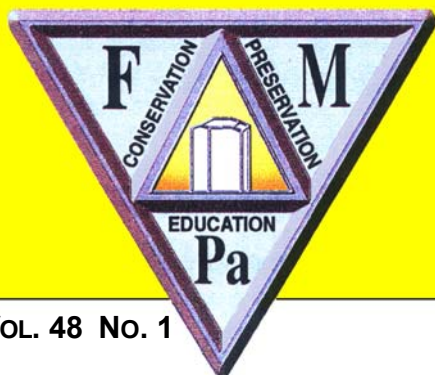




FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 48 No. 1

SPRING 2020

President's Message

from Joe Marchesani

"The more things change, the more they remain the same." This mantra has been repeated many times during different circumstances throughout a career. It couldn't be truer. As I write, the world sits in the middle of a coronavirus (Covid-19) pandemic from a virus named SARS-CoV-2. America and the world have changed almost overnight. We have ground to a halt. The Dow stock market has fallen from an all-time high of about 29,000 to below 19,000 in one month. The public has made a panic run on chicken and toilet paper. New York state has been declared a "major disaster" (guessing they skipped the simple "disaster" phase or maybe it already was a disaster). America is on "lockdown", and here in New Jersey, non-essential workers are told to stay home. The National Guard has been deployed in 22 states, including New Jersey, to deliver supplies... for now. Many businesses are temporarily shuttered, and many workers temporarily jobless. Social distancing, which means keeping a distance of about 6-feet from the person next to you, is encouraged. Yet somehow, we were able to have a Spring 2020 field trip (though minimal attendance from FM-PA) to Odessa, Delaware, for petrified wood. It emerges to be our last field trip for the moment.

Tom Pankratz has been keeping the group supplied with emails and notices for field trips. Times are good. Field trips are happening and we are not in short supply. Tom has a special knack for putting together field trips, and sparking enthusiasm. Although we have lost a few collecting localities due to development, ownership change, and/or insurance underwriters, there are still many options. The Covid-19 pandemic has compelled all foreseeable field trips to be postponed. Hopefully, this will all be over shortly, and back to business as usual.

The Fall 2019 symposium at Franklin and Marshall College was a great event. Attendance was



optimal with a very nice auditorium for presentations. Roger Thomas, professor emeritus, provided a generous welcome to the group since Stan Mertzman was unavailable (best wishes, Stan), then Bill Stephens, Karenne Snow, Ron Sloto, Peter Heaney, and Ryan Mathur all gave interesting presentations. A special thank you to all who presented and spread your wealth of knowledge. Attendees usually receive five (5) professional development hours.

It seems that Fall 2019 could have been our final year at the Franklin and Marshall College location. The college has been a spectacular venue, but there comes time for change. The next symposium, the Fall 2020 symposium, will most likely have us in a new venue. A nearby Lancaster location has already been proposed and reviewed by fellow board member(s). Pending our next upcoming board meeting for further review and approval, members of this chapter will be happily impressed by an improved modern venue for the new Fall 2020 Symposium!

Current members in good standing receive the newsletter, field trip notifications, a discounted price and invitations to the annual symposium. Membership dues structure is as follows:

Individual-\$20

Family (one email address)- \$25

Student-\$15

Seniors (over 62)-\$15

...and the 2019 Symposium registration fees (which includes Sunday trip) were:

Member-\$15

Non-member-\$25

Students (w/ID)-free both days

Stay safe, and all the best.

The **Spring 2020** issue of the national **Bulletin of FM** is available on their website
<https://www.friendsofmineralogy.org/>
under 'Newsletters.' See also pages 6-7

Some Minerals from the Contact Zones at the Silver Hill Quarry, Narvon, Caernarvon Township, Lancaster County, Pennsylvania

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

INTRODUCTION

This article describes some minerals collected during the Berks Mineralogical Society field trip to the Silver Hill quarry on November 16, 2019. It is not intended to be a complete list of minerals found in the contact zones. The Silver Hill quarry, owned and operated by the H&K Group, produces aggregate from Jurassic-age diabase. The diabase intrudes the Hammer Creek Formation. Little mineralization occurs in the massive diabase. Contacts between the diabase and the Hammer Creek Formation are located on the eastern (upper contact) and western (lower contact) sides of the quarry.

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

The author thanks the H&K Group and Mark Eschbacher of the H&K Group for access to the quarry. Mark led the field trip and pointed out the contact zones and collecting areas.

Upper Contact Zone

The upper contact zone is obscured by backfill. Float indicates the presence of a pink quartz pebble conglomerate of the Hammer Creek Formation above the contact. Dark gray hornfels boulders also are present in the area.

Allanite-Ce Allanite-Ce occurs as sprays of greenish black acicular crystals (fig. 1) associated with orange albite, pink microcline, and quartz. It was identified in

the field by other collectors as schorl, which it resembles. However, a closer examination indicated that it probably was not schorl. Analysis by SEM-EDS (fig. 2) showed it to be allanite with cerium as the dominant rare earth element. The median rare earth element weight percent (wt%) values for 22 spectra were cerium, 7.51 wt%; lanthanum, 3.45 wt%; and neodymium, 2.24 wt%.



Figure 1. Allanite-Ce from the upper contact zone at the Silver Hill quarry. Field of view is 2 cm. Sample RS-4313.

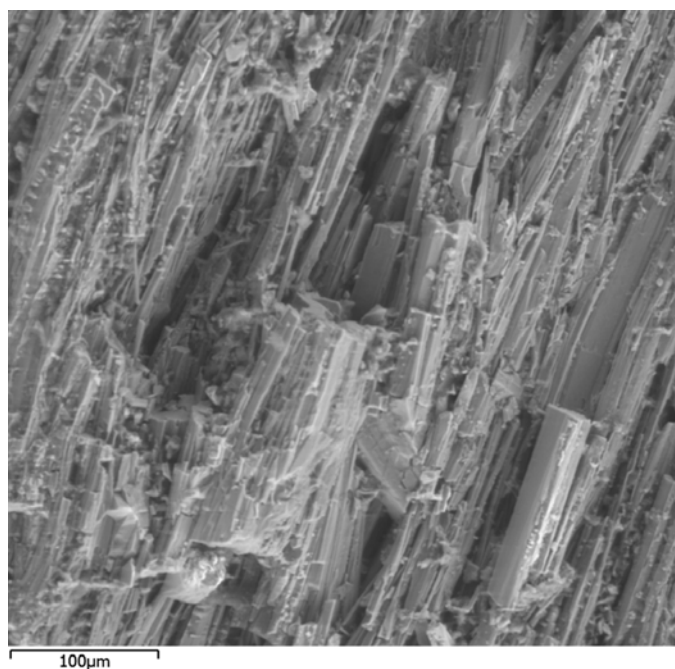


Figure 2. Scanning electron microscope image of allanite-Ce from the upper contact zone at the Silver Hill quarry. Magnification is approximately 590 X. Sample RS-4313.

Albite Small orange, semi-transparent anhedral crystals (fig. 3) associated with allanite-Ce were identified as albite by SEM-EDS analysis (fig. 4). Some of the albite forms euhedral crystals.

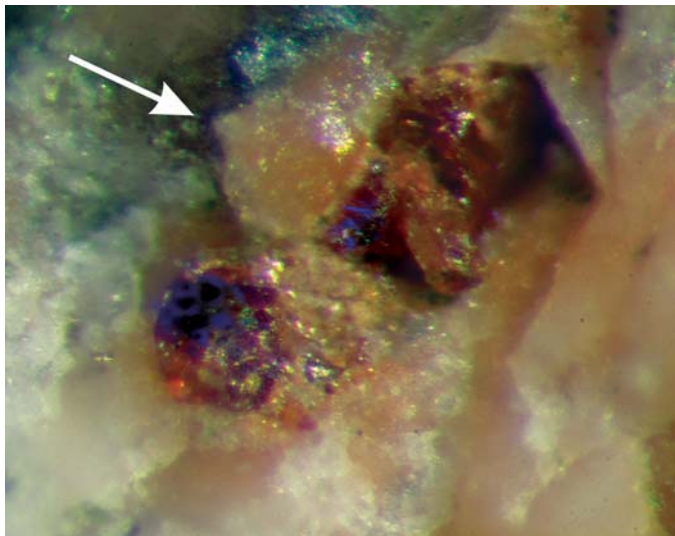


Figure 3. Albite from the Silver Hill quarry, 1 mm. Sample RS-4313.

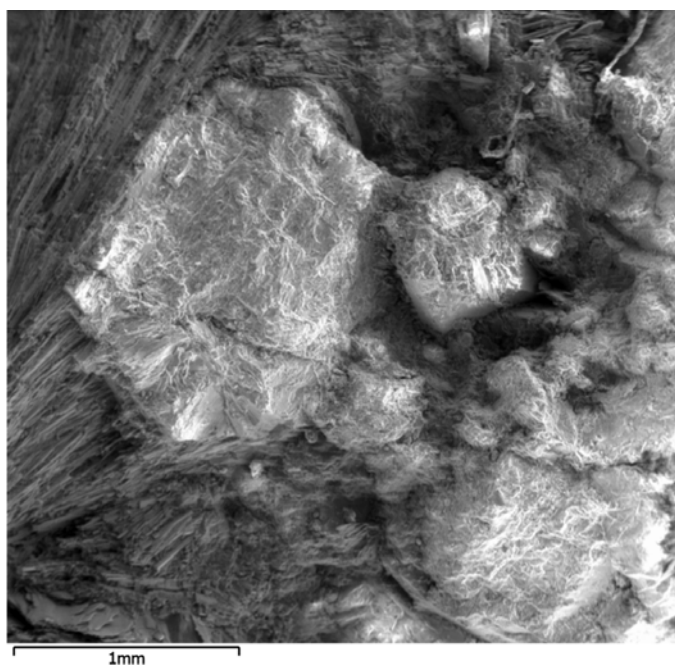


Figure 4. Scanning electron microscope image of albite and allanite-Ce from the upper contact zone at the Silver Hill quarry. Magnification is approximately 90 X. Sample RS-4313.

Dravite-Schorl Solid Solution Series Lustrous black crystal sprays (fig. 5) associated with silvery muscovite (fig. 6) were found in the hornfels boulders. Dravite is the magnesium-rich end-member of the series; schorl is the iron-rich end-member of the series. SEM-EDS

analysis showed the crystals to be intermediate between dravite and schorl. The median values were 3.28 wt% for magnesium and 5.60 wt% for iron.



Figure 5. Dravite-schorl series crystals from the Silver Hill quarry, 5 cm. Sample RS-4319-A.



Figure 6. Muscovite and dravite-schorl series crystals from the Silver Hill quarry. Field of view is 1.8 cm. Sample RS-4319-B.

Hematite, var. specularite Hematite forms small, silvery-grey plates and aggregates (fig. 7). The individual tabular hematite crystals can be seen under magnification (figs. 8A and 8B). Hematite was confirmed by SEM-EDS.



Figure 7. Hematite from the Silver Hill quarry, 8 cm. Sample RS-4322.

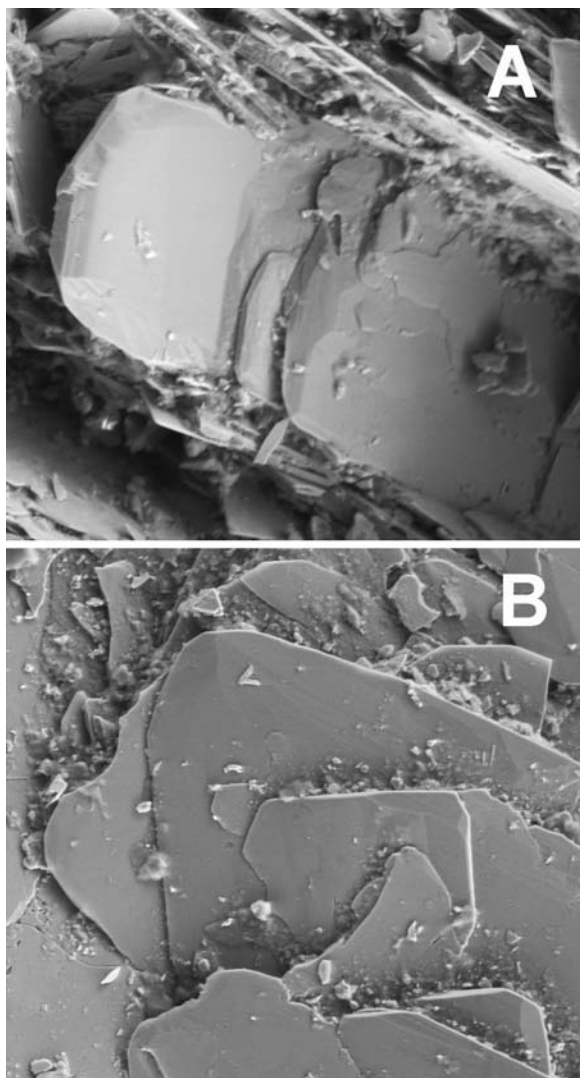


Figure 8. Scanning electron microscope images of hematite from the Silver Hill quarry. Magnification is approximately 1350 X for A and 890 X for B. Sample RS-4322.

Lower Contact Zone

The lower contact zone is located on west side of the bottom level of the quarry. The collecting area is behind the aggregate storage piles.

Allanite-Ce Small, blocky crystals of allanite-Ce (fig. 9) were identified by SEM-EDS in an augite matrix. The black allanite-Ce crystals in the dark green augite matrix could not be discerned with the naked eye; they were found with the SEM. Cerium was the dominant rare earth element. The median rare earth element values were cerium, 0.74 wt%; lanthanum, 0.36 wt%; and neodymium, 0.30 wt%. These values are much lower than the values for the allanite-Ce found at the upper contact zone.



Figure 9. Scanning electron microscope image of allanite-Ce from the lower contact zone at the Silver Hill quarry. Magnification is approximately 260 X. Sample RS-4313.

Chabazite-Ca Chabazite-Ca occurs mainly as white massive and lustrous, white, radiating rosettes (fig. 10). It occurs rarely as white rhombic crystals (figs. 11, 12A, and 12B). SEM-EDS analysis showed calcium to be the principle cation.

Chalcopyrite Chalcopyrite occurs as small, brass yellow blebs in chabazite-Ca (fig. 13). It was confirmed by SEM-EDS analysis.



Figure 10. Radiating chabazite-Ca from the Silver Hill quarry, 4.6 cm. Sample RS-4320.



Figure 13. Chalcopyrite from the Silver Hill quarry, 2 mm. Sample RS-4321-B.



Figure 11. Chabazite-Ca crystals from the Silver Hill quarry. Field of view is 3 cm. Sample RS-4321-A.

Malachite Malachite is a weathering product of chalcopyrite and is found as sparse green coatings (fig.14) on chabazite-Ca. It was confirmed by SEM-EDS analysis.

Microcline White microcline occurs as massive and small blocky crystals (fig. 15). It was confirmed by SEM-EDS analysis.

Titanite One small, light brown crystal (fig. 16) was found associated with chabazite-Ca. It was identified as titanite by SEM-EDS analysis.

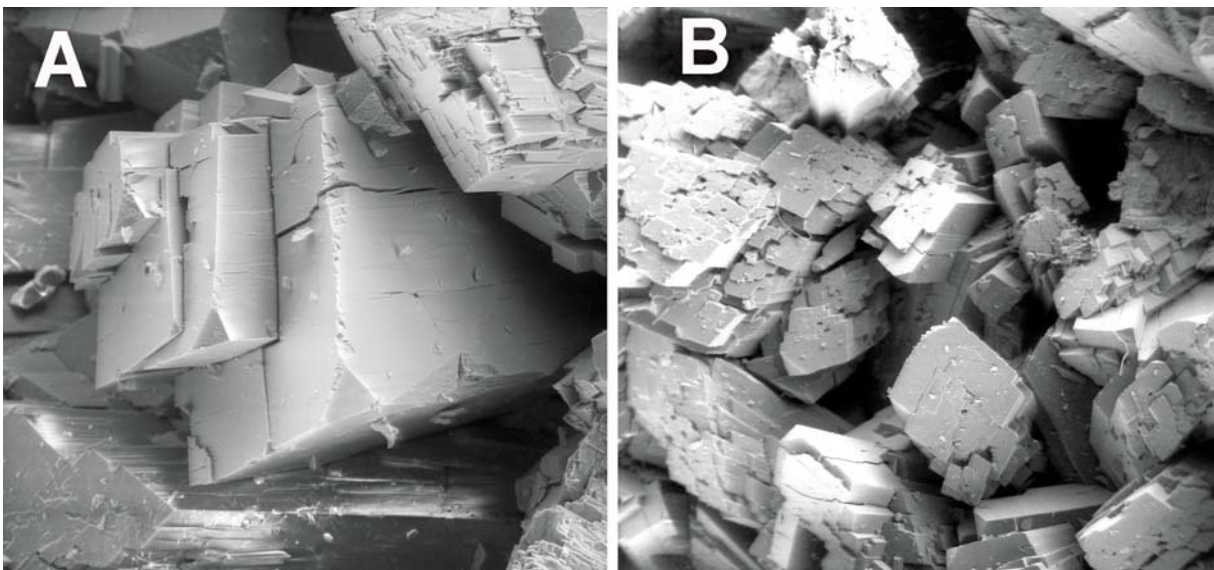


Figure 12. Scanning electron microscope images of chabazite-Ca crystals from the Silver Hill quarry. Magnification is approximately 290 X for A and 60 X for B. Sample RS-4321-A.

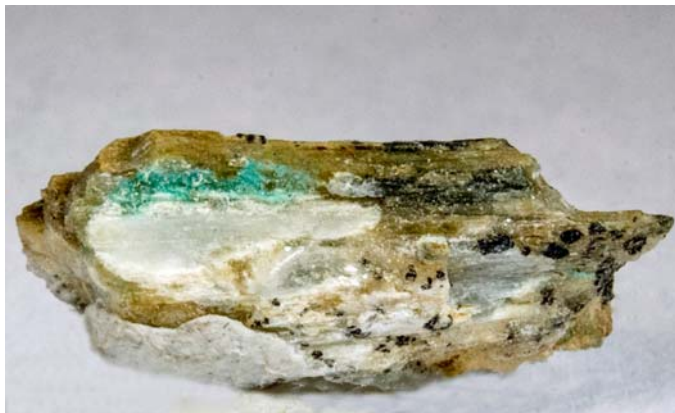


Figure 14. Malachite from the Silver Hill quarry, 1.3 cm. Sample RS-4315.



Figure 15. Microcline from the Silver Hill quarry, 1.5 cm. Sample RS-4310.



Figure 16. Titanite crystal from the Silver Hill quarry, 4 mm. Sample RS-4317.

50-Year Anniversaries

FM national Editor Beth Heesacker is planning for a 50th anniversary of FM article in an upcoming issue of the Bulletin of Friends of Mineralogy.

FM-Pennsylvania Chapter, having started volume 48 of this newsletter, is also approaching 50 years.

Mineralogical Record, having completed its 50th year in 2019, has now published *50 Years of What's New in Minerals*, in two volumes plus an index volume, complete with the original illustrations. "...this new reference work provides the full original text of The Mineralogical Record columns, including thousands of specimen photos, many in original full color (black & white for some of the earliest volumes)." See <https://mineralogicalrecord.com/bookdetail.asp?id=168>

Pennsylvania Geology magazine will start volume 50 with its first issue of 2020.

While We Can't Travel

While many of us are stuck at home, museums may be offering new material to view on the internet. Penn State's Earth & Mineral Sciences Museum and Art Gallery has been adding "virtual museum" postings on <https://www.facebook.com/EMSMAAG/>

The Smithsonian continues virtual tours, such as https://naturalhistory2.si.edu/vt3/NMNH/z_tour-022.html

National Bulletin of Friends of Mineralogy

On the next page we have reproduced the first page of the latest national Bulletin of Friends of Mineralogy. Volume 50 number 1. It's the President's Message and the table of contents, to entice you to download the complete issue from the national web site, <https://www.friendsofmineralogy.org/> under "Newsletters"



to promote, support, protect and expand the collection of mineral specimens and to further the recognition of the scientific, economic and aesthetic value of minerals and collecting mineral specimens.

BULLETIN OF FRIENDS OF MINERALOGY

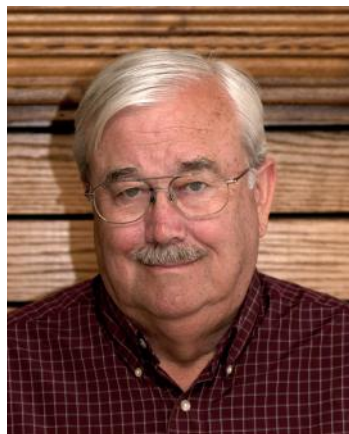
Volume 50 No. 1

ISSN 2471-7932

March 2020

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President's Message By William W. Besse

I am sure you are aware the COVID-19 has caused the postponement or cancellation of all meetings and symposia for the foreseeable future. This is necessary to slow the spread of the disease. Hopefully, this will be over in a few months so that some of the events can be rescheduled.

Otherwise we will have to wait for those events next year. The main thing is to keep safe.

Just because large groups are not recommended does not mean that you cannot enjoy mineralogical pursuits. It is a good time to research, get your collection in order, and go collecting. Yes, field collecting, for as long as there are no travel restrictions in your area, it is a good way to spend time away from crowds, get exercise, and add to your collection. If you like camping, better yet as you will be away from possible contamination.

Tucson show has passed for this year. There were lots of changes in many of the shows with more ahead in the next year or so. Even though FM did not present any lectures this year, there were many informative talks at the TGMS Show as well as at the Fine Mineral and Mineral City Shows.

The FM Board of Directors' annual meeting was an active affair. There were several motions presented and awards for educational displays and articles were announced. See the meeting minutes in this bulletin for details. One important note is that there were representatives of the Mineralogical Society of America (MSA) in attendance. They described the new MSA outreach program to see if there was interest. There was. Their program will attempt to match speakers for clubs and other events, plus online knowledge assistance.

To say the least, the current, most important message is to stay safe.

UPCOMING EVENTS

See www.mineralevents.com for more

**Most or all events have been canceled,
at least through April.**

**Here's some good advice from Google during
the coronavirus pandemic:
Confirm details of events before attending.**

April 2020: Monongahela Rockhounds Show has been
RESCHEDULED TO November 14-15, 2020.
See <http://www.monongahelarockhounds.org/events.php>

April 2020: Rochester Mineralogical Symposium
CANCELED.

May 23, 2020: Earth Science Show & Sale, by The
Rock & Mineral Club of Lower Bucks County. Christ
United Methodist Church, 501 Wistar Road, Fairless
Hills, PA 19030. Saturday 9:00- 3:00.
Still "on" as of this writing, March 29.

Nov. 7-8, 2020: Friends of Mineralogy - Pennsylvania
Chapter Annual Symposium and Field Trip. Watch for
news. Location to be announced.

From the Editor

David Glick

THANK YOU to everyone who has been providing
material for the Newsletter! Everyone else - join the fun!
Feel free to contact me at xidg@verizon.net, or 814-237-1094
days and evenings. Mail can be sent to 209 Spring Lea Dr.,
State College PA 16801. Materials for the **Summer** issue
should be submitted by **June 8**.

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

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

DONATIONS WELCOMED

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

FM on the WWW

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

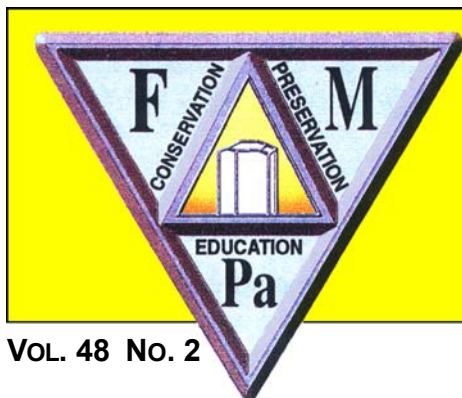
President	Joe Marchesani
Vice President	Dianne Soccio
Treasurer	Ron Sloto
Secretary	David Glick
	Mike Dunton
	William Kochanov
	Bill Stephens

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

COMMITTEE CHAIRS

Membership Chair	Dianne Soccio
Field Trip Chair	Tom Pankratz
Web Manager	Ron Sloto
Newsletter Editor	David Glick

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



FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 48 No. 2

SUMMER 2020

President's Message

Well, it seems things haven't changed much from the Spring newsletter. America is still on

lockdown, but some states, like maybe Montana and South Dakota, are opening back up. Public unrest is putting America at risk from itself, and for some odd reason the stock market has climbed from a low of below 19000 to over 27000 within the last three months.

By the time you read this, we will have had our first field trip for the Spring (Wednesday 10 June 2020). A quick day trip out to the Amethyst site, a good trial run to test the waters and see if we can start getting back to normal. This collecting site has always spooked the writer and have yet to find something worthwhile. Patience is a virtue.

In the Spring 2020 newsletter, we discussed how there would be a new venue for the Fall 2020 symposium. We are looking at a Lancaster location as a possibility, but because of this Coronavirus dilemma, are also entertaining the option of an online symposium. However, the Symposium field trip will definitely occur. So, read through this newsletter carefully, and provide some feedback to your friendly FM-PA board as to your thoughts. As we toss around cancellation, postponement, and the different Venue options, a decision will most likely be made sometime in September, and with a bit of luck, installed into the Fall 2020 Newsletter.

Have fun, be safe and all the best.
Joseph Marchesani



PLEASE RESPOND to a Survey Concerning the FM-PA November Symposium

by Bill Kochanov

The FM-PA Board really needs the input from its members with regard to the format of this year's annual symposium in November. In light of the COVID-19 outbreak, the Board feels that we have several options to consider. We do not want to put our members at risk and possibly add to the potential for spreading the virus. It is with this uncertainty that the Board is asking the membership to review and respond to the proposed options.

To take the survey go to:

<https://www.surveymonkey.com/r/TJXD9PZ>

This link was also in the e-mail transmitting this Newsletter. If you wish, you may scan this QR code with your phone to open the survey. For those who receive this Newsletter in print only, a printed survey and return envelope are enclosed.



In any case, the plan is that the field trip associated with the symposium would still occur, however, it may or may not occur on the day after the symposium.

1. Would you want the symposium to be an in-person meeting at a designated location? (yes/no).

The program would run as in previous years, with protocols put in place for COVID-19, i.e. social distancing, masks, hand sanitizer.

2. Would you want the symposium program run online only? (yes/no)

The program would not have a designated location and participants would view presentations on computer, smart phone, etc. via an online streaming service such as Zoom or pre-recorded presentations.

3. Would you want the symposium program a combination of both, a blend of live presentations at a designated location, and remote live or pre-recorded presentations (yes/no).

This takes into consideration those who may wish to present a talk but feel uncomfortable in attending due to age or pre-existing health conditions.

4. Postpone the symposium until early 2021? (yes or no).

5. Cancel this year's symposium? (yes/no).

Plan for November 2021.

6. Would you have the ability to access on-line presentations using a computer, smart phone, etc.? (yes/no).

7. Would you be interested in attending a field trip in November? (yes/no).

Respectfully, the FM-PA Board wants a response ASAP, and definitely by June 30.

Call for Symposium Presentations

Friends of Mineralogy - Pennsylvania Chapter invites submissions of abstracts for presentation at our annual symposium. If held in person, the Symposium is expected to be in Lancaster, PA, on Saturday, November 7, 2020. If held online, video files of presentations will need to be provided in advance. Presentations on Pennsylvania minerals or mineral localities, or topics of interest to mineral collectors, are invited. Abstracts may be up to two pages and may include illustrations of sufficient resolution to look good in print; a biographical sketch and photograph of the author are also welcome. We provide an honorarium of \$100 for each presentation. Contact Joe Marchesani or another Board member (see page 6) if you might be interested in making a presentation.

Chapter Board Meeting via Zoom

Online Zoom meetings are being used by the Board of Directors to keep things moving and plan for the annual Symposium. There was a meeting in May, another in early June, and a third is planned for mid-June. So far both in-person and online Symposia are under consideration, hence the survey (see page 1) to help the Board decide which is more likely to meet the needs of the membership. Ways in which we might present an online Symposium, if it comes to that, has been a major topic of discussion. We're keeping our eyes and ears open for experiences of other groups having online meetings. All Board members are considering who we might invite to give a presentation (see article above). It's agreed that we want to have an in-person field trip, even if the meeting presentations are online. Field trips other than the Symposium trip are also being investigated.

While We Can't Travel Much

While many of us are stuck at home, museums and others may be offering new material to view on the internet. Nittany Mineralogical Society's web page at <http://www.nittanymineral.org> lists several online tours, presentations, etc., of interest (scroll down to find that section).

Our Board Members Check In

Dianne Soccio

Thinking of the entire FM-PA family, and hoping that this finds everyone doing well. After such an unusual spring, it is particularly nice to be welcoming the upcoming summer season.

In a springtime where both travel and gatherings have been significantly limited, our field trip coordinator, Tom Pankratz, was able to arrange one field trip, to search for amethysts. What a great way to bring back some normalcy for club members, by being able to attend a field trip. Originally scheduled for June 6th, Mother Nature had to add her own twist by providing heavy rains the night before, causing the trip to be postponed. However, Tom was persistent, and managed to reschedule the trip for the 10th, one day before the site would become unavailable for the rest of the season. Field trip attendees of all ages, including members of FM-PA, were treated to a beautiful, sunny, spring day, with a refreshing breeze. To maintain safe practices, social distancing was encouraged, and mask-wearing was required to travel between the parking area and the collecting site, as well as when interacting with other non-family field trip attendees. Folks were scattered across the site, collecting through visual searches, as well as hole digging. And while the elusive motherlode again evaded discovery, it appeared that all enjoyed simply getting out, and getting the opportunity to go collecting again. A heartfelt thank you goes out to Tom and the landowner, for making the only field trip for Spring 2020 a reality, as well as to all those who were interested in attending. While there are currently no planned field trips for this summer, stay tuned for potential fall trips, including one associated with the symposium.

Speaking of the Symposium, please do not forget to reply to the survey concerning it. Your responses will help play a part in determining how the symposium goes forward for this fall. Your feedback is most appreciated!

May you all stay safe and well, as things start opening up and life becomes a little more "normal" again.

Mike Dunton

After a spring of quarantine here in NE PA and NJ, I was looking forward to our first organized collecting trip – amethyst in Lancaster County. But the heavy rains in southern Lancaster County on the Friday before the trip postponed that trip. But things are looking better and hopefully a few collecting trips – with some safety changes – will happen in the next few weeks.

It is time for us to plan for our fall symposium so we would appreciate it if you would respond to our survey with your thoughts for our fall meeting & collecting trip.

David Glick

During Pennsylvania's stay-at-home period, I was glad to be able to keep busy with woodworking projects for my new house. I've become familiar with Zoom for discussions in various mineral clubs. This week I'm about to contact some possible venues concerning our Symposium, in case we do have it in person. I hope everyone will stay well and that we can continue to safely move toward "normal."

Tom Pankratz

Photo by D. Soccio

The Board of Directors is grateful to Tom for all his work as the June field trip had to be postponed at the last minute due to heavy rains. The rescheduled trip on June 10 turned out very well. Thanks, Tom!

Bill Stephens had his drone operating on the June 10 amethyst field trip. See the photo below.



FM-Pa members search for amethyst on a beautiful Pennsylvania spring day.

Drone photo by Bill Stephens



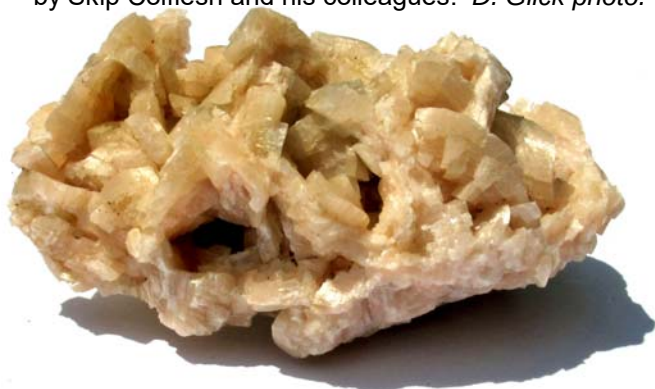
Calcite phantom crystals, Valley Quarry, Shippensburg, Cumberland County, PA. 8.3 cm / 3.3" across. Collected by Skip Colflesh and his colleagues. *D. Glick photo.*



Calcite crystals with coating, York Building Supply Quarry, York, PA. 11.4 cm / 4.5" across. Collected by Skip Colflesh and his colleagues. *D. Glick photo.*



Golden calcite crystals, Valley Quarry, Shippensburg, Cumberland County, PA. 14 cm / 5.5". Collected by Skip Colflesh and his colleagues. *D. Glick photo.*



Dolomite, Binkley-Ober Quarry, East Petersburg, Lancaster County, PA. 8.4 cm / 3.3". Collected by Skip Colflesh and his colleagues. *D. Glick photo.*



A winter find at York; photo from www.jcminerals.com/gallery.html

“Skip” James J. Colflesh 1951 - 2020

FM-Pa member and supporter, avid mineral collector, geologist, and jeweler Skip Colflesh died on April 5, 2020. He and his wife Kim had recently moved from Hershey, Pennsylvania, to Atascadero, California. The family has an extended obituary on Skip's Facebook page. He had Leptomenigeal Disease, a rare fast-acting cancer involving the cerebrospinal fluid.

He was the proprietor of The Jewelers Bench, a custom jewelry shop in Hershey, Pa. For many years, Skip and his collecting colleagues collaborated on finding Pennsylvania minerals on every weekend that the weather would possibly allow it. The best of the best, well-displayed in his home, were very impressive.

The obituary notes Skip's many interests and achievements; “The Jewelers Bench and his mineral specimen collection were everything to him. He has donated minerals to West Chester University and others, gorgeous custom designs to charitable foundations and was featured for his minerals in *Rocks & Minerals* (vol. 92, no. 4) and *Mineral Collections in the American Northeast*, a supplement to the *Mineralogical Record*, July/August 2016. Some of his minerals are available on jcjminerals.com. [See also <https://www.facebook.com/JCJMineralsHershey/>] While *Girl, Interrupted* was filming in Pennsylvania, their wardrobe crew worked with Skip to supply some period appropriate estate jewelry for Vanessa Redgrave, which he thought was pretty cool.”

Most recently, Skip donated many good specimens for the FM-Pa 2018 Symposium silent auction. By the 2019 Symposium, everything had been moved to California.

Skip will be missed among Pennsylvania collectors and his FM-Pa friends. We send our sincere condolences to his family.
-Editor



Skip's "killer garnet" collected at Cornwall, Lebanon County, PA, by Ryan O'Neal. Garnet is 6 cm / 2.5 in. R. Sloto photo.



Celestine and calcite, Meckley's quarry "old pit," Mandata, Northumberland County, PA. Collected by Skip Colflesh and his colleagues. Section shown is 7.5 cm / 3" across. D. Glick specimen & photo.

UPCOMING EVENTS

See www.mineralevents.com for more

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

Sep 26-27, 2020: Gem, Mineral & Jewelry Show by Central PA Rock & Mineral Club. Harrisburg Consistory, 2701 N 3rd St, Harrisburg PA 17110. Sat 10-6, Sun 10-4. <http://www.rockandmineral.org/>

Oct 3, 2020: Autumn Mineraldust, by PESA. Macungie, PA. Sat. only, 8:30-3:00. <http://www.mineraldust.com/>

Oct 31, 2020: South Penn Rock & Mineral Swap & Sale, by CPRMC & Franklin County RMC. South Mountain Fairgrounds, Biglerville PA. Sat. only.

Nov. 7-8, 2020: Friends of Mineralogy - Pennsylvania Chapter Annual Symposium and Field Trip. Watch for news; see Survey on page 1. Location to be announced.

Nov. 14-15, 2020: Monongahela Rockhounds Show, rescheduled from April. West Mifflin Volunteer Fire Co., #4 Skyview Hall, 660 Noble Drive, Pittsburgh, PA 15122. (Near Century III Mall & Allegheny Co. Airport) See <http://www.monongahelarockhounds.org/events.php>

From the Editor

David Glick

THANK YOU to everyone who has been providing material for the Newsletter! Everyone else - join the fun! Feel free to contact me at xidg@verizon.net, or 814-237-1094 days and evenings. Mail can be sent to 209 Spring Lea Dr., State College PA 16801. Materials for the **Fall** issue should be submitted by **September 4**.

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

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

DONATIONS WELCOMED

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FM on the WWW

Please explore the FM-PA Chapter 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

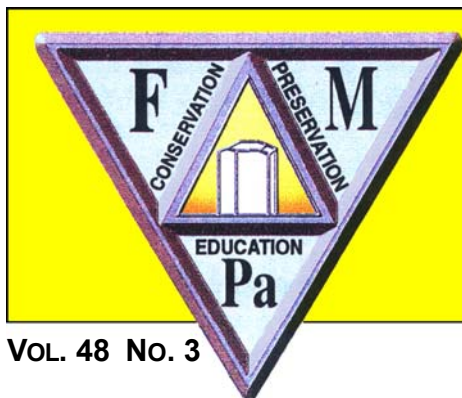
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FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 48 No. 3

FALL 2020

JOIN US FOR THIS VIRTUAL LIVE EVENT!

Pennsylvania Chapter Plans November 7 Virtual Symposium and November 8 Field Trip

Friends of Mineralogy-Pennsylvania Chapter will hold its annual symposium for mineral collectors on Saturday, November 7, 2020, as a live virtual event from 9:00 a.m. to 2:30 p.m., subject to change. An in-person field collecting trip is planned for Sunday, November 8. The online symposium will include several virtual live presentations of interest to Pennsylvania mineral collectors, with audience questions and answers.

The Symposium will be available to FM-PA Chapter 2020 members who **register in advance**. Non-members may pay for 2021 membership by October 26 and receive membership for the remainder of 2020, including the Symposium and Field Trip, as a bonus. See <<http://www.rasfoto.com/FM/>> for membership application, symposium details, and registration form as they become available.

Call for Symposium Presentations

Friends of Mineralogy - Pennsylvania Chapter invites submission of abstracts for virtual live presentation at our annual symposium. It will be a Zoom meeting taking place on Saturday, November 7, 2020 (and an in-person field collecting trip planned for Sunday, November 8). Presentations on Pennsylvania minerals or mineral localities, or other topics of interest to collectors, are invited. We provide an honorarium of \$100 for each 40 minute presentation.

Short abstracts may be submitted to Chapter President Joseph Marchesani <jmarch06@comcast.net> by October 12 to be considered for acceptance as Symposium presentations. Upon acceptance, final abstracts for inclusion in the Symposium Program are required by October 26. These may be up to two pages and may include illustrations of sufficient resolution to look good in print; a biographical sketch and photograph of the author are also welcome.

Accepted speakers should be prepared to make their virtual live presentations and answer audience questions via Zoom in a scheduled time slot on November 7. It is expected that most of these will be PowerPoint presentations with live narration via Zoom shared screen. FM-PA plans to have preparatory "dry run" test session(s) in advance. FM-PA may make the presentations available for a limited time following the symposium.

Short Mineral Collecting Videos Requested

Short (5-10 minute) videos of mineral collecting sites and/or recent collecting activities and resulting specimens may be submitted by October 26 for possible inclusion in the Symposium. Contact Bill Stephens <bstephens@stephensenv.com> for instructions on submission.

2020 Memberships Extended through 2021

Because the pandemic has prevented us from presenting many activities, the Board of Directors has decided that FM-PA memberships which have been paid for 2020 will be extended through 2021 at no charge.

National Bulletin of FM

The June issue of the Bulletin of FM is available on their web site, <www.friendsofmineralogy.org>. In keeping with the 50th anniversary of FM, Peter Modreski shares his recollections of the early years in an article on pages 3-4. He says, in part: "FM Region 3 (Pennsylvania) held mineral symposia in 1973 and 1974, which were designated as the First and Second Annual FM-Region 3 Mineral Symposia. In 1973 was the Pennsylvania Mineral Collecting Symposium, Nov 2-3, and in 1974 the theme was Minerals and Ores in Igneous rocks in Pennsylvania, November 1-3 (see <https://www.friendsofmineralogy.org/symposia/past-symposia/>). Both were held at Lafayette College, Easton, PA."

Editor's Note

We thank all of the members who responded to the survey in the last issue. The general state of the pandemic, and Pennsylvania regulations limiting indoor gatherings, prevent us from having an in-person Symposium.

Minerals of the Penn/MD Materials Quarry, Fulton Township, Lancaster County, Pennsylvania, Part 4, Carbonate Minerals

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

Introduction

The Penn/MD Materials quarry, owned and operated by the H&K Group, produces aggregate from ultramafic rocks of the Baltimore Mafic Complex, known locally as the State Line Serpentinite District. This complex of ultramafic and associated gabbroic rocks is believed to be a remnant from the roots of an island arc complex formed about 490 to 510 million years ago (Smith and Barnes, 1998; Smith and Barnes, 2008).

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

The author thanks Jay Lang and the H&K Group for access to the quarry, Dennis Buffenmeyer and Tom Pankratz for providing specimens for analysis, and Robert C. Smith, II, for helpful comments on this manuscript.

Carbonate minerals observed at the Penn/MD Materials quarry include aragonite, calcite, dolomite, hydromagnesite, magnesite, and nakauriite, which are discussed here. Carbonate minerals observed also include desautelsite and pyroaurite, which were described in part 1 of this series (Sloto, 2019).

The copper magnesium carbonate mineral mcguinnessite occurs in the adjacent Cedar Hill quarry, but it has not yet been verified from the Penn/MD Materials quarry. I have tested over a dozen suspected mcguinnessite specimens from the Penn/MD Materials quarry (mostly provided by other collectors); however, none of them contained copper and, therefore, were not mcguinnessite. In all cases, they were a green to blue green amorphous-appearing serpentine mineral.

Aragonite CaCO_3

Aragonite is the second most common polymorph of natural calcium carbonate. Two specimens of clear, elongated crystals (figs. 1 and 2) were provided for analysis by Dennis Buffenmeyer. Analysis by SEM-EDS showed both to be calcium carbonate. They are assumed to be aragonite on the basis of crystal form. Aragonite is known from other serpentine localities, such as the nearby Wood mine (Geyer and others, 1976; Wilson, 2011). Aragonite crystals from the Penn/MD Materials quarry appear identical to those from the Wood mine pictured in Wilson (2011, p. 316).

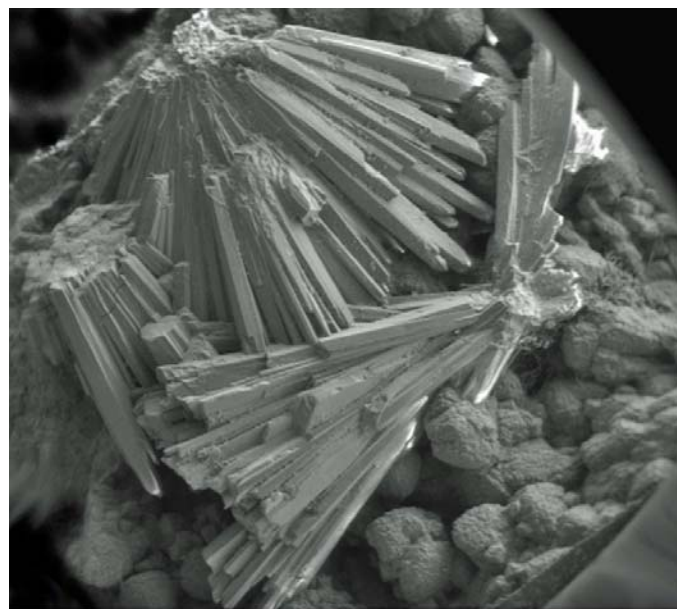


Figure 1. Scanning electron microscope image of aragonite crystals from the Penn/MD Materials quarry. Magnification is approximately 40 X.

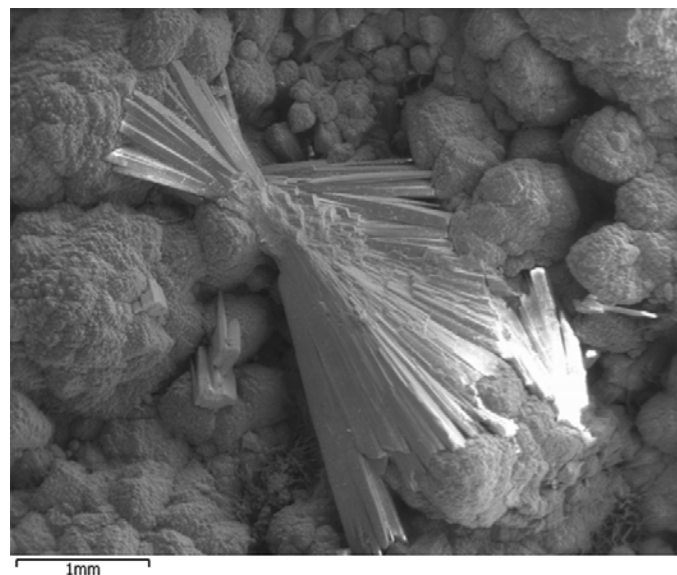


Figure 2. Scanning electron microscope image of aragonite crystals from the Penn/MD Materials quarry. Magnification is approximately 75 X.

Calcite CaCO_3

Calcite is a rare mineral at the Penn/MD Materials quarry. Only one specimen (RS-4112-B) was analyzed that could be considered calcite. The chemical composition was $(\text{Ca}_{0.88}\text{Mg}_{0.22})\text{CO}_3$.

Dolomite $\text{CaMg}(\text{CO}_3)_2$

Dolomite is a rhombohedral carbonate mineral with the ideal formula $\text{CaMg}(\text{CO}_3)_2$ in which calcium and magnesium occupy preferred sites. Dolomite is a common mineral at the Penn/MD Materials quarry. It occurs as crystals (figs 3 and 4), cleavages (figure 5), and as massive dolomite (fig. 6). It can be brown, orange, white, or clear. Cleavages of white dolomite resemble calcite (fig. 7). The Mg to Ca ratio of 10 dolomite samples ranged from 1:0.47 to 1:2.18 with an average Mg to Ca ratio of 1:0.97.



Figure 3. Dolomite crystals from the Penn/MD Materials quarry, magnified. Sloto collection RS-4049.

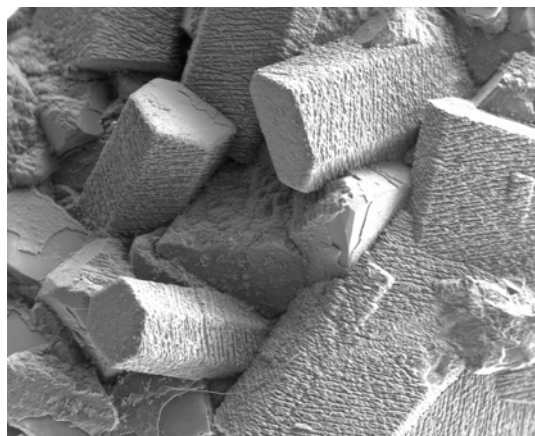


Figure 4. Scanning electron microscope image of dolomite crystals from the Penn/MD Materials quarry. Magnification is approximately 60 X. Sloto collection RS-4140.



Figure 5. Dolomite cleavages from the Penn/MD Materials quarry. Field of view is 10 cm.



Figure 6. Massive dolomite from the Penn/MD Materials quarry, 4cm. Sloto collection RS-4129. The brown mineral is dolomite.



Figure 7. Dolomite cleavage from the Penn/MD Materials quarry, 4.5 cm. Sloto collection RS-4224.

Hydromagnesite $\text{Mg}_5(\text{CO}_3)_4(\text{OH})_2 \cdot 4\text{H}_2\text{O}$

Hydromagnesite occurs rarely at the Penn/MD Materials quarry. I found only one specimen (fig. 8) in the quarry. The hydromagnesite forms clear to white acicular crystals in divergent sprays on magnesite. Another specimen (fig. 9) was given to me many years ago by Ed Carvalho, who collected it in 1996. The identification of both was confirmed by SEM-EDS.



Figure 8. Hydromagnesite crystals from the Penn/MD Materials quarry; crystal sprays to 3 mm. Sloto collection RS-3954.



Figure 9. Hydromagnesite from the Penn/MD Materials quarry. Field of view is 3 mm. Sloto collection RS-2812. Collected by Ed Carvalho in 1996.

Magnesite MgCO_3

Massive magnesite is abundant at the Penn/MD Materials quarry in a variety of colors and forms. The most common color is white, but it can be brown or gray. It forms thick white veins in serpentine (fig. 10), interlayered with serpentine (fig. 11), globular (fig. 12), and botryoidal (fig. 13). It is sometimes mistaken for chalcedony because of a similar appearance (fig. 12).



Figure 10. Massive magnesite from the Penn/MD Materials quarry, 8 cm. Sloto collection RS-4207. The magnesite fluoresces a weak white under shortwave ultraviolet light.



Figure 11. Magnesite interlayered with serpentine from the Penn/MD Materials quarry. Field of view is 7 cm. Sloto collection RS-3307.



Figure 12. Magnesite from the Penn/MD Materials quarry, 8.5 cm. Sloto collection RS-4272.



Figure 13. Magnesite from the Penn/MD Materials quarry. Field of view is 1 cm. Sloto collection RS-4100.

Magnesite/Quartz Mixture $\text{MgCO}_3 + \text{SiO}_2$

Several SEM-EDS analyses of a white mineral with an undulating surface (fig. 14) showed it to be a Si-C-Mg-O mineral with a composition that did not match any known mineral. Further investigation determined that the mineral was a mixture of equal parts magnesite and quartz. After examining several of these specimens, they became easy to recognize because the surface usually was cracked when viewed under magnification (fig. 15). It is possible that the SiO_2 could be opal; however, further testing would be necessary.



Figure 14. Magnesite-quartz mixture from the Penn/MD Materials quarry. Field of view is 2 cm. Sloto collection RS-3956.

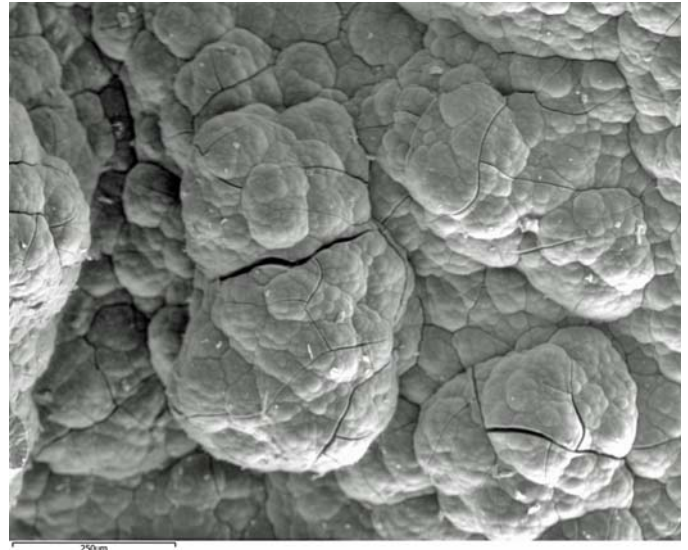


Figure 15. Scanning electron microscope image of magnesite-quartz mixture from the Penn/MD Materials quarry. Magnification is approximately 360 X. Sloto collection RS-4136.

Nakauriite

There has been much controversy surrounding the composition of nakauriite. It was originally described by Suzuki and others (1976) as a copper sulfate-carbonate hydroxide hydrate mineral from Nakauri, Japan, with the idealized chemical formula $(\text{Mn,Ni,Cu})_8(\text{SO}_4)_4(\text{CO}_3)(\text{OH})_6 \cdot 48\text{H}_2\text{O}$. The nakauriite from Japan occurred as clear, sky-blue bundled aggregates of very small slender to fibrous crystals less than about 0.2 mm in length and 0.006 mm in width. It occurred as fracture fillings in a brucite-bearing serpentinite and was named nakauriite for the locality.

Peacor and others (1982) determined by X-ray diffraction analysis that the cuprohydromagnesite and cuproartinite from Gabbs, Nevada, described by Oswald and Crook (1979) were actually nakauriite. The research done by Oswald and Crook was done prior to the publication of the paper by Suzuki and others (1976) describing nakauriite. Cuprohydromagnesite $(\text{Cu,Mg})_5(\text{CO}_3)_4(\text{OH})_2 \cdot 4\text{H}_2\text{O}$ occurred at Gabbs as translucent, blue, bladed, elongated crystals; and cuproartinite $(\text{Cu,Mg})_2(\text{CO}_3)(\text{OH})_2 \cdot 3\text{H}_2\text{O}$ occurred as blue acicular translucent, elongated crystals (Oswald and Crook, 1979). Note that neither contained sulphur and both contained magnesium, which differs from the material from Nakauri, Japan. According to Peacor and others (1982), electron microprobe analyses of nakauriite from both Japan and Nevada showed little or no sulphur present. Peacor and others (1982) did not present additional chemical data.

Foord and others (1985) described the occurrence of nakauriite from the adjacent Cedar Hill quarry in the Pennsylvania Chapter Friends of Mineralogy Newsletter: *"We would like to report on the occurrence and identification of a brightly colored fibrous (as seen in an SEM photograph), pale blue to medium navy blue, to platy, medium navy blue mineral which was identified by Robert C. Smith, II, in April, 1983, as nakauriite... Microprobe analyses showed little or no sulfur to be present, and microchemical tests produced the same results... The mineral occurs as blue fibrous sprays and mats in thin coatings with antigorite, some magnesite, quartz, and talc at the Cedar Hill serpentine quarry, Fulton Township, southwestern Lancaster County."*

Samples were supplied by Thomas O'Neil to Deane K. Smith and others, who obtained X-ray diffraction data between 1972 and 1983. However, because of the limited amount of clean material free from antigorite, a good chemical analysis could not be obtained (Foord and others, 1985, p. 4).

In 1975, Robert C. Smith, II, and Robert B. Finkelman collected similar bright blue material from the Cedar Hill quarry. However, the mineral was mixed with antigorite, and, based on Smith's optical data, could not be fully identified (Smith, 1978, p. 209).

Additional material of a better quality and in larger quantities was collected from the Cedar Hill quarry by Bryon Brookmyer and Martin Anne in September 1982. Some of the material was sent to Robert Smith II, Eugene Foord, Allen Heyl, and Deane Smith. Robert Smith obtained X-ray diffraction powder patterns and matched them with nakauriite in April 1983. Similar X-ray diffraction data were obtained by Foord on light blue and medium blue varieties of nakauriite. SEM examination by Foord showed Cu, Mg, Fe, and Ni to be present. Iron was present in minor amounts, but no sulfur was detected. The ratio of Cu to Ni was estimated to be about 4:1 in the light blue material and was somewhat greater in the darker blue material. Lower amounts of Cu and Ni and greater amounts of Mg were found in the almost terminated ends of some of the light blue fibers. Mn was not detected in the Cedar Hill

nakauriite. Foord and Heyl concluded that there may be three end members: Cu, Ni, and Mg, and possibly a fourth (Mn). The presence of carbonate was confirmed by infrared spectra made by Arnold H. Fainberg on material from the Cedar Hill quarry, as well as from Nakauri, Japan (Foord and others, 1985, p. 5-7).

Barnes (1986, p. 8) stated this about nakauriite from Pennsylvania: *"Additional work is needed to fully understand this mineral that has been a source of controversy and great interest to the mineralogical community. What is clear is that it is still possible to encounter very rare and attractive minerals that have not been previously known in Pennsylvania, and about which much remains to be learned."*

A sample of nakauriite (fig. 16) collected in the Penn/MD Materials quarry by Alex Kane was furnished to the author by Tom Pankratz for SEM-EDS analysis. Analysis of the sample (table 1) showed the dominant metals were, in decreasing order, magnesium, copper, and nickel. Sulphur was not detected. The manganese and iron concentrations were very low. Contamination by antigorite likely was minimal as indicated by the low value for silicon. The analysis gave the approximate chemical formula $(\text{Mg}_{5.75}\text{Cu}_{1.73}\text{Ni}_{0.68})(\text{CO}_3)_4(\text{OH})_2 \cdot 10\text{H}_2\text{O}$.

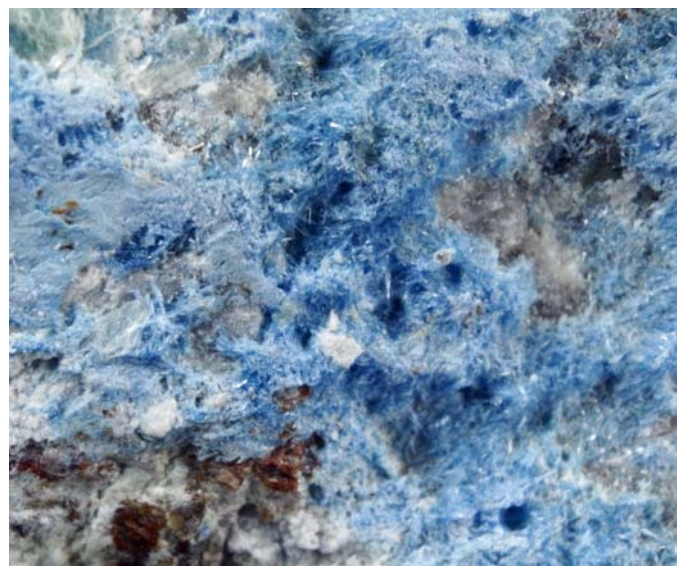


Figure 16. Nakauriite from the Penn/MD Materials quarry, magnified. Tom Pankratz specimen.

Table 1. Results of X-Ray energy dispersive spectrometer (EDS) analysis of nakauriite from the Penn/MD Materials quarry. Values are in weight percent. The median represents 37 measurements taken at 6 sites.

Element	C	O	Mg	Si	Ca	Mn	Fe	Ni	Cu
Median	6.62	52.73	19.25	0.57	0.17	0.03	0.29	5.52	15.14

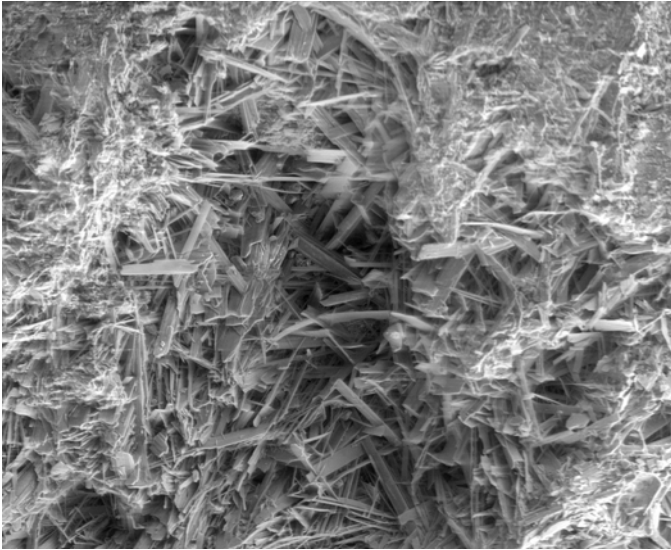


Figure 17. Scanning electron microscope image of nakauriite from the Penn/MD Materials quarry. Magnification is approximately 180 X. Tom Pankratz specimen.

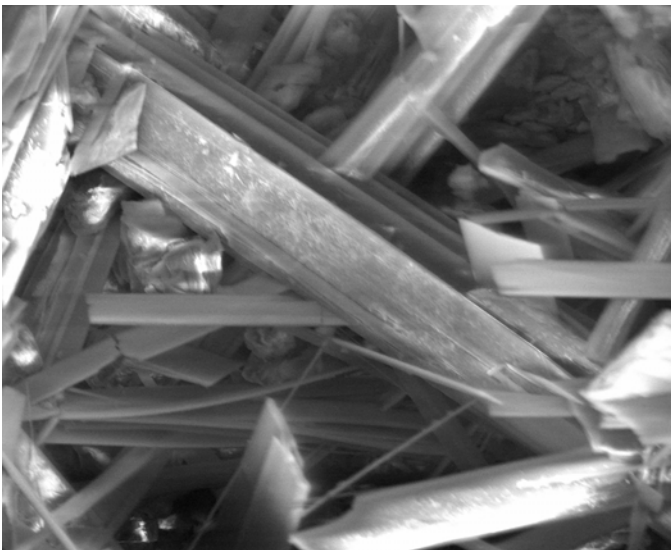


Figure 18. Scanning electron microscope image of nakauriite from the Penn/MD Materials quarry. Magnification is approximately 1275 X. Tom Pankratz specimen.

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UPCOMING EVENTS

See www.mineralevents.com for more

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

Sep 26-27, 2020: Franklin/Sterling Hill G&M Show. Franklin Firehouse, 137 Buckwheat Rd., Franklin NJ. Sat 9-5, Sun 10-4. Indoor & outdoor.
www.facebook.com/AnnualFranklinSterlingGemMineralShow/

Oct 3, 2020: Autumn Minerafest, by PESA. Macungie, PA. Sat. only, 8:30-3:00. <http://www.minerafest.com/>

Oct 23-25, 2020: EFMLS Convention & Catawba Valley G&M Club Show, Hickory, NC
<https://efmls.org/annual-convention/>

Oct 31, 2020: Ultravioletation fluorescent minerals show, by R&M Club of Lower Bucks County & UV Nomads of FMS. First UM Church, 840 Trenton Rd., Fairless Hills, PA 19030. Sat. only 9-4.

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David Glick

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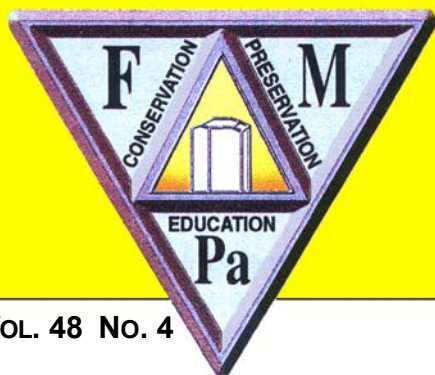
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Friends of Mineralogy Pennsylvania Chapter Web Site: <http://www.rasloto.com/FM>



FRIENDS OF MINERALOGY Pennsylvania Chapter NEWSLETTER

VOL. 48 No. 4

WINTER 2020

Good times around the corner

President's Message
by Joseph Marchesani



The Fall 2020 Symposium went very well. Six people gave virtual on-line presentations on a variety of geology topics for the Fall FoM-PA 2020 Symposium. The Fall 2020 symposium was

the first ever on-line symposium for FoM-PA and it went without gimmick. A very big thank you and job well done goes out to each and every board member who did their part and together we "pulled a rabbit from the hat." Board members Ron Sloto, Dave Glick, Mike Dunton, Bill Kochanov, Dianne Soccio and Bill Stephens did a fabulous job of organization to make it happen. There are not enough kind words in any dictionary to put forth, but to say thanks again to the FoM-PA board. The associated Sunday field trip with social distancing guidelines at Cornwall Quarry happened under blue skies and warm weather.

We initially had no idea on how to coordinate this Fall 2020 Symposium, and at one point it was a vote away from being cancelled. The team gathered in on-line meetings (the only way possible during the Covid-19 times), and sometimes not the entire team. We gathered every other week, then almost every week, for at least three months prior to the Fall 2020 Symposium. There was much bad news for our team, first from our initial venue at Franklin and Marshall College, then from other venues that shut the doors on gatherings thanks to the Covid-19 issue. Many ideas were thrown around, and so many disagreements, then it came to be the virtual live Symposium on the regular date, as we approach our fiftieth year of existence. For amusement, here are a few terminated ideas... 1) record presentations and make available somehow online, 2) scatter live presentations throughout the week, 3) postpone... etc. There were many other ideas. It was heartwarming to see so many participate as an audience, as it made all the hard work justified.

Well, it seems that there are multiple vaccines ready to combat the Covid-19 virus and they are currently being globally distributed. When this happens, we should start to approach an old sense of normalcy, that is, gathering together to collect specimens and minerals. The Spring 2021 looks possibly promising, and Fall 2021 looks better for the collecting enthusiast.

We have a new field trip coordinator starting 2021 of Ross Elliot. Ross's bio is included below. Ross is inheriting field trip coordinator duties from Tom Pankratz, who has been organizing FoM-PA field trips for about three years, and other clubs for over a decade. As Tom retires from this coordinator position, we look forward to seeing him out on upcoming field trips. **Thank you, Tom, for all you have done for FoM-PA.**



Thanks & best wishes, Tom!

New Field Trip Coordinator Ross Elliott

Ross Elliott has been a passionate mineral and fossil collector from a young age. Ross Elliott is a Hydrologist in New Castle, DE working the past six years in the Delaware Department of Natural Resources and Environmental Control Division of Waste and Hazardous Substance Remediation Section. He studied geology at the University of Delaware with a bachelors in Geological and Earth Sciences/Geosciences Minor in Coastal and Marine Geoscience. He previously worked at the Delaware Geologic Survey as a research assistant for the State Map Program. Before working for the State, he was a field geologist for the environmental engineering firm Environmental Alliance Inc. In addition, for the past three years he has been the VP of Programs for the Delaware Mineralogical Society (DMS). Currently he is taking on the role of FoM-PA Field Trip Coordinator following Tom Pankratz retiring from the post.

Reminder: 2020 Memberships Extended through 2021

Because the pandemic has prevented us from presenting many activities, the Board of Directors has decided that FM-PA memberships which have been paid for 2020 will be automatically extended through 2021 at no charge.

Chapter Symposium Report: November Virtual Symposium and Field Trip

Friends of Mineralogy-Pennsylvania Chapter held its annual symposium for mineral collectors on Saturday, November 7, 2020. Six presentations were made via Zoom, and were also recorded. **Videos** of the three noted in bold below are now available on the Chapter web site <<https://rasloto.com/FM/>> (under 'What's New') and the other three are being processed. Watch the web site for their appearance.

Jeri Jones, Jones Geological Services
Update of Some Historic and New Mineral Finds in
York County, Pennsylvania

Ryan Mathur, PhD, Juniata College
Mineral and mining histories of Fort Roberdeau,
Blair County, Pennsylvania

Joseph Marchesani, PG **video online now**
Brief discussion of North Carolina Crabtree
Emerald Mine pegmatite and comparison to
Unionville, Pennsylvania, pegmatite

Chris Haefner
Pequea Silver Mine (Argentiferous Galena),
Lancaster County, Pennsylvania

Peter Heaney, PhD, Penn State **video online now**
New Insights into the Growth of Hematite and Goethite

Bill Stephens, PG, Stephens Environmental
video online now
Field Camp, SUNY at Selkirk, 1982: Reflections of
a Geologist on the Merits of Field Camp

A brief annual Chapter Membership Meeting was also held via Zoom. Most business had been transacted in the weeks prior by mail ballot (see article below).

The traditional annual Symposium field trip took place on the following day at Cornwall, Pennsylvania (see p. 3).

Celestine Video

At our 2019 Symposium, Dr. Peter Heaney of Penn State gave a presentation on "Making the Case for Celestine as the Pennsylvania State Mineral." His 2020 presentation to Nittany Mineralogical Society on the same topic was recorded and is available on their web site, <http://www.nittanymineral.org/programs.htm>

Bylaws Changes and Elections

Our Chapter Bylaws require at least one regular annual meeting of the membership of the corporation, which we typically hold during our annual symposium. However, the Bylaws required an in-person meeting, not possible under pandemic restrictions. To resolve this contradiction, members and the Board of Directors formulated amendments to the bylaws which were voted by mail ballot and passed by the membership.

The amended bylaws now allow for virtual meetings of both the Board and the membership, and electronic notice of those meetings. A Family Membership category (two or more family members listed under one name at one address) was also approved.

The mail ballot included election of three Board members. Joseph Marchesani, Mike Dunton, and David Glick were re-elected for three-year terms ending November 2023.

Welcome to New Members!

Our Chapter experienced what was, for us, a big wave of new members in October, taking advantage of the 2020 Symposium plus all of 2021 for one year's membership fee. Welcome! Thank you for joining! We look forward to seeing you in person in the near future.

National Bulletin of FM

The September issue of the Bulletin of FM is available on their web site, <www.friendsofmineralogy.org>. Members are encouraged to read the national Bulletin in its entirety.

"In light of the adverse and disruptive effect" of the pandemic, the requirement for payment of Chapter dues to national Friends of Mineralogy has been suspended for the year 2020. Ron Sloto's article on carbonate minerals from Penn/MD was reprinted from our own Chapter Newsletter. The Maine Geoscience Portal on the NEMA web site is announced: <<http://www.nemineral.org/geoscienceportal/mainegeoscienceportal.html>>. Richard Francaviglia's article, "Accidental Encounters: Reflections on the Role of Serendipity in Mineral Collecting," is continued from the previous issue; this section is about "Gold is where you find it." Mark Jacobson's articles on pollucite continue with "Pollucite Occurrences of Canada." From the Midwest Chapter comes an article on fluorescence and phosphorescence of calcite in basalt, including samples from Arizona, New Jersey, Colorado, and Oregon. The Virginia Chapter reports on their incorporation and further progress.

Symposium Field Trip H&K Cornwall Materials Quarry

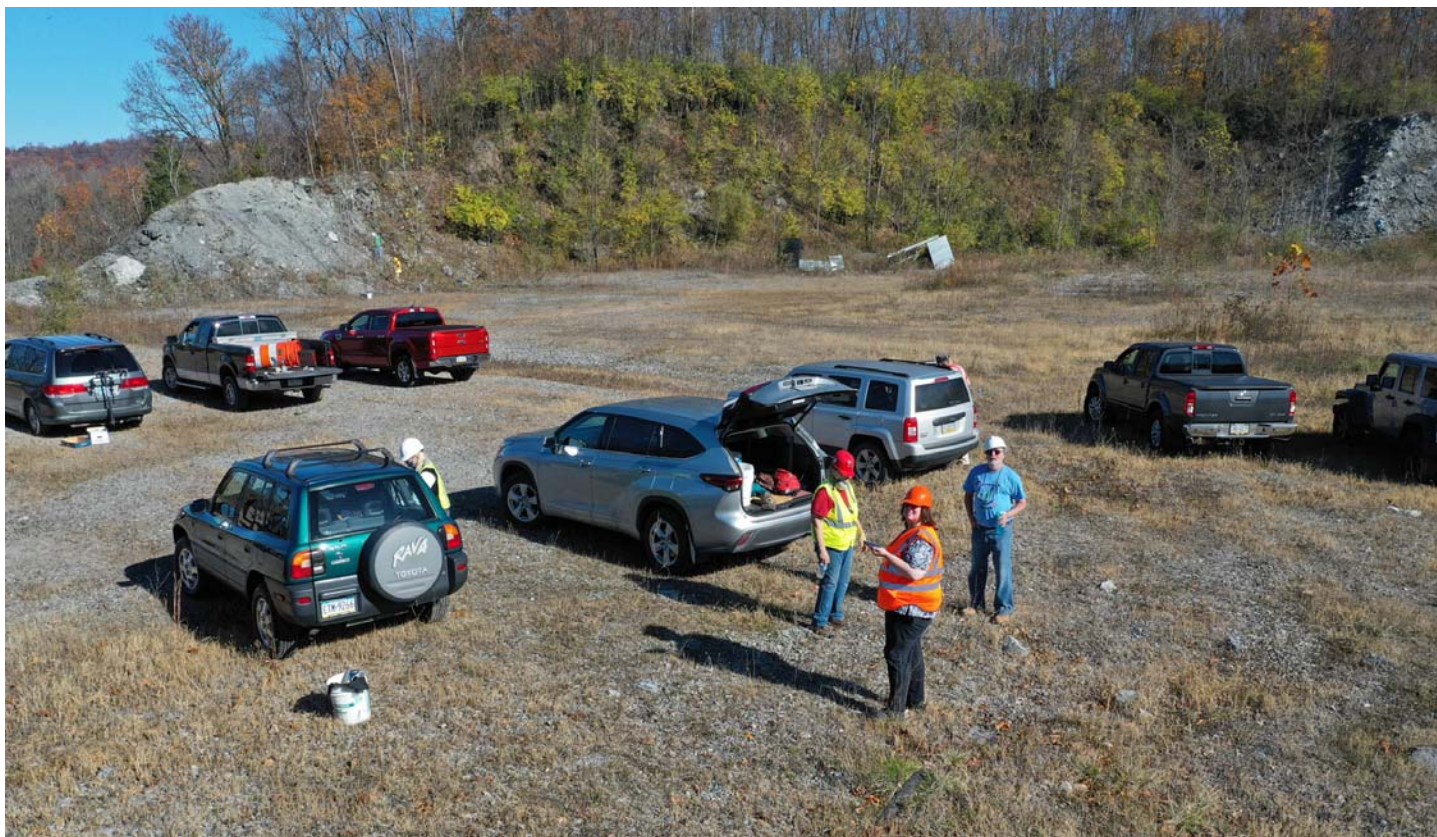
In a very refreshing change from the pandemic's "new normal," our annual Symposium field trip took place **in person** and **in real life**. Sunday, November 8, was bright, sunny and pleasant at H&K Group's Cornwall Materials quarry. The big site allowed for plenty of social distancing and all went smoothly.

Friends of Mineralogy - Pennsylvania Chapter and the Symposium attendees were grateful to H&K Group personnel for coming out on a Sunday morning and generously permitting access to the Cornwall Materials site. Our mineralogical symposium is greatly enhanced through such opportunities to collect.

For a photo of antigorite var. williamsite from past field trips to H&K Group's Penn/MD Materials Quarry, see p. 8.



Kim Yepremian was one of those finding good specimens (garnets shown above) at this classic area for mineral collecting. *J. Marchesani photos*



Bill Stephens used his drone to provide high-resolution video and photos.

Yellow Epidote from the Rock Hill Quarry, East Rockhill Township, Bucks County, Pennsylvania

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

INTRODUCTION

The abandoned and flooded Rock Hill quarry is located on the southwest side of Rock Hill in East Rockhill Township, Bucks County, at 40° 24' 18" N latitude and 75° 17' 56" W longitude. The quarry is in the Haycock diabase sheet. The quarry was abandoned in the 1980s by the General Crushed Stone Corporation. General Crushed Stone was later acquired by Hanson Aggregates Pennsylvania, Inc.

The diabase in the quarry was cut by numerous mineralized veins. In the late 1970s, a vein was exposed on an upper bench in the west end of the quarry that contained prehnite crystals (<http://www.mindat.org/loc-46795.html>).

Analyses were performed at the West Chester University Center for Microanalysis and Imaging, Research and Training (CMIRT). Imaging and chemical analyses were done using an FEI Quanta 400 environmental scanning electron microscope integrated with an Oxford AZtec X-ray energy dispersive spectrometer. Samples were unpolished and uncoated. A Bruker D2 Phaser powder X-ray diffractometer was used to determine mineral species. The author thanks Emilie Kendig for providing a specimen for analysis and Robert C. Smith II for providing inspiration and guidance.

Prehnite

I imaged prehnite crystals from the Rock Hill quarry with the scanning

electron microscope (SEM) for my forthcoming book, *The Mines and Minerals of Bucks County, Pennsylvania*, because the SEM could produce much better images of the crystals (fig. 1) than a camera. A sparse yellow coating was associated with the prehnite crystals. An X-ray energy dispersive spectrometer (EDS) analysis of the yellow mineral indicated that it could be pumpellyite-(Fe³⁺) or possibly epidote; however, the mineral appeared weathered, it was yellow, and neither pumpellyite nor epidote had been reported from the Rock Hill quarry.

Epidote

Emilie Kendig was kind enough to furnish a specimen of prehnite (Kendig collection 6677, fig. 2) with unweathered yellow crystals (figs. 3 and 4). Emilie graciously allowed me to remove a tiny crystal group from the back of the specimen for analysis. The results of the SEM-EDS analysis are provided in table 1. The formula could be written as $\text{Ca}_{2.1}\text{Mg}_{0.4}\text{FeAl}_{2.0}(\text{SiO}_4)(\text{Si}_2\text{O}_7)(\text{OH})_{1.3} \cdot \text{H}_2\text{O}$ if the mineral was hydrated [pumpellyite-(Fe³⁺)] or as $\text{Ca}_{2.1}\text{Mg}_{0.4}\text{FeAl}_{2.0}(\text{SiO}_4)(\text{Si}_2\text{O}_7)\text{O}(\text{OH})_2$ if the mineral was not hydrated (epidote). The magnesium is an impurity.

Table 1. Results of X-ray energy dispersive spectrometer (EDS) analysis of epidote from the Rock Hill quarry. Values are in weight percent. The reported value represents the median of 11 measurements.

Element	O	Mg	Al	Si	Ca	Mn	Fe
Median value	43.83	0.40	10.96	16.85	17.12	0.19	11.37

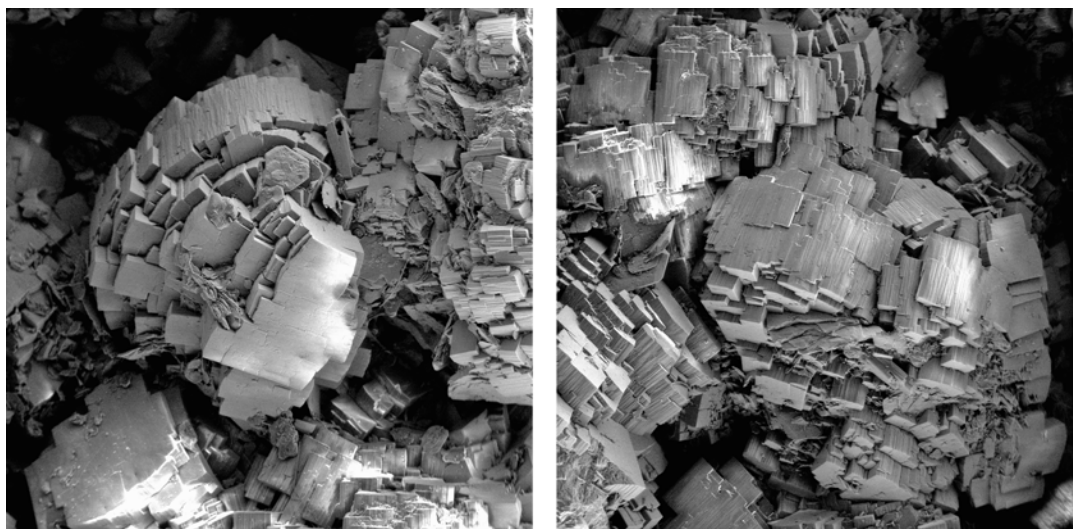


Figure 1. Scanning electron microscope images of prehnite crystals from the Rock Hill quarry. Left side image magnification is approximately 115X; right side image magnification is approximately 80X. Sloto collection RS-3975.



Figure 2. Prehnite and epidote from the Rock Hill quarry. Field of view is 4.5 cm. Kendig collection 6677.



Figure 3. Epidote crystals from the Rock Hill quarry, 7 mm. Kendig collection 6677.

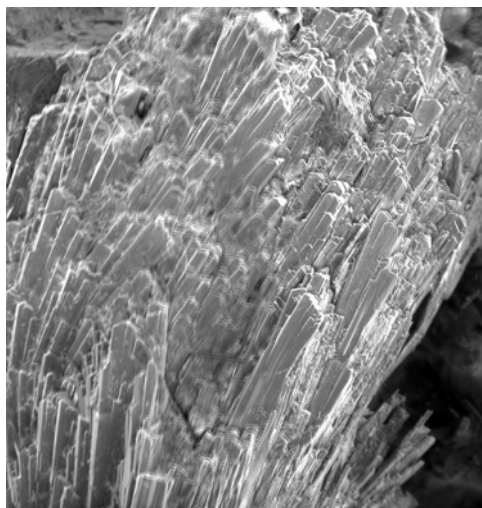


Figure 4. Scanning electron microscope image of epidote crystals from the Rock Hill quarry. Magnification is approximately 95X. Kendig collection 6677.

An analysis by X-ray diffraction (XRD) was needed to confirm the identity of the yellow mineral. Unfortunately, the crystal group removed from the back of the specimen was very small. Nevertheless, the crystal group was powdered, and the powder was fixed to a silicon wafer for analysis. The resulting XRD pattern (fig. 5) is a bit rough, but it provides a good match to epidote.

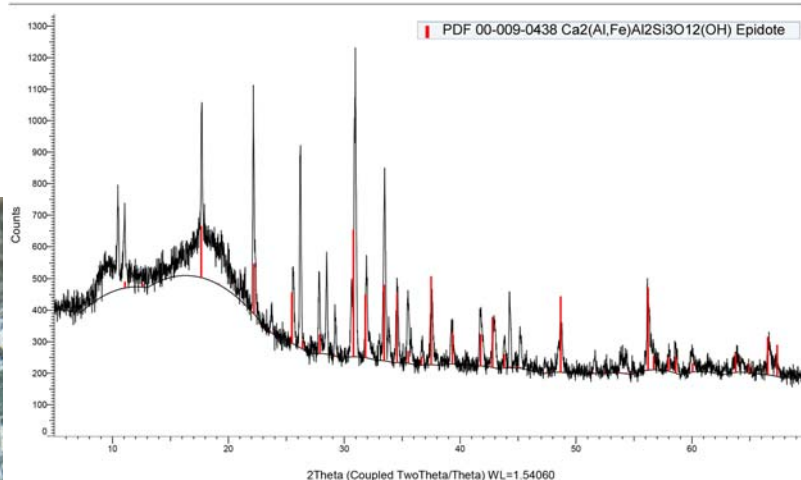


Figure 5. X-ray diffraction pattern produced by epidote crystals from the Rock Hill quarry. Kendig collection 6677.

Summary

Epidote from the Rock Hill quarry occurs as small, lustrous aggregates of yellow, curved, elongated crystals associated with dark green prehnite crystals. Under magnification, the crystals appear to have flattened terminations (fig. 6). The epidote also occurs as a yellow coating on massive prehnite and prehnite crystals.



Figure 6. Scanning electron microscope image of epidote crystals from the Rock Hill quarry. Magnification is approximately 1,330X. Kendig collection 6677. ❄

UPCOMING EVENTS

See www.mineralevents.com for more

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

Mar. 27-28, 2021: Annual Gem & Mineral Show, by Che-Hanna Rock and Mineral Club. Wysox Volunteer Fire Company Social Hall, 111 Lake Rd., Wysox PA 18854
<http://www.chehannarocks.com/show.html>

From the Editor

David Glick

THANK YOU to everyone who has been providing material for the Newsletter! Everyone else - join the fun! Feel free to contact me at xidg@verizon.net, or 814-237-1094 days and evenings. Mail can be sent to 209 Spring Lea Dr., State College PA 16801. Materials for the **Spring** issue should be submitted by **February 28**.

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

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

It's that time of year... DONATIONS WELCOMED

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



Antigorite var. williamsite

Cindi Newman provided this photo of translucent antigorite var. williamsite collected on a past FM-PA Chapter field trip to H&K Group's Penn/MD Materials Quarry at Peach Bottom, Lancaster County, PA.

FM on the WWW

Please explore the FM-PA Chapter 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
	Mike Dunton
	William Kochanov
	Bill Stephens

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

COMMITTEE CHAIRS

Membership Chair	Ron Sloto
Field Trip Chair	Ross Elliott
Web Manager	Ron Sloto
Newsletter Editor	David Glick

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