1. Pseudomalachite from the Perkiomen mine whim shaft, Audubon, Montgomery County, Pennsylvania, 7mm.

obtained from two areas on the sample. The average elemental analysis in weight percent is presented in table 1. The analysis indicates that the mineral is pseudomalachite, a copper phosphate (malachite is a copper carbonate).

Pseudomalachite from the whim shaft was verified by John H. Barnes of the Pennsylvania Geological Survey (Smith, 1978, p. 197-200). It was described by Smith as translucent dark-bluish-green, botryoidal crusts and hemispheres with a radial, fibrous habit (Smith, 1978, p. 197).

Table 1. Results of energy dispersive X-Ray spectrometer (EDS) analysis. Values are mean values in weight percent. Mean values represent the average of 18 measurements.

P	Cu	O	Calculated formula
10.89	59.95	29.16	$\text{Cu}_5(\text{PO}_4)_2(\text{OH})_4$

REFERENCE

Smith, R.C., II, 1978, The mineralogy of Pennsylvania, 1966-1975: Friends of Mineralogy Pennsylvania Chapter Special Publication No. 1, 304 p.

From the Editor

David Glick

THANK YOU to everyone who has been providing material for the Newsletter! Everyone else - join the fun! **Please provide materials for the next issue by June 10, 2017.** Feel free to contact me at xidg@verizon.net, or 814-237-1094 days and evenings. **Mail can be sent to** 209 Spring Lea Dr., State College PA 16801.

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** to make them worthwhile! 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 may be deducted from your federal income tax. Donations of any size help to offset the general operating costs of the Society, helping to keep dues low.

UPCOMING EVENTS

See www.mineralevents.com for more

March 25-26, 2017: Che-Hanna Rock & Mineral Club Annual Show. www.chehannarocks.com

March 25-26, 2017: Gem- Mineral & Jewelry Show by Franklin County Rock & Mineral Club. Hamilton Heights Elem. School, 1589 Johnson Rd Chambersburg, PA. Sat. 10-5, Sun. 10-4.

March 25 -26, 2017: Show and sale by Philadelphia Mineralogical Society & Delaware Valley Paleontological Society, Lu Lu Temple; 5140 Butler Pike; Sat. 10-5, Sun. 10-4; www.philamineralsociety.org

April 29-30, 2017: 45th Annual Gem & Mineral Show with Outdoor Swap, by New Jersey Earth Science Ass'n, Franklin School, 50 Washington Ave., Franklin, NJ 07416. Sat. 9 a.m. - 5:30 p.m.; outdoor swap 8 a.m. - 5 p.m. Sunday 10 a.m. - 5 p.m.; outdoor swap 9 a.m. - 5 p.m.

<http://www.njesa.org/spring-mineral-show.html>

Contact: Sterling Hill Mining Museum, (973)209-7212

May 6, 2017: South Penn Rock Swap, by Central Penn & Franklin County R&M Clubs. See page 2.

May 13, 2017: Earth Science Show & Sale, by Rock & Mineral Club of Lower Bucks Cty. See page 2.

May 20-21, 2017: 49th Annual "World of Gems and Minerals" Rock, Mineral, Fossil and Jewelry Show, by Berks Mineralogical Society. Leesport Farmers Market, Leesport, PA.

June 3, 2017: Spring Mineralfest by PESA, Macungie, PA. Sat. only 8:30 -3:00. <http://www.mineralfest.com/>

June 16-17: Annual Show by Lancaster County Fossil and Mineral Club, Solanco Fairgrounds, Hoffman Building; 172 South Lime St.; Fri. 12-8, Sat. 10-5.

FM on the WWW

Please explore the FM-PA web site at
www.rasloto.com/FM/

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

Friends of Mineralogy Pennsylvania Chapter Directory of Officers

OFFICERS and BOARD OF DIRECTORS members

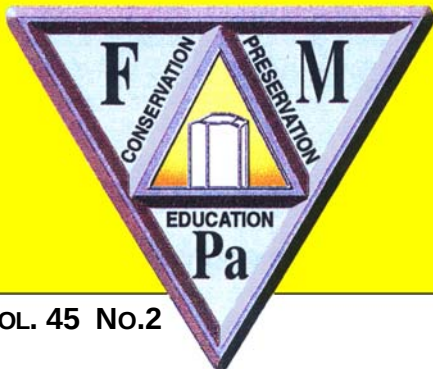
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Members can find Board contact information in the Newsletter which they receive directly.

Friends of Mineralogy Pennsylvania Chapter Web Site: <http://www.rasloto.com/FM>



FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 45 No.2

SUMMER 2017

Hiddenite NC Field Trip

July 29 - 30

by Bill Stephens

The Friends of Mineralogy Pennsylvania Chapter (FoM-PA) is planning a multi-day collecting trip to a new prospect in Hiddenite, North Carolina. Hiddenite is famous for extraordinary crystal specimens and cuttable emeralds and other beryl, a wide variety of quartz crystals (many world class), rutile, muscovite and other gems and mineral specimens. This opportunity is rather rare insofar as few mine owners will allow digging on their property, and this new prospect is beginning to produce. It is located to the northeast of the old Rist Mine, now North American Emerald Mines, which has been commercially operated as a hard rock mine by Jamie Hill for many years.

We have tentatively scheduled Saturday and Sunday, July 29 and 30, 2017. From our area you should allow a day to travel each way to and from the site, so it's a minimum of 4 days for most of us. The weekend will be held open for our club until the 14th of July, by which time I must have not less than 10 adults. The upper cut-off is 60 people, so I have opened it up to the Delaware Mineralogical Society as well. Please **RSVP to Bill Stephens**, PG at <bstephens@stephensenv.com> **no later than July 14th, but the sooner the better.** I will be coordinating this event and all correspondence and arrangements must go through me. Any paperwork required as noted below I will try to work with the lessee to get organized prior to arrival. I plan to get there early and recon as well as set up an area where screening of vein material can be conducted away from the stream.

So **here's the rules** and status since my last visit as stated to me by my local contact:

* you can dig pretty much anywhere, whether dug already or not. The exception is: **no digging in or very near to the stream**, as that would create a silt issue.

* you can keep it, but Chris and the owner get a 40% cut of anything of value \$100,000 or more.

* you can collect from sun-up till about 7:00 PM.

* collecting will require that the **\$20 daily fee** gets paid; no exceptions. Also, **anyone** arriving on the property, whether to collect or simply to walk/observe, will need to sign and hand over Chris' release prior to heading in.

* due to parking limitations, the limit is about **60 people**. Chris has cleared an area as you first pull in, and that should be used before anyone parks out on the road.

* Chris did have someone in 2 weeks ago to further clear the paths, and they've actually fully cleared off the whole top area around the main hole that we were digging (it looks REAL promising!). That area by itself could have 25 people digging holes. Again, there's 3 main holes already started, and many places where holes could be started (remember, there's 30+ acres and a number of quartz outcroppings). I had no problem getting straight into a vein on my last visit and I did get some nice muscovite clusters and fine rutile needles in just a few hours.

Collecting is by hand tools and site conditions are primitive. If you want to collect at Emerald Hollow (see <<http://www.emeraldhollowmine.com/>>) due to physical limitations or young children, you need not coordinate with me on that activity. Camping is available nearby but reservations must be made in advance. Hotel accommodations are available in nearby Statesville.

**Please contact Bill Stephens at 302-286-0406
or bstephens@stephensenv.com
as soon as you know you are planning to go,
no later than July 14.**

FM-PA Chapter Symposium

Saturday, November 4

Field Trip November 5

Our Chapter's 2017 Symposium is set for Saturday, November 4, at Franklin & Marshall College in Lancaster, PA, with a field trip on Sunday. Please mark that weekend on your calendar and plan to attend. Details will be available soon.

Stilbite-Stellerite Solid Solution Series from the Kibblehouse Quarry, Perkiomenville, Montgomery County, Pennsylvania

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

INTRODUCTION

The Kibblehouse quarry is a large, active quarry located in Perkiomenville, Montgomery County, Pennsylvania, at 40° 19' 29" N latitude and -75° 28' 06" W longitude. The quarry is operated by Highway Materials, Inc. for aggregate and is known as their Perkiomenville quarry. The quarry is in hornfels adjacent to the Sassamansville diabase sill. The adjacent sedimentary rock was thermally metamorphosed to hornfels by the intrusion of the rift-related York Haven Diabase at 201.509 Ma (Blackburn and others, 2013). Magma from the York Haven Diabase is known to be associated with famous zeolite localities, including Centreville, Virginia, Gettysburg, Pennsylvania, the Watchungs of New Jersey, and the Bay of Fundy in Canada. The adjacent sedimentary host rock was originally red but became dark grey to black when the hematite was reduced to magnetite during contact metamorphism. The zeolite minerals occur as fracture fillings. For many decades, the Kibblehouse quarry was a noted and prolific producer of zeolite minerals. It was in its heyday for field trips by the Mineralogical Society of Pennsylvania in the 1950s when stilbite and, to a lesser extent chabazite, could be readily collected by the flat. However, the zeolite-bearing veins were quarried out, and zeolite minerals are now sparse.

Two of the zeolite minerals reported from the Kibblehouse quarry are stilbite and stellerite. The general naming convention among mineral collectors is that yellow, orange, or flat-top crystals are stellerite, and

those crystals exhibiting a sheaf habit are stilbite. However, except for crystals exhibiting a sheaf habit, the names stellerite and stilbite seem to be used somewhat interchangeably by collectors.

For this study, eight specimens (table 1, fig. 1) were selected for analysis. Four specimens were labeled stilbite, and four were labeled stellerite. Sample RS-3784 was collected by Allen Heyl about 1935 and is a part of the specimen used by Richard C. Erd of the U.S. Geological Survey to determine stellerite from the Kibblehouse quarry. The Heyl label (fig. 2) notes that Erd characterized the mineral as "near stellerite."

Zeolites are tectosilicates characterized by open frameworks consisting of SiO_4 and AlO_4 tetrahedra connected to form three-dimensional networks surrounding cages and channels within the crystal structure (Coombs and others, 1997). The negative framework charge caused by the presence of Al in tetrahedral sites requires charge-compensation by extra-framework cations within the cages and channels, typically alkali metal and alkaline earth elements, such as Na^+ , K^+ , Ca^{2+} , and Mg^{2+} .

A complete solid solution exists between stilbite ($\text{Ca}_2\text{NaAl}_5\text{Si}_{13}\text{O}_{36} \cdot 16\text{H}_2\text{O}$) and stellerite ($\text{Ca}_2\text{Al}_4\text{Si}_{14}\text{O}_{36} \cdot 14\text{H}_2\text{O}$) (Fridriksson and others, 2001). Although the tetrahedral frameworks of stellerite and stilbite are identical, the overall crystal symmetry is different due to different locations of the extraframework cation sites. Stellerite is orthorhombic with only one extraframework cation site, fully occupied by Ca^{2+} , located in the center of the main channel. In stilbite, there is an additional extraframework cation site, occupied by Na^+ , that is closer to the wall of the channel. The addition of the Na^+ site in stilbite leads to a reduction of symmetry from orthorhombic to monoclinic (Fridriksson and others, 2001).

Even minor amounts of Na^+ will induce the symmetry reduction (Passaglia and others, 1978), and, as a result, the formal mineral name stellerite was

Table 1. Description of analyzed samples from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa.

Sample number	Sample label	Notes
RS-1	Stilbite	Collected by R. Sloto 11/86
RS-106	Stellerite	Collected by R. Sloto 11/86
RS-3384	Stilbite	Ex Joseph Varady collection
RS-3671	Stilbite	Ex Vince & Marge Matula collection
RS-3784	Stellerite	Chip from Allen Heyl specimen; collected in 1935
RS-3785	Stellerite	Ex Vince & Marge collection
RS-3786	Stellerite	Obtained from Steve Carter
RS-3787	Stilbite	Collected by R. Sloto 11/86



Figure 1. Stilbite-stellerite solid solution specimens analyzed from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa.

Coll. by <u>AV Heyl</u> No. <u>1237</u>	<i>Note: Dick originally classified Perkiomenn- ville stellerite as "very near stellerite" Closest of all samples I sent him from Pa. This you can read in Art Mont. old Penna. Minerals columns. Then Italian mineralogists verified it from Perkiomenville. End then agreed 1978 it is stellerite. This is chip of verified sample from</i>
Purch. from <u>Verified by</u> <u>Dick Erd</u> yr. <u>1935</u> ±	
Name <u>Stellerite! This</u> <u>is chip of the actual</u> <u>sample Erd verified</u>	
Loc. <u>Central E. side Kib-</u> <u>blehouse Q. Perkiomenville</u>	
Coll. of <u>ALLEN V. HEYL</u> <u>(over)</u> <u>Pa</u>	

Figure 2. Allen Heyl label that accompanied sample RS-3784.

restricted to specimens of nearly stoichiometric $\text{Ca}_4\text{Al}_8\text{Si}_{28}\text{O}_{72} \cdot 28\text{H}_2\text{O}$ by Coombs and others (1997). Passaglia and others (1978) stated: "Most samples have a half-unit cell content of 4 Ca atoms; if no other cations are present, the mineral is an orthorhombic stellerite; if some (Na + K) is present, the mineral is a monoclinic stilbite." Stilbite is commonly used for all monoclinic specimens of the solid solution, encompassing a much wider range of compositions, and, thus, the bulk of naturally occurring stilbite solid solution (SS) minerals. Gaines and others (1997, p. 1674) indicated that stilbite crystals consist of both orthorhombic {001} and monoclinic {101} growth sectors rather than single monoclinic or orthorhombic sectors. Fridriksson and others (2001) used the names stilbite and stellerite for the solid solution end members and referred to all specimens of intermediate composition as stilbite SS regardless of their crystal symmetry.

Coombs and others (1997) indicated that variations in stellerite composition can include up to about 0.2 atoms of Na pfu (per formula unit) and minor K, Mg, and Fe. For stilbite-Ca, Ca is the dominant extra-framework cation; it is accompanied by subordinate Na and minor K and Mg, approximating $\text{Ca}_4(\text{Na},\text{K})$ pfu (Coombs and others, 1997). Among 65 chemical analyses of stilbite SS minerals from a variety of geologic environments, including a sample from the Kibblehouse quarry, reported by Passaglia and others (1978), only 15 analyses had more than 0.12 K pfu, with some as much as 0.50 K pfu.

ANALYSIS

The eight samples (table 1) were analyzed by scanning electron microscope/energy dispersive X-ray

spectroscopy (SEM-EDS). Analyses were done on an FEI Quanta 400 environmental scanning electron microscope integrated with an Oxford INCA 400 X-ray energy dispersive spectrometer at the West Chester University Center for Microanalysis and Imaging, Research and Training. Samples were unpolished, uncoated cleavage fragments that exposed fresh faces. Analytical accuracy of unpolished, uncoated samples is approximately +/- 5 percent. From 6 to 12 spectra were obtained for each sample (figs. 3 and 4). The average elemental analyses are presented in table 2.

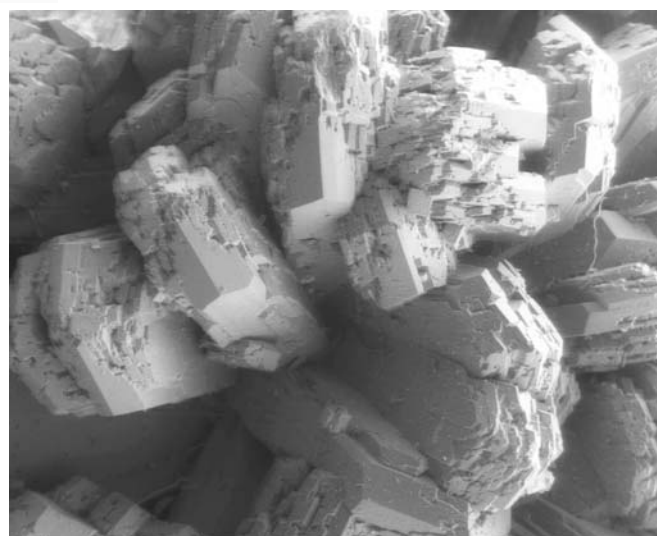


Figure 3. Scanning electron microscope image of sample RS-3671, stilbite-stellerite solid solution series from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa. Magnification is approximately 80 X.

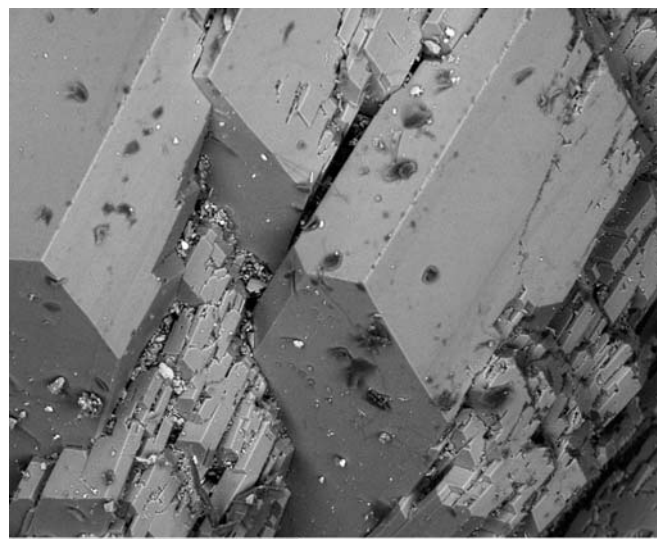


Figure 4. Scanning electron microscope image of sample RS-3787, stilbite-stellerite solid solution series from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa. Magnification is approximately 300 X.

Table 2. Results of X-Ray energy dispersive spectrometer (EDS) analysis of eight mineral specimens from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa. Values are mean values in weight percent. Mean values represent the average of n measurements. Calculated formulas are based on a framework of 72 oxygen atoms.

Sample number	n	Ca	Na	K	Mg	Al	Si	O	Calculated approximate formula
RS-1	15	6.20	0.24	0.42	0.40	9.31	33.77	49.66	$(\text{Na}_{0.3}\text{Ca}_{4.6}\text{K}_{0.3}\text{Mg}_{0.5})(\text{Al}_{10}\text{Si}_{36})\text{O}_{72}\cdot 21(\text{H}_2\text{O})$
RS-106	7	6.19	0.70	0.11	0	9.47	33.84	49.71	$(\text{Na}_{0.9}\text{Ca}_{4.6}\text{K}_{0.1})(\text{Al}_{11}\text{Si}_{36})\text{O}_{72}\cdot 21(\text{H}_2\text{O})$
RS-3384	18	7.78	0.80	0.13	0	9.47	32.71	49.10	$(\text{Na}_{1.1}\text{Ca}_6\text{Mg}_{1.7})(\text{Al}_{11}\text{Si}_{36})\text{O}_{72}\cdot 23(\text{H}_2\text{O})$
RS-3671	15	7.97	0.65	<0.1	0	9.27	32.94	49.17	$(\text{Na}_{0.9}\text{Ca}_{6.1})(\text{Al}_{11}\text{Si}_{36})\text{O}_{72}\cdot 22(\text{H}_2\text{O})$
RS-3784	9	9.76	0.27	0.15	<0.1	8.54	32.57	48.72	$(\text{Na}_{0.4}\text{Ca}_{7.6}\text{K}_{0.1})(\text{Al}_{10}\text{Si}_{36})\text{O}_{72}\cdot 16(\text{H}_2\text{O})$
RS-3785	18	7.55	0.77	0.29	<0.1	9.31	32.94	49.14	$(\text{NaCa}_{5.8}\text{K}_{0.2})(\text{Al}_{11}\text{Si}_{36})\text{O}_{72}\cdot 22(\text{H}_2\text{O})$
RS-3786	10	7.68	0.81	0.17	<0.1	9.45	32.78	49.12	$(\text{Na}_{1.1}\text{Ca}_{5.9}\text{K}_{0.1})(\text{Al}_{11}\text{Si}_{36})\text{O}_{72}\cdot 23(\text{H}_2\text{O})$
RS-3787	16	8.31	0.97	<0.1	0.16	9.49	32.14	48.84	$(\text{Na}_{1.3}\text{Ca}_{6.5}\text{Mg}_{0.2})(\text{Al}_{11}\text{Si}_{36})\text{O}_{72}\cdot 24(\text{H}_2\text{O})$

RESULTS OF ANALYSIS

Eight samples from the Kibblehouse quarry were analyzed by SEM-EDS. The Na content ranged from 0.24 to 0.97 weight percent. None of the samples analyzed were pure stilbite-Ca or stellerite end members (table 3); all were intermediate between the two. Most (75 percent) of the samples fell in the middle third of Na range between 0.7 and 1.3 Na atoms per 72 framework O atoms (fig. 5). Neither color nor crystal habit were diagnostic of the Na content. K content ranged from less than 0.1 to 0.42 weight percent. Only two samples had a reportable Mg content.

ACKNOWLEDGEMENTS

The author thanks Dr. Robert Smith II for his review and comments and Dr. Frederick Munson, Director of the West Chester University Center for Microanalysis

and Imaging, Research and Training (CMIRT) for his patient assistance with the SEM-EDS.

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- Coombs D.S., and others, 1997, Recommended nomenclature for zeolite minerals: Report of the subcommittee on zeolites of the International Mineralogical Association, Commission on New Minerals and Mineral Names: *Canadian Mineralogist*, v. 35, p. 1571-1606.

continued on page 6

Table 3. Calculated number of sodium atoms per 72 framework oxygen atoms.

Sample number	Calculated number of Na atoms per 72 framework O atoms	Crystal habit
Stilbite-Ca ¹	2.0	
RS-3787	1.3	Tan, sheaf habit, medium-size crystals
RS-3384	1.1	Light tan, sheaf habit, small crystals
RS-3786	1.1	Orange sphere of interlocking crystals
RS-3785	1.0	Orange-brown sphere of interlocking crystals
RS-3671	0.9	Brown, sheaf habit
RS-106	0.9	Orange, flat-top crystals
RS-3784	0.4	Light tan, flat-top crystals
RS-1	0.3	White, sheaf habit, large crystals
Stellerite ¹	0	

¹ From Fridriksson and others (2001)

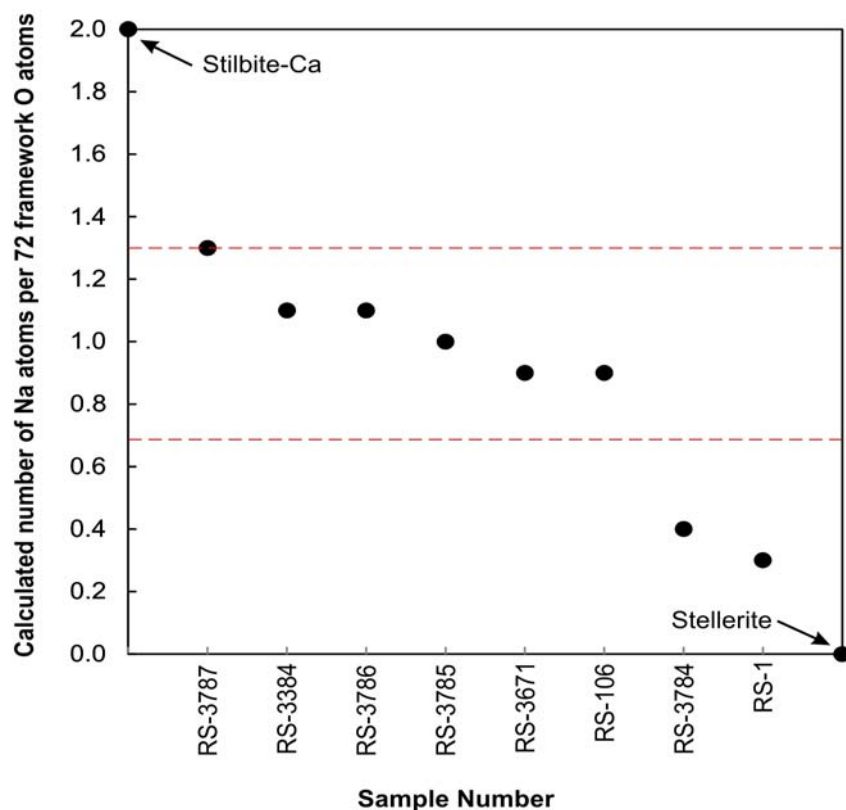


Figure 5. Calculated number of sodium atoms per 72 framework oxygen atoms for 8 analyzed samples from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa.

Fridriksson, T., Neuhoﬀ, P.S., Arnorsson, S., and Bird, D.K., 2001, Geological constraints on the thermodynamic properties of the stilbite—stellerite solid solution in low-grade metabasalts: *Geochimica et Cosmochimica Acta*, v. 65, no. 21, p. 3993–4008.

Gaines, R.V., and others, 1997, *Dana's new mineralogy*: John Wiley and Sons, New York, 1819 p.

Passaglia E., Galli E., Leoni L., and Rossi G., 1978, Crystal chemistry of stilbites and stellerites: *Bulletin de Minéralogie*, v. 101, p. 368–375.

Board of Directors News

The Board of the FM-Pa Chapter met on June 17 to plan upcoming activities. The Symposium is set for Saturday November 4 at Franklin & Marshall College, with a field trip on Sunday. Selection of speakers is well under way. Bill Stephens related his experiences with organizing the Delaware Mineralogical Society's Geology Symposium in March, and there was extensive discussion of how to attract a greater audience for our event. Other field trips are being investigated, and ideas are always welcome; contact Joe Marchesani (see page 10).



FM-Pa Chapter Board of Directors, June 17 2017. Left to right: Glick, Kocharov, Sloto, Marchesani, Soccio, Stephens. *Autumn Soccio-Knapp photo.*

Visit the FM-PA Facebook page, Created by Treasurer Ron Sloto

<https://www.facebook.com/pages/Friends-of-Mineralogy-Pennsylvania-Chapter/1174230635931641>

Members and friends are invited to *Like* the page, post, and generally provide a good level of activity.

National News

The FM-Pa Board is working with national to get the national Bulletin of FM to our members. Members for whom FM-Pa has e-mail addresses should soon receive the national Bulletin of FM via e-mail. Watch for more news.



Educational Awards at the Tucson Gem and Mineral Show February 9-12, 2017

By Mark Jacobson

from the Bulletin of FM, vol. 47, no. 2, April 2017

Two educational awards, for individual and institutional cases were awarded at the Tucson Gem and Mineral Show. The principles for judging the exhibits was based on rules first written in 1970, revised in 1972, and elaborated on in an as yet unpublished article prepared by Si and Ann Frazer and Albert and Sue Liebetrau.

The seven judges on Thursday chose for the *Friends of Mineralogy Best Educational Exhibit by an Individual* the exhibit named: "Crystal and Crystal Forms: A foreshadowing of the 2018 TGMS show theme." The case was created by the "META group" The Minerals Enthusiasts of the Tucson Area participants: Bill Besse, John & Karen Cesar,



Jean & Michelle des Rivieres, the Graeme family, Mike & Mary Jaworski, Jim & Imelda Klein, Peter & Allison Megaw, Lauren Megaw, Barbara Muntyan, Marcus Origlieri, Ron & Peggy Pellar, Alex & Laura Schauss, Gene & Jackie Schlepp, Frank & Pat Sousa, Marshall Sussman, and Wendell & Carolyn Wilson.



The *Best Educational Exhibit by an Institution* award was made to the Smithsonian Institute, Washington, D. C. for their display of "Minerals of the Tri-State_District."

The cases considered in the competition were all the fossil, mineral, meteorite and lapidary displays exhibited at the show. The winners were announced and

presented their certificates at the Saturday night banquet of the Tucson Gem and Mineral Show. Michael Wise accepted the Smithsonian Institution certificate for the institution. Jim and Imelda Klein accepted the individual certificate for the META group. All the participants of the META group will be receiving their certificates later in the mail.

The West Chester University Geology Museum

By Casey M. Slattery
West Chester University

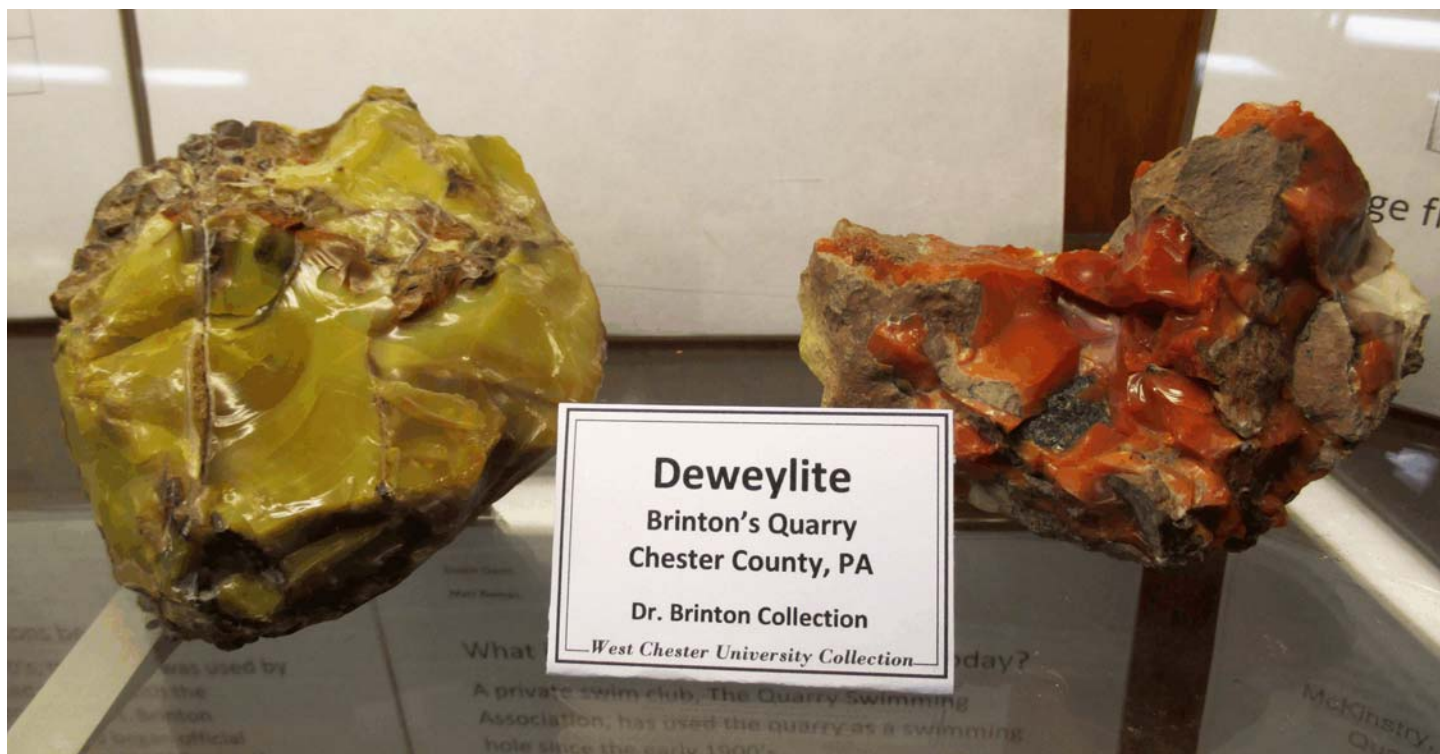
While West Chester University's geology museum is often overlooked by the masses of busy students who pass by it each day, it is without a doubt one of the university's most noteworthy hidden gems. The museum, located in the Schmucker Science Link between the Schmucker and Merion Science Centers, is open to both students and the public.

Opened on April 11, 1992, the West Chester University geology museum has served as a shining example of the collaboration between visionaries and enthusiastic supporters. To make the museum a reality, donations from individuals, mineral clubs (including the Friends of Mineralogy), civic organizations, and the West Chester University Foundation provided more than \$5,300 in funding. Two West Chester Geology Department professors, Dr. John Stolar, Jr., and Dr. Gil Wiswall, donated their time and carpentry skills to construct the display cases in the museum. Donors' names on the display cases include current Friends of Mineralogy Pennsylvania Chapter members -- Arnold Mogel, Juliet Reed, and David Saja, and FM PA members who are no longer with us -- Martin Anné, Robert Eisenhauer, Paul Lazar, Paul Morgan, George Rambo, and Bill Yocom.

The geology museum displays minerals from the West Chester University mineral collection, which is composed of the collections of the Chester County Cabinet of Natural Sciences (dating back to 1826), West Chester Normal School, Dr. John Rose, Dr. Willard Brinton, Capt. Thomas Gay, Dr. Hugh McKinstry, Ruth Bass, and Franklin Sharpless as well as significant donations from the collections of John Stolar, Sr., Deanne Smith, and Rick and Belinda Hopewell.

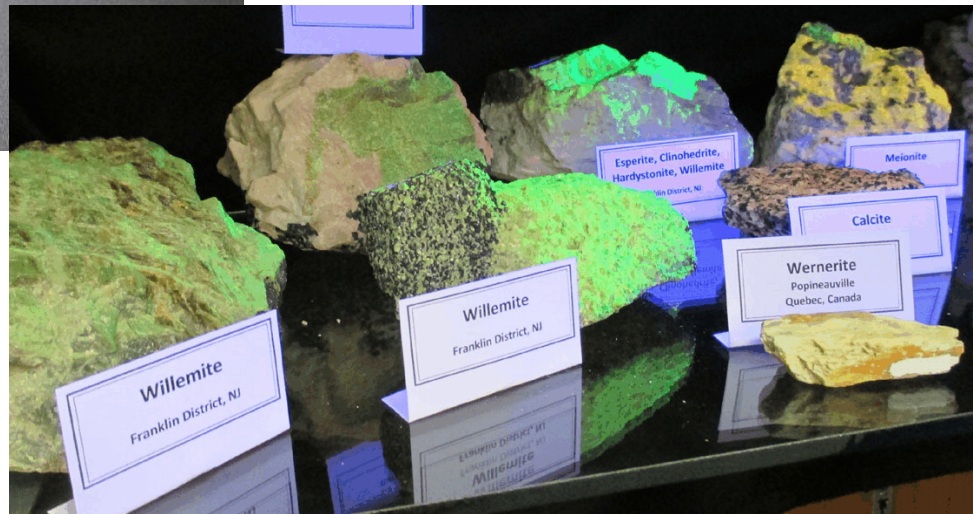
Displays in the museum are intended to be educational. All displays were designed and installed by students. The museum boasts a particularly impressive collection from Chester County, including a display dedicated to Brinton's quarry. Another case features Laguna agates, beautiful minerals from Chihuahua, Mexico, making fascinating finds from distant areas accessible to our local community. One of the favorite displays is an interactive exhibit, which uses hands-on experience to demonstrate the electrical properties of minerals. A special cabinet houses selected fluorescent mineral specimens from the collection of John Stolar, Sr. Other exhibits include Green River fossils, industrial minerals, and minerals from the Wissahickon Valley.

The West Chester University geology museum can be found in room 145 of the Schmucker Science Center Link, 750 South Church Street (corner of South Church Street and Rosedale Avenue), West Chester, Pa. The museum is free and open to the public Monday through Thursday from 10 a.m. to 2 p.m. during the fall and spring semesters, and is open by appointment during summer and winter sessions.





Some photos of the West Chester University Geology Museum and its contents



From the Editor

David Glick

THANK YOU to everyone who has been providing material for the Newsletter! Everyone else - join the fun! **Please provide materials for the next issue by Sept. 20, 2017.** Feel free to contact me at xidg@verizon.net, or 814-237-1094 days and evenings. **Mail can be sent to 209 Spring Lea Dr., State College PA 16801.**

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** to make them worthwhile! 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 may be deducted from your federal income tax. Donations of any size help to offset the general operating costs of the Society, helping to keep dues low.

UPCOMING EVENTS

See www.mineralevents.com for more

July 8-9, 2017: Gem & Mineral Show by Gem City Rock & Mineral Society. JMC Ice Arena, 423 W 38th Street, Erie, PA 16509. Sat. 10-6, Sun. 10-5. Flyers, dealer list, etc. at <http://www.gemcityrockclub.org/>

Sept. 16-17, 2017: 52nd Annual Gem, Mineral & Jewelry Show, by Central Penn. Rock & Mineral Club. Zembo Shrine Center, 2801 N. 3rd St., Harrisburg PA. Coupon, directions, more on web site: <http://www.rockandmineral.org/annualshow.htm>

Sept. 23-24, 2017: Franklin - Sterling Hill Mineral, Gem & Jewelry Show, by FOMS & Franklin Min'l Museum. Littell Commun. Ctr, 10 Munsonhurst Rd #12 Franklin NJ 07416

October 7, 2017: Autumn Minerafest by PESA, Macungie, PA 18062. Sat. only 8:30 -3:00. <http://www.minerafest.com/>

October 21-22, 2017: EFMLS Convention & Show, Bristol, Connecticut. EFMLS meeting Friday October 20.

Nov. 4-5, 2017: Friends of Mineralogy - Pennsylvania Chapter Symposium and Field Trip. Saturday Symposium at Franklin & Marshall College, Lancaster, Pa. Sunday field trip.

Classifieds

FOR SALE: I am preparing to sell a large percentage of my worldwide collection and thousands of Pennsylvania specimens, many self collected and old classics. There's plenty of variety, and plenty for different levels of collector interest. Anyone interested should call to set up an appointment. Thanks,
Skip Colflesh, Hershey, PA
phone 717-805-2027

FM on the WWW

Please explore the FM-PA web site at
www.rasloto.com/FM/

and facebook: Friends of Mineralogy Pennsylvania Chapter

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

Friends of Mineralogy Pennsylvania Chapter Directory of Officers

OFFICERS and BOARD OF DIRECTORS members

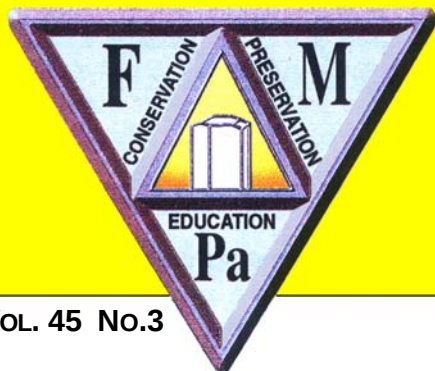
President	Joe Marchesani
Vice President	Dianne Soccio
Treasurer	Ron Sloto
Secretary	David Glick
	William Kochanov
	Bill Stephens

COMMITTEE CHAIRS

Membership Chair	Ron Sloto
Symposium Chair	
Field Trip Chair	
Web Manager	Ron Sloto
Newsletter Editor	David Glick
Grants Chairman	David Saja

Members can find Board
contact information in the
Newsletter which they
receive directly.

Friends of Mineralogy Pennsylvania Chapter Web Site: **<http://www.rasloto.com/FM>**



FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 45 No.3

FALL 2017

Symposium on Pennsylvania Mining and Mineralogy

Mineral Collecting Enthusiasts
Meet and Learn
Saturday, November 4, 9 - 4
Field Trip November 5, 9 - noon

Franklin and Marshall College,
Lancaster, PA

Please Join Us!

Register in Advance or at the Door

The Friends of Mineralogy – Pennsylvania Chapter will hold our 2017 Symposium and field trip on the first weekend in November. Mineral collectors in attendance on Saturday will meet in the Hackman Physical Sciences Building at Franklin & Marshall College, Lancaster, PA., to hear several talks by experts on minerals, geology and mining in Pennsylvania and beyond. Doors open for registration by 8:30 a.m., but **anyone wishing to help set up** may arrive as early as 7:00-7:30. On Sunday, a field trip for those registered for the symposium will provide an opportunity for mineral collecting.

The program planned for the symposium includes these presentations:

Stan Mertzman, PhD: Through the "Looking Glass": Optical Mineralogy and Common Igneous and Metamorphic Minerals and Rocks.

Ron Sloto, PG: The Dyer Diabase Quarries, Berks County, Pennsylvania

Bill Stephens, PG: Lapidary Grade Agate and Other Semi-Precious Gemstones from the Penn-MD Serpentine Quarry, Lancaster County, Pennsylvania

William Kochanov, PhD: The Occurrence of Smoky Quartz Crystals in Northeastern Pennsylvania

Kent Littlefield, PG: Friedensville Zinc Mines of Southern Lehigh County: Geology, Industrial History, and Environmental Impact

All interested mineral collectors are invited to register and attend.

OFFICIAL NOTICE: Annual Meeting and Elections on November 4

The November 4th symposium will include a brief **Annual Meeting of the Membership**, in accordance with our bylaws. See page 3 regarding elections for the Board of Directors.

As usual, select 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. Professional geologists can receive professional development hours for lecture attendance. Lunch is available at restaurants within walking distance. Please see the web site <http://www.rasloto.com/FM/> for details, updates, and the registration form.

The mineral collecting **field trip on Sunday** is planned for H&K Group's Penn/MD Quarry, Peach Bottom, PA. The trip is open **only** to symposium registrants. Safety equipment will be required; watch for details. See p. 2.

Registration: \$15 per person for current FM-Pa members; \$25 for non-members, free for students with student ID. Please register in advance or at the door; a form is available on the web site.

Donations of specimens, books, collecting equipment, etc., for the silent auction and giveaway table are greatly appreciated. The silent auction covers a significant portion of the symposium's expenses and helps keep registration costs low. *Continued on page 2*

The web site will have any updates and a registration form: <http://www.rasloto.com/FM/>



Silent auction at 2015 Symposium. D. Glick photo.

Parking note: There is no home football game, so the parking lot closest to our event in the Hackman Physical Sciences Building might accommodate everyone. That parking lot can be entered across the intersection (at the traffic light) from Iron Hill Brewery and Restaurant at 781 Harrisburg Ave, Lancaster, PA 17603. If it's full, the best alternative would be to park on the street west of the College (Race Ave. or State St.), for the shortest walk to the building.

Symposium Field Trip to Penn/MD Materials Quarry

by Joseph Marchesani

LOCATION & DIRECTIONS:

Meet at the H&K Group Penn/MD Quarry, 303 Quarry Rd., Peach Bottom, PA 17563 **no later than 9:00 A.M. sharp!!** The quarry is located off of PA Rte. 222 just north of the Maryland state line. Penn/MD is right next to the ICM-Cedar Hill Quarry. To get to the Penn/MD Quarry from your departure point, go to the H & K web page <http://www.hkgroup.com/Locations/Locations.aspx> scroll down to Penn/MD under H&K Company Locations and click on Get Directions and type in your address. Plug the quarry address into any map program (Map Quest, Yahoo, Google, etc.) as your destination and it will give you directions from your departure point.

ATTENDANCE

Only 2017 FM-PA symposium participants (\$25/person non-member; \$15/person for members -

see page 1) may attend this trip. We are checking on any age limit for junior members.

SAFETY

Hardhat, safety glasses/goggles and steel-toed boots are required for this trip, and must be worn at all times. Gloves are good to have. Always bring water, drinks and snacks for the day and wear appropriate durable clothing. You will be required to read safety rules (OSHA requirement), and sign-off that you've read them. You will also need to read and sign-off on a liability waiver. All field trips are weather dependent and require at least an average level of physical fitness!

MINERALS

Penn/MD is an active quarry that mines serpentinite rock for roadbuilding, construction and decorative aggregate. The minerals that can be collected here include antigorite, picrolite, lizardite, deweylite, chromite and many others. The minerals are very similar to those that have been reported from the Cedar Hill Quarry. For more information and pictures of the minerals that have been found at Cedar Hill check:

<http://www.mindat.org/loc-9693.html>

EQUIPMENT

Recommended equipment includes: rock hammers, chisels, pry-bars, collecting boxes, packing material (newspaper is good), hand cart, etc. Nothing fancy. It's a good idea to spray paint your equipment a nice bright color so you can find it easily after it's buried under tailings.

If you find equipment lying around that's not yours, chances are it's Bill Stephens'.

CONTACT

Primary contact is
Bill Kochanov
(wkochanov@pa.gov)
717-232-3407 and/or
secondary Joseph Marchesani
(jmarch06@comcast.net)
609-433-5129.



A variety of specimens collected at Penn/MD, 2016.

M. Dunton photo



Deweylite and hydromagnesite,
Penn/MD 2016.

K. Yepremian photo

Board of Directors Elections

As part of the annual meeting of the membership of the corporation held during the Symposium, annual election of members to the Chapter Board of Directors will be held. Chapter member Mike Dunton has accepted an invitation from the Board to stand as a candidate for election. Incumbents Joseph Marchesani and David Glick will also be on the ballot. Candidates have provided the following biographical information.

Mike Dunton: I live in the Poconos. I write business software and help manage computer networks for a few small companies. As a kid I was an avid rock collector on our family camping trips out west (back when my rock books suggested there were only about 50 different rocks and minerals in the world). It is only in the past 5 years or so that I got interested again in the hobby. I am currently president of the Monroe County Earth Science Association and a member of the Franklin-Ogdensburg Mineralogical Society, North Jersey Mineralogical Society, and the Nittany Mineralogical Society.

Joe Marchesani grew up in Concordville, Pennsylvania, and sold stream garnets to the local golfers and their wives for \$5 a 35mm film canister while other kids cut lawns. This led to an interest in minerals. Joe currently lives in New Jersey and is employed as a hydrogeologist by the State of New Jersey. Joe has a bachelor's in Geology from WCU and master's in Environmental Science from NJIT. His favorite collecting spots are Cornwall, Pennsylvania, and the Sterling Mine dumps, New Jersey.

Dave Glick has been picking up rocks since age 3, according to his parents. A mineral collecting hobby led to geology degrees, a BS from Virginia Tech and an MS from Penn State, and 15 years working in coal geology, sample preparation and computer programming - not mineralogy. After leaving that job he found more time for mineral collecting, specializing in Pennsylvania minerals and fluorescents. He is president and bulletin editor for Nittany Mineralogical Society.

Visit the FM-PA Facebook page

<https://www.facebook.com/pages/Friends-of-Mineralogy-Pennsylvania-Chapter/1174230635931641>

Members and friends are invited to *Like* the page, post, and generally provide a good level of activity.

FM-PA Field Trip to Pickering Valley



On April 15, FM-PA members visited the Pickering Valley Golf Club, Chester County, for access to the dumps of three old lead mines on the property.

Mike Dunton provided these photos: digging at the Brookdale Mine dumps (top), old smokestack still standing at the Brookdale Mine (above), and galena recovered there (below).



The Friends of Mineralogy - Pennsylvania Chapter field trip to Hiddenite, North Carolina by Joseph Marchesani



Joe and Dianne at Hiddenite

The Friends of Mineralogy - Pennsylvania Chapter recently hosted a trip to the North Carolina, Hiddenite Emerald Mining District on July 29th and 30th, 2017. The Friends of Mineralogy - Pennsylvania Chapter president Joseph Marchesani and vice president Dianne Soccio pleasantly arrived Friday July 28th, at about noon. Already there were Ross Elliot and Bill Stephens. The sprawling approximately 35- acre property is accessible by only one point along the Yeller road. A creek with waterfalls bounds two other sides. Friday found Ross Elliot (FM-PA prospect) and Bill Stephens diligently digging a hole into the quartz vein. Little did anyone know, but the hole would only get bigger and deeper, with smaller holes popping up about. Hand tools were only allowed. No power equipment.



Bill Stephens in his hole

Twenty- three mineral collectors from The FM-PA club, Delaware Mineralogical Society, and FM-Ohio Chapter arrived to see what this emerald bearing district would offer. Dreams of striking it rich, paying off houses, cars and student loans were in everyone's mind.

Granted, it wasn't transpiring this spree; but many useful things were acquired and cultured of the area, especially of the rutile which is enriched in the red clays at only specific intervals.

Bill and Ross hit the main Quartzite vein, looking for that "*big pocket*", and others decided initially to keep heading back to see what was deeper in the woods. There were a couple access roads going back, Mike Royal, Joe and Dianne chose one and went back as far as the road was cut, then with a pair of hand loppers two went a bit further. Finding a suitable location, all three preceded into the side wall at different locations finding a pegmatite rich with amphiboles and rutile, which unhappily broke easily as the pegmatite was hammered out. Around the pegmatite and everywhere else on the property was this red clay which had weathered down and into all spaces around the pegmatite and quartzite, making the going very slow.

Friday, Joe and Dianne simply got the lay of the land, set up on a spot with the tools, pulled down some loose soils and pegmatite and left about 3 p.m. before the rains came and made even a 4-wheel drive useless in the red clay parking area. Mike Royal was set up on the wall and had already found himself two feet into the rock. They would come back and start big Saturday morning with the other club members.

Camping was at the Hiddenite Family campground, the hosts were kind, friendly and helpful. They provided electric (which was used for air mattress, fan and to charge cell phones) and water at the site for an economical treat.

And did it thunderstorm Friday night, at least an inch, maybe more! Saturday morning, everyone had arrived at the dig. We all went to find our spots. Joe and Dianne went to see what the rains had cleared up on all that pegmatite that we had pulled out, and found that the red clay simply got onto everything. Nothing was washed clear not did anything "sparkle". They dug into the side wall, but after a few hours were not more than a couple feet in and maybe four-foot-high and nothing but red clay and hard pegmatite without any voids. Dianne and Joe then decided to terminate the "deep woods location" and went back to attack the quartzite near Bills hole. Mike Royal terminated his side wall hole and proceeded to look for rutile. Ross terminated working on Bill's hole, preferring to sieve

for rutile within the red clay, as many, many others did. Other people started holes along what was thought to be the attitude of the quartz vein.



Quartz crystals from the gas pocket

Opening up a hole adjacent to Bill, Joe and Dianne did find a gas pocket late Saturday with a couple large clear quartz crystals. See the picture. Besides the rutile, it was one of the best finds on the trip. Unfortunately, many people left Saturday night/ Sunday morning due to the dreary prospects. It was simply very hard work with only hand tools. Others, about six of us, went back Sunday for another beating, and prospected a few other locations with negative luck. After Sunday dinner at the Yellow Deli, the local banqueting abode with superb wood craftsmanship, it was back to the campground for a quick powernap then a few libations and much "bench prospecting", and talk of the one that got away. A good night's sleep Sunday left us well rested for the Monday trip back. Construction and traffic issues between Washington and Baltimore had some taking the back way around Harpers Ferry, for a relaxing and timely safe return

The FM-PA Chapter thanks the following attendees for the trip, procuring and donating a meager \$20/person/day, or \$625+ to the land owner/ lessee of the property for their generosity:

Jim and Barbara DiSebastioni
 Marc Sigouin
 Leo Rhodes (2 days)
 Kim and Madeline Yepremian
 Lyle Peterson
 Kathy and Mike Fox
 Tom Pankratz and family
 Willard and Jason Barrowclough
 Norm Lincoln (2 days)
 Sherri Matis-Mitchell and Kenny
 Dave Fordyce (3 days)
 Mike Royal (4 days)
 Ross Elliot (4 days)
 Bill Stephens (6 days)
 Dianne Soccio (2 days)
 Joseph Marchesani (2 days)



40 years ago in the FM-PA Chapter Newsletter

In the Fall 1977 edition, the Chapter was preparing for its annual symposium, to be held at West Chester State College. The registration fee for FM members was \$2.50. Friday evening was to be a workshop on simple chemical identification of minerals. Five speakers were scheduled for Saturday, and a tour of the Academy of Science, Philadelphia, for Sunday.

The Chapter had just received its tax-exempt status from the IRS, and had 69 members in good standing. The Mineralogy of Pennsylvania, 1965-1975, was in the final stages of publication

Dr. Allen Heyl provided a 1977 article on "Chromian dravite, a new variety of tourmaline from the Line Pit (Lows Mine) in Pennsylvania and Maryland," by Allen V. Heyl, Eugene E. Foord and M.L. Heyl of U.S. Geological Survey, Denver [with no indication of where it might be or might have been published]. In 1951, acicular green tourmalines in massive sheared chromite were collected at the Line Pit chrome mine. That location was described as 3/4 mile northwest of Rock Springs, Maryland, which places it about one mile west of Penn/MD Materials Quarry, site of our 2017 Symposium field trip. "The prismatic crystals are from .1 to 1 cm long and .5 to 2 mm wide... Some of the tourmaline crystals are well terminated with rhombohedrons." Optical properties and x-ray powder diffraction data all matched dravite. Chromium content of 2.6 to 5.4 % Cr_2O_3 was much higher than the < 1% of most dravite, but similar to the 2.61 to 5.29 % of dravite from the Etchison chrome mine in central Maryland, "in the same Maryland-Pennsylvania chromite belt." It was concluded that "the two tourmalines are both chromian dravites of remarkably similar composition with the chromium probably substituting for the magnesium rather than for the aluminum" and that further samples should be sought in the area, including at the Cedar Hill quarry. Other chromian species from the area were also discussed.

That Newsletter back issue and others can be found on our Chapter web site, <http://www.rasloto.com/FM/>, thanks to the efforts of Ron Sloto.

BARITE FROM THE PERKIOMEN MINE IN THE CHARLES WHEATLEY COLLECTION

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

The precise date that lead ore was discovered on the Mill Grove property in Audubon, Montgomery County, Pennsylvania, has not been firmly established. Several versions of the ore discovery exist. A lead mine on the property was noted in Philadelphia and New York newspapers in 1804; the mine was only about 12 deep at that time. In 1820, over 100 tons of lead ore were extracted from the mine by miners who had emigrated from England. As the mines became deeper, the quantity of lead ore decreased, and the quantity of copper ore increased. In the 1820s, a number of shafts were sunk to mine copper ore. Little mining was done between about 1830 and 1848.

The mines in Audubon had a second life as copper mines. In January 1848, the Perkiomen Mining Association was formed for the purpose of mining copper ore. By the end of 1849, they had sent 1,400 tons of copper ore to market. The Ecton Consolidated Mining Company was active at the same time.

Charles Moore Wheatley was appointed manager of the Ecton Consolidated Mining Company in 1848 or 1849. In 1851, a new corporation, the Perkiomen Consolidated Mining Company, bought out both the Perkiomen Mining Association and the Ecton Consolidated Mining Company. Wheatley continued as manager of the new company. While managing the Perkiomen mines,

Wheatley explored the surrounding area for lead and copper ore. Across the Schuylkill River in Chester County, Wheatley found a rich lead vein on the John Williams farm. In the spring of 1850, he leased 46 acres of the Williams farm and formed his own mining company. In January 1852, Wheatley resigned as manager of the Perkiomen mines to work full-time at his own mine. The Perkiomen mines closed in 1858.

Charles Wheatley was an avid mineral collector and assembled a large collection of 6,000 specimens. In January 1858, Wheatley's mineral and shell collections were purchased by Edward C. Delavan, who donated them to Union College in Schenectady, N.Y., where they are preserved. The Wheatley collection contains several impressive barite crystal groups from the Perkiomen mine. Six of them are pictured below. Wheatley likely collected or obtained them when he was the mine manager.

The author thanks Union College for access to the Wheatley collection and permission to photograph specimens and Dr. George H. Shaw of the Union College Geology Department for his assistance with the collection.

Barite from the Perkiomen Mine in the Wheatley Collection



Figure 1. Barite in radiating, prismatic to acicular crystals, 9 cm with crystals to 4.5 cm, Union College 25.4.14-36.



Figure 2. Barite in prismatic to acicular crystals, 4 cm, Wheatley Collection 4701, Union College 25.4.14-45.



Figure 3. Barite in radiating, flattened, prismatic crystals, 10 cm with crystals to 3.5 cm, Wheatley Collection 2106, Union College 25.4.14-29.



Figure 4. Barite in tabular, prismatic crystals on quartz, 10 cm, Union College 25.4.14-26.



Figure 5. Barite in radiating aggregates of thin plates on limonite, 8 cm, Union College 25.4.14-37.



Figure 6. Barite in radiating, prismatic to acicular crystals, Wheatley Collection 2143, Union College 25.4.14-57.

From the Editor

David Glick

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October 7, 2017: Autumn Mineraldust by PESA, Macungie, PA 18062. Sat. only 8:30 -3:00. <http://www.mineraldust.com/>

October 21-22, 2017: EFMLS Convention & Show, Bristol, Connecticut. EFMLS meeting Friday October 20.

October 28, 2017: South Penn Rock Swap, by Central Penn. & Franklin County Rock & Mineral Clubs. South Mountain Fairgrounds, west of Arendtsville, PA on Route 234. Contact: tsmith1012@comcast.net

Nov. 4-5, 2017: Friends of Mineralogy - Pennsylvania Chapter Symposium and Field Trip. Saturday Symposium at Franklin & Marshall College, Lancaster, Pa. Sunday field trip Penn/MD Quarry, Peach Bottom PA.

Classifieds

FOR SALE: I am preparing to sell a large percentage of my worldwide collection and thousands of Pennsylvania specimens, many self collected and old classics. There's plenty of variety, and plenty for different levels of collector interest. Anyone interested should call to set up an appointment. Thanks,

Skip Colflesh, Hershey, PA
phone 717-805-2027

FM on the WWW

Please explore the FM-PA web site at
www.rasloto.com/FM/

and facebook: Friends of Mineralogy Pennsylvania Chapter

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

Friends of Mineralogy Pennsylvania Chapter Directory of Officers

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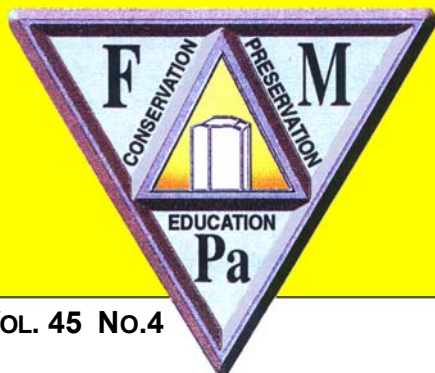
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contact information in the
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Friends of Mineralogy Pennsylvania Chapter Web Site: **<http://www.rasloto.com/FM>**



FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 45 No.4

WINTER 2017

Symposium and Field Trip Attendance Increases

The Friends of Mineralogy – Pennsylvania Chapter held its 2017 Symposium and field trip on the first weekend in November. The Saturday symposium was held in the Hackman Physical Sciences Building at Franklin & Marshall College, Lancaster, PA.; our Chapter is grateful to have access the facilities there.

The fifty-nine collectors attending heard several talks by experts on minerals, geology and mining in Pennsylvania and beyond. Eight new members joined FM-Pa at the Symposium.

Chapter President Joe Marchesani had led the efforts to organize this symposium. He started the morning by welcoming the participants, and introduced the speakers.



Stan Mertzman, professor and our host at F&M, spoke on Through the "Looking Glass": Optical Mineralogy and Common Igneous and Metamorphic Minerals and Rocks.



Ron Sloto, PG, discussed history, geology and mineralogy in his talk on The Dyer Diabase Quarries, Berks County, Pennsylvania. (2015 photo)



Bill Stephens, PG, spoke about his experiences with Lapidary Grade Agate and Other Semi-Precious Gemstones from the Penn-MD Serpentine Quarry, Lancaster County, Pennsylvania.



William Kochanov, PhD, detailed The Occurrence of Smoky Quartz Crystals in Northeastern Pennsylvania.



Kent Littlefield, PG, recounted the story of Friedensville Zinc Mines of Southern Lehigh County: Geology, Industrial History, and Environmental Impact.



Select mineral dealers were present, and there was an extensive silent auction, give-away table, refreshments, and plenty of opportunities for visiting with fellow enthusiasts.

The Sunday mineral collecting field trip for symposium registrants was held at H&K Group's Penn/MD Quarry, Peach Bottom, PA. The group drove to the quarry floor, and received a safety briefing and orientation. Polished core samples showed a variety of colors and lots of veining.



The Franklin & Marshall College facilities met our needs very well, as always.



Joanne Moore photo



Dave Johnson photo



A thick coating appearing to be blue opal similar to that at Dyer's Gibraltar Quarry was found.



Hydromagnesite crystal clusters.

Ron Sloto photo

Photos in this article by D. Glick unless otherwise noted.

Hemimorphite from the Ecton Mine 80-Foot Stope and Perkiomen Mine Whim Shaft, Audubon, Montgomery County, Pennsylvania

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

The Perkiomen mines were located on or near the Mill Grove estate in Audubon. The village of Shannonville was renamed Audubon in 1899 in honor of John James Audubon, who resided at Mill Grove from 1804 to 1806 during the very early days of lead mining on the estate. The Perkiomen mines exploited veins of galena-sphalerite-chalcopyrite mineralization. The mines were abandoned by 1858. Smith (1977) provided an excellent description of the mines.

The Perkiomen mines are noted for their microcrystals; few mineral species occurring there form large crystals. The microcrystals are beautiful and well formed; however, they may be difficult to identify correctly.

Two unidentified minerals from the Perkiomen mines were analyzed and found to be hemimorphite. Sample RS-703 (fig. 1) was collected by the author from the Perkiomen mine whim shaft dumps in 1985. Hemimorphite forms a zoned, white group of radiating acicular crystals measuring 4 mm in diameter. Smaller crystal groups less than 1 mm in size are to the left of the larger radial group in figure 1. The scanning electron microscope (SEM) image shows the smaller crystals to be diverging spays of hemimorphite crystals (fig. 2).



Figure 1. Hemimorphite from the Perkiomen mine whim shaft, Audubon, Montgomery County, Pennsylvania. Sample number RS-703. Field of view is 1 cm.

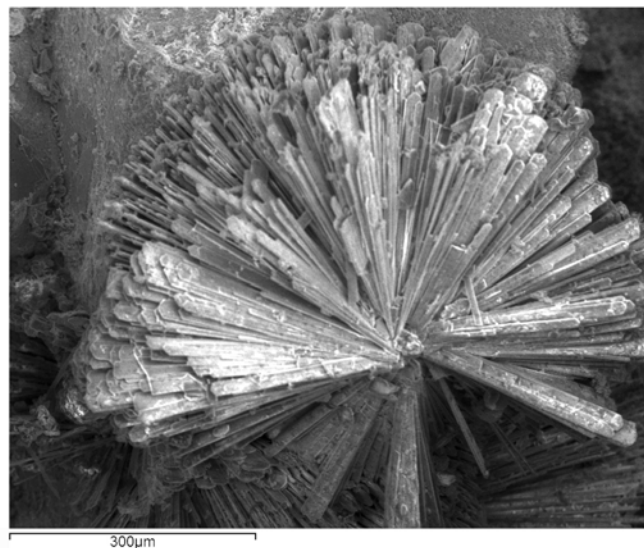


Figure 2. Scanning electron microscope image of hemimorphite from the Perkiomen mine whim shaft, Audubon, Montgomery County, Pennsylvania. Sample number RS-703. Magnification is approximately 350 X.

Sample RS-3925 (fig. 3) was collected in the 80-foot stope of the Ecton mine by Bill Shin in the 1960s. Hemimorphite forms lustrous, white spheres to 1 mm in diameter. The SEM image (fig. 4) shows aggregates of tabular crystals forming the spheres. Individual crystals are visible on the upper right side of the image. Both samples were analyzed by scanning electron microscope/energy dispersive X-ray spectroscopy (SEM-EDS). The analysis was done on an FEI Quanta 400 environmental scanning electron microscope integrated with an Oxford INCA 400 X-ray energy dispersive spectrometer at the West Chester University Center for Microanalysis and Imaging, Research and Training. Both samples were the unpolished, uncoated specimens shown in figures 1 and 3. Analytical accuracy of unpolished, uncoated samples is approximately ± 5 percent. Results of the EDS analysis are presented in table 1.



Figure 3. Hemimorphite from the 80-foot stope of the Ecton mine, Audubon, Montgomery County, Pennsylvania. Sample number RS-3925. Field of view is 8mm.

Table 1. Results of X-ray energy dispersive spectrometer (EDS) analysis. Values are mean values in weight percent.

Sample number	Number of measurements	Zn	O	Si
RS-703 Whim shaft Large hemisphere	4	50.24	35.04	12.94
RS-703 Whim shaft Small crystal spray	4	52.56	34.50	14.68
RS-3925 80-foot stope	2	56.07	33.33	11.66

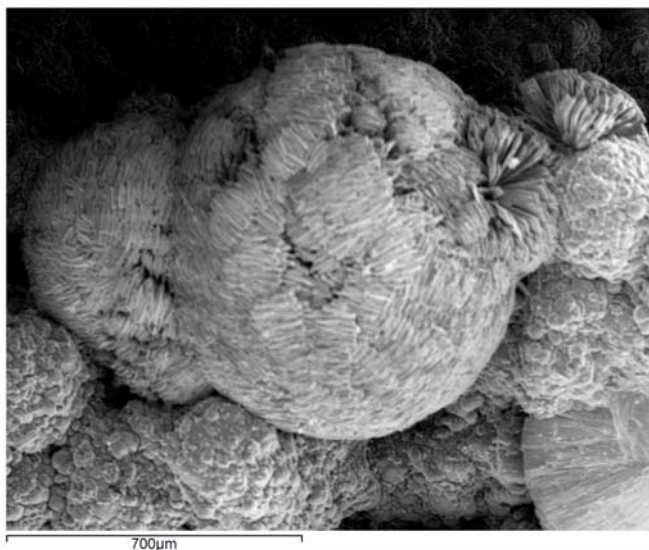


Figure 4. Scanning electron microscope image of hemimorphite from the 80-foot stope of the Ecton mine, Audubon, Montgomery County, Pennsylvania. Sample number RS-3925. Magnification is approximately 180 X.

REFERENCE

Smith, R C., II, 1977, Zinc and lead occurrences in Pennsylvania: Pennsylvania Geological Survey, 4th ser., Mineral Resource Report 72, 318 p.

PRESIDENT'S NEWS: STERLING HILL FIELD TRIP

Well, it is 2 a.m. Tuesday morning, January 9th, and I sit here in a halite spreader as the roads slowly turn from ice to slush after the freezing rain and a recent spread. I wonder a little about global warming, and what higher or lower temperatures really existed many millions of years ago. Did ice ball earth really exist? Or does it just seem that this month is just an ice ball earth month? Is it an anomaly? How much atmospheric water vapor must accumulate for the ice sheets to come down? Does it happen overnight? The northern coniferous forest. The rain forests. Sea level rise. Where's my coffee? Okay, now onto something more interesting...

The FM-PA is coordinating and sponsoring a trip to the **Sterling Hill Mining Museum** located in Ogdensburg, New Jersey and associated collecting piles/ sites. The trip is being put together by our new field trip chair person Tom Pankratz. The trip will be in April 2018, on a Saturday. It is an all day event. We need at least 20 members to make the trip possible. It is likely that we will invite other mineral collecting clubs if FM-PA attendance is light. We will also have an evening lamp collecting event, so bring your UV lamps. If you don't have one, get one. They're a lot of fun to have around the house. The event will include semi hard-core mineral collecting, a tour that will include lighting up the wall, and minerals are also for sale. Bring a BIG hammer.

Come out on this trip, and meet the new field trip chair Tom Pankratz, and membership chair person Dianne Soccio. And have fun. There is a hotel in nearby Rockaway, and many others. We will probably coordinate a hotel and maybe get a group rate. But, many still do our own thing, and that is good.

While we're still putting this together, right now specimen collecting is about \$1.50/lb. A \$25 fee covers the day. Not sure if the fee is the same for children, but I imagine unless you're in the open active quarry area, children of all ages are allowed. **We ask that a questionnaire be completed** (members have received it by e-mail or with this printed Newsletter) to help ascertain attendance and interest - return it to Tom by Jan. 21.

For up to date field trip information, contact Tom Pankratz at TjPankratz@verizon.net.

All the best, Joe Marchesani

Visit the FM-PA Facebook page

<https://www.facebook.com/pages/Friends-of-Mineralogy-Pennsylvania-Chapter/1174230635931641>

Members and friends are invited to *Like* the page, post, and generally provide a good level of activity.

Rudy Tschernich 1945-2017

**Author, Collector of Zeolites,
Museum Curator**

by

Julian Gray, Executive Director
Rice Northwest Museum of Rocks and Minerals,
Hillsboro, Oregon

It is with profound sadness that I report the passing of Rudy Tschernich today, December 26, 2017. Rudy was born in Snohomish, Washington in 1945 and developed a love for mineral collecting with an exceptional passion for the zeolite group minerals that were so prevalent in his home in the Pacific Northwestern United States. His collection of nearly 12,000 zeolites from worldwide localities, most of them personally collected, was eventually donated to the Rice Northwest Museum of Rocks and Minerals in Hillsboro, Oregon. Rudy served on the board of the Rice Museum before being invited by Museum co-founder, Sharleen Harvey, to join the museum as full-time curator following his retirement from the U.S. Postal Service in 2003. Rudy served as curator of the Rice Museum until 2011.

<<http://www.ricenorthwestmuseum.org>>.

Rudy was a dedicated field collector and was involved in many new discoveries, most famously those of the Neer City Road site in Goble, Oregon where three zeolites new to science were discovered in a small dig site. These minerals included boggsite, cowlesite, and a mineral that was initially confused with apophyllite. That latter mineral turned out to be a new mineral that was named in Rudy's honor: tschernichite (Boggs, et al., 1993). Rudy was involved in recording the mineralogy of many zeolite locations, but arguably his greatest contribution to science was his 1992 book, *Zeolites of the World*, in which Rudy meticulously documented thousands of zeolite localities. Rudy was instrumental in the founding of the Pacific Northwest Chapter of the Friends of Mineralogy, which honored him in 2000 with the Noble Witt Award for his self-less contributions. He was also recognized by the Rice Northwest Museum of Rocks and Minerals which named its Northwest Gallery in his honor.

Rudy was active to the very end. His last project was re-photographing his entire zeolite collection using modern photomicrography techniques. His legacy lives on through his collections, his writings, his photographs, the museum gallery that bears his name, and the lives he touched. He was also modest and wished no services be held in his memory. Nevertheless, we are grateful for his contributions.

References:

Boggs, R.C., Howard, D.G., Smith, J.V., Klein, G.L. (1993) Tschernichite, a new zeolite from Goble, Columbia County, Oregon. *American Mineralogist*: 78: 822-826.

Tschernich, Rudy W., Rudy Tschernich's Mindat Home Page. <https://www.mindat.org/user-14679.html>

Tschernich, Rudy W., (1992) *Zeolites of the World*. Geoscience Press. Free download at https://www.mindat.org/book_details.php?id=74 and https://www.mindat.org/book_details.php?id=71

CHAPTER BUSINESS NEWS

Election Results

At the annual meeting of the membership held on November 4 at the symposium, Mike Dunton was elected and David Glick and Joseph Marchesani were re-elected to the Board of Directors for three-year terms. The Board later met and re-elected the four incumbents to the officer positions (see page 8).

New Membership Chair

Chapter Vice President Dianne Soccio is now Membership Chair, taking over from Ron Sloto after his many years of service. Ron continues as Treasurer.

There's Still Time to Pay Dues

This newsletter is being sent to all members who were paid for 2017. If you have not yet paid your **dues for 2018**, there's still time to pay so that your membership benefits, including delivery of this newsletter, will not lapse. Please be sure to provide any updates to your contact information, such as a new e-mail address; the member data sheet is available at the chapter web site

www.rasloto.com/FM/
under "Join FM." Rates are \$20 for full membership, \$15 for students and seniors (over 62). Checks should be made out to "Friends of Mineralogy, PA Chapter" and mailed to the Membership Chair:

Dianne Soccio
Friends of Mineralogy - Pennsylvania Chapter
128 South Ford Avenue
Wilmington DE 19805

Please remember to provide updates to Dianne whenever your contact information changes. -Editor

James L. Quickel 1927 - 2017

Pennsylvania Collector and Chapter Member

Long-time, active collector and FM-Pennsylvania Chapter member James Quickel has died. More may be found in the obituary at cumberlink.com, which reports "World War Two veteran Sgt. James Lavere Quickel (USMC) was relieved of duty on September 8th, 2017. He was born on September 4th, 1927 to James Monroe Quickel and Edna Marie (Cleaver) Forsythe in East Berlin, PA. James was married to Nadine R. (Sieg) Quickel until she passed away May 25th, 1988." He is survived by three sons and their wives, grandchildren and great-grandchildren. The obituary notes that he wore the title of United States Marine with great pride. It recounts his many activities as an outdoorsman, most notably as a mineral collector, but also champion rattlesnake competitor, winning homing pigeon competitor, motorcycle racer, and hunter. He was a scoutmaster for many years.

As the obituary says, "James had a passion for mineralogy." He was an active collector for many years. One aspect of his collecting was gold panning. In the Summer 2002 issue of the FM-Pa Chapter Newsletter, the late Martin Anné wrote, "Jim Quickel and I started on a quest for gold in Lancaster County in 1981... Our best find was at Peters Creek (5/22/82), when Jim Quickel found an area where, probably, the most placer gold has been found in Pennsylvania." A 1984 trip in York County "...I believe, was Jim's last trip, due to health concerns. It should be mentioned that Jim was the one, on his own, who found gold in northern York County."



His extensive collection of Pennsylvania minerals now resides at Bryn Mawr College, Bryn Mawr, Pennsylvania. The Spring-Summer 2007 issue of the FM-Pa Chapter Newsletter reports that "... cataloging of the 1000-specimen James Quickel Pennsylvania collection" was almost complete; "the Quickel collection is rich in central Pennsylvania material, in addition to the classic southeastern localities." Specimens from the collection were to be on exhibit in Fall 2007; a few are shown here.



Fluorite from the Eastern Industries quarry, Berks Co., PA. Quickel collection 452 at Bryn Mawr College. R. Sloto photograph.



Feldspar from the Elk Creek prospect, Chester Co., PA. Quickel collection 552 at Bryn Mawr College. R. Sloto photograph.



Pyrrhotite from the Grace mine, Berks Co., PA. Quickel collection 538 at Bryn Mawr College. R. Sloto photograph.



Stilbite-stellerite and calcite from the Kibblehouse quarry, Montgomery Co., PA. Quickel collection 904 at Bryn Mawr College. R. Sloto photograph.

From the Editor

David Glick

THANK YOU to everyone who has been providing material for the Newsletter! Everyone else - join the fun! Please provide materials for the next issue by **March 10, 2018**. Feel free to contact me at xidg@verizon.net, or 814-237-1094 days and evenings. Mail can be sent to 209 Spring Lea Dr., State College PA 16801.

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 to make them worthwhile! If you know people who have interesting material, please encourage them to submit it.

UPCOMING EVENTS

See www.mineralevents.com for more

Jan. 20, 2018: Philadelphia Interclub Swap & Sell, by Phila. Mineralogical Society. THIS IS THE NEW LOCATION Lu Lu Temple, 5140 Butler Pike, Plymouth Meeting, PA 19462. Sat. only, 9-noon. <http://www.phillyrocks.org/>

Jan. 27, 2018: Rutgers Geology Museum Open House. See enclosed flyer & <http://geologymuseum.rutgers.edu>

March 3-4, 2018: Delaware Mineralogical Society Gem, Mineral & Fossil Show, Theme: "Favorite Finds." Watch for news of Symposium.

March 24-25, 2018: Philadelphia Mineral Treasures and Fossil Fair, by Phila. Min. Soc. & Delaware Valley Paleo. Soc. LuLu Temple: 5140 Butler Pike, Plymouth Meeting, PA 19462 <http://www.phillyrocks.org>

March 24-25, 2018: 49th Annual Gem and Mineral Show sponsored by the Che-Hanna Rock & Mineral Club. Wysox Vol. Fire Co Social Hall, 111 Lake Rd; Wysox, PA www.chehannarocks.com

DONATIONS WELCOMED

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

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Treasurer	Ron Sloto
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	Mike Dunton
	William Kochanov
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Symposium Chair	
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