

THE PICKING TABLE

JOURNAL OF THE FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY

VOL. 63, NO. 1 – SPRING 2022

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- **MARK LEGER REMEMBERED**



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THE PICKING TABLE

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The Picking Table is the official publication of the Franklin-Ogdensburg Mineralogical Society, Inc. (FOMS), a nonprofit organization, and is sent to all members. *The Picking Table* is published twice each year and features articles of interest to the mineralogical community that pertain to the Franklin-Ogdensburg, New Jersey, area.

Members are encouraged to submit articles for publication. Articles should be submitted as Microsoft Word documents to James Van Fleet at javanfleet8@gmail.com.

The views and opinions expressed in *The Picking Table* do not necessarily reflect those of FOMS or the editors.

FOMS is a member of the Eastern Federation of Mineralogical and Lapidary Societies, Inc. (EFMLS).

The Picking Table is printed on acid-free, chlorine-free paper.

ABOUT THE FRONT COVER

The front cover features a specimen with platelike crystals of pale orange-pink rhodochrosite, thickly encrusting a fracture surface in lean, granular, calcite-willemite-franklinite ore. Rhodochrosite is newly recognized as a fluorescent species from Franklin-Sterling Hill. Most of the platy crystals are lying on edge, nearly perpendicular to the fault surface. Lightly encrusting the rhodochrosite in part of the specimen, mostly toward the right, is fine-grained white calcite. Former owners include Richard Hauck, Gary Grenier, and Steven Phillips. Specimen size: 12.8 × 5.3 × 4 cm (5 × 2 × 1.6 inches). *Paul Shizume specimen and photo.*



FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY

SPRING AND SUMMER 2022 ACTIVITY SCHEDULE

WWW.FOMSNJ.ORG

COMPILED BY TEMA J. HECHT

Due to the COVID-19 pandemic, check online media for confirmation of all events.

Proper wearing of masks and social distancing may be required for indoor activities.

SATURDAY, MARCH 19, 2022

9:00 AM – NOON

FOMS Field Trip

TBA (Weather permitting)

NOON – 1:15 PM

Future Rockhounds of America

Franklin Mineral Museum

Parents are welcome to attend.

For questions, please contact Mark Dahlman at:

fra@foms.org or 301-428-0455.

1:30 PM – 3:30 PM

FOMS Meeting,

Franklin Mineral Museum.

Lecture: *Mineral Fluorescence at Franklin and Sterling Hill, 1960-2022*, by Richard (Dick) Bostwick.

6:00 PM – 10:00 PM

**Night Dig on the Buckwheat Dump

(weather permitting)

Franklin Mineral Museum

Fee charged. Call for details: 973-827-3481.

SATURDAY, APRIL 16, 2022

9:00 AM – NOON

FOMS Field Trip

Collecting at the Hamburg Mine/Lang Shaft (private property)

Meet at the Franklin Mineral Museum at 8:30 AM sharp, where participants will be escorted to the location.

NOON – 1:15 PM

Future Rockhounds of America

Franklin Mineral Museum

Parents are welcome to attend.

For questions, please contact Mark Dahlman at:

fra@foms.org or 301-428-0455.

1:30 PM – 3:30 PM

FOMS Meeting,

Franklin Mineral Museum

Lecture: *A Franklin Journey*, by Phil Crabb.

FRIDAY, SATURDAY, SUNDAY

APRIL 22 – 24, 2022

**Spring Mineral Sale

Franklin Mineral Museum

For information, call: 973-827-3481.

SATURDAY AND SUNDAY, APRIL 23 AND 24, 2022

**Garage Sale at the Christiansen Pavilion

Sterling Hill Mining Museum

SATURDAY, APRIL 23, 2022

9:00 AM – 5:00 PM

**Spring Swap and Sell

Franklin Mineral Museum

For information, call: 973-827-3481.

6:00 PM – 10:00 PM

**Night Dig on the Buckwheat Dump (weather permitting)

Franklin Mineral Museum

Fee charged. Call for details: 973-827-3481.

SATURDAY AND SUNDAY, APRIL 30 AND MAY 1, 2022

**ANNUAL NORTH JERSEY

GEM, MINERAL & FOSSIL SHOW

Midland Park High School

250 Prospect St., Midland Park, NJ

Hours: Saturday 10:00 AM – 5:00 PM;

Sunday, 10:00 AM – 4:00 PM

WEDNESDAY – SUNDAY, MAY 11 – 15, 2022

**NY/NJ Mineral, Fossil, Gem & Jewelry Show

New Jersey Convention & Expo Center, Raritan Center

97 Sunfield Ave., Edison, NJ

Wednesday–Friday: NOON – 8:00 PM

Saturday: 10:00 AM – 7 PM; Sunday: 10:00 AM – 6:00 PM

For more information, please go to: <https://nj.show/>

SATURDAY, MAY 21, 2022

9:00 AM – NOON

FOMS Field Trip

Collecting at the Braen Stone Quarry
Cork Hill Road, Franklin, NJ.

NOON – 1:15 PM

Future Rockhounds of America

Franklin Mineral Museum
Parents are welcome to attend.
For questions, please contact Mark Dahlman at:
fra@foms.org or 301-428-0455.

1:30 PM – 3:30 PM

FOMS Meeting,

Franklin Mineral Museum
Lecture: *The Geography and Geology of Ore Sources
Smelted at Palmerton, PA (Franklin-Ogdensburg,
Friedensville PA, and Austinville VA)*, by Dr. Dru Germanoski.

SATURDAY, JUNE 4, 2022

7:00 PM – 11:00 PM

****Night Dig on the Buckwheat Dump**

Franklin Mineral Museum
Fee charged. Call for details: 973-827-3481.

SATURDAY, JUNE 18, 2022

9:00 AM – NOON

FOMS Field Trip

Collecting at the Taylor Road site.
Meet and park at the Franklin Mineral Museum, and walk
from there. **Do not park on Taylor Road!** Fee charged.

1:30 PM – 3:30 PM

FOMS Meeting

Franklin Mineral Museum
Lecture: *A Potpourri of Franklin/Sterling Hill Geology,*
by David Vonderheide

SATURDAY, JULY 9, 2022

7:00 PM – 11:00 PM

****Night Dig on the Buckwheat Dump**

Franklin Mineral Museum
Fee charged. Call for details: 973-827-3481.

SATURDAY, JULY 30, 2022

9:00 AM – 5:00 PM

****Summer Swap & Sell**

at the Franklin Pond, Franklin, NJ
Sponsored by the Franklin Mineral Museum.

SATURDAY, AUGUST 6, 2022

7:00 PM – 11:00 PM

****Night Dig on the Buckwheat Dump**

Franklin Mineral Museum
Fee charged. Call for details: 973-827-3481.

✘ ✘ ✘ ✘ ✘

*Events of interest to FOMS members will take place
throughout the season at the Franklin Mineral Museum
(website: www.franklinmineralmuseum.com
and telephone: 973-827-3481) and the
Sterling Hill Mining Museum
(website: www.sterlinghillminingmuseum.org
and telephone: 973-209-7212).*

Call, or visit their websites for further information.

✘ ✘ ✘ ✘ ✘

Scheduled activities of the FOMS include meetings,
field trips, and other events. Regular meetings are held
on the third Saturdays of March, April, May, June,
September, October, and November, and generally comprise
a business session followed by a lecture. FOMS meetings
are open to the public, and are held at 1:30 PM, usually
in Kraissl Hall at the Franklin Mineral Museum,
30 Evans St., Franklin, NJ (check listings for exceptions).

Most FOMS field trips are open only to
FOMS members aged 13 or older.
Proper field trip gear required: hard hat,
protective eyewear, gloves, sturdy shoes.

**Activities so marked are not FOMS functions but may be
of interest to its members. Fees, and membership in other
organizations, may be required.

Any information in this schedule, including fees,
is subject to change without notice.

*Special thanks go to: Stephanie Koles, Mark Dahlman, the
Franklin Mineral Museum, Carol LaBrie, John Postas, Earl
Verbeek, Dave (Groundhog) Shapiro, the Sterling Hill Mining
Museum, and Bill and Denise Kroth, for this information.*

President's Message

RALPH BONARD
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OGDENSBURG, NJ 07439
rbonard@yahoo.com

As the newly elected president of FOMS I would like to take the opportunity to introduce myself. I am a local resident of Ogdensburg, N.J. and over the past ten years both Sterling Hill Mining Museum and Franklin Mineral Museum have become like second homes to me, as I am very involved at both. My son Zack and I got involved when he was around six years old and have never looked back. We went from collecting “rocks that glow green and red under a light” to a much more advanced stage of collecting. Our main focus is on daylight species and rarities from Franklin and Sterling Hill. From the earliest days one of my mentors (he knows who he is) advised me to scrutinize every rock and in doing so we often find nice oddities and rarities, some of which have made their way onto the shelves of the FMM, and many others into private collections. It's been a fun journey thus far and we look forward to the coming years. The spring Franklin Museum mineral show will be here soon and although not a show like in years past, this is a nice move forward from the “COVID-19 era.” As we always do, FOMS will be assisting with the outdoors dealer spaces. As we are a volunteer organization, we rely on members to help with these shows. A huge “thank you” to everyone that helped this past fall! *The Picking Table* continues to be such an outstanding publication, due to the

folks that work diligently and tirelessly to make it happen. Last month featured the long-awaited release of the Franklin Color Book. This three-volume set is an amazing publication. Many thanks and credit to Van King and all of the folks involved in getting this monumental task completed.

The FOMS website (fomsnj.org) continues to be an excellent resource for the FrOg community. Bill Pazik has volunteered many hours and his skills over the years to keep this updated and running and it is a standout in the mineral world as both an informational and historic resource. Much gratitude to Bill for his dedication to such an important part of what FOMS does. This coming spring there are going to be some great local events, as you can see listed here in the *PT*, on our website, and the FOMS Facebook page. We are in for a treat with some outstanding guest speakers! Many thanks to Stephanie Koles, FOMS VP, as she is filling more than a few roles; as dig coordinator, and booking the guest speakers for our monthly meetings.

We will be continuing with our Future Rockhounds program, held prior to our monthly meetings and run by FOMS past-president Mark Dahlman. There is no greater treasure than the minds of our children and this is a great way to tap into their learning potential. Going into this new year there are so many great things being planned at both the local museums and through FOMS. As always we will do our best to keep our members informed and up to date. All we ask is that you do your best to contribute however you can; whether it be volunteering at an event, or simply keeping up to date on your membership! With the world slowly beginning to drop restrictions we are getting back a sense of normalcy. These are exciting times and we look forward to seeing so many of you, so please come join us! ✂

Message From the Managing Editor

JAMES VAN FLEET
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javanfleet8@gmail.com

First, an apology for the very late delivery of our fall 2021 issue of *The Picking Table*. A top priority is to provide accurate information, and when possible, the articles we publish receive professional outside review, as well as exacting editorial scrutiny. Even with the indispensable skills of Caitlin Whittington on design and layout, each issue takes four to six months of steady work, and as many as five or six drafts, to reach completion. We would be delighted to welcome a new volunteer editor or two to *The Picking Table* staff!

The Picking Table is always seeking new authors and new voices; we welcome our new FOMS president Ralph Bonard, and John Postas, the new president of the Franklin Mineral Museum. Sadly, we bid farewell to a very well known member of our community with the passing of Mark Leger. This sort of bad news keeps trickling in; we only learned recently that FOMS member Ray Klingler passed away in 2020, and Sterling Hill miner Gene Clyne in 2021. Remember your friends and loved ones, and *keep in touch!* We hope *The Picking Table* helps a little. ✂

Franklin Mineral Museum Report

JOHN POSTAS

PRESIDENT, FRANKLIN MINERAL MUSEUM
32 EVANS STREET
FRANKLIN, NJ 07416
johnpostas@gmail.com

As the new president of the Franklin Mineral Museum, I would like to express my gratitude to Mark Boyer for carrying the torch as president for the past decade. During Mark's tenure as president he was challenged by several hurdles, ranging from staffing changes to a global pandemic that has closed businesses and museums nationwide; some will never reopen. Through all these challenges, Mark's focus has always been on the health and well-being of the museum and its staff, and for this we remain grateful to him for getting us through these difficult times.

We move forward with hopes that 2022 will be a better year and closer to normal. The museum is planning some long-overdue upgrades to help maximize the museum's potential. The Franklin Mineral Museum Board of Trustees recognizes the need to offer more "user-friendly," hands-on experiences to our patrons and is researching options to provide them. We have also contracted a web designer to redo the Franklin Mineral Museum website, which will be more user-friendly and feature options for online payments for museum experiences as well as merchandise that will be available for our patrons.

We have a full schedule set for 2022, starting with a "Glowing of the Green" night dig on Saturday, March 19 on the Buckwheat Dump, weather permitting. The museum officially opens for the season on Friday, April 1 and will be open weekly from Friday to Sunday. On Saturday, July 30, we are excited to return for our second annual Pond Swap and Sell, located again at the Franklin Pond Recreational Complex on Cork Hill Road. The Franklin-Sterling Gem and Mineral Show will be held on September 17 and 18, once again at the Franklin Fire Department on Buckwheat Road. The museum will be holding monthly night digs on the Buckwheat Dump, and the season finale will be in October, with a dig held once again on the famed Mill Site pile. Dates and times for the night digs as well as

the Mill Site pile dig will be posted on the museum's website and on social media by late April.

The museum's off-season has been very busy, with Earl and Lois Verbeek spending countless hours over the winter, cleaning the curator's office as well as cataloging specimens. Mark Boyer has been busy in the archives room, working diligently to preserve and catalog the many historical documents that the museum has collected throughout the years. Steven Phillips has also purchased many new collections, which are being identified and labeled and will be ready for our summer mineral sales. The work behind the scenes is never-ending and at times tedious and thankless, but without the hard work of these volunteers the museum wouldn't be what it is today—a world-class museum known not only for our great mineralogical specimens, but our history as well.

In closing, I would like to welcome our new Board of Trustees members, Ralph Bonard, Phil Crabb, Corey Houghtaling, and Steven Phillips. Their willingness to serve and their varied talents promise to lead the museum into a bright future. I would also like to thank Mark Dahlman, James Van Fleet, and Ed Seger for their many years of dedication to the Franklin Mineral Museum Board of Trustees; their years of tireless effort are greatly appreciated. ✂



Franklin Mineral Museum
Located in
"The Fluorescent Mineral Capital of the World"

Exhibits

Mineral Sales

Rock Collecting

ebay.com/str/franklinmineralmuseum
32 Evans Street ~ Franklin, NJ 07416
973-827-3481
franklinmineralmuseum.com



Happenings at Sterling Hill

BILL KROTH

PRESIDENT, STERLING HILL MINING MUSEUM
30 PLANT STREET
OGDENSBURG, NJ 07439

During the past two years I tried to maintain an optimistic view of how we could exit the pandemic and get back to normal at the Sterling Hill Mining Museum. We have risked much and greatly modified all aspects of our operations over that time, while giving tours and trying to continue educational presentations and programs. Our main business and educational mission are closely tied to school class trip visitations. In 2019, we typically averaged 40 class visits every week of the school year, but we are now lucky to get four school classes in a month! Weekend attendance by the general public was over 200 on a typical Saturday or Sunday; that dwindled in the fall of 2021 to as few as 40.

Bolstering our tours were our gift shop and snack bar sales, which accounted for 50% of our revenue. We have attempted to modify those features by limiting the tour group sizes, selling through an exterior window, and putting a small sales kiosk adjacent to the pavilion. But the effort to set this up in relation to the number of customers made this just barely cost-effective.

Finally, the physical risk to our employees is a continuing major concern for me. Whether it is from COVID itself; or an irate visitor who gets angry and animated about masks, about someone coughing, proof of vaccination, or social distancing; all have me wondering whether it is worth the risk of even giving tours in this climate. Fear is a difficult foe to overcome.

During the past 30 years that Denise and I have been involved in Sterling Hill, we never imagined that something so profound could affect us for such an extended period of time.

Despite it all, the Sterling Hill Mining Museum has continued to improve its programs, presentations, exhibits, and reputation over the years. Looking back on the past six months, there are some highlights. The third annual Halloween Haunted Mine Tour was again a great success, made possible by many volunteers. The North Jersey Mineralogical Society made Sterling Hill their “second home” in 2021, hosting meetings, mineral shows, and digs at the museum.

Behind the scenes, the museum purchased or received through donations a number of mineral collections, which help replenish the annual Garage Sale event, Gift Shop sales, and even the material on the Mine Run Dump. Dr. Earl Verbeek and his interns continued to make use of the excellent laboratory facilities and analytical equipment provided by the museum, supporting several projects and publications. Earl reports he is progressing on his study of faulting in the Sterling Mine.

The museum acquired a very large collection (over 10,000 labeled specimens) that was donated by local collector Jim Rumrill, of Towaco, New Jersey. We are now inspecting and organizing that wonderful collection in a newly

refurbished and secured room in our Kolic Geotech Building. The Rumrill collection has amazing depth, with minerals representing local and worldwide species, and will be kept intact as a great reference collection. Many of the world-class fluorescent mineral specimens will be moved into our Warren Museum for display there.

Finally, Vandall King’s long-awaited book has been published, featuring a chapter highlighting the Sterling Hill Mining Museum, and illustrated throughout with beautiful photographs of our distinctive local minerals, shown in daylight and under UV light. ✂

The Sterling Hill Mining Museum, Inc.

Featuring acres of things to see indoors, outdoors, and underground, including:

- Antique mining equipment displays
- Mining memorabilia displays
- Historic buildings
- Underground guided tours
- Museum store stocked with minerals, books, T-shirts, caps, etc.
- Food concession and picnic area
- And much more!



30 Plant Street
Ogdensburg, NJ 07439
973-209-7212

sterlinghillminingmuseum.org

The James Rumrill Collection Donated to Sterling Hill Mining Museum

BILL KROTH

PRESIDENT, STERLING HILL MINING MUSEUM

30 PLANT STREET

OGDENSBURG, NJ 07439

During the fall of 2021, we were contacted by James Rumrill of Towaco, New Jersey, asking us whether we would like to acquire his collection of local and worldwide minerals as a donation to the Sterling Hill Mining Museum. Jim is a retired post office worker who worked in the Clifton, N.J., area for most of his career. Now that he is 90, he wanted to be sure that his lifelong efforts in building his collection would culminate in a safe and secure future for it. We were not sure of the size of the collection, but we responded that we would arrive in a few days with a pickup truck in order to bring it to our museum.

Upon meeting Jim and entering his home, we were amazed at the collection's size, quality, the degree of organization, its beautifully handmade wood-and-glass display cases, and the comprehensive computer database that he presented. What I initially presumed would be one or two trips to his home with one vehicle would turn out to be six trips, with up to four vehicles for each excursion! While we could have jammed much more into our vehicles and made fewer trips, I wanted to be sure that nothing was damaged and all of the beautiful cases survived intact. Jim had put much effort into doing things right, and I wanted to take the extra care that the minerals and cases deserved.

Helping us were my wife, Denise; Sterling Hill Advisory Board members Ken Daubert and Andy Marancik; gift shop assistants Carol Dunn and Sue Conklin, and tour guides Brianna Wagner and Adam Baldwin. Our first visit gave us a glimpse of the effort that would be required, and it would indeed be a major undertaking; but Jim's calm and friendly demeanor made us feel at home and in no rush. Jim showed us his many other hobbies, such as tropical fish and an amazing greenhouse. We realized that he was a true collector at heart like so many of us!

His best specimens were in his dining room. He turned common cardboard flats into beautiful uniform display cases for perfect organization and protection (see Photo 1). Each had a glass- and oak-trimmed edge molding, all carefully mitered to make them look totally professional. I thought to myself ... "why didn't I think of that!" Jim's wonderful fluorescent specimens from all over the world were displayed in two tall, open shelving units. We walked around his house to the hurricane doors that lead into the basement and were shocked



Photo 1: Using a typical cardboard flat as the base, Jim hand-made beautiful wood and glass tops that really protect and display his specimens nicely. *Photo by Bill Kroth.*

at the number of specimens, neatly organized in flats, stored on many metal shelving units. Fortunately, we were able to drive our vehicles right up to the doors leading into the basement, and it was only the steps that offered any obstacle.

I am still amazed at the effort Jim put into organizing, labeling, and documenting the collection. There was simply no guesswork at all. Anything that we wanted to know is on the computer flash drive that he provided. The quality, variety, and depth of the collection are absolutely superb, both for local New Jersey material and worldwide minerals. When Denise first opened the catalog on her computer at our home, I jokingly said: "See if he has a gerstmannite?" Gerstmannite



Photo 2: The Rumrill Room in the Kolic Geotech Building is now dedicated solely to his collection and new shelving units were purchased. We will be visiting Jim shortly to pick up some of his shelving units that will help with the final organization. *Photo by Bill Kroth.*

is the rarest and most desirable mineral from Sterling Hill—could there possibly be one? Wow, a second later, there it was ... specimen number 3352.01, bought from Excalibur Minerals (Tony Nikischer) in 1991. The number after the decimal point gives a nice indication as to how many of that species is represented in the collection—in this case one. If you like deep-red fluorescent tugtupite from Greenland, you could take your pick, there are 10.

The collection is now safely stored in our “Lecture Room” of the Kolic Geotech Building (see Photo 2). The room was emptied of its furniture and new heavy metal racks were purchased specifically to house the collection. We had a donated, tempered glass storefront door already in stock, and we installed that as the main entrance to the room. New locks were installed in all doors leading to the “Rumrill Room.” It is now a dedicated, secured, and climate-controlled environment. Our plan is to slowly and carefully arrange all of the 1,000-plus flats in a sequence that will provide the opportunity to easily and quickly locate any specimen. Some of these will be added to the existing museum displays, and the remainder will be kept as an amazing and comprehensive reference collection.



Photo 3: Jim Rumrill visiting the Sterling Hill Mining Museum in May of 2008. *Photo by Bill Kroth.*

We would like to personally thank Jim Rumrill for trusting us with a major part of his life’s work and investment. His efforts have certainly given us a major new resource. Thank you, Jim! ✕

The 65th Annual Franklin-Sterling Gem & Mineral Show

SEPTEMBER 25 AND 26, 2021

STEVEN M. KUITEMS, DMD

14 FOX HOLLOW TRAIL
BERNARDSVILLE, NJ 07924
smkuitems@gmail.com

After a long and painful COVID-19 hiatus, the Franklin-Sterling Gem and Mineral Show returned to its regularly scheduled weekend. A new location for the indoor part of the show was the Franklin Fire Department Hall. It allowed for 14 dealers, seven fluorescent exhibits, and seven daylight exhibits. Ample parking was available on three adjacent lots, all within a short walk of the exhibit hall. The outdoor “swap and sell” dealer’s space, aka “The Pond” was located across the street in the expansive Firemen’s Memorial Park. For those dealers wanting a bit of shade, there was a large outdoor pavilion that accommodated 10 dealers and their wares, while on the field there was enough space to fit a larger number of dealers than at previous outdoor sites.

The fluorescent exhibits are described here, in the order listed in the show booklet.

Steven Kuitems presented two cases titled “Franklin Delights 1 and 2.” Each case included a large polished sphere of willemite in calcite. A large wollastonite with a green center from the Sterling Mine was an eye-pleasing favorite. A specimen nicknamed “Fozzy Bear,” with 3-inch ears, composed of willemite crystals set in calcite, was the top centerpiece. It was collected from the Passaic Pit. Two nice specimens of clinohedrite and willemite fluorescing orange and green, were separated by a blue-white fluorescent margarosanite from the Franklin Mine. The second case was notable for two recently field-collected specimens from the Mill Site pile. One was a large red-fluorescing axinite-(Mn), and the other a set of butterfly halves featuring clinohedrite on hardystonite, and willemite, with orange, green, and violet blue fluorescent colors in shortwave ultraviolet (SW UV) illumination.

The Franklin Mineral Museum’s case titled “Wollastonite” showed off the variations possible on a theme of just one species. Under SW UV the differences caused by higher manganese content in wollastonite (a more orange fluorescent response) and lower manganese content farther away from the orebody (pale orange to yellow fluorescent response) were very apparent. Several other associated species were present, such as green-fluorescing willemite.

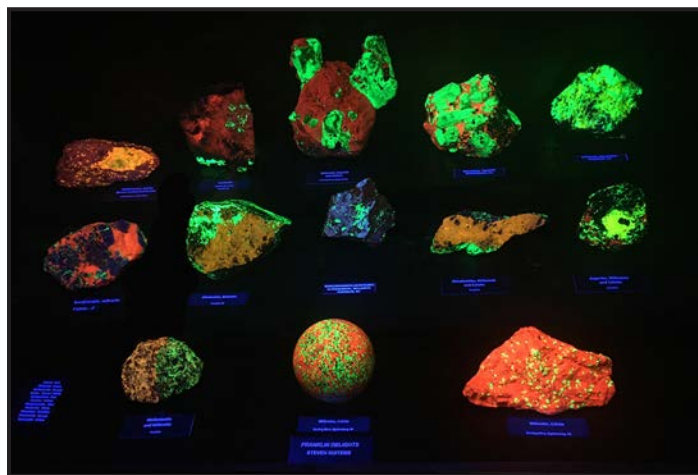


Figure 1: The fluorescent mineral display titled “Franklin Delights 1” featuring “Fozzy Bear.” Photo by Steven Kuitems.

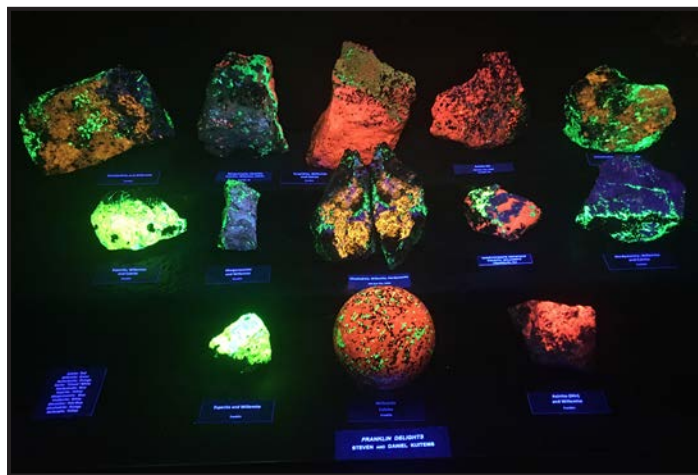


Figure 2: Franklin fluorescent minerals under shortwave UV light, many collected on the Mill Site pile. Photo by Steven Kuitems.

Franklin Mine Third-Find wollastonite is often associated with dots of barite fluorescing a cream-white color.

Richard Bostwick and Tema Hecht placed a case titled “Esperite and Friends,” all from Franklin, New Jersey, under SW UV light. There were crystals of hardystonite replaced

by esperite in neat, sharp, yellow-fluorescing rectangles. The display featured esperite with hardystonite and calcite in many patterns and mixes. One notable specimen had a sharp willemite vein coursing down the center of a large horizontal band of esperite like a racing stripe. There were two tasty-looking esperite doughnuts, one with a hardystonite center and one with a willemite center.

Dick and Tema placed a second case titled “Mimetoliths,” otherwise known as “picture rocks,” naturally occurring specimens that under UV light have patterns resembling things we recognize such as mythical beasts, cultural icons, animals, people, or words. The viewer’s imagination can go

wild with these specimens. Favorites were “The Alligator,” formerly a Gary Grenier specimen of a green willemite alligator head in a red calcite matrix, and the “Shark Attack!”, a green-fluorescing vein of secondary willemite crystals resembling shark teeth with a red calcite body, both from the Franklin Mine. One could not miss the iconic New Jersey Zinc horsehead emblem, a nonfluorescent Franklinite mass in the shape of a horse head outlined in green willemite in a matrix of violet-fluorescing hardystonite.

Ralph and Zack Bonard placed a case titled “Hardystonite and Clinohedrite,” with 25 specimens, under SW UV light. Several standouts were four hardystonite masses with clinohedrite in sheets of orange fluorescence. They displayed veins and masses of willemite in hardystonite, and one interesting grain of hardystonite in the shape of a wild boar stirring up a cloud of green willemite dust on a red calcite matrix!

Mark Boyer exhibited a case titled “Classics From Franklin, N.J.,” ten large cabinet specimens from the Franklin Mine, under SW UV light. A notably bright green willemite vein in ore, so bright it blew out my camera sensor, was displayed alongside a large crystal mass of fluorescent orange Third-Find wollastonite in red calcite. The centerpieces of Mark’s case were a fine creamy-white fluorescent band of barite in red-responding calcite and one of the infamous Mill Site margarosanite specimens; a band of blue-fluorescing margarosanite with green willemite, and red polka dots of calcite.

The daylight exhibits were as follows: Steven Kuitems placed a case titled “Franklin Classics,” featuring seventeen specimens of native copper from the Franklin Mine. There were four specimens of leaf copper in, and on, a typical ore matrix. There was a finely disseminated mini-sheet of copper spread over a large area of green willemite, copper masses in bluish glaucochroite, and one copper mass rising out of a white hardystonite matrix. Two examples of copper crystals were displayed, along with one delicate mass of copper in a right-angle form encasing a sharp one-centimeter crystal of franklinite.

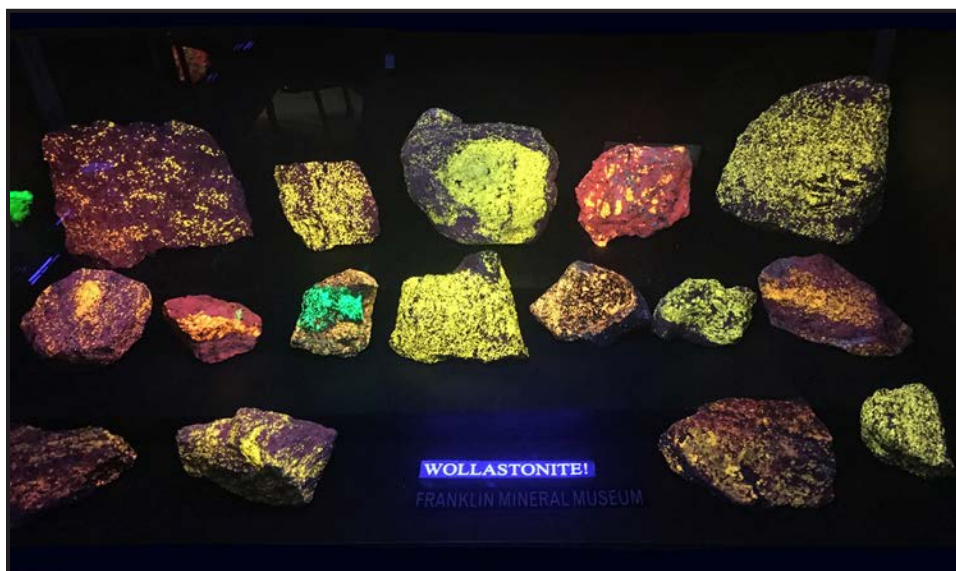


Figure 3: A display dedicated to fluorescent wollastonite, from the Franklin Mineral Museum. *Photo by Steven Kuitems.*



Figure 4: “Classics from Franklin, N.J.” displayed by Mark Boyer. *Photo by Steven Kuitems.*



Figure 5: The dealer room in the Franklin Firehouse, Bob Batic at his table in the foreground. *Photo by Steven Kuitems.*



Figure 6: Corey Houghtaling presented a display of willemite specimens from the Franklin and Sterling Mines, his first display case at the show. *Photo by Steven Kuitems.*

Ralph Bonard’s case was titled “Franklin History,” with multiple papers, books, letters, and metal advertising plates from the New Jersey Zinc Company. A Lawson Bauer photo reminded me of the mineral giants who preceded us in our study of the minerals and mining in the Franklin Mining District. There was a report of the Edison Gravity Screen used at Franklin, and a monthly report of the operations in Franklin and Sterling Hill dated September 1954. A giant bound ledger of transactions of the Franklin Iron Company operations in the 1800’s was a truly rare find. Someday there might be a report on its contents.

Ralph Bonard’s second case was titled simply “Willemites,” from miniatures to large cabinet-sized specimens. Of the 36 specimens present, 25 were Ralph’s favorite green color, but there were red, yellow, brown, and even a white secondary



Figure 7: Steven Kuitems mounted a daylight case that featured some really outstanding specimens of native copper from the Franklin Mine. *Photo by Steven Kuitems.*



Figure 8: Brad Plotkin’s display was titled “Franklin Minerals” but might have been described as “small but mighty.” It featured some truly rare and historic specimens. *Photo by Steven Kuitems.*



Figure 9: Corey Houghtaling (left) and Richard Bostwick (right) at the outdoor show “swap and sell,” hoisting a large Franklin specimen and the lamp to light it up. Even fluorescent mineral collectors come out of dark closets, sometimes. *Photo by Tema Hecht.*



Figure 10: Judy Williams staffing the kitchen in the pavilion. Thank you, Judy, for feeding scores of hungry mineral lovers. *Photo by Tema Hecht.*

willemite in dolomite. There were gemmy to opaque specimens, granular and gneissic textures, and one fine thumb-sized willemite crystal in a brown serpentine matrix.

Corey Houghtaling also displayed a case titled “Willemites.” These were specimens from both the Franklin Mine and the Sterling Mine. I might add that this was the first case Corey has ever exhibited. There was a huge brown willemite single-grain mass in a bright pink kutnohorite matrix that dominated the top center of his case, with a second large specimen of this type showing small yellow gemmy areas. There was also a large green granular ore specimen about a foot wide from Franklin, along with four nice crystal specimens. One from Franklin featured nice green willemite crystals covering its surface, while the other three were brown crystals from the Sterling Mine.

The Franklin Mineral Museum placed a case titled “Hemimorphite!” consisting of thirteen specimens from the Sterling Mine operations in the years 1850-1898, primarily from the Passaic and Noble Pits, with a few collected more recently from the upper levels of the Sterling Mine. Several large cabinet specimens of the “maggot ore” variety were presented, from unstained white color to various shades of tan-brown due to the clay minerals that are associated with the hemimorphite. The rarest specimen was a small pastel-blue-colored botryoidal hemimorphite; the color is due to copper staining.

Ken Reynolds placed a case titled “Franklin and Sterling Hill Classics” consisting of twenty hand-sized to large cabinet

specimens. The top-center specimen was a very large tan “maggot ore” hemimorphite from the Passaic Pit, and below that was a very large cabinet specimen of red-colored blocky rhodonite crystals from Franklin. Ken displayed a large specimen with many green fluorapatite crystals in a calcite matrix, beautifully worked out by hand. A really choice gemmy yellow willemite specimen drew my eye to the front row, along with a fine specimen of stout olive-green lustrous willemite crystals, next to a bright specimen of red-pink gemmy willemite, with blue-green fluorapatite and brown andradite, a most attractive hand specimen from Franklin.

Brad Plotkin presented a case titled “Franklin Minerals,” featuring 33 specimens from full cabinet-sized to a number of fine miniature specimens, many with interesting historical labels. Of note were twelve native copper specimens. There were two colorful coppers present, one with pink hodgkinsonite, and the other with purple leucophoenicite. A fine miniature roeblingite nodule, looking just like a fresh piece of coconut, and a choice miniature-sized vein of ganophyllite, were placed next to a schallerite, a datolite-coated axinite-(Mn), and a fine sparkling white minehillite specimen. Of note in Brad’s lineup of miniatures was a plate of gageite on ore, with an R.B. Gage label, purchased in 1920 for twelve dollars.

Thanks to all who put fear aside and displayed their specimens, and to those who coordinated the setup of the Fire Department Hall to make the displays and dealer’s sites a reality. ✂

Carbide Lamps at Franklin, New Jersey, 1908

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In the summer of 2001, the Borough of Franklin lowered the water level in the Franklin Pond. Alison Littell McHose, former Borough Manager, provided some details...

It was done so the spillway could be replaced (beneath the falls). There was also a trench dredging done at the same time. It was a huge spectacle. People brought lawn chairs and lined the edges of the pond while watching people dig through the silt that had built up over the years (McHose, personal communication).

Among the many finds of old bottles and soup bones buried in the mud, a number of brass carbide cap lamps came to light. Given the number of lamps, their location, and their mechanical condition, it seems very likely that these were used by Franklin miners. We may assume that having outlived their usefulness, they were discarded by the New Jersey Zinc Company, or by Franklin miners themselves. The examples



Figure 1: A Baldwin lamp adorned the cover of *Mining and Scientific Press*, August 15, 1908.



Figures 2-3: A Baldwin carbide cap lamp, showing the wire hook and brace soldered at the back, and a wire brace and removable "wet-mine" reflector at the front. Photos by Dave Thorpe.



Figures 4-5: Note the solder marks at front and back, the hourglass “pinched-waist,” and the inset water door. The large dent in this lamp bottom made it impossible to maintain a seal between the top and bottom of the lamp, rendering it inoperable. *Photos by James Van Fleet.*



Figure 6: A Baldwin model 36 hand lamp, circa 1909, with homemade repairs. This lamp was rescued from the bottom of the Franklin Pond by Harold McGrath. *Photo by Karen McGrath Lund, posted on Facebook.*

I have seen all show evidence of damage that would have rendered the lamp inoperable, such as large dents, cracked brass, or failed solder seams.

A few members of the Franklin-Ogdensburg Mineralogical Society (FOMS) might remember that before the author was editor of *The Picking Table*, he was an editor for *Eureka! The Journal of Mining Collectibles*. That publication began in 1992, and has continued in print or online format for 30 years. The May 2021 issue featured an article by Dave Thorpe, titled “Frederic Baldwin’s Adventures in Scranton.” This article shone some light on a fascinating piece of Franklin mining history.

Thorpe’s research details a particular point in history, when Frederic Baldwin patented and manufactured the first miners’ carbide cap lamps used in the United States. As Thorpe notes, “most Baldwin lamps seen today were manufactured by the John Simmons Co. of Manhattan. His lamps were first used... in Scranton’s anthracite mines and for a short period of time Baldwin established manufacturing in that area. Few of these lamps survive today.”

These early Baldwin carbide lamps were advertised in mining trade journals in 1908 (Fig. 1).

Baldwin’s “adventure” was short-lived; by 1911 he had lost his Scranton distributors, and as Thorpe reports, had “put to market new lamps that did not follow his original patents.” Dave Thorpe’s article, and his carefully researched book *Carbide Light: The Last Flame in American Mines*, include photographs of the early Baldwin carbide cap lamps, and highlight specific design features seen on surviving examples of these lamps (Fig. 2 and 3).

At the fall 2021 Franklin-Sterling Gem and Mineral Show, Gar Van Tassel handed me a crusty and disreputable-looking object, which I recognized instantly

as a 1908 Baldwin carbide cap lamp. Its condition was due, at least in part, to having spent over 100 years on the bottom of Franklin Pond! Even with no manufacturer’s name or markings, the design features detailed in Thorpe’s publications made the identification certain (Figs. 4 and 5).

It’s the fine details of lamp design that excite collectors, and they warrant close inspection. The hourglass shape and overall design, with a “pinched-waist” between lamp top and bottom, suggest that the lamp in question was manufactured in New York rather than Scranton. The Baldwin cap lamps made and marketed in Pennsylvania had a “bulge” at the waist. Many of these lamps have no manufacturer’s markings, although the overall design is nearly identical to lamps with a Baldwin stamp. Dating the lamp to 1908 are features such as the inset water door, and the steel hook and brace attachment, which have left behind evidence of solder joints. Most interesting to collectors are the solder joints seen on the front of the lamp top, on either side of the burner tube. They are evidence of a wire reflector brace which has eroded away, and point to a specific style of flat, removable reflector, advertised as being adapted to wet mines.

As with many collector or hobby enthusiast communities, mining lamp collectors have a Facebook group. Posting photographs of the Franklin find elicited several helpful responses, from Dave Thorpe and others, who own examples of these 1908 Baldwin lamps. These helped verify our identification.

This short exercise in “industrial archaeology” seems to provide an insight into the history of mine lighting at Franklin. The NJ Zinc Company, or the local miners themselves, were fairly progressive in adopting the first carbide cap lamp marketed in the United States, as early as 1908, and using them hard until they were used up. Dumping them in the pond was perhaps less progressive, but arguably an easy way to dispose of spent tools. The proximity of these finds to the site of “bedbug row,” early miners’ housing at Franklin, reinforces the conjecture that the Baldwin lamps were once used by Franklin miners. Note, however, that both Dave Thorpe and John Sowden, a local member of the Franklin Borough Historical Commission, speculate that the lamps may have been used for night fishing on the Franklin Pond! This does not preclude the possibility that Baldwin lamps were used underground at Franklin.

Since beginning the research on this article, I’ve been shown a Baldwin model 36 superintendent’s style carbide lamp, easily identified from period advertisements, which was also found at the bottom of the Franklin Pond. The homemade twisted wire handle indicates this lamp received hard usage and amateur repairs, before it was finally discarded (Fig. 6).

Thanks to Dave Thorpe for his research, and his cooperation in sharing photos and images, and to Karen McGrath Lund for the use of her photograph. Thanks also to Gar Van Tassel, whose generosity sparked an insight into Franklin mining history. ✂

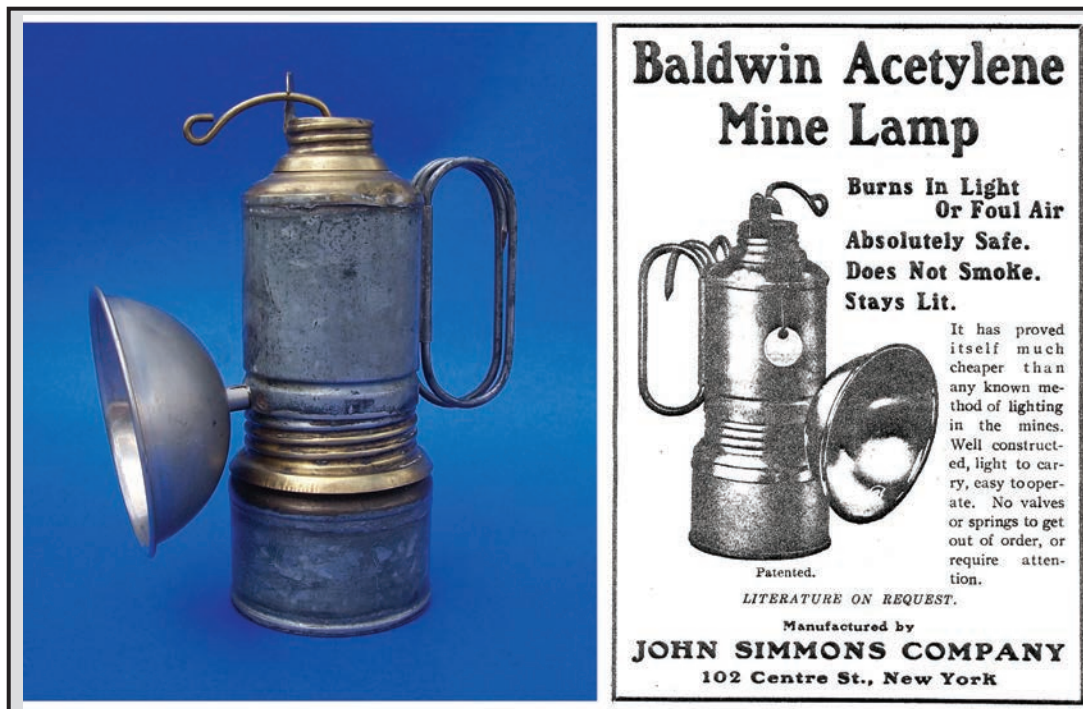


Figure 7: A Baldwin model 36 hand lamp, as advertised in the *Engineering and Mining Journal*, January 1909. Photo by Dave Thorpe.

Pyrophanite Epitaxial on Magnetite From the Franklin-Ogdensburg Area, New Jersey

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INTRODUCTION

Pyrophanite, MnTiO_3 , is a rare mineral locally, heretofore known only from two occurrences on and near the 500 level of the Sterling Mine. The first occurrence, reported by Sandhaus (1981) and Craig et al. (1985), was of anhedral to subhedral grains generally <0.5 mm across (largest about 2 mm across), disseminated within large grains of brown to greenish-gray augite. Associated minerals are gahnite, zincian biotite, and calcite. The locality was given as the footwall of the east limb of the orebody at about the 1000N coordinate, 10 feet above the 500 level. Approximate mine coordinates would thus be about 1000N, 880W. The second occurrence, reported by Valentino (1983) and Valentino et al. (1990), was of microscopic lamellae of pyrophanite that had exsolved during cooling from magnetite-rich lamellae within franklinite-magnetite intergrowths, which themselves are contained within large grains of gahnite. The host rock is marble containing, in addition to the gahnite, grains of biotite, diopside, franklinite, and garnet. The locality for this occurrence, too, was the 500 level of the Sterling Mine, about 10 feet east “along the crosscut from the west limb” (Valentino, 1983). Assuming this refers to the 700 crosscut near the keel of the orebody, approximate mine coordinates would be 700N, 1240W.

We here report a third occurrence of pyrophanite from the Franklin-Ogdensburg area, of quite different character from those observed previously.

SPECIMEN DESCRIPTION

The specimen containing the pyrophanite (Fig. 1) is a group of large magnetite crystals on a highly weathered and leached matrix containing massive magnetite, a little cinnamon-colored garnet (likely spessartine), small flakes of a brown mica, and abundant goethite. Projecting from the matrix are small, dark brown grains of augite (probable identity) of the type commonly referred to locally as “jeffersonite.” The magnetite crystals, the largest of which measures 4 cm on edge, are dominantly octahedra beveled by narrow dodecahedral faces.



Figure 1: The specimen examined for this study: a group of octahedral magnetite crystals on weathered matrix, probably from the Noble Pit at Sterling Hill. The specimen, no. FMM-2593 in the collection of the Franklin Mineral Museum, was acquired in 2021 and was earlier in the James Gouger collection. Specimen size: 14.5 × 9 × 7 cm (5.7 × 3.5 × 2.8 inches). Photo by Earl R. Verbeek.

These crystals when originally formed were probably encased in a matrix of calcite, long since dissolved. X-ray fluorescence (XRF) data reveal that the magnetite contains about 8.9 wt.% ZnO and 5.0 wt.% MnO. The specimen is reminiscent of the magnetite crystal groups that were once recovered at or near the surface from weathered debris that constituted much of the “strippings” from the Noble Pit during the early years of mining for hemimorphite at Sterling Hill. Note, however, that the Noble Pit locality is an inference, not a known fact, and there remains a possibility that the specimen came from Franklin instead.

PYROPHANITE OVERGROWTHS

Attention was first called to the pyrophanite during chemical analysis by XRF of the magnetite, which revealed not only significant contents of zinc and manganese, but, in some

places, abnormally high titanium contents of 5-14 wt.%. This prompted a visual reexamination of the specimen, during which we realized that some of the magnetite crystal faces were dull, but others showed numerous small areas of high reflectivity. Examination of the highly reflecting areas under magnification revealed that they are small, lustrous crystals of a dark green mineral (Fig. 2) lying flat on the crystal faces of the underlying magnetite. Additional XRF measurements showed that those magnetite crystal faces bearing great numbers of the green crystals are high in Ti content, averaging 7.8 wt.% Ti, whereas faces with few or no green crystals average only 0.7 wt.% Ti. This, plus the green color and rhombohedral outline of many of the crystals (Fig. 2), suggested they are pyrophanite. The magnetite between the pyrophanite crystals is uniformly dull and pitted by weathering, but the pyrophanite crystals retain their high luster, which lends to some of the magnetite crystal faces a curiously speckled appearance.

We then turned to Raman spectroscopy to better establish the identity of the green crystals, particularly because ilmenite (FeTiO_3), a mineral closely related to pyrophanite, is also known locally and on a worldwide basis is commonly associated with magnetite. Despite being related minerals, the smaller ionic radius of Fe^{2+} relative to Mn^{2+} results in minor but clear differences in their Raman spectra. The major Raman peak, for example, is at 677 cm^{-1} for ilmenite but at 685 cm^{-1} for pyrophanite. Fortunately, Raman spectra for the green crystals in specimen FMM-2593 are excellent (Fig. 3) and confirm their identity as pyrophanite. Table 1 shows the observed Raman peaks for the pyrophanite in our specimen



Figure 2: Close-up view of two of the magnetite crystals, showing abundant crystals of dark green pyrophanite on the magnetite surfaces. Horizontal field-of-view is approximately 6.5 cm (2.6 inches). Photo by Earl R. Verbeek.

versus Raman peaks for pyrophanite from three different literature sources. The four spectra agree well in terms of peak positions for all clearly expressed peaks and also show substantial agreement in the relative intensities of those peaks. The latter relation is imperfect because relative peak heights in Raman spectra of pyrophanite are in part dependent on the orientation of the crystal in relation to the laser beam (Zajzon et al., 2013), so differ from one crystal to another.

Table 1. Raman peaks for pyrophanite, various sources

RRUFF R070211	FMM- 2593	Song et al. 2004	Zajzon et al. 2013
165 w	166 w	— ^a	164 w
202 m	204 m	202 w	202 w-m
236 w	237 m-s	236 m	235 m-s
263 m	265 m	264 m	263 m-s
337 m	336 s	336 m-s	334 m-s
359 m-s	363 m	360 m-s	360 m-s
423 vw	418 w	—	—
465 m	468 w	465 w	466 w-m
598 w	602 wb	611 vw ^b	— ^{d,b}
—	659w ^c	—	—
684 vs	686 vs	685 vs	684 vs

s = strong, vs = very strong, m = moderate, w = weak, vw = very weak

^a Below measured interval

^b Broad, rounded peak

^c Small shoulder on 686 peak

^d Present but not measured

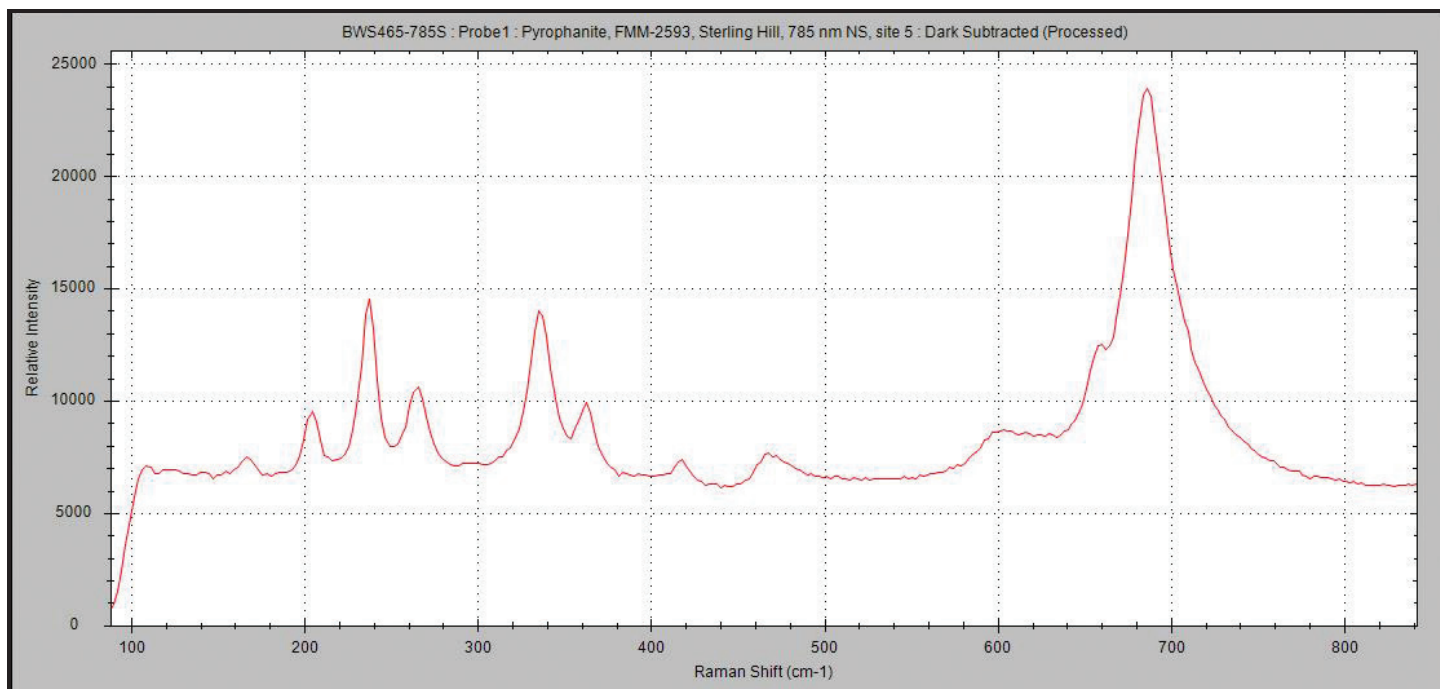


Figure 3: Raman spectrum of one of the pyrophanite crystals shown in Figure 2. Additional spectra were obtained from two other crystals, with identical results.

The green color of the pyrophanite is worth mentioning, inasmuch as most pyrophanite worldwide is blood red through reddish brown to brown. Indeed, that is where the mineral gets its name, the “pyro” part alluding to fire. Other known colors of pyrophanite, however, include greenish yellow, green, and nearly black. In part the color depends on composition, with various other elements (notably Fe) substituting for Mn in natural examples, but it also depends on conditions of formation. Fujiki and Ohtsuka (1977) and Ohtsuka et al. (1983), in experiments on lab-grown, synthetic pyrophanite, noted that the color of the crystals depended on the concentration of oxygen in the gas of the reaction vessel as crystallization proceeded and changed from reddish brown to green as oxygen levels decreased. The green crystals could be converted to reddish brown ones upon reheating at higher oxygen levels. These results suggested to them that the color of pyrophanite depended on the valence state of manganese in the crystals: green if all of the manganese was present as Mn^{2+} (compare to manganosite, MnO , also green), but reddish brown if some of it was present as Mn^{3+} instead. In mineralogical parlance, this suggests that the pyrophanite in the Sterling Hill specimen formed under conditions of low oxygen fugacity, conditions that prevailed over much of the early history of the Sterling Hill orebody.

Also worthy of note is the evident parallelism of many of the pyrophanite crystals on the octahedral crystal faces of the underlying magnetite (Fig. 2). This is a probable example of *epitaxy*—an oriented overgrowth of one mineral on an older one. As explained by Rakovan (2006), epitaxy can occur when “specific crystallographic directions of the substrate [magnetite in our case] and overgrowth [the pyrophanite] are aligned. This occurs when certain structural planes in the overgrowth and substrate have similar spacing between atoms.” A similar process often occurs in exsolution, when an originally homogeneous, high-temperature phase separates (exsolves) into two separate minerals upon cooling and contraction of the crystal structure. Again in reference to pyrophanite and magnetite, Valentino (1983) suggested that the microscopic lamellae of pyrophanite in the specimen he studied from the 500 level of the Sterling Mine have their (0001) planes parallel to the (111) planes of the host magnetite. In that orientation, Valentino notes, the interplanar spacing of oxygen ions in both minerals is similar, thus giving rise to a preferred orientation of the exsolved pyrophanite lamellae. The shape of the pyrophanite crystals in Figure 2 suggests the same relation, but we stress that we have made no measurements of their crystallographic orientation.

CONCLUDING REMARKS

The pyrophanite crystals described here constitute only the third occurrence of this mineral in the Franklin-Ogdensburg area. These crystals are notable not only for their abundance, their green color, and their apparent epitaxial relation with the underlying magnetite, but also for their size. The largest crystal so far measured on the specimen is 3.8 mm long, nearly twice the size of any pyrophanite crystal described before from the area. To date, however, this is the only specimen known to us of pyrophanite overgrowths on magnetite from the area. The authors would appreciate hearing of others, should they occur.

ADDENDUM

After this article was written, the authors became aware of another local occurrence of pyrophanite. Dr. Frank Mazdab, a petrologist at the University of Arizona, maintains a website (<https://www.rockptx.com>) that features photographs and explanations of minerals from many different rock types as observed in petrographic thin sections. That term—petrographic thin sections—refers to slices of rock so thin (generally 30 μm , thinner than the diameter of a human hair) that most minerals become transparent and can be studied under transmitted light with a petrographic microscope. The relevant specimen is FKM-45, a rock composed dominantly of a zinc- and manganese-rich pyroxene with minor amounts of rhodonite, gahnite, zinc- and manganese-rich phlogopite, calcite, willemite, and rare galena. Within this rock, Mazdab observed pyrophanite as overgrowths on tiny grains of franklinite. The pyrophanite was analyzed and has a composition of $(\text{Mn}_{0.90}^{2+}\text{Fe}_{0.06}^{2+}\text{Zn}_{0.03}\text{Fe}_{0.01}^{3+})\text{Ti}_{0.99}\text{O}_3$. The locality for the specimen is given only as the Franklin Mining District, so it is not known if it is from Franklin or Sterling Hill.

Dr. Mazdab's website, by the way, is a valuable, readily accessible, and fascinating resource for anyone who wishes to learn about minerals as components of rocks—what they look like, how they are related to one another, and what they tell us about a rock's genesis. Moreover, thin sections of many rocks are simply beautiful to behold, even if one has little interest in the underlying science. We highly encourage readers of the *PT* to take a look.

ACKNOWLEDGEMENTS

The authors appreciate repeated access to the lab instruments at the Sterling Hill Mining Museum, without which this study would not have been possible. We are grateful, too, for helpful comments from Alex Kerstanski on an earlier draft of this paper.

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Fluorescent Rhodochrosite From the Sterling Mine, Ogdensburg, New Jersey

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INTRODUCTION

Among the many scientific advances made during preparation of the new book on Franklin–Sterling Hill minerals (King et al., 2022), possibly the most popular among collectors is the large number of additions to the list of fluorescent minerals from the area. The last “formal” list released by the Franklin Mineral Museum was published in 2015, and showed 96 of the local species to be fluorescent. The new book claims at least 113 species and possibly as many as 123. Rhodochrosite is not among these, but two specimens of fluorescent rhodochrosite have recently emerged. Both are shown here.

SHIZUME SPECIMEN PS18056

The specimen shown in Figure 1 is owned by Paul Shizume and was originally intended for publication on the back cover of the spring 2021 *Picking Table*. It was then regarded as a fine example of the “papier spathe” variety of calcite—that is, calcite in thin, bladed crystals. The locality, as described by Steven Kuitens and Steven Misiur, is on the 900 foot level of the Sterling Mine, near 780 pillar and just south of 800 crosscut. This places it along the west limb of ore just north of the keel of the orebody, at approximate mine coordinates 785N, 990W. This is the same area from which numerous mcgovernite specimens were recovered in 1990. As described by Kolic and Sanford (1993), “boxworks of pink rhodochrosite” were found on a single specimen at that locality. This may be that specimen, but its rather bright fluorescence led us to suspect it was pink calcite instead and prompted its investigation. Analysis showed the initial identification was correct. The fine-grained white mineral encrusting and locally covering some of the rhodochrosite crystals proved to be calcite, so both species are present.

Rhodochrosite is one member of a group of related carbonates with the general formula ACO_3 , where A can be calcium (calcite), manganese (rhodochrosite), iron (siderite), zinc (smithsonite), magnesium (magnesite), etc. Most natural examples of these minerals are impure and contain a small percentage of one or more of the other metals substituting for the dominant one. Much calcite from the Franklin and Sterling



Figure 1: Platelike crystals of pale orange-pink rhodochrosite thickly encrusting a fracture surface in lean, granular, calcite-willemite-franklinite ore. Most of the platy crystals are lying on edge, nearly perpendicular to the fault surface. Lightly encrusting the rhodochrosite in part of the specimen, mostly toward the right, is fine-grained white calcite. Former owners include Richard Hauck, Gary Grenier, and Steven Phillips. Specimen size: 12.8 × 5.3 × 4 cm (5 × 2 × 1.6 inches). *Paul Shizume specimen and photo.*

Hill orebodies, for example, contains nontrivial amounts of manganese substituting for calcium, so its chemical formula is often written $(Ca,Mn)CO_3$ to acknowledge that fact. If instead manganese is the dominant metal in the A site, the mineral is rhodochrosite, but again, as in calcite, natural examples often depart from the pure end member in composition. Fortunately, the crust of bladed pink crystals on the Shizume specimen is sufficiently thick that we could use a portable X-ray fluorescence (XRF) unit to measure its composition. Although the results are approximate, especially for rough, unprocessed samples, the median of four analyses calculates to a composition of $(Mn_{0.64}Ca_{0.16}Mg_{0.19})CO_3$ and thus suggests the crystals are not calcite, but rhodochrosite. We also compared Raman spectra of the Shizume specimen (Fig. 2) to the spectra of known (chemically analyzed) rhodochrosite and calcite specimens in the RRUFF database (<https://rruff.info>) as an additional means of identification. One of the Raman peaks for rhodochrosite occurs at 183–185 cm^{-1} (= range of five specimens), but the corresponding peak for calcite is nearly 30 cm^{-1} lower, at 150–157 cm^{-1} (= range of six specimens). A second peak shows lesser but still substantial differences of

288-290 cm^{-1} for rhodochrosite versus 278-283 cm^{-1} for calcite. Observed values for the Shizume specimen are 183 cm^{-1} and 289 cm^{-1} , again strongly favoring rhodochrosite as the correct identity of the pink crystals.

The rhodochrosite in this specimen fluoresces orange-red under LW ultraviolet (UV) light, with a hue somewhat more orange than is typical of most local calcite. The fluorescence MW is similar but somewhat weaker, and the SW response is dim. The fine-grained calcite locally encrusting the rhodochrosite blades fluoresces yellowish-tan in the MW photo (Fig. 3), and the green-fluorescing grains are willemite in the matrix rock. One can readily understand, from both the daylight appearance of this specimen and its fluorescence, why it was thought to be calcite, especially since fluorescence in rhodochrosite from Sterling Hill was then unknown.

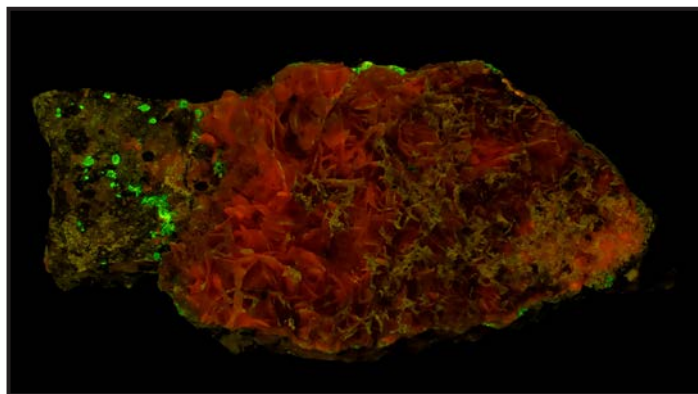


Figure 3: The Shizume rhodochrosite specimen shown under MW UV. Note the orange-red fluorescence, similar in hue to that of much local calcite. The green-fluorescing mineral is willemite. The late-stage calcite encrusting some of the rhodonite blades fluoresces dim yellowish tan in this view. *Paul Shizume photo.*

VERBEEK SPECIMEN ERV-2402

The specimen shown in Figure 4 is underwhelming compared to the Shizume specimen but is the one in which the fluorescence of local rhodochrosite was first documented. The rhodochrosite crystals in this specimen are of nearly white color with only a faint blush of pink. Associated with them, but far less numerous, are grains of white barite. These minerals

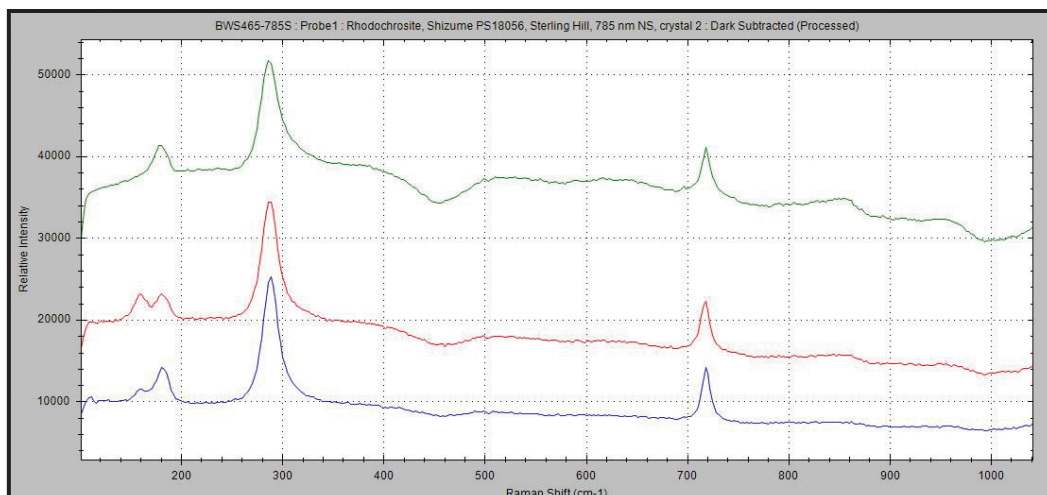


Figure 2: Raman spectra of two rhodochrosite crystals (blue and red lines) in the Shizume specimen, showing the mineral to be rhodochrosite rather than calcite (later confirmed by chemical analysis). The upper, green spectrum is for the Verbeek specimen discussed below.

sit upon a matrix of brown friedelite underlain by massive, dark brown tephroite with subordinate willemite, franklinite, and calcite. The rhodochrosite crystals were initially sight-identified as tilasite, which at first glance they resemble, and which also occurs at Sterling Hill as white crystals on friedelite matrix. Their peculiar fluorescence, however, prompted further study.

The identity of the white crystals as rhodochrosite was first indicated by Raman spectroscopy (Fig. 2, upper spectrum in green) in February 2021 and was later confirmed by a chemical analysis performed by Excalibur Minerals (Fig. 5). The chemical analysis suggests that the white crystals contain far too much manganese to be manganoan calcite and similarly eliminates kutnohorite as a possibility; the approximate composition calculates to $(\text{Mn}_{0.84}\text{Ca}_{0.16})\text{CO}_3$. These crystals fluoresce a dull, pale orange color LW (Fig. 6), best seen using a LW UV LED light source. The fluorescence under MW UV is negligible and under SW is almost nonexistent.

DISCUSSION

Rhodochrosite, a common carbonate mineral known from hundreds of localities worldwide, is popular among mineral collectors for its common pink to deep rose-red color and, from some localities, its large and well-formed crystals. Not all rhodochrosite, however, is pink: Specimens of gray to pale pink (nearly white), yellowish-gray, or pale brown color are less common but have long been known. Calcian rhodochrosites, especially, tend toward paler shades of pink than those higher in manganese content and are readily mistaken for calcite. As with so many of our other local minerals (members of the apatite, mica, and pyroxene groups,

FLUORESCENT RHODOCHROSITE FROM THE STERLING MINE, OGDENSBURG, NEW JERSEY
EARL R. VERBEEK AND PAUL H. SHIZUME

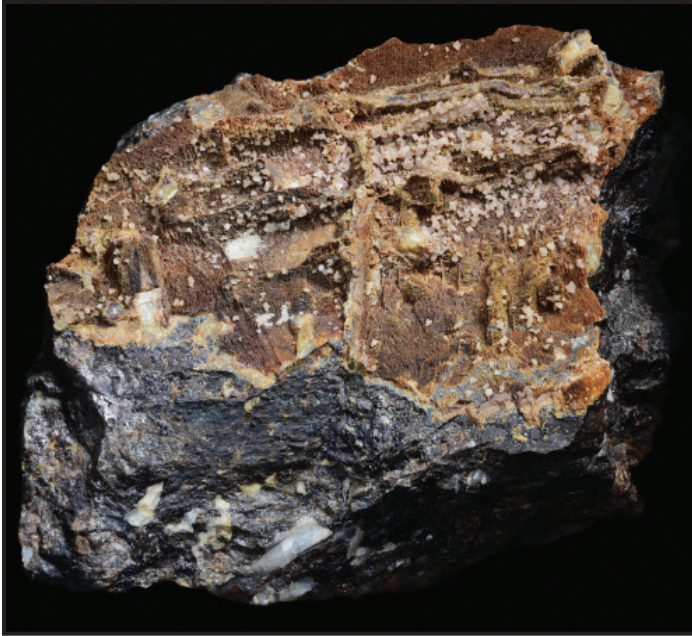


Figure 4a: Tiny (0.5-1 mm) crystals of faintly pink rhodochrosite scattered atop brown frieldelite on a very dark brown matrix of tephroite containing numerous grains of franklinite with subordinate willemite and calcite. The rhodochrosite, frieldelite, and tephroite were all confirmed as such by Raman spectroscopy. Specimen size: 4.0 × 3.4 × 1.2 cm (1.6 × 1.3 × 0.5 inches). *Earl R. Verbeek photo.*

Figure 4b: Close-up view of the tiny (0.5-1.0 mm) rhodochrosite crystals in the specimen of Figure 1. Note that the crystals are nearly white with only a faint blush of pink. Field of view is about 5 mm (0.2 inch) across. *Vandall King photo.*

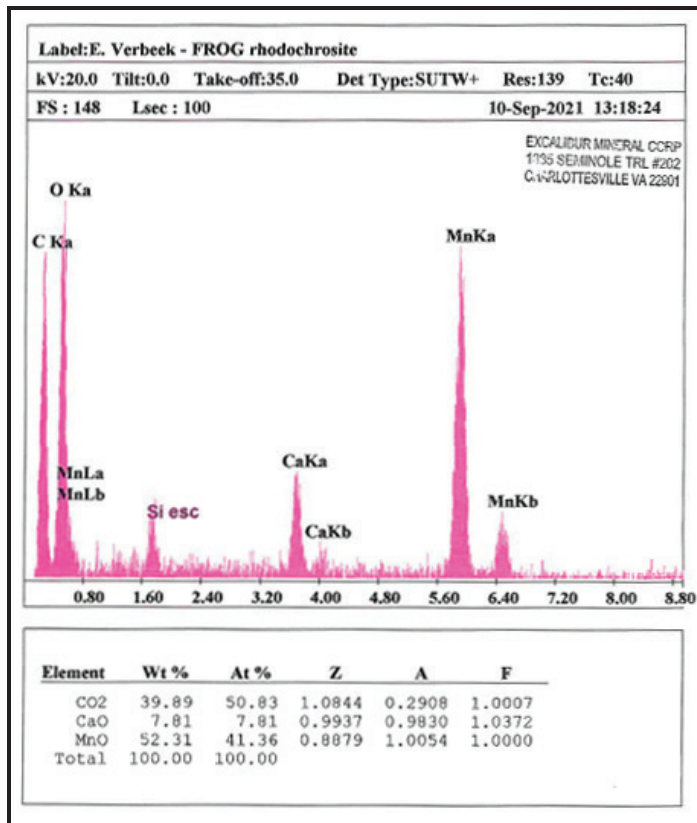


Figure 5: Results from an SEM-EDS (scanning electron microscope, energy-dispersive spectrometry) chemical analysis of the Verbeek rhodochrosite specimen.

for example), their colors in daylight are an insufficient and often misleading indicator of species identity. Note that, for both specimens described here, the authors did not assume that the initial identities were correct and turned instead to two different analytical techniques for more conclusive results, the results of one being used to confirm the results of the other. Such practice is especially important when semiquantitative rather than rigorously quantitative techniques are employed, as in our XRF analyses.

Despite the common occurrence of rhodochrosite on a worldwide scale, examples of fluorescent rhodochrosite are rare. The *Henkel Glossary of Fluorescent Minerals* (published

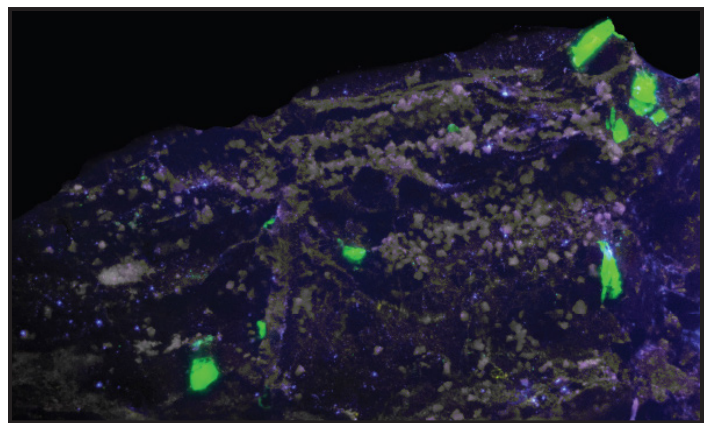


Figure 6: The specimen of Figure 4, shown here under LW ultraviolet light. *Vandall King photo.*

1989), for example, lists only 11 examples from nine localities. The Sterling Mine now joins the list, with rhodochrosite from two different assemblages and exhibiting different colors of fluorescence. This, plus knowledge that not all local rhodochrosite is of decidedly pink color, suggests that a possibly significant number of other fluorescent rhodochrosite specimens may be present in other collections, misidentified as calcite. We should also mention the reverse problem, of calcite specimens mislabeled as rhodochrosite. The most common examples in old collections are of fine-grained, white calcite (fluorescent red SW, of moderate brightness) associated with gray to white dolomite and dark brown serpentine, an example of which is shown in Figure 7. All specimens of this material so far studied by us have proven to be calcite.

Although the cause of the pastel orange fluorescence in the Verbeek specimen is unknown, the orange-red fluorescence in the Shizume specimen is probably activated by divalent manganese (Mn^{2+}), a known cause of red emission in rhodochrosite (see table 10.1 in Gorobets and Rogojine, 2002). For some of the local minerals (e.g., calcite, willemite) there is widespread belief in the “Goldilocks Principle,” which holds that there exists a content of manganese that is “just right” for stimulating maximum brightness of fluorescence. Blazek (1973), for example, attempted to quantify this effect for local calcite and suggested that optimum fluorescence was observed in calcites with Mn contents of 3%-5%. Palache (1928) also hinted at this effect when he noted that “normal” Franklin willemite is generally fluorescent under the iron-arc spark, but both the purest white willemite and those high in manganese fluoresce only weakly or not at all. From such observations grew a companion belief that minerals containing large amounts of manganese cannot fluoresce—a phenomenon known as concentration quenching. However, axinite-(Mn), a mineral that contains 12-16 wt.% MnO (Dunn, 1995, p. 417), was already known to fluoresce by the 1930s (Palache, 1935). Other local examples include bustamite (24-31 wt.% MnO) and rhodonite (32-42 wt.% MnO). All of these minerals fluoresce red, with Mn^{2+} as the known or probable activator. In light of these facts, the discovery of fluorescent rhodochrosite at Sterling Hill should not prove surprising.

ACKNOWLEDGEMENTS

The authors are indebted to Vandall King for permission to use two of his specimen photographs, to Glenn Waychunas for his review of an earlier manuscript, and to the Sterling Hill Mining Museum for continued access to their lab facilities, including the Raman spectrometer and the portable X-ray fluorescence unit, both of which were indispensable to this study.

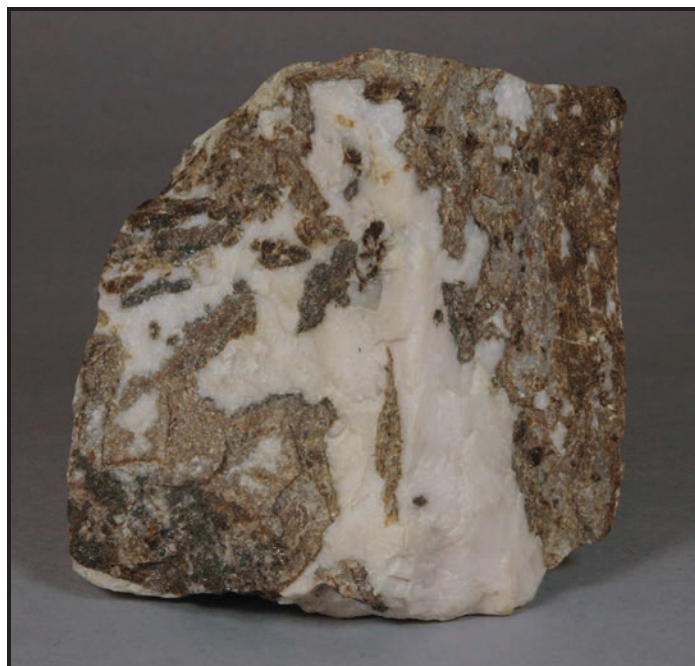


Figure 7: A calcite specimen of the type sometimes found in old collections mislabeled as rhodochrosite. The calcite is fine-grained, in some specimens almost like porcelain, and shows a modest red fluorescence SW. This example, from the E. Packard “Sunny” Cook collection (now specimen FMM-6218 of the Franklin Mineral Museum) was labeled “rhodochrosite,” the quotation marks suggesting that Sunny Cook suspected it was not that mineral. Specimen size: 10.5 × 10 × 4.5 cm (4.1 × 4.0 × 1.8 inches). Earl R. Verbeek photo.

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Mark Leger Remembered

The editors of *The Picking Table* were saddened to learn of the passing of Mark Leger in January of 2022. He was well liked and respected, as a mineral dealer and Franklin collector, a member of the Franklin-Ogdensburg Mineralogical Society (FOMS), a family man, and a good friend to many. We asked folks who knew him to remember Mark for us, with stories and photographs. It's pretty clear he was an integral part of our community; we had a hard time finding a photograph of Mark by himself—he was usually surrounded by friends and fellow collectors. The following are just some of the stories we received.



GEORGE V. POLMAN

I was deeply saddened to hear of the passing of my good friend Mark Leger. Although I can't remember the first time we met, I have known Mark for at least 25 years. Over the years we have shared endless amounts of laughter. Being from New Jersey myself, I not only appreciated his great knowledge of Franklin and Sterling Hill minerals, but also his sense of humor.

It was a difficult task, thinking about what I should write about Mark. I had numerous memories to draw from. Should I write about all the great times I had visiting him to purchase minerals, or all the times chatting with him twice a year at the Franklin shows, or maybe the time he visited me in Phoenix and offered me \$2,000.00 for a calcite specimen from Mexico that I paid \$45.00 for!? However, after careful consideration, I decided to share a story that most exemplifies the type of person Mark was.

Some years back, Debbie and I flew into Newark from Phoenix to visit my family and see the Franklin show. From the airport, Debbie and I went directly to Mark's house in order to see the specimens he had for sale. When we got to his house, he was busy melting down scrap jewelry in order to produce bullion bars. As we were watching this, he constantly offered Debbie any piece of jewelry she wanted (at a great price of course!). Debbie was thrilled at the offer but could not find anything that fit her taste.

As it got dark, I was still chatting with Mark as he melted away. He noticed that the conversation was getting a bit boring for Debbie. He then told her that toward the back of his yard, by a tree, he had lots of willemite/calcite specimens piled up. Debbie grabbed my UV lamp and went to the area and started to collect. You could tell from the sound of her voice that she was finding "killers" back there. She kept yelling out "Hey Mark, can I have this one, can I have that one?" He saw what a great time she was having and told her she could keep any pieces she wanted! Needless to say, although she didn't find any jewelry she liked, she had a great time collecting red-and-green that night. Mark was thrilled that she enjoyed herself, and that's the kind of person he was.

Mark will certainly be missed by the mineral community he loved so much. I too will miss him dearly and will pray that he rests in peace. May his family find comfort knowing Mark was loved by so many.

MARK DAHLMAN

I first met Mark Leger at an Ultraviolet mineral show, where he had for sale the largest pieces of esperite that I had seen. They were priced above my level, but picking up one that was the size of a loaf of bread gave us something to talk about. He said he wasn't allowed to say where the pieces came from, "just a miner"—but after a few more clues I was able to say "Ahh—Zipco!" Leger said, "What are you, FBI or something?" I realized later Mark let a lot of people feel like geniuses.

He was an excellent salesman that way, but as I dealt with him more, he felt less like a friendly salesman and more like a friend who sold me rocks. Well, rocks, memorabilia, microscope equipment, etc. He had earned a reputation as someone families could trust to help them sell off dad's collection. Part of the trust must have been his ability to tell you things you might not want to hear without being a jerk, starting or ending them with "not for nothin'" or "just sayin'." I'm sure part of the trust was being generous as well. The last time I saw him he gave another donation to the local junior rockhound program—a bucket of really nice carnelians he had collected.

In recent years a lot of us visited Mark's small shop in Chester, New Jersey, which, being a windowless room with a workbench, shelves, a fluorescent display, microscope, and a refrigerator, was a great place to look at rocks. Out back was a large shed that contained lots of larger pieces. It was easy to feel like a kid in a candy shop. He'd say something like "Wanna see a \$25,000 franklinite?" and he wouldn't be joking. He'd hand you a rock to look at under the UV light, and tell you to keep turning it until you saw the important part: "Keep it comin', keep it comin'." It seemed like I always had the rock wrong side up to start with for some reason.

A favorite memory of the Tucson show was walking into a Moroccan meteorite dealer's room with Leger, where Geoff Notkin was giving a presentation to someone—a reporter, perhaps. Leger was telling a story as we walked in with his usual "No, listen, listen..." elbowing me when I started laughing, and raising the volume, just having a good time. The look on Notkin's face, fearful of bulls entering the china shop, wasn't surprising. The Moroccan dealer had no choice but to give us his full attention, and while explaining the importance of a group of meteorites he was selling, the dealer couldn't help laughing as Leger kept interrupting with "whaaat" and "yaaah?" When I pulled the dealer aside for a quiet moment of negotiation he was still laughing and saying how much he liked Mark—apparently, they knew each other well enough to be on a first-name basis. Leger had friends all over.

He had experience in a surprising number of things. A shift in the conversation could uncover the next surprise—meteorites, gems, jewelry, raising a family, cars, guns, dogs,

motorcycles, carnivorous plants—the list continued to grow. He had a picture of himself and his dog riding his motorcycle—it was hard to imagine how that started. I wish I could ask him. I'm sure it would have been an interesting story.

CHRIS LUZIER

Mark was the kind of person who was larger than life and just a joy to know. He had an indomitable personality with that classic New Jersey/New York style and flair that was so entertaining to watch and listen to, especially from an out-of-stater's vantage point. The Franklin, New Jersey, personalities have always been one of my favorite parts of the hobby and always keep me coming back. Phrases that you don't typically hear down in Maryland, such as "it's not for nothin'," were so enchanting to someone who was starting to be immersed into the culture and characters of the Franklin-Sterling Hill hobby. Don't get me wrong, we have some nice double negative phrases down south too, but not with as much panache and flair as up in this region.

I met Mark in the first year that I started collecting Franklin-Sterling Hill specimens. It was at one of the Franklin shows where he was set up with his wares. I walked up, sheepishly kind of waved and then he shot me that huge Leger grin! I found myself immediately liking this guy, as he was smiling so big. It seemed like his face was going to explode! Not many people smile quite like that and it was so pleasantly disarming to a new guy in the hobby and most wonderful to behold and receive. He had quite a crowd around his table but took that time to acknowledge me personally. To my surprise, he started just showing me his favorites that he had out and why they were special.

You could tell that he was really enjoying himself as well, just passing on the knowledge and trying to help a newbie out. I marveled at how complicated some of the information was but was totally captivated by it as well. He was an excellent teacher, as he possessed the knowledge to make it fascinating, but most importantly, the enthusiasm to drive it home and leaving you begging for more. I learned a lot that day from him about rare species and getting to know various assemblages, with Mark pointing out the characteristics of each and why they mattered. Mineral assemblages are key at any mineral locality, but most especially at Franklin and Sterling Hill. For example, he showed me a couple of specimens of "caswellite" and pointed out how that can be a marker or indicator for margarosanite in a specimen, along with hyalophane feldspar. I went back and forth through the show that day and kept coming back to see him to continue the education and add some new specimens. It was just a wonderful day that he gave to me and I will always be grateful to him for many times like that.

Through the years, Mark and I would see each other mostly at local shows and sometimes, not-so-local shows, but I always enjoyed the fact that we just got to hang out. So many times when we would see each other, he would walk up with that mischievously, magic grin and say "Ay . . ., I saved this for you," and drop something incredible in my hand! I never knew what specimen it was going to be, but it would always be "a rump-kicker." I firmly believe that he was having as much fun as the recipient, as it was one of those Christmas morning sort of events. You had no idea what little dandy he brought you and he enjoyed the reaction just as much. I remember one such event about four years ago; a couple of us were hanging out and Mark pulled a piece out of his pocket and placed in my palm, one of the most spectacular gemmy willemite that I had ever seen. It was just solid, glassy gem willemite in amber, green, and orange, and amazingly translucent throughout. I just drooled over this piece and he should have passed me a bib ahead of time as well! It was simply spectacular and he knew it. He also could have most certainly "banged me over the head for it," but he just didn't. This piece "knocked my eyes out" as he would say, and it is one of my favorite pieces to this day. Thanks so much, Mark, for being such a gem. Your care, love, and humor will be missed!

PETER CHIN

Many people will remember Mark, "Mr. Markarosonite," as an unstoppable force, inexorable like gravity in the Franklin-Ogdensburg (FrOg) mineral collecting community. So many magnificent mineral specimens would somehow find their way to him. But he was not a mere collector and purveyor of fine mineral specimens, he was a man of many diverse talents and pursuits; he faceted a brilliant gem willemite, now in my collection. Some will remember that he also repaired cars. How many of us had frames and dents in their cars fixed by him? Scuba diving was another of his pursuits. When he told me that he and some friends were going to dive for lobsters off the New Jersey coast, I was astonished that any still existed. In any case, I asked him how three-eyed, green-glowing lobster tasted? Mark could do almost anything he put his mind to: Okay, maybe not neurosurgery, but certainly psychiatry!

Just a month had passed since I acquired the brilliant cut willemite, when Mark showed me a terminated blue willemite crystal that was partially coated with lennilenapeite (pictured on page 411, King et al., 2022). I paused to ponder the merits of acquiring it, which prompted Mark to say, "Well, if you don't take it, I'm gonna' cut it like the Cilen willemite!" My response was, "HOLY SMOKES (not exactly my spoken words), THAT'S SACRILEGE!" I quickly made up my mind. It is hard to believe that was 25 years ago.

In the early 1990s, Mark chased down margarosanites with the zeal of a fanatic, even offering a bounty for great margarosanite specimens and thereby instigating the *Great Margarosanite Wars*. The *Wars* were so intense that he inspired Dan Russel's classic, "Pearls for Swine," a *Mad Magazine* style revue on the subject.

I had a number of opportunities riding "shotgun" with Mark in pursuit of FrOglodite treasures. One memorable ride was like one of those in mafia flicks, sitting in a pickup truck speeding down a winding country road in total darkness, then to a farm shed and into the bright glowing aura surrounding a huge block of glorious hardystonite that weighed at least 400 pounds, a magic FrOg Stele! Collecting FrOg minerals is sometimes like that trip.

Goodbye, Mark, see you later!

KEN REYNOLDS

I met Mark, as so many of us did, at the Franklin mineral shows where he was selling minerals. Mark was one of the most knowledgeable people I have met. He was well-versed on gems and minerals from all over the world, but especially the Franklin-Sterling Hill minerals.

Mark was always there when I needed advice on buying or selling minerals. Many of the best specimens I own came from Mark. He always seemed to have the most incredible stuff.

On my last trip to Franklin, Mark and I were at the Franklin Mineral Museum, and we took time to walk through, to study and admire the minerals on display. His advice was to really look at the details and study the rocks so you know what to look for if you ever come across them. Great advice!

Over the years we became friends and would hang out together on my trips to Franklin. Mark had a personality that was like a magnet. I would never get tired of hanging out with him and he was usually the life of the party! I'll never forget his sense of humor, and that smile! Even though he's gone, his memories will live on because he truly was Mark "the legend" Leger.

MARK BOYER

Mark Leger was a larger-than-life character and his passing on January 12, 2022, was a shock to the Franklin mineral community. More than 30 years ago, Mark had assembled one of the most impressive collections of fluorescent Franklin minerals in a short period of time. He doggedly pursued collections, facetiously claiming to be an "FBI agent"—which he said stood for Franklin Basement Inspector. Mark's legendary status was clinched when earned the nickname "Markarosonite" from the sheer number and quality of margarosanite specimens in his display case. That display

case itself was of epic proportions—4 feet deep, 4 feet tall, and 10 feet wide with five stepped shelves inside. The front glass panel was a single pane of glass 9 feet wide mounted in a custom-made, hinged aluminum doorframe. The case was originally illuminated by five D-68 UVP display lamps.

In past professions, Mark worked as an auto mechanic and a jeweler. In recent years he worked for the HVAC company Fras-Air. His sideline business was The Leger Connection, mostly dealing in mineral specimens, but it also connected people with a wide assortment of collectibles from display cases to mining artifacts, rare Franklin books, lapidary equipment, and gemstones. In a broader, metaphoric sense, "the Leger connection" comprised countless friends and associates and numerous diverse interests.

In addition to Franklin fluorescents, Mark collected other mineral treasures such as carnelians, touchonites, agates, meteorites, and silver ore. He faceted diamonds and other gemstones. He collected antique oil lamps with ornate lampshades. He loved guns and shooting. He rode motorcycles. He made wine. He even commissioned artwork. Another of Mark's passions was carnivorous plants. His apartment had a balcony filled with Venus flytraps and other exotic flesh-eating plants that he took great pride in.

As a mineral dealer and appraiser, Mark was street-smart savvy and he had a reputation for being knowledgeable, fair, and trustworthy. He had so many friends and connections in the mineral hobby, he was a top-choice go-to man for moving or acquiring rock. Mark was a great salesman, but he usually had cool merchandise that would sell itself. Many times I'd go over to his place to buy rock and I'd end up buying something else—rare books on New Jersey geology, hurricane lamps, display cabinets both for myself and for the mineral museum, a rock saw and lapidary set-up, and even a Gretsch Electromatic guitar and amp, which got me taking music lessons for many years and buying additional guitars!

Mark had a natural enthusiasm for life, a great sense of humor, and keen aesthetic sensibilities. He was picky and discerning about what he collected—Mark wanted nothing but the very best. Less known about Mark was his passion for the history of Franklin. To that interest he commissioned an artist to paint scenes of Franklin's vanishing mining heritage. The first painting was of the Buckwheat Open Pit. The second was of the two smokestacks of the old zinc company mill. The third was of the Parker Shaft, based on historic photos.

For a few years, he would treat his close friends to bottles of his homemade red wine (discretely) at Franklin shows. Mark was also an avid firearms enthusiast and shooter, and he reloaded his own ammo. When he wasn't at the shooting range, he was out riding one of his motorcycles. His favorite was his Honda XR400 Enduro dirt bike. He liked to ride it around my property when I wasn't at home, and I would half-

jokingly/half-seriously tell him not to chew up my lawn and make donuts in the dirt.

Mark had a great sense of adventure and spontaneity. One time he stopped at my house unannounced, and asked me, “Boyer, what are you doing now?” I told him that I was about to do something mundane like mow the lawn, and he said, “You can do that anytime. Come with me and my artist friend John to scope out some sites for his next painting.” After driving around Franklin for an hour, Mark decided he wanted his artist friend to paint the two smokestacks of the New Jersey Zinc Company Mill No. 2 as seen from the perspective of the lower-level mill ruins. Unfortunately, the mill site had become obstructed by a decades-old growth of forest. But that didn’t deter Mark. Over several days, Mark chain-sawed down about 20 trees to give his artist a clear view of the stacks. Mark supervised the painting, instructing his friend to capture details such as individual bricks in the stacks, the bent lightning rods at the top, and a few vultures perched on the rim! The subject of Mark’s next commissioned artwork was a historic view of the Parker Shaft headframe. Mark consulted the Franklin Mineral Museum archives for reference images to use. That painting was nearly completed by December 2021, when Mark called me to say how excited he was after he saw how good the painting looked.

Mark was a natural entertainer. From his expressive gestures and salty speech to his favorite parlor trick of dangling a spoon on his nose, he was the life of any party. In recent years, Mark was part of the social group that gathered at Ted Bayles’s rock and history shop in Franklin. Mark loved the store and the social interaction there, and he helped the fledgling shop stock good rocks and draw regular clients. Mark was a regular attendee at the monthly get-togethers at Ted’s shop, and he always brought food and drink, and often a flat or two of rocks.

Mark was generous with his time and expertise, whether it was helping someone with a car repair or mentoring new mineral collectors by guiding them on whirlwind tours of every room at the Franklin Mineral Museum. He also loved to take people on impromptu driving tours through Franklin, explaining where certain great collections came from. Mark was an astute judge of a person’s character, and to those he trusted, he shared both his mineral knowledge and his canny and colorful assessments of people, places, and events. Mark earned my respect for his shrewd insights and candor.

Mark was always on the phone texting or talking with his friends. I’ll miss those frequent cryptic phone-tag exchanges we had, which usually went: “Hey, Boyer, it’s Leger. Call me back.” I’d call him back, curious as hell about what he wanted to tell me, and say, “Hey, Leger, it’s Boyer. What’s up?” He was that rare type of person who had a major influence on the Franklin collector community and culture, and he is sorely missed.



THE LEGER FAMILY

1. Were Mark’s family and kids involved in the mineral hobby at all?

Danielle: We were always dragged to rock events. We spent many weekends at the mine/museum and shows with dad. We’d help pack up the pickup truck, set up tables, and then during the show, we’d walk around or lounge in the truck bed playing games with each other. He tried to teach us (I think he was desperate for sons) but it wasn’t really our thing.

Donna: As we got older, we’d go to shows and buy things that were “pretty.” He tried to teach us about the different specimens, but we never really paid attention.

Dana: Yeah, one day we were hanging out by the river by our house, and we were digging around. I found this rock and I asked Dad what it was. He started getting excited and shouted “It’s a leavearight! ... like “leave it right there.” I really thought I’d found something special because he said it with such enthusiasm, but it was junk. He laughed so hard at his funny joke.

Donna: My daughter, Piper, who’s six now, loves to collect rocks she finds. She has a jar full of Pop-Pop’s rocks and likes to add “special ones.”

Danielle: Dad’s hobbies were always evolving. He went from Franklin minerals, to agates, to precious stones. We’ve all taken turns faceting stones on the kitchen table and freezing in the garage, cabbng rocks. I still have a scar on my hand where the wheel caught me once.

Dana: Dad was my chaperone on our school field trip to the Sterling Hill Mining Museum. My group got all the questions right because he helped us out.

Danielle: The first class I had freshman year of high school was Earth Science. I walked in and when roll was called



and the teacher pronounced my name as “Ledger” instead of “Leg-ger,” I knew I was in trouble. I walked up to the desk and he said to me, dead-pan, “You’re Mark’s daughter?” *insert eye roll from me here.* Every time the answer in class was unknown by everyone else, the teacher would say “Danielle knows this.” It was very embarrassing sometimes.

Dana: How about explaining to your friends you’re going to a “rock show” this weekend? They all thought we were talking about concerts... um, not quite.

2. Did you live with rocks and minerals as decorations? Or was that separate? Did you find your father’s weird mineral-collecting friends interesting or fun?

Donna: The living room had two big cabinets full of meteorites, agates, and other specimens. As an adult with a house of my own, my dad gave my husband and me rocks to display inside and outside of the house. We have some in the living room and some in the front yard. As kids, we’d use rocks as currency when we needed something ... oh, I have a cavity? Bring a rock to the dentist. My car needs brakes? Bring a rock to the mechanic.

Danielle: When we were really little, my dad built his own black box in our grandparent’s basement. It was always so cool to bring friends over and show them dad’s glow-in-the-dark rocks. None of our other friends had stuff like that at their house.

Dana: There were black lights all over the house. Loupes to look at precious stones all over the place, like in his glove box in the truck. And there were always people coming to the house at all weird hours.

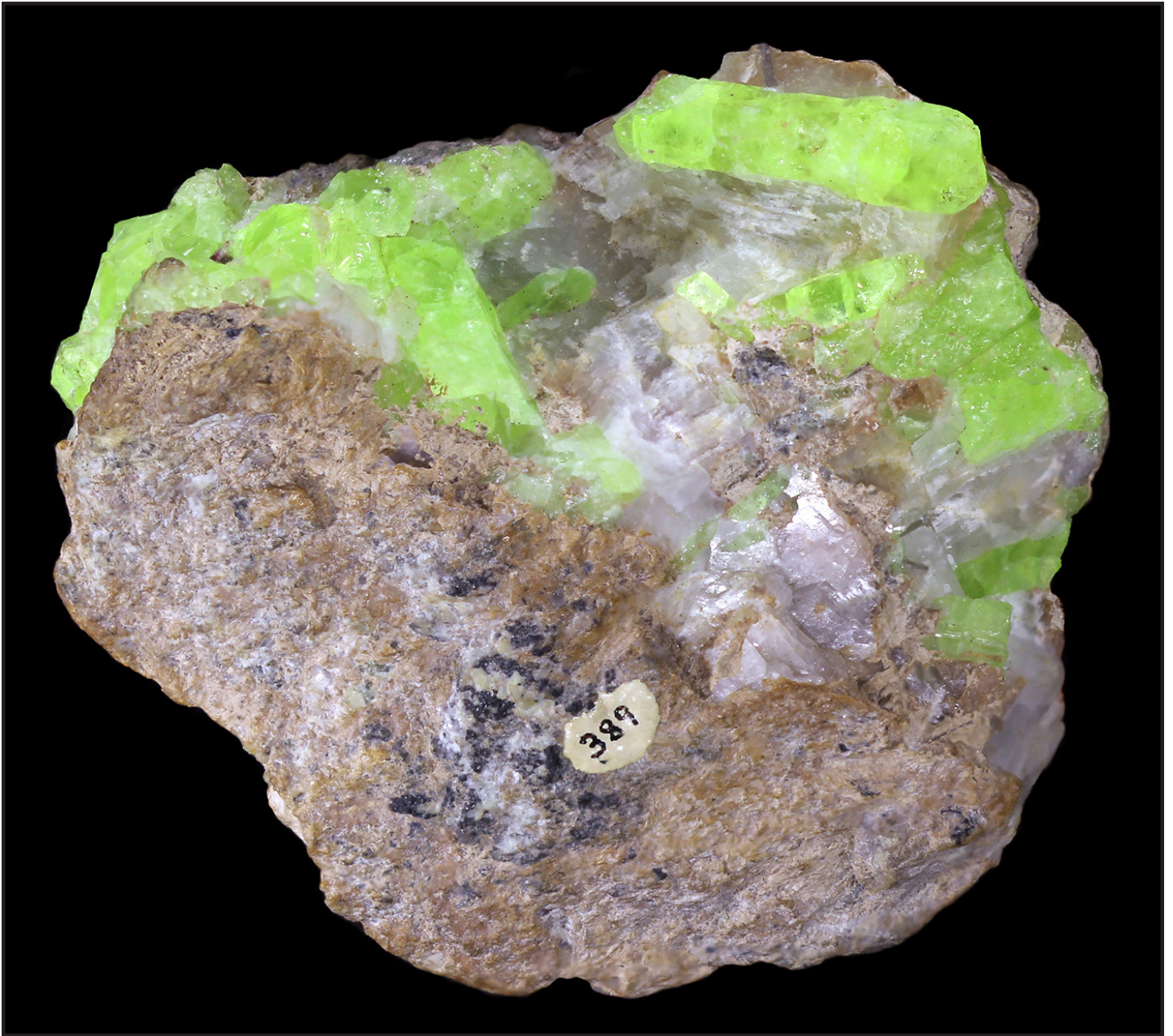
Danielle: But I don’t think we realized how different our dad was than other dads. Rocks like that really aren’t common. It’s a small percentage of people who are into this hobby. The cool thing is all the different backgrounds of everyone; careers, other hobbies, etc. The day Dana was born we were with a “rock guy” looking at trains. We had to leave the park early because mom went into labor and I remember getting so upset because we had never done anything like that before. We’d spend summer days at a lake house on a boat with a “rock guy” and his family. All those different experiences we might not have had if dad didn’t have all these friends. We spent weekends chasing barn cats at a “rock guy’s” farm. It was always exciting.

3. What was your sense of how Mark Leger fit into the Franklin mineral collecting community?

Danielle: I always told my friends that Dad had his name on a locker in a museum, that he was pretty special. I was always pretty proud of him. I also remember him having a large display at the Morris Museum.

Donna: We knew he was very well known, but until recently we never realized how much of a pillar he was. The impact of his death on this community shows us just how big of an influence he was.

Dana: We’ve had so many people reach out to us. It’s amazing how far his reach has gone. He will forever be “Mark Leger.” He will always be remembered and his stories will be shared over and over again. ✕



Willemite, Franklin Mine. Daylight-fluorescent willemite crystals in direct sunlight, with grayish-white barite, tan andradite, and black franklinite. Horizontal field of view 8 cm (3 inches). From the Joseph Orosz collection. *Photo by Vandall King. p. 207, The Mineralogy of Franklin and Ogdensburg, New Jersey—A Photographic Celebration.*

