

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 Perkiomenville stillerite as 'very near stillerite' - 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 stillerite. This is chip of verified sample from</i>
Purch. from <u>Verified by</u> <u>Dick Erd</u> yr. <u>1935</u> ±	
Name <u>Stillerite! This</u> <u>is chip of the actual</u> <u>sample Erd verified</u>	
Loc. <u>Central E. side Kib-</u> <u>blehouse Qry, Perkiomenville</u>	
Coll. of <u>ALLEN V. HEYL</u> (over) <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 stillerite; 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 stillerite 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 stillerite 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.

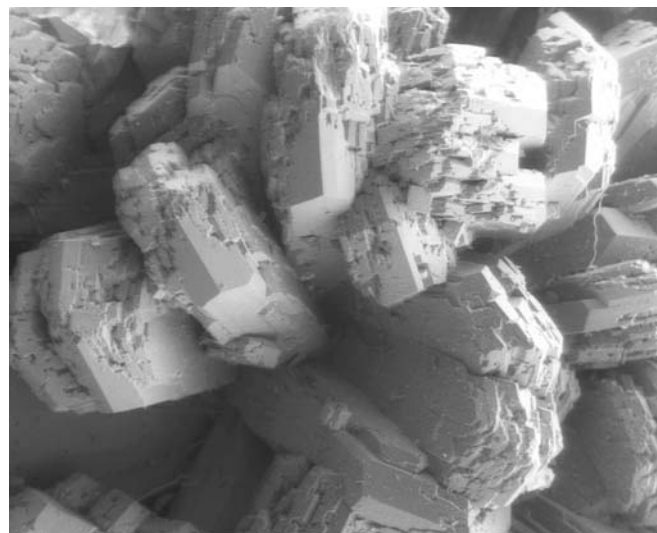


Figure 3. Scanning electron microscope image of sample RS-3671, stilbite-stillerite solid solution series from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa. Magnification is approximately 80 X.

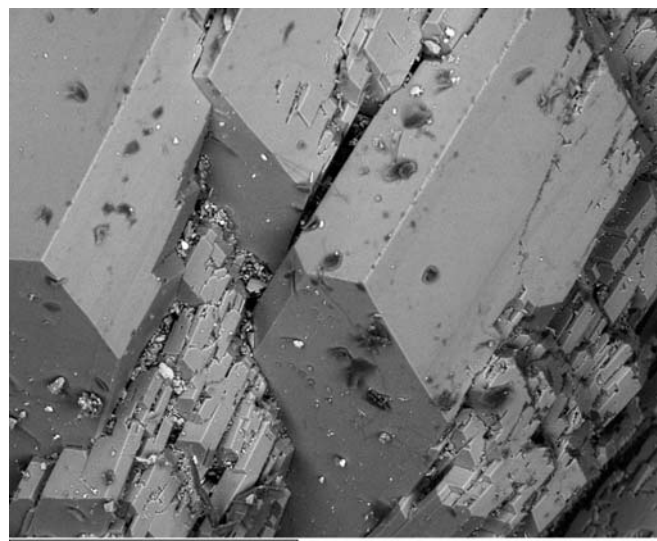


Figure 4. Scanning electron microscope image of sample RS-3787, stilbite-stillerite solid solution series from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa. Magnification is approximately 300 X.

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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- Blackburn, T.J., and others, 2013, Zircon U-Pb geochronology links the end-Triassic extinction with the Central Atlantic Magmatic Province: *Science*, v. 340, Issue 6135, p. 941-945.
- 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)

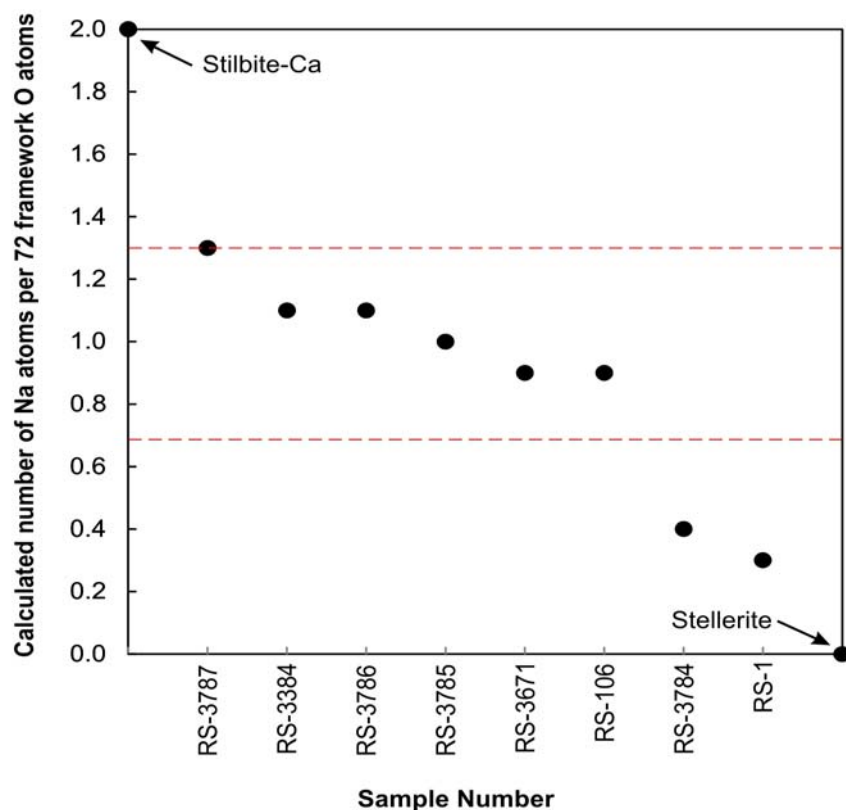


Figure 5. Calculated number of sodium atoms per 72 framework oxygen atoms for 8 analyzed samples from the Kibblehouse quarry, Perkiomenville, Montgomery County, Pa.

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, Kochanov, 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

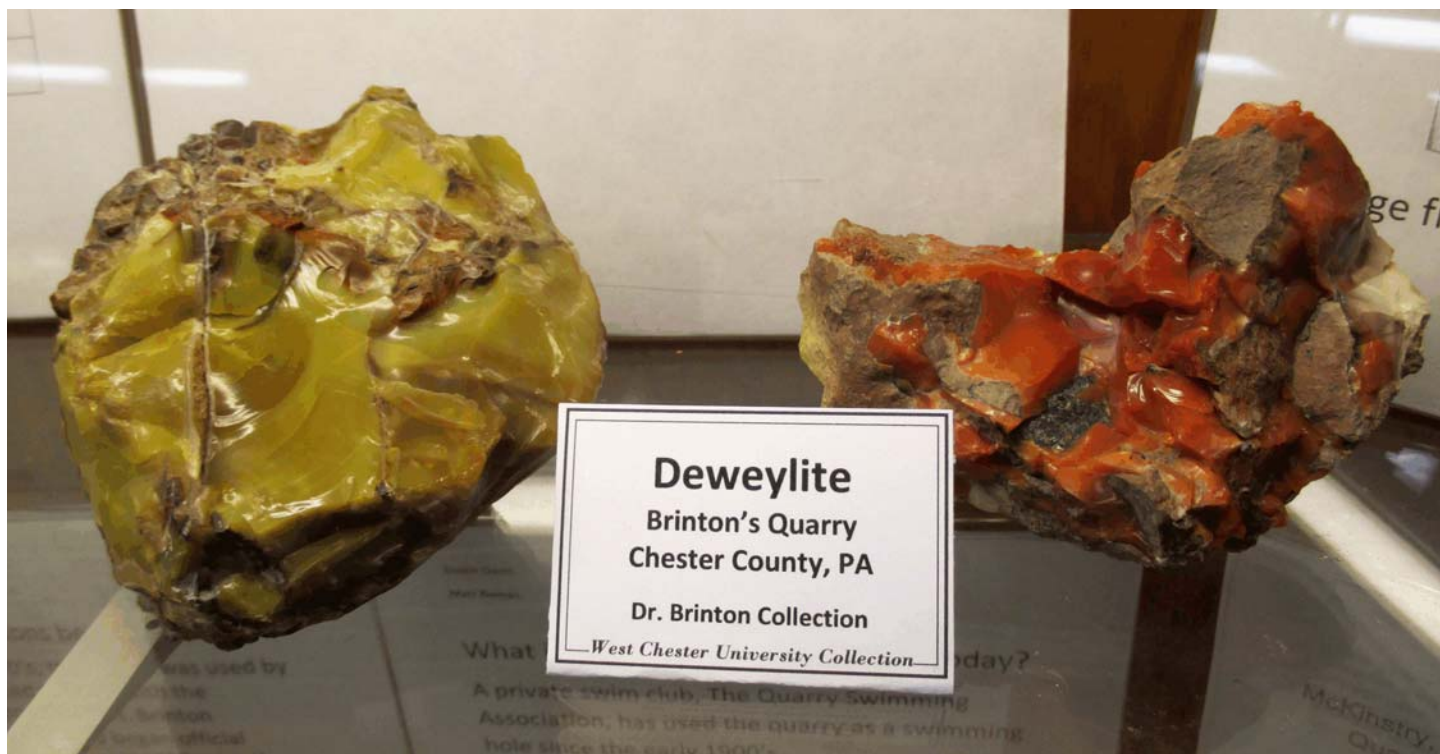
While West Chester University's geology museum is often overlooked by the masses of busy students who pass by it each day, it is without a doubt one of the university's most noteworthy hidden gems. The museum, located in the Schmucker Science Link between the Schmucker and Merion Science Centers, is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

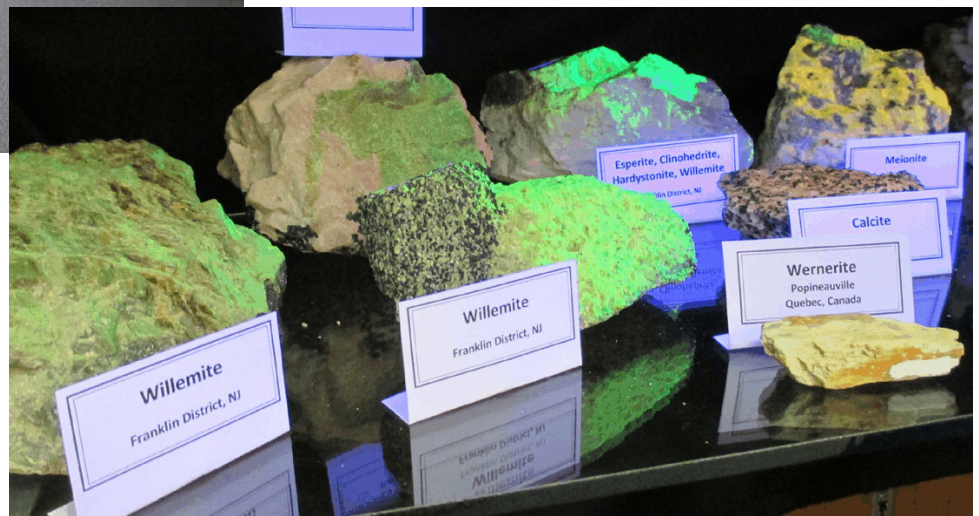
Displays in the museum are intended to be educational. All displays were designed and installed by students. The museum boasts a particularly impressive collection from Chester County, including a display dedicated to Brinton's quarry. Another case features Laguna agates, beautiful minerals from Chihuahua, 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 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.

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

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COMMITTEE CHAIRS

Membership Chair	Ron Sloto	rasloto@aol.com	(610) 469-0626
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Friends of Mineralogy Pennsylvania Chapter Web Site: **<http://www.rasloto.com/FM>**