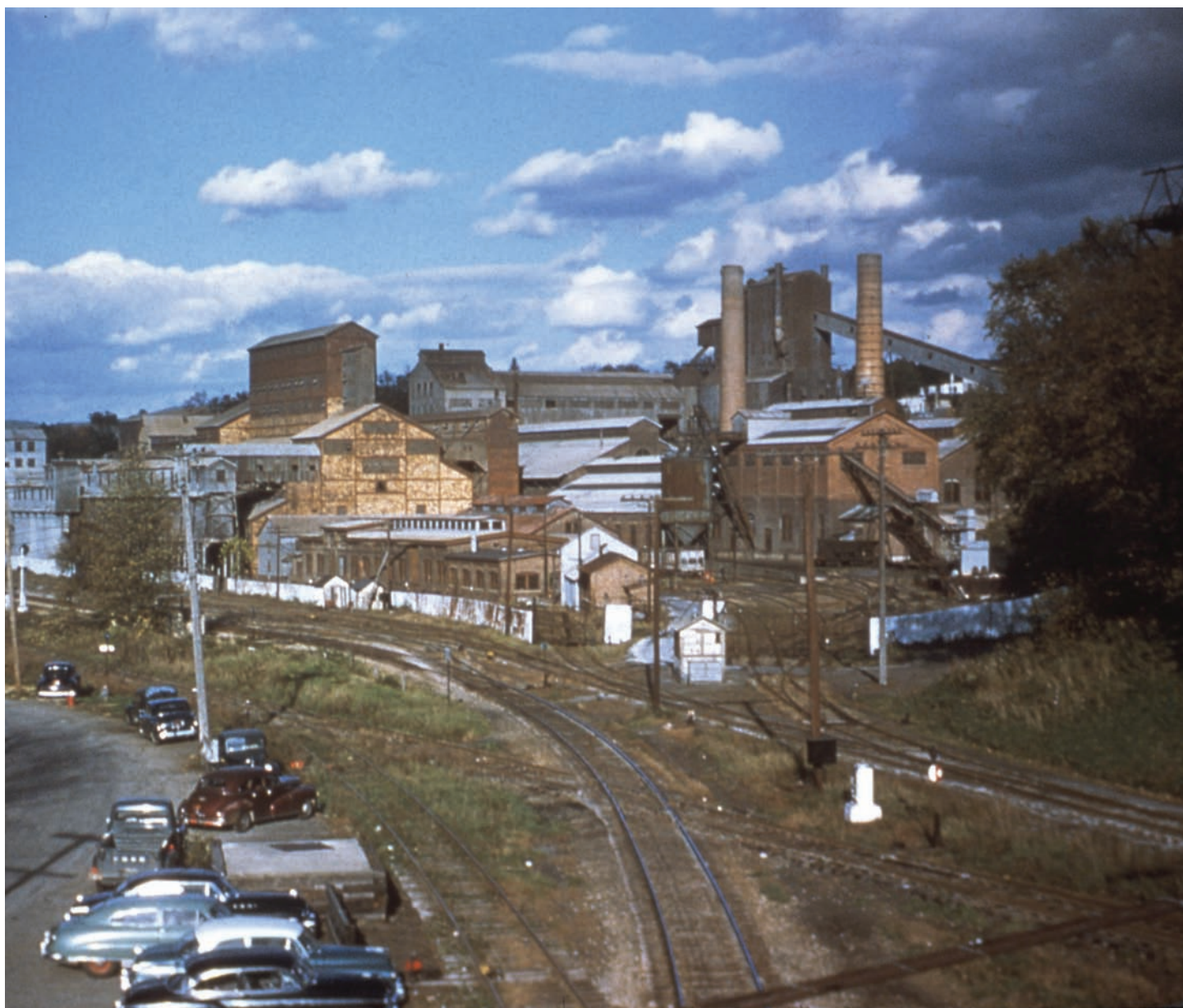


THE PICKING TABLE

JOURNAL OF THE FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY

VOL. 52, NO. 2 – FALL 2011

\$10.00 U.S.



INSIDE THIS ISSUE

FRANKLIN MILL SITE, PART II
HARRY WAIN, FOUNDER OF RAYTECH
NJESA SHOW REPORT, MINERS DAY

YELLOW-FLUORESCING CALCITE FROM STERLING HILL
HARDYSTONITE FLUORESCENCE EMISSION SPECTRUM
REMEMBRANCES: BOB JENKINS, JOE KAISER

THE FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY, INC.

OFFICERS AND STAFF 2011-2012

PRESIDENT 2011-2012

RICHARD J. KELLER, JR.

13 Green Street
Franklin, NJ 07416
H: (973) 209-4178
C: (973) 222-2088
FranklinNJ@hotmail.com

VICE PRESIDENT 2011-2012

CHARLES BUTTS

9 Trail West
Kinnelon, NJ 07405
H: (973) 838-1292
C: (973) 970-0716
cbuttsrun@optonline.net

SECOND VICE PRESIDENT 2011-2012

JAMES VAN FLEET

222 Market Street
Mifflinburg, PA 17844
C: (570) 412-2978
vanfleet@bucknell.edu

SECRETARY

TEMA J. HECHT

600 West 111th Street, Apt. 11B
New York, NY 10025
H: (212) 749-5817
C: (917) 903-4687
thecht@att.net

TREASURER

DENISE KROTH

240 Union Avenue
Wood-Ridge, NJ 07075
H: (201) 933-3029
DeniseB111@aol.com

ASSISTANT TREASURER

WILLIAM KROTH

240 Union Avenue
Wood-Ridge, NJ 07075
H: (201) 933-3029
WKroth8394@aol.com

TRUSTEES

Richard C. Bostwick (2011-2012)

Mark Boyer (2011-2012)

George Elling (2010-2011)

Bernard T. Kozykowski (2011-2012)

Steven M. Kuitems, DMD (2011-2012)

Chester S. Lemanski, Jr. (2010-2011)

Lee Lowell (2010-2011)

Bill Truran (2011-2012)

Earl R. Verbeek, PhD (2010-2011)

Edward H. Wilk (2010-2011)

LIAISON WITH THE EASTERN FEDERATION OF MINERALOGICAL AND LAPIDARY SOCIETIES (EFMLS)

Delegate	Richard C. Bostwick
Alternate	TBD

COMMITTEE CHAIRPERSONS

Field Trip	Bernard Kozykowski
Nominating	William Kroth
Program	Charles Butts
Swap & Sell	Chester S. Lemanski, Jr.
Slide Collection	
Custodian	Edward H. Wilk

THE PICKING TABLE

VOL. 52, NO. 2 – FALL 2011



Fall – Winter 2011 Activity Schedule, <i>Tema J. Hecht</i>	2
Errata	3
From the Editor's Desk, <i>Richard J. Keller, Jr.</i>	4
Notes From the Franklin Mineral Museum, <i>Lee Lowell</i>	5
Hardystonite Fluorescence Emission Spectrum, <i>William C. Mattison</i>	7
FOMS Spring 2011 Field Trip Reports, <i>James Van Fleet</i>	10
Harry Wain, Founder of Raytech, <i>Mark Isaacs</i>	11
The Mill Site – Part II, <i>Bernard T. Kozykowski</i>	17
Miners Day and Volunteer Appreciation Day, <i>Tema J. Hecht</i>	24
Scenes From the NJESA Gem & Mineral Show, <i>Tema J. Hecht</i>	26
The 39 th Annual NJESA Gem & Mineral Show and Outdoor Swap, <i>Steven M. Kuitems, DMD</i>	28
Yellow-Fluorescing Calcite From Sterling Hill, <i>James Van Fleet</i> <i>and Earl R. Verbeek, PhD</i>	29
Remembering Bob Jenkins, <i>Steven C. Misiur</i>	33
Joe Kaiser, <i>Tema J. Hecht</i>	35
Joe Kaiser, Dumpmeister, <i>Anne M. Wronka</i>	36
A Good Joe, <i>Steven C. Misiur</i>	36

PUBLISHER

THE FRANKLIN-OGDENSBURG
MINERALOGICAL SOCIETY, INC.

MANAGING EDITOR

RICHARD J. KELLER, JR.

EDITORS

RICHARD C. BOSTWICK
MARK BOYER
GEORGE ELLING
DON HALTERMAN
TEMA J. HECHT
EARL R. VERBEEK, PhD

PHOTO EDITOR

TEMA J. HECHT

ART DIRECTOR

CAITLIN ANNE MACK

PRINTING

ACORN GRAPHICS, INC.

Subscription to *The Picking Table* is included with membership in FOMS. For membership, back issues, and information, write to:

Denise Kroth, Treasurer, FOMS

240 Union Avenue
Wood-Ridge, NJ 07075
DeniseB111@aol.com

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 double-spaced Microsoft Word documents to Richard J. Keller, Jr. at FranklinNJ@hotmail.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 and chlorine-free paper.

ABOUT THE FRONT COVER

Franklin Mill no. 2, as it appeared decades ago when the Franklin mine was in full swing. The view is to the northeast from the bridge over the railroad tracks on North Church Road. The cars at lower left are parked along Susquehanna Street, and a portion of the Palmer Shaft headframe is visible at upper right. The mineral-collecting area that would later become known as “the Mill Site” is beyond the buildings in the center of the photo.



FALL – WINTER 2011 ACTIVITY SCHEDULE

SATURDAY, SEPT. 17, 2011

9:00 AM – NOON

FOMS Field Trip

Collecting on the Buckwheat Dump. Fee charged.

10:00 AM – NOON

FOMS Micro Group, Franklin Mineral Museum.

1:30 PM – 3:30 PM

FOMS Meeting and Lecture, Franklin Mineral Museum:
Rare Earth Minerals; Strategic “Uglies,” by John Sanfaçon.

SATURDAY AND SUNDAY, SEPTEMBER 24-25, 2011

****55TH ANNUAL FRANKLIN-STERLING
GEM & MINERAL SHOW**

Sponsored by the Franklin Mineral Museum.
Franklin Middle School, Washington St.,
Franklin, New Jersey.

9:00 AM – 6:00 PM SATURDAY (INDOORS),

10:00 AM – 5:00 PM SUNDAY (INDOORS).

The ticket price covers the show, The Pond outdoor swap,
and admission to the Franklin Mineral Museum:
\$7.00 per day for adults, \$4.00 per day for children (6-16).

The Pond Swap-and-Sell, sponsored by the FOMS,
takes place outdoors on the school grounds
from 7:30 AM to 6:00 PM on Saturday,
and from 9:00 AM to 5:00 PM on Sunday.
Show admission required.

The FOMS Annual Banquet starts at 6:30 PM on Saturday
at the **Lyceum Hall of the Immaculate Conception Church**,
located at the south end of Franklin’s Main Street.
Tickets may be obtained at the FOMS show table for \$18.00.

The meal is an all-you-can-eat buffet; soda, tea,
and coffee are included.

◆◆ BYOB ◆◆

After the banquet there will be an auction for the benefit
of the FOMS. Please plan on donating a good specimen,
artifact, book, etc.!

** Saturday and Sunday: Events at the Sterling Hill
Mining Museum.

For more information, please call: 973-209-7212.

Or you can visit the website at

www.sterlinghillminingmuseum.org

SATURDAY, OCTOBER 15, 2011

9:00 AM – NOON

FOMS Field Trip

Collecting at the Taylor Road site.
Meet at the Franklin Mineral Museum. Park, and walk
from there. Fee charged.

10:00 AM – NOON

FOMS Micro Group, Franklin Mineral Museum.

1:30 PM – 3:30 PM

FOMS Meeting and Lecture

Franklin Mineral Museum:

*The New Jersey Zinc Company, and the Lehigh and
Hudson River Railroad,* by John Bazelewich.

****NIGHTTIME MINERAL COLLECTING:**

6:00 PM – 10:00 PM

STERLING HILL MINING MUSEUM.

Collecting permitted on the Mine Run Dump and
in the Fill Quarry, Passaic Pit, and “Saddle” area.
For museum members only. \$5.00 admission fee
plus \$1.50 for each pound of material taken.

OCTOBER 22, 2011

9:00 AM – NOON

FOMS Field Trip

Collecting at the Braen Quarry
(a.k.a. Franklin Quarry), Cork Hill Road,
Franklin, New Jersey.

Registration begins at 8:30 AM. Gates will close at 9:30 AM
and everyone must be off-site by noon.

!!! Field trip gear required !!!

SATURDAY, OCTOBER 29, 2011

**** 22ND ANNUAL ULTRAVIOLATION SHOW,**

9:00 AM – 4:00 PM

A Show-Swap-Sell session featuring
fluorescent minerals *only*. \$2 donation.
First United Methodist Church, 840 Trenton Road,
Fairless Hills, Pennsylvania.

**“IF YOUR ROCKS DON’T GLOW,
YOU’RE AT THE WRONG SHOW.”**

Table space available. For information, call 856-663-1383
or e-mail ultraviolation@yahoo.com.

SATURDAY, NOVEMBER 5, 2011

**** 10:00 AM – 3:00 PM****Franklin Geology Field Trip led by Earl R. Verbeek, PhD**

Assemble across the street from the Franklin Mineral Museum at 9:30 AM. Departure time is at 10:00 AM by caravan to geological sites in Franklin and nearby Vernon Valley.

!!! BYO LUNCH and BEVERAGE and BEER FOR EARL !!!**** 6:30 PM – 9:30 PM**

**Night Dig on the Buckwheat Dump,
for the benefit of the Franklin Mineral Museum.**

Doors open at 6:00 PM for check-in and mineral sales. Admission \$10.00 adult, \$8.00 children 3-12 years of age. Poundage fee charged. Call for details: 973-827-3481.

SATURDAY, NOVEMBER 19, 2011

9:00 AM – NOON**FOMS Field Trip****Sterling Hill Open Cut. Sterling Hill Mining Museum.**

Registration: 8:45 AM – 9:30 AM. Persons arriving after that time shall be required to wait until 10:00 AM, pay the normal admission fee, and collect only in areas routinely designated for such.

10:00 AM – NOON**FOMS Micro Group, Franklin Mineral Museum.****1:30 PM – 3:30 PM****FOMS Meeting and Lecture****Sterling Hill Mining Museum, GeoTech Center:**

The Sterling Hill Mine – As It Was, by Bernard Kozykowski.

✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕

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 memberships in other organizations, may be required.

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

The FOMS Activity Schedule is compiled by Tema J. Hecht
thecht@att.net

Thanks go to Charles Butts, Bernard Kozykowski,
Earl Verbeek, Ralph Thomas,
the Franklin Mineral Museum, and the Sterling Hill Mining
Museum for this information.

Stephen Sanford, in an e-mail message to the current editor on February 24 of this year, alerted us to errors in two of his articles published in earlier issues. Corrections appear below.

FALL 2009 ISSUE, VOLUME 50, NO. 2

In reference to the article, *Black Ore at the Franklin and Sterling Hill Orebodies* on pp. 34-35 of this issue, corrections and clarifications are as follows:

Page 34, right column, first paragraph, lines 4-7: The symbols were printed incorrectly, and one of the values was omitted. The text should read: “Dr. Peter Leavens judged oxygen activity (fO_2 in geologist’s shorthand) to be -17, whereas fO_2 in the red ore is -12.”

Page 35, first paragraph below the bulleted items: In the fourth line, change “Trotter Mine crusher” to “Taylor Mine crusher.”

FALL 2010 ISSUE, VOLUME 51, NO. 2

In reference to the article, *Unaltered Sterling Hill Willemite* on pp. 19-20 of this issue, corrections and clarifications are as follows:

Page 19, right column, second paragraph: Words were left out of the second sentence, rendering it unintelligible. It should read: “This ancient feature was reactivated several times, both as an initial mylonite (impermeable texture) and later as a breccia with interstices that allowed fluid passage (Metsger, 1990).”

Page 19, right column, second paragraph: The first part of the last sentence should read: “An earlier worker likened the microscopic appearance of this colored willemite to that of altered harzburgite...”

Page 19, right column, sixth paragraph: The citation as given is incorrect. Change to read as follows: “In 1976, S.F. Squiller did a geochemically exhaustive examination of franklinite.”

In the last sentence, eliminate Fe so the sentence reads “...extensive movement of elements such as Zn and Mn under high-grade metamorphic conditions.”

Page 19, right column, last paragraph: Add the italicized words so the sentence reads: “If one were to repeat the determination of isotopic ratios on *unaltered Sterling Hill willemite*, would the results duplicate the data in normal Franklin ore?”

Page 20, right column, at end: Add reference: Squiller, S.F. (1976), The geochemistry of franklinite and associated minerals from the Sterling Hill zinc deposit, Sussex County, New Jersey. M.S. thesis, Lehigh University, Bethlehem, Pennsylvania, 231 pp. ✕

FROM THE EDITOR'S DESK

RICHARD J. KELLER, JR. 13 GREEN STREET FRANKLIN, NJ 07416

Greetings once again to FOMS members, both old (used?) and new. Whereas this is the sophomore effort of *The Picking Table* for this managing editor, we think you'll find the end result to be anything but sophomoric.

Once again, we were fortunate to receive article submissions from a wide variety of FOMS members from all across the country. *The Picking Table* is for FOMS members, by FOMS members, and will continue to be.

The first thing you'll probably notice is that we've adopted a new style for OUR *Picking Table*.

A new era, a new look. For a while, our journal roughly mirrored the *Mineralogical Record* in style and layout, and then gradually came to have its own identity. We continue that process here, with a new design that is classic in its appearance and easy on the eyes. We hope you'll like it, but if you don't, please tell us, preferably by e-mail at PTmemberfeedback@gmail.com.

From as far away as a land supposedly called California, we were able to procure an interesting and informative article from Mark Isaacs, a member of the West Coast contingent of the Fluorescent Mineral Society. His article is about the late Harry Wain, founder of Raytech Industries, Inc., and features recollections of Harry from not only Mark, but also Harry's daughters, Morgan and Cynthia. It includes photographs of some very fine specimens from the Wain collection, including two stunning Second-Find wollastonite specimens.

We also have a review of the April NJESA Mineral Show in Franklin from Dr. Steven Kuitens, as well as a literary and visual documentation of Miners Day 2011 provided by Tema Hecht. It was both a joy and a privilege to see Jack Baum and his wife, Augusta, attend for a significant part of it. I know I hope to look this good wh'if (contraction of "when" and "if") I'm 95 years old! And the photo of Jack in his home with Franklin Mineral Museum collections manager Lee Lowell shows that it's not a trick of the light. Jack is just still looking snappy!

Also in this issue of the *PT*, we address (and perhaps dispel a few beliefs about) "longwave barite" from both Franklin and Sterling Hill. Luckily, we had access to a few outstanding specimens, which made illustrating this misnomer simple. No need for bifocals or an electron microscope to see, in these photos, what others have been seeing for years. While it was easy to understand why folks had this pegged as longwave barite, it was even easier to prove that identification erroneous. Read and learn....

One article that's expected to be of special interest to a lot of our members is Bernie Kozykowski's submission on the Mill Site. The subject alone was enough for us to decide that we should dedicate the cover of this *Picking Table* to the Mill Site. Bernie's story will send waves of nostalgia over many

of our readers. But when you add the photographs Bernie was able to provide for the article (we had to pore over a few hundred slides), well...need I say more? It makes me wish I'd been living in Franklin, as I now do, when I graduated from college. That was around the time the Mill Site was becoming a classic, and organized, dig location. Bernie's article makes me almost melancholy that I missed these great times for Franklin collecting, but at the same time, creates a feeling that I was there. And some of the photos of people you're likely to recognize are PRICELESS!

On the more somber side, this issue contains well-deserved tributes to two of the more visible members of FOMS, both of whom had a particularly strong connection to Sterling Hill: Bob Jenkins and Joe Kaiser. Bob, a geologist for DuPont, often came to Sterling Hill to map underground; his efforts resulted in additions to the local species list, as reported in past issues of this journal. Joe Kaiser, meanwhile, was virtually omnipresent at Sterling Hill digs, FOMS field trips, and our local mineral shows, all of which he helped coordinate and run.

From a business perspective, during a recent meeting of the FOMS Board of Directors, we discussed the concept of possibly raising FOMS membership dues. After all, it's been years since the last time dues were raised. But since no one could come up with a viable and fiscally sound reason for us to do it at that point in time, the discussion was shelved. Thus, for the foreseeable future, FOMS members get to enjoy the benefits of their membership dues for the same fee they've paid since 2004.

And finally, a distressing situation with a potentially happy ending. With our deadlines for this issue rapidly approaching, Caitlin, our graphic artist, and two others were robbed at gunpoint. Despite all of the time spent cancelling credit cards and all of the other things people need to do when they've lost their wallet/purse, Caitlin made the time, sometimes working into the wee hours of the morning, to keep the *PT* on its original schedule.

But as I write this, we've received word that the suspected perpetrator of this crime is in police custody, and Caitlin will be visiting the precinct hoping to positively ID him.

In the Spring 2011 *PT*, I mentioned that Caitlin's first venture as our graphic artist was a "trial by fire". Another such reference, in light of recent events, might well be considered "politically incorrect"...so I'll not make one!

There is much more to this *PT*, as you'll see when leafing through its pages. The contributing authors and editorial staff have, once again, spent hundreds of hours creating yet another quality issue of *The Picking Table* for your enjoyment. So stop listening to ME! Go enjoy it! ✕

NOTES FROM THE FRANKLIN MINERAL MUSEUM

LEE LOWELL COLLECTIONS MANAGER, FRANKLIN MINERAL MUSEUM 32 EVANS STREET FRANKLIN, NJ 07416

WORLD-CLASS FLUORESCENT DISPLAY

The most popular exhibit in the Franklin Mineral Museum for most of our visitors is the 32-foot-long fluorescent display of the local minerals. A major effort was made this year to upgrade this display by adding new specimens and deaccessioning others whose response to the shortwave UV lamps was less than desirable. Expert collectors were asked to volunteer their time to upgrade this Franklin-Sterling Hill collection. This group included Dick Bostwick, Mark Boyer, Rich Keller, Steve Kuitems, and Earl Verbeek. The primary catalyst for this project was the purchase earlier this year of many Sterling Hill fluorescent specimens from the Robert Hauck collection. This was made possible through the help of Earl Verbeek and Steven Phillips. Some of these rocks display unique and attractive patterns. Some are huge. Mark Boyer and Rich Keller spent several days, roasting under the hot UV lamps, to move the larger specimens onto the high shelves in the display area. The improvement to this display is remarkable. Changes will continue to be made as new fluorescent additions become available.

PETE DUNN COLLECTION

Over the winter months, several museum volunteers knowledgeable in Franklin-Sterling Hill minerals closely examined the collection of Dr. Pete J. Dunn, which the museum obtained in the fall of 2010. This collection contains some excellent specimens for display purposes, as well as geological reference specimens and a great number of petrographic thin sections. Many of these specimens are pictured in Dr. Dunn's monograph. Suggestions were made to retain some of the specimens for the museum's collection. Others will be offered for resale. Some of what Pete called his "pretty rocks" were put on display in the museum. Earl Verbeek took photographs of many of the specimens.

LARGE COPPER SPECIMEN ACQUIRED

The museum purchased from James Zigras, wheeler-dealer extraordinaire, a 54-pound copper specimen from the Franklin Mine. Mr. Zigras obtained this specimen from the Paterson Museum through a trade. Until someone can reliably refute the claim, it is believed that this specimen is the largest known Franklin copper. The museum does not know the pedigree of this specimen except that it was born and raised in the Franklin Mine.



Jack Baum (right) and Lee Lowell, in the kitchen of Jack's home, two days after his 95th birthday. Mark Boyer photo.

MINERAL COLLECTIONS

This year many mineral collections were acquired through purchases and donations. Steven Phillips and Ray Latawec are the museum's designated team for evaluating collections and either making offers or suggesting donations for tax-deduction purposes. From these collections many specimens were added to the museum's permanent collection. The mineral labels for the specimens put into the museum's exhibits show the collector or donor names.

2011 FALL GEM & MINERAL SHOW

With a smaller and aging group of volunteers that provides the heavy-duty work for the fall show, the museum decided that the time has come to get some professional help for managing the show. The museum board approved Steven Phillips's suggestion to hire outside help, so P&E Solutions, a local business, will manage the show this fall. What a relief this will be for those who contributed many hours in the past to put on this show. It is unfortunate that Joe Kaiser is no longer with us to appreciate this change, for he was one of the most conscientious and hardest-working volunteers the museum had for this show.

VISITING JACK BAUM

On Sunday, March 27, Mark Boyer and I visited Jack Baum at his home. Jack's wife, Augusta, greeted us and asked us to come into the living room, where Jack was waiting for us. We said we preferred to talk to Jack around the kitchen table, where we had met Jack in past visits. We had many questions to ask Jack about his life's work for the New Jersey Zinc

Company. He told us some of his recollections and many amusing stories. Jack has always had a refreshing sense of humor. Mark brought along a Swedish johnbaumite that a fellow collector wanted Jack to sign. After an hour or so, we ended our visit, but before we left, Jack gave me a package containing a rock. He often told me in the past that he had a rock with my name on it. During one of my earlier visits, when he showed me the fluorescent specimens in his basement, he pointed out a First-Find wollastonite—this was the rock with my name on it! What a treasured gift from a great man.

SPECIMENS DEACCESSIONED

Over the winter months, a select committee of esteemed collectors was put to work to closely review the museum's display of local minerals, both white light and fluorescent, to advise the museum board on which specimens could be deaccessioned. This committee, along with the collection's manager, spent three sessions at the museum and provided their recommendations. Because none of the museum's donated collections have any restrictions as to their disposition, the deaccessioned specimens will be made available for sale.

MILL SITE ROCKS

The museum board decided that the six million pounds of Mill Site rocks donated to the museum in 2007 will not be available for collecting until 2013. The board's reasoning was that the museum needs to preserve these rocks for future collecting to extend the life of the Buckwheat Dump.

SCHOOL SCIENCE AWARDS

The museum annually sponsors a high school science award program, which was again managed by museum volunteer Anne Wronka. Five of the area schools conduct science fairs in which the students display and describe their scientific topics. Each school provides the name of a senior who excelled in science, and the museum gives these students cash awards. Awards are presented by the Franklin school superintendent, Dr. Tom Turner, at the annual Miners & Volunteer Appreciation Day, which this year took place on May 1.

STEVE SANFORD'S RETURN

After a year or so of health issues, Steve has returned to one of his favorite jobs, i.e., volunteering his expertise in identifying specimens from collections acquired by the museum. Steven Phillips has been helpful in getting Mr. Sanford to the museum and assisting him with some of his needs. The museum is thankful for Mr. Sanford's excellent mineral identification services. ✂

Now Available!!

The first 50 Years of
THE PICKING TABLE,
the "Official Journal of the Franklin-
Ogdensburg Mineralogical Society,"
on DVD in Adobe Acrobat PDF format.



Ninety-three issues, 2,256 scans, and hundreds upon hundreds of both B&W and color photos of minerals, events, collectors, as well as articles, event schedules, past officers and editors, mineral descriptions, etc.

All pages have been scanned from ORIGINAL issues of the *PT*. In some cases "imperfections" will be evident such as yellowing of 50-year-old paper and the occasional marginal note, but all literary inclusions are clearly legible and the photos are true to the originals.

The knowledge you will acquire as you read through these issues will be evident.

Price for the 2-DVD set is \$45.00, plus \$5.00 shipping. Personal checks should be made payable to "FOMS" and mailed to Denise Kroth at:
240 Union Ave., Wood-Ridge, NJ 07075.
Technical support is provided by Richard Keller
(e-mail: PTMemberFeedback@gmail.com).

HARDYSTONITE FLUORESCENCE EMISSION SPECTRUM

WILLIAM C. MATTISON 732 CLOPPER RD., APT. #22 GAITHERSBURG, MD 20878

ABSTRACT

Fluorescence emission spectra were obtained for two specimens of hardystonite illuminated by 254 nanometers (nm) ultraviolet (UV) light. Results show hardystonite's fluorescence to consist of a single peak between 57 and 61 nm wide at half-height, and a peak wavelength between 353 and 357 nm.

INTRODUCTION

The mineral hardystonite, to date known in nature only from Franklin, New Jersey, is much sought by collectors for its attractive fluorescence under shortwave UV light. Hardystonite is a calcium zinc silicate ($\text{Ca}_2\text{ZnSi}_2\text{O}_7$), a member of the melilite group. Depending on individual perception and some variation from specimen to specimen, its fluorescence has been described as blue, violet-blue, blue-violet, and violet. Hardystonite can be associated with as many as six of at least ten other fluorescent minerals (barite, bustamite, calcite, clinohedrite, cuspidine, esperite, fluorapatite, margarosanite, willemite, wollastonite) in specimens exhibiting a seemingly infinite variety of multicolored fluorescence patterns.

In the 1980s and again in 2000, fluorescence emission spectra for many minerals were published in the *Journal of the Fluorescent Mineral Society* (Modreski and Newsome, 1981; Newsome, 1982; Newsome, 1985; Stoertz, 2000). Hardystonite, however, was not one of those minerals. During this same period, Manuel Robbins reported that the fluorescence of synthetic hardystonite activated with small amounts of lead peaked in the longwave UV (Robbins, 1983). The emission peak in the UV part of the spectrum made me curious.

In the late 1990s, I was conversing with a physicist about color perception. This physicist, who asked to remain anonymous, mentioned that he was getting a new spectrometer and offered me the opportunity to try it on a fluorescent specimen. I accepted and selected two hardystonite specimens for an informal experiment.

THE SPECIMENS

The first specimen consists of massive hardystonite transected by two broad, parallel layers of nearly opaque, pale yellowish green willemite. Franklinite, minor calcite,

clinohedrite, and other minor, unidentified minerals are also present. The hardystonite is mottled, ranging from nearly opaque medium gray to almost transparent and colorless. Tiny grains of an unidentified black mineral are scattered randomly throughout. When illuminated with 254 nm UV light, the fluorescence of the hardystonite is also mottled and of deep blue-violet color. Those areas that are nearly opaque in daylight show fluorescence of moderate brightness, whereas the hardystonite that is nearly transparent in daylight fluoresces only weakly.

The second specimen consists of massive hardystonite with irregular blebs of willemite, leucophoenicite, garnet (probably andradite), and franklinite. Minor clinohedrite is also present, as are small quantities of other minerals not yet identified. In daylight the hardystonite is very pale gray and opaque. When illuminated with 254 nm UV light, it fluoresces a moderately bright, deep blue-violet color.

EQUIPMENT USED

The spectrometer used was an Optische Messtechnik model CAS 140 B made by Instrument Systems. Its detector is capable of collecting data from 190 through 792 nm. A SuperBright 2000 UV lamp made by UV Systems was used as the excitation source to produce fluorescence in the hardystonite samples. A shortwave-blocking plastic (Frost King 5-mil vinyl sheeting) made by Thermwell Products Company, Inc, was also used in this experiment for reasons explained below. The author does not have transmission data on this plastic, but it is easily demonstrated that it is opaque to 254 nm (SW) UV light.

EXPERIMENTAL PROCEDURE

First, the UV lamp was wrapped in the shortwave-blocking plastic, and the light transmitted through this plastic was directed at the first hardystonite specimen. Because the plastic blocks shortwave UV light, any light emitted or reflected from the hardystonite specimen could not be due to fluorescence stimulated by shortwave ultraviolet light. The resultant spectrum (Fig. 1) was thus used to identify spurious peaks that are not part of the shortwave emission spectrum of hardystonite.

Second, the plastic was removed from the lamp. The first specimen was then illuminated with the unwrapped lamp, and a spectrum was taken of the light coming off the

hardystonite. This spectrum (Fig. 2) consists of the light already measured in the first spectrum (Fig. 1) plus the light emitted from the hardystonite as true fluorescence in response to shortwave (254 nm) excitation. An identical procedure was then followed with the second hardystonite specimen, resulting in the spectrum shown in Figure 3. Each spectrum consists of relative intensity measurements for each of 1024 wavelengths from 196.93 nm through 792.27 nm inclusive.

The only visible light in the room where the experiment was done, other than that emitted from the hardystonite, was from the UV lamp, the LEDs on the spectrometer and in the PC, and the PC's monitor. These sources proved inconsequential, as all of the spectra showed negligible light coming from those sources through nearly the whole of the visible spectrum and the near infrared. The only substantial quantities of light measured from the samples lay in the visible violet and longwave UV part of the spectrum, in conformity with the observed fluorescence of the mineral.

ANALYSIS

A spreadsheet was used to plot the files of spectral data. The spreadsheet allows the user to limit the range of wavelengths plotted, and to specify the maximum relative intensity value corresponding to the upper end of the y-axis. This provided a way of "clipping" and "magnifying" selected portions of the spectrum, resulting in a "zoomed-in" or "close-up" view of any interesting parts.

In this way even minor spectral peaks could be identified. Once all the data were tabulated and the spectra plotted, the various spectral peaks were compared to the known positions of mercury emission lines (CRC, 1996) to identify those peaks not associated with hardystonite fluorescence. Moreover, the same data allowed an estimate of the accuracy of the spectra. Inasmuch as the spectrometer was not calibrated, any deviation between the measured wavelengths of the mercury emission lines and their known positions reflects the magnitude of error in the readings. For all nine mercury emission lines, ranging in wavelength from 302 nm to 772 nm, the maximum error was only 0.88 nm and the median error less than 0.5 nm. Given that the average interval between measured readings is 0.58 nm (equal to about 1.5 observation intervals), it seems safe to assume that the wavelength measurements for each spectrum are accurate to within +/- 1 nm. For the present purposes, this is a truly negligible error.

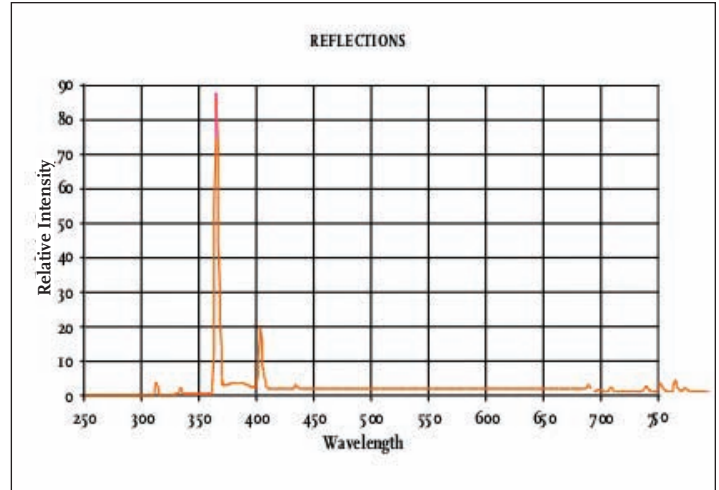


Figure 1. The measured spectrum for hardystonite sample no. 1, taken with shortwave ultraviolet-blocking plastic on the ultraviolet lamp.

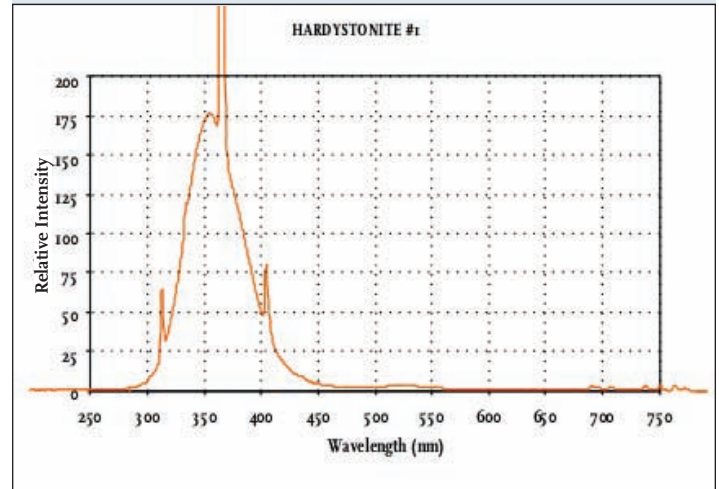


Figure 2. The fluorescence emission spectrum of hardystonite sample no. 1 under 254 nm excitation.

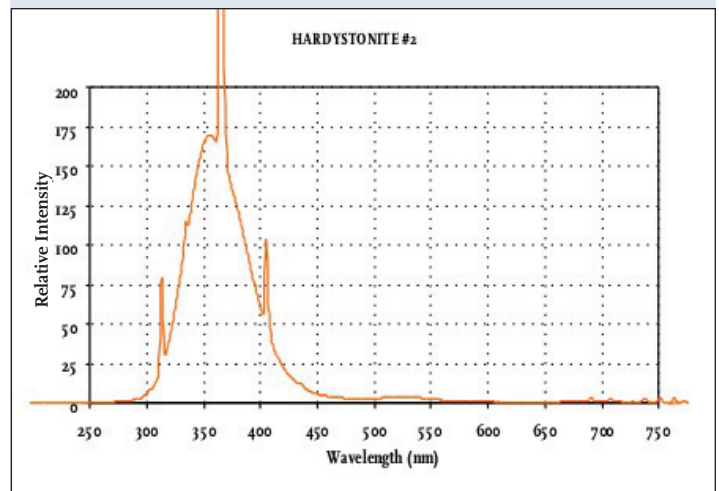


Figure 3. The fluorescence emission spectrum for hardystonite sample no. 2 under 254 nm excitation.

RESULTS

Both Figures 2 and 3, for the two hardystonite specimens, show a broad peak centered on about 355 nm, superimposed on which are five much narrower peaks of varying intensity. Additional narrow peaks, all of quite low intensity, lie at higher wavelengths, most near the red end of the visible spectrum and extending into the near infrared (right side of each spectrum). Comparison of these spectra with that of Figure 1 shows that all but the broad peak are present in all three spectra—thus only the broad peak is part of the hardystonite emission spectrum, and the narrow peaks are due to other causes, mostly mercury emission lines “leaked” from the UV lamp and reflected from the specimen. Other small peaks, all of negligible intensity and barely if at all visible on the spectra of Figures 2 and 3, possibly are due to ambient light from the LEDs and computer monitor used in the experimental setup.

The emission spectrum of hardystonite then consists of a single emission peak centered on a wavelength of about 355 nm. The peak width (at half height) is about 60 nm (Figs. 2 and 3). Given that the sensitivity of the human eye to light extends only to about 400 nm on the low-wavelength end, it is apparent that most of the fluorescent light emitted by hardystonite is invisible to us. The long-wavelength end of the emission peak, however, extends into the visible range, and thus we perceive the fluorescence as of violet color. Few would describe the fluorescence as bright, for two reasons: First, as already mentioned, most of hardystonite’s emission lies in the UV region, and second, the human eye is only minimally sensitive to violet light to begin with. Collectors of the local fluorescent minerals are well familiar with this effect, as in most specimens it is difficult to fully appreciate the fluorescence of hardystonite without “overexposing” such other associated minerals as esperite, willemite, and calcite.

CONCLUSION

Fluorescence emission spectra were obtained for two specimens of hardystonite illuminated by 254 nm UV light. Though the spectrometer was not calibrated, comparison of the spectra with the published mercury line emission spectrum shows the wavelength calibration to be off by less than one nanometer.

The fluorescence spectrum of each hardystonite specimen appeared not quite symmetric about its peak. The fluorescence of the first specimen peaked at

354.6 nm, decreasing to half-height 24 nm from the peak on the shorter-wavelength side, and 34 nm from the peak on the longer-wavelength side. The fluorescence of the second specimen peaked at 355.7 nm, decreasing to half-height 25 nm from the peak on the shorter-wavelength side, and 36 nm from the peak on the longer-wavelength side. Allowing for a one-nanometer wavelength calibration error, I conclude that hardystonite’s fluorescence under 254 nm excitation consists of a single peak between 57 and 61 nm wide at half-height, and peaking at a wavelength somewhere between 353 and 357 nm.

ACKNOWLEDGEMENTS

I would like to thank Dr. Yoshi Ohno, a physicist in the Optical Technology Division of the National Institute of Standards and Technology in Gaithersburg, Maryland, for his advice and help in analyzing and interpreting the spectral data. I also thank Arthur Taylor, a programmer in the Meteorological Development Lab of the National Weather Service in Silver Spring, Maryland, for his help with the software used to analyze and plot the spectra. Dr. Earl Verbeek, Richard Bostwick, Dr. Glenn Waychunas, and Don Newsome provided helpful comments in the early stages of understanding the spectra.

REFERENCES

- Chemical Rubber Company (1996), *CRC Handbook of Chemistry and Physics*, 76th edition, pp. 10-57: CRC Press.
- Modreski, Peter J. and Newsome, Don (1981), The Colors and Spectral Distributions of Fluorescent Minerals: *Journal of the Fluorescent Mineral Society*; vol. 10, pp. 7-56.
- Newsome, Don (1982), The Colors and Spectral Distributions of Fluorescent Minerals, Part II: *Journal of the Fluorescent Mineral Society*, vol. 11, pp. 7-32.
- Newsome, Don (1985), The Colors and Spectral Distributions of Fluorescent Minerals, Part III: *Journal of the Fluorescent Mineral Society*, vol. 13, pp. 2-28.
- Robbins, Manuel (1983), *The Collector’s Book of Fluorescent Minerals*: Van Nostrand Reinhold Company Inc., New York, pp. 141-142.
- Stoertz, George (2000), The Further Side of Darkness: *Journal of the Fluorescent Mineral Society*, vol. 21. ✕

FOMS SPRING 2011 FIELD TRIP REPORTS

JAMES VAN FLEET BERTRAND LIBRARY BUCKNELL UNIVERSITY LEWISBURG, PA 17837

SATURDAY, MARCH 19TH: STERLING HILL MINE, PASSAIC AND NOBLE PITS, MINE RUN DUMP.

This dig was our first without the assistance of Joe Kaiser, and we missed his presence. Mike Gunderman took on the thankless task of checking folks in and out, weighing the material they had collected, and generally being large and in charge! Turnout was about 15 FOMS members, and some serious excavation was done in the Noble Pit. The brothers Hauck agreed to move the caution tape back a few yards for our visit, so at least one boulder containing wollastonite was attacked with vigor.

SATURDAY, APRIL 16TH: BRAEN QUARRY, CORK HILL ROAD.

This dig was, as always, well attended. Mike Gunderman again kept us organized, and signed in more than 20 members. After our mandatory safety meeting, we were given access to a large new boulder field of freshly blasted material on the south end of the quarry. FOMS members immediately began to find interesting material, including some large, dark diopside crystals, and rock that included norbergite, phlogopite, diopside, and an unknown surface coating, providing four-color shortwave fluorescent specimens. One mystery was eventually cleared up: The chalky, greenish rocks that were collected turned out to be heavily compressed/fractured marble, basically pulverized by the blasting.

SATURDAY, MAY 21ST: BUCKWHEAT DUMP, FRANKLIN MINERAL MUSEUM.

This dig was attended by five FOMS members. Some good specimens of lamprophyre (“camptonite”) dikes cutting calcite were collected. The best find of the day was a good-sized boulder of chlorophane fluorite with its distinctive teal-green fluorescence when freshly broken. Due to the heat and the merciless sun, this was a short field trip.

SATURDAY, JUNE 18TH: TAYLOR ROAD SITE, FRANKLIN MINERAL MUSEUM.

Always a popular dig site, this trip was supervised by Bernie Kozykowski, our field trip coordinator. A great deal of rock was moved around, including one boulder that weighed more than a ton, and rolled a surprising distance. [Editor’s note: But for a lucky land in a trough, that dislodged boulder would have kept going, right through



FOMS members at the Braen Quarry, doing what they do best: collecting mineral specimens in a large area of freshly blasted rock. James Van Fleet photo.

the neighbor’s fence, thus ending FOMS field trips to the Taylor Road site forever.] Silvery sphalerite, chlorophane fluorite, fluorapatite, amazonite microcline, and even fluorescing quartz, and some scheelite were uncovered.

SATURDAY, JULY 9TH: NATIONAL LIMESTONE QUARRY, MOUNT PLEASANT MILLS, PENNSYLVANIA.

Unwilling to let the dig season come to an end, we organized a trip out of town. As a result of a couple of hundred postcards sent to the membership, we had ten FOMS members show up for this dig. The limestone quarry is one of the last in northeastern Pennsylvania to allow clubs to dig, free of charge. After our mandatory safety meeting, we drove right into the quarry bed, and collected lots of calcite crystals, including some “golden” calcite that fluoresces orange yellow, both short- and longwave. Although the quarry has long been a location for purple fluorite and strontianite, we were able to find only small spots of these. The economy has prevented any recent blasting, but the quarry still hosts a lot of mineral club digs!

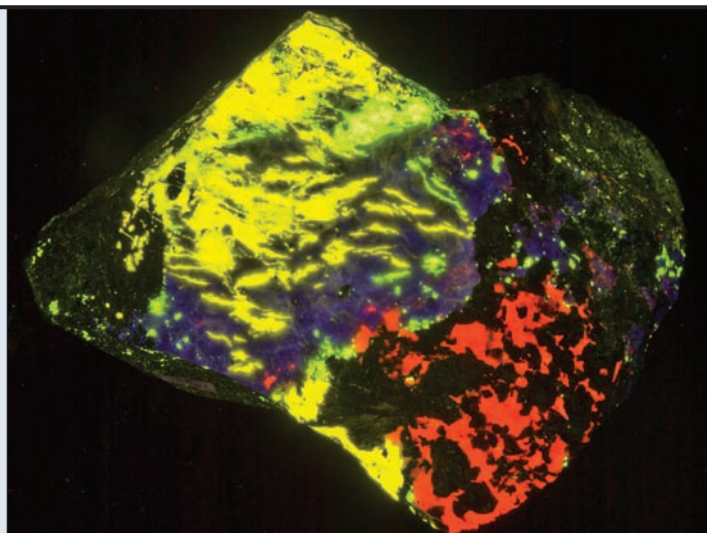
A unique feature of the National Limestone Quarry is an occurrence of wavellite, reached by taking a bumpy road to the top of the adjoining Lime Ridge. The quarry owner had gotten a worker to expose some fresh material, and we were able to find wavellite veins and rosettes, and even some botryoidal coatings. Typically, this bright green mineral is obscured by brown iron oxide deposits, and it takes some serious cleaning to bring out its best color. ✕

HARRY WAIN, FOUNDER OF RAYTECH

MARK ISAACS FMS NORTHERN CALIFORNIA CHAPTER OAKLAND, CA 94605 MARK.ISAACS@SBCGLOBAL.NET



Harry Wain's hand-made display case. Mark Isaacs photo. The ultraviolet light on top of the case is a Raytech model SW-218.



"Wispy" esperite with hardystonite, calcite, and willemite, 6 x 4 x 3 inches. Mark Isaacs photo.



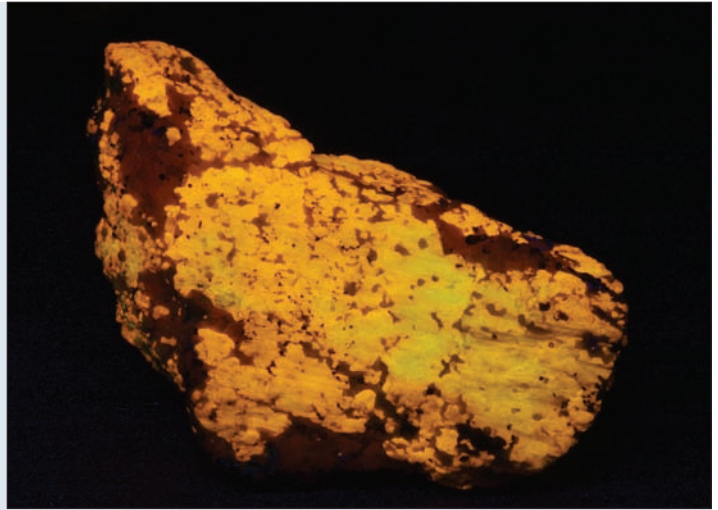
The author, standing before more than a dozen prime specimens from the Harry Wain collection, as shown under combined daylight and shortwave UV light. Note in particular the rich barite specimen in front, and the two orange-fluorescing wollastonite specimens in center back.

Just as children dream of becoming superheroes and Madonna dreams of a big comeback, Franklin collectors dream of opening an old cardboard box at an estate sale and finding chunks of esperite, rare wollastonite, and thick seams of radiating willemite. For those of us living thousands of miles from the Mecca of fluorescence in New Jersey, however, the odds of that fantasy becoming reality are about as high as Democrats and Republicans holding hands and singing *Kumbaya*. Yet against all odds, I had exactly this experience, not once but twice. In both cases, the collection once belonged to a man whose innovations were important in the evolution of fluorescent mineral collecting, but whose name is little known today.

Like many local rock clubs, the Mineral and Gem Society of Castro Valley (MGSCV) in the San Francisco Bay area occasionally gets donations of collections from the estates of deceased mineral enthusiasts. As I am not only a member of the Fluorescent Mineral Society and FOMS, but also the MGSCV member who organizes the fluorescent display for the club's annual show, I am occasionally asked to take a look at donations thought to have some value as fluorescent specimens. This was the case in late January 2009, when the president of our club asked me to look at a collection being offered for donation by Morgan Wain, a woman living in Menlo Park, California. The president suggested that there might be something worth using as giveaways for kids visiting our upcoming public show in March.



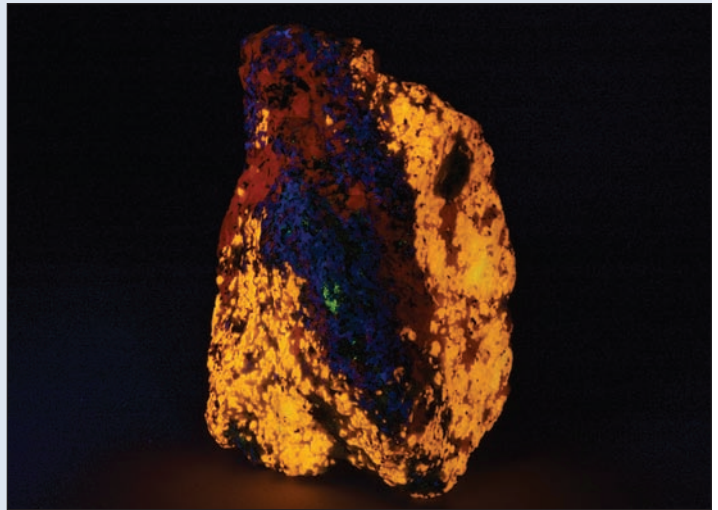
Second-Find wollastonite in calcite, 5.5 x 3 x 2 inches, daylight view. Earl Verbeek photo.



Same specimen as above, shown under shortwave UV light. Earl Verbeek photo.



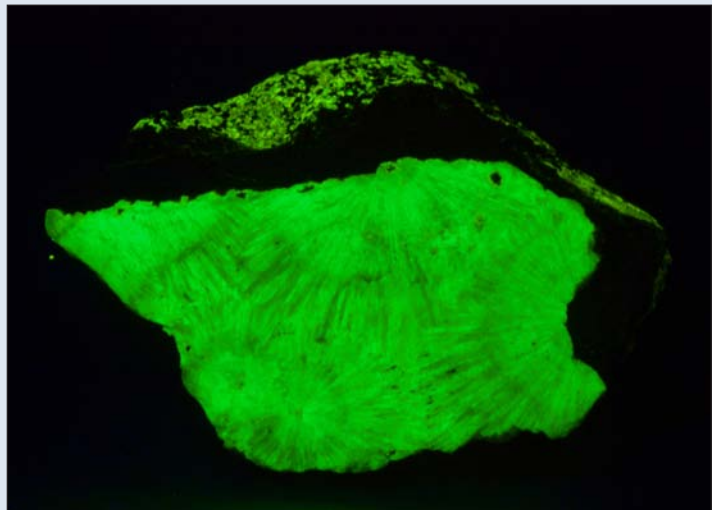
Second-Find wollastonite in calcite, with hardystonite and minor willemite, 6.5 x 4 x 2 inches, daylight view. Earl Verbeek photo.



Same specimen as above, shown under shortwave UV light. Earl Verbeek photo.



Radiating willemite, 3.5 x 3 x 1.3 inches, daylight view. Earl Verbeek photo.



Same specimen as above, shown under shortwave UV light. Note that the willemite in the matrix rock (top of photo) fluoresces a somewhat more yellowish-green than the later radiating willemite coating the fracture face. Earl Verbeek photo.

It's a nice drive to Menlo Park over a bridge spanning the San Francisco Bay from where I live in Oakland; and in any case, I never turn down a chance to check out fluorescent rocks. Morgan Wain turned out to be an extremely pleasant and friendly young woman, a psychologist in her professional life, who was delighted to pass her father's collection on to a club with a sincere interest in his hobby.

When I arrived, the rocks were already boxed up and sitting in the driveway along with many nice nonfluorescent minerals being donated to the club. Figuring I'd check out the rocks when I got home, I started loading them into my SUV when Morgan asked if I'd also like a display box that her father had built for fluorescent demonstrations. Though covered with dust, the peep-style wooden box was obviously beautifully built, had an old Raytech shortwave ultraviolet (UV) lamp on top, and large stylized Raytech "R" symbols painted on the sides. It was only when I asked about those symbols that Morgan enlightened me. Her father, Harry Wain, had been the founder and president of Raytech Industries!

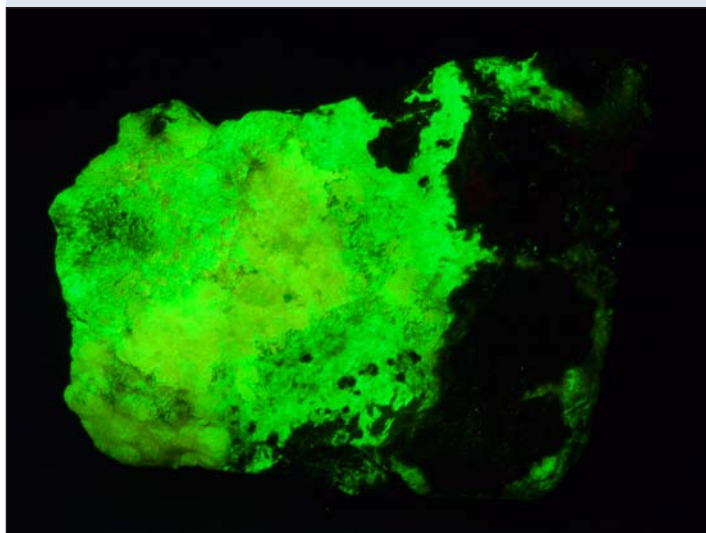
I was in for quite a shock when I finally got home, unwrapped all those carefully stowed specimens, and took a look with my own UV lamps. The very first rock I checked turned out to be a solid esperite, 3 by 5 inches in size and weighing several pounds! Five more esperites came out of that box, two others that were solid, and three that also contained hardystonite, calcite, and willemite. One is a gorgeous "wispy" esperite, with brilliant yellow streaks of esperite blending into blue-fluorescing hardystonite. The box also contained a number of other Franklin classics, including a specimen of calcite with massive barite, and another of solid barite.

Incredibly, lightning struck a second time almost exactly two years later when I acquired another portion of the collection from a second daughter, Cynthia Wain. Upon opening one box from this second lot, I was stunned to discover four brilliantly glowing orange specimens, two with hardystonite. These were unlike anything I had seen before outside of a museum and were later identified as "Second-Find" wollastonites through photographic correspondence with Richard Bostwick. A fifth beautiful specimen was identified as fibrous wollastonite by Glenn Waychunas, fellow West Coast collector. Yet another box yielded both a beautiful radiating willemite and a specimen of exsolution willemite in tephroite.

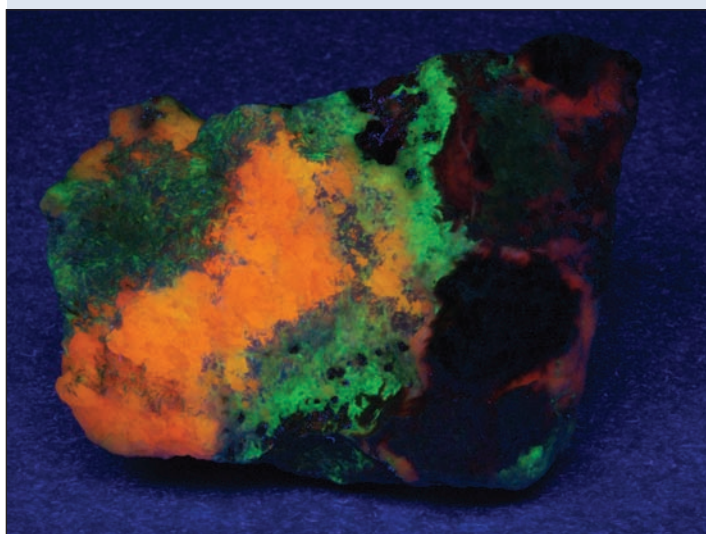
Another specimen that intrigued me in this second lot was an ugly (in daylight) rock that at first looked like it contained nothing more of interest than bright, very phosphorescent willemite. I was astonished when I checked it under longwave UV and saw it transform into a stunning display of reds, yellows, oranges, and purples. This, I later



Willemite disseminated in calcite, 4.5 x 3 x 1.8 inches, daylight view. Earl Verbeek photo.



Same specimen as above, under shortwave UV light. Earl Verbeek photo.



Same specimen as in both photos above, under longwave UV light. Earl Verbeek photo.

learned from Richard Bostwick, is a rare example of a common mineral assemblage at Franklin (willemite, calcite, sphalerite) hydrothermally altered so the willemite is finely disseminated in calcite, and that the mixture consequently has a range of fluorescent hues, from red to orange to yellow to green, depending on the relative concentrations of the two minerals and the UV wavelength or wavelengths used to excite them.

After obtaining the first portion of the collection two years ago, I immediately contacted Morgan to thank her for the donation and to find out more about the history of her father's collection. She told me that she grew up in a house full of rocks and remembers a vast collection of fluorescent specimens in the basement. When she recently visited her childhood home in Somers, Connecticut, the current residents were interested to learn that the windowless room in the basement had been excavated and specifically dedicated to fluorescent displays. Harry* must have been quite a charismatic man, for according to Cynthia, his friends, relatives, and neighbors wound up manning shovels and wheelbarrows to help with the excavation while his wife made lunch for all the volunteers!

Throughout her childhood, Morgan remembers that family vacations often consisted of camping trips to out-of-the-way rock-collecting sites or hikes to old abandoned mines. She and Cynthia would sleep in the family's Plymouth "carry-all" along with all of her father's rockhounding equipment and an ice chest filled with food. Likewise, many of Morgan's childhood memories are of well-known rockhounds visiting her home to swap information and tall tales with her father. She and her sister, Cynthia, generously shared with me a biography, articles, mementos, and their own memories, from which I've summarized below the information relevant to Harry's fluorescent hobby.

Born in Missouri on July 18, 1928, Harry Wain and his family moved to Fanwood, New Jersey, when he was four years old. Harry saw his first fluorescent minerals when he was a nine-year-old Cub Scout, at the home of Paul Robinson in Westfield, New Jersey. By the time he was a teenager, he had a large collection of his own, including both fluorescent and nonfluorescent specimens from all over the world. Harry and his father went on a number of rockhounding expeditions, including one in which they "rediscovered" the McNeil Mine and its deposit of hyalite in Spruce Pine, North Carolina. By the time he was in high school, Harry was an associate member of the New Jersey Mineralogical Society and was giving lectures on mineralogy to scout troops and



Teenager Harry with his rock collection. Photo courtesy of Ruth Morgan Wain.

Rotary Clubs. His first UV light was hand-assembled with the aid of a neighbor, and during the early years of World War II, he managed to scrounge the parts to make a cold-quartz light of his own design, later modified with a battery pack for night collecting. Fanwood was approximately 50 miles south of Franklin, where Harry put his equipment to good use on field trips and collected most of his early specimens.

By the time he was a high school senior, Harry had experience working in a machine shop and had built his own equipment for sawing, grinding, and polishing rock. After graduating from the Newark College of Engineering with a major in mechanical engineering, Harry worked for the Hercules Powder Company and for DeBell and Richardson, gaining experience in developing specialized equipment for the plastics industry. Simultaneously, he founded the Mineral Equipment Company in 1959 to manufacture UV lamps suited for field prospecting as well as displaying fluorescent minerals. Initially a part-time, home-based endeavor (Cynthia recalls her father tinkering with UV lamps in the basement), the company later relocated to Stafford Springs, Connecticut, in an old 8000-square-foot mill building purchased from the Connecticut Light and Power Company (I'm told the building still has the Big Raytech R, faded but visible, on its brick side over the receiving dock). This company was later incorporated as Raytech Industries, a company well known to present-day lapidary and fluorescent mineral enthusiasts.

* In my original draft of this article I respectfully referred to "Mr. Wain." This was Morgan's reaction when she read it: "My Dad would like to be referred to by his first name. He never wanted a sign on his door saying 'President' or any other indication that he might be above or different from anyone else."

While credit is rightfully given to Tom Warren of UVP for originally designing and marketing UV lamps suitable for collectors, it seems clear from the chronology of Harry's efforts that he too was a pioneer in bringing fluorescent mineral collecting to the general public, and he acquired a number of patents as a result. His pamphlet, "The Story of Fluorescence," written with his first wife, Alice, was inserted with every UV lamp sold by Raytech, and it has become a classic reference for beginning collectors. Harry did most of his Franklin collecting before his daughters were born, but Morgan remembers her father making annual pilgrimages to the Franklin show to add to his extensive collection. His love of Franklin minerals, as well as his impish sense of humor, are illustrated by the fact that he named two family cats "Willemite" and "Calcite."

Harry's legendary sense of humor also was recalled by Morgan's aunt, Carlyn Gore (Carlyn Blank at that time), who was put to the test as a potential addition to the rockhounding family in 1954 while dating Harry's wife's brother, Roger. Wading in the cold waters of a stream in the area of Bernardsville, New Jersey, hunting for carnelian, Carlyn was informed by Harry that the stream contained poisonous snakes. Her ensuing dances at the sight of any branch that her imagination transformed into a snake is the stuff of family legends. She got her revenge as well as acceptance into the family, however, by being the only one that day to find any carnelian.

In response to a request that I posted on the Internet for information about Harry, I received the following remembrance from Richard Bostwick (excerpted from his personal communication):

I knew Harry Wain chiefly through his presence in the 1960s and 1970s at the Franklin-Sterling Mineral Exhibit, as it was then called, when it was sponsored by the Kiwanis Club of Franklin and held at the Franklin Armory on the first full weekend of October. A major reason for Harry and Raytech making such a splash at the Franklin show is that in the early decades of the show, the fluorescent mineral displays put on by UV lamp manufacturers Raytech and Ultra-Violet Products were the only such displays in the armory. It's ironic that the "Fluorescent Mineral Capital of the World" needed Raytech and Ultra-Violet Products to display fluorescent minerals at their show, but this reflects the high price and short life of Corning shortwave filters. Only the UV lamp manufacturers could afford to replace their filters for every show.

Harry had laid in a lot of good Franklin fluorescent minerals when they could be purchased from the miners, so I usually visited his darkroom first; he had good "hand specimens" of esperite and clinohedrite for less than \$10, and even a 17-year-old with a limited allowance (e.g., me in the fall of 1960) could then put together a small collection of typical Franklin classics.

The hard part was ponying up the cash for a UV lamp powerful enough to show off that collection, even in a dark closet, and the lamps were not cheap.

Harry met the needs of young collectors by designing durable, effective UV lamps that were simpler than the competition's, cheaper, and (here's the kicker) apparently more powerful for the wattage. My recollection is that he did this by overdriving the tubes, for example running 6-watt tubes at 8 watts. Harry was also very clever at making small, inexpensive handlamps with both shortwave and longwave UV, some with one SW tube half-coated with LW phosphor, and others with SW and LW tubes paired in a compact housing. The LS-88 was a particularly popular handlamp with LW and SW tubes, each with its own off/on switch; older collectors will remember the characteristic boxlike shape, convenient handle, and gray hammertone finish of Raytech lamps from this period...and yes, it was a good lamp to have with you in a basement or closet, or in the field with a battery pack.

Harry not only accumulated fluorescent minerals for sale, but also had a remarkable, high-quality personal collection. Tom Warren had favorite specimens, which he set aside for his lectures or kept in his office to show visitors, but not a personal collection as such. What the two men had in common, besides good sense, intelligence, and the necessary drive and discipline to run a business, was a deep love and appreciation of fluorescent minerals. Harry and Tom both had a keen aesthetic sense, a talent for distinguishing quality in specimens, and the ability to explain what made a specimen good or great.

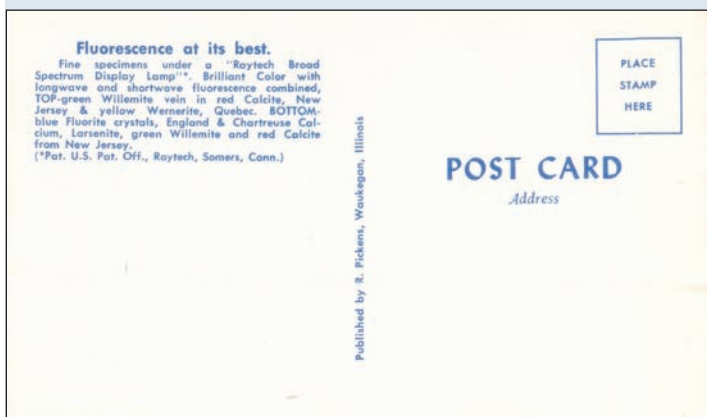
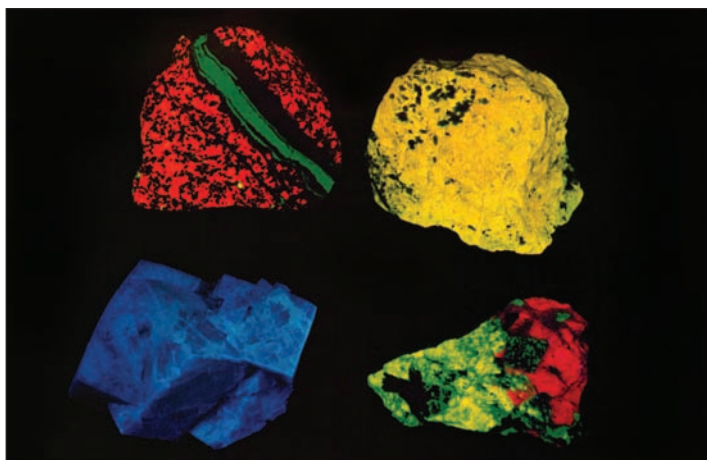
Years later, when Harry sold Raytech and moved to his dream house overlooking the Pacific, the first most of us Franklinites knew about it was when Jim Kaufman of Jim's Gems in Wayne, New Jersey, announced the sale of Harry's Franklin-Sterling Hill stock. There was a line outside Jim's store that Saturday morning, and when the door finally opened, a feeding frenzy ensued. There were some wonderful pieces there, perhaps not good enough for Harry to keep, but the rest of us were delighted with what we got. It was the best of all feeding frenzies.

Everything about rocks was of interest to Harry, whether they were fluorescent or not. According to Morgan, "He was fascinated with the way rocks looked, felt, and their chemical compositions and crystal structures. He was interested in inclusions and how various 'contaminants' would change the colors and properties of minerals. He was a man with a mission, sort of an open-ended mission, always looking for the next find. There was always something more interesting yet to be discovered."

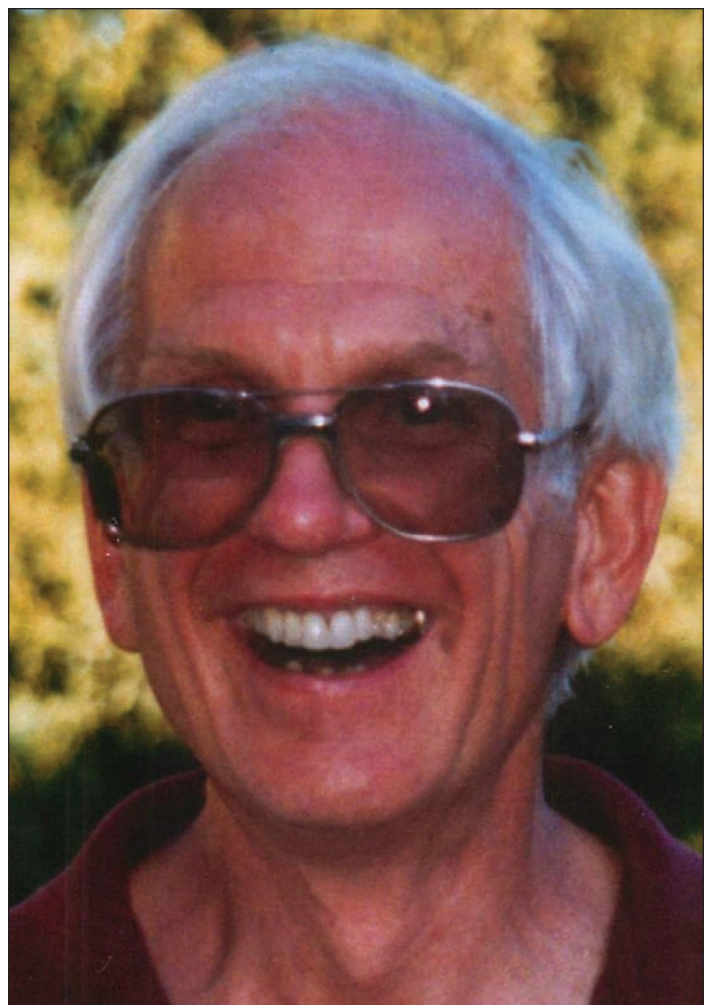
Most of the Wain fluorescent collection was donated to the Houston Museum of Natural Science in 1984. A limited number of specimens, however, remained in Harry Wain's home as part of his personal collection until his death in 2001, at which time they passed initially to his wife, Barbara,

and eventually were divided amongst his three daughters, Ruth Morgan, Cynthia, and Carol. As described above, one portion was generously donated to the Mineral and Gem Society of Castro Valley for display by the Northern California chapter of the Fluorescent Mineral Society by Harry's oldest daughter, Ruth Morgan Wain. Morgan says that her father would have liked nothing more than knowing that his collection is now part of a fluorescent display that will pique the interest of people who might not previously have had an opportunity to be exposed to this fascinating and beautiful world of fluorescence. A case containing these specimens, dedicated as a tribute to Harry, made its debut at the MGSCV show in Hayward, California, March 6-8, 2009, and continues to be displayed annually at the club's new show location at the Newark Pavilion in Newark, California.

Perhaps the most intriguing part of this story is that in both lots of Harry Wain's collection that I obtained from his daughters, the majority of the fluorescent rocks were "plain" willemite and calcite. Each specimen, however, was clearly chosen and valued for its aesthetic beauty despite its lack of rarity or monetary value. As confirmed by others who knew him, Harry was a man of exceptional taste and enthusiasm, and it should come as no surprise that "ordinary" red-and-green would continue to thrill him long after his collection included far more exotic combinations. Unpacking this collection and going through it piece by piece reminded me of what appealed to me most when I first encountered fluorescent rocks: the sheer mind-blowing beauty of nature's rocks glowing brilliantly in the dark. ✕



Harry's daughter, Morgan, wrote, "My dad must have had a million of these cards printed; they have been around as long as I can remember." Photo courtesy of Ruth Morgan Wain.



Harry Wain

THE MILL SITE – PART II

BERNARD T. KOZYKOWSKI, RA 161 ROUTE 55 BARRYVILLE, NY 12719

INTRODUCTION

Collecting minerals *in situ* as they occur naturally is usually relegated to those few persons engaged in their extraction during prospecting and mining. Consequently, mineral specimen acquisition is typically the product of postmining field-collecting or purchasing. Field-collecting of course provides a sense of discovery that cannot truly be experienced by those using the “silver pick.”

The exploitation of the orebody at Franklin, at first where it outcropped at the surface and later underground, saw the accumulation above ground of vast amounts of waste rock, low-grade ore, and gangue minerals. Prior to stabilizing the underground mine workings with backfill, this material was removed and discarded at the surface on the Buckwheat, Parker, and Taylor mine dumps. The Parker Dump in particular provided an early opportunity for mineralogists and amateurs alike to field-collect minerals and peer into the unique nature of this orebody. These dumps also served as a valued source of road metal for constructing the roadbeds of local streets and byways that have ever since had potential for specimen collecting.

The famous Parker Dump, seen as the all-time premier collecting ground in Franklin, is gone, having been built upon or hauled away. The larger Buckwheat Dump, a shadow of what it once was, occasionally offers up remarkably fine mineral specimens. The Taylor Dump, also largely built upon, exhibits potential, albeit limited by what material remains accessible.

COINCIDENCES OVER TIME

In my first article on the Mill Site (see *The Picking Table*, vol. 50, no. 2, 2009), I described the construction by the New Jersey Zinc Company of Mill No. 2 along with a timber railroad trestle, the need to stabilize that trestle (Figs. 1 and 2) using fill material derived directly from the Franklin mine, the consequences thereof, and subsequent events once the presence of this material became known and access was secured.

Our Mill Site saga began nearly a full century after the Parker Shaft was sunk by Mine Superintendent J.A. Van Mater and the mine’s underground workings were fully developed (see *The Picking Table*, vol. 24, no. 1, 1983). It is these workings that yielded the mineral wealth encountered along the trestle at Mill No. 2. The mill property remained untouched by collectors for nearly three-quarters of a century before being exploited by the Franklin-Ogdensburg Mineralogical Society, Inc. (FOMS) in the middle of the 1980s.



Figure 1. Mill No. 2 being demolished soon after the closing of the Franklin Mine. The storage tanks and crusher building have been taken down. The timber trestle is center left at eight o'clock. Stephen J. (“Itchie”) Novak photo.



Figure 2. End of timber trestle as it appeared in 1984 at the north side of the Mill No. 2 crusher foundation. Just beyond this point, it was entirely buried beneath mine fill consisting of low-grade ore, gangue minerals, and waste rock.

All photographs by Bernard T. Kozykowski, R.A., unless otherwise noted.

In the autumn of 1984, and for the next four years, FOMS was rejuvenated by unprecedented events in mineral collecting at this site. What follows is the recounting of this magnificent period of recovery. The next installment of this series will present the fruits of our discoveries in the pictures and words of those who experienced the unique thrill of collecting at the Mill Site.

AS IT HAPPENED

Initial mechanized excavation of the railroad bed exposed the cap timbers of the trestle buried beneath it, but this limited stripping of the ground surface had yet to reveal the full extent of material that ultimately would be encountered. Further removal of the surface materials and discarded mill fines, at depth and parallel to the railroad bed, was to follow.

It was not surprising when someone suggested that the most appealing way to accomplish this while “investigating” the potential for specimens, though slower than mechanical excavating, was to collect—and collect we did (Fig. 3).



Figure 4. One of many early excavations hand-dug into the top of the mine run fill between the buried trestle supports. The character and diversity of collectible material was immediately recognized, but its extent remained unknown.



Figure 3. Rockhounds doing their thing in the fall of 1984.

Australians have a name for it: *fossicking*, the picking over of abandoned workings. Observed, it looks like a dog digging for a long-lost bone. These first digs soon affirmed suspicions that much more remained below (Fig. 4). Based upon the character and diversity of the minerals encountered, word of the return of premier mineral collecting opportunities to Franklin spread like wildfire through our mineral-collecting world.

The initial intent was that only FOMS and the Franklin Mineral Museum (FMM) would enjoy the benefits of the property, with the Society at point. It was soon recognized that club and museum membership fees alone were not fiscally capable of supporting the effort ahead. As a consequence, it was decided that the Mill Site would be open to all interested mineral collectors, under the same terms as the Society, with a fee being taken to offset expenses.

LOGISTICS

As mineral collectors began to probe ever deeper into the sides of the backfilled trestle, it became all too apparent that further mechanized excavation would definitely be required in order to discover the full extent of the remaining mine run fill.

Realization of this, and stipulations by the property owners in entrusting the Society with full access to the site, presented quite a logistical challenge. The response was to organize a dedicated group of volunteers who would provide oversight and accountability in conformance with the requirements of both the owners and FOMS. This group came to be known as the “Mill Site Committee,” which consisted of the following members:

MILL SITE COMMITTEE

- | | |
|-----------------|-------------------|
| Phil Betancourt | Joe Kaiser |
| Dick Bostwick | Bernie Kozykowski |
| Jim Chenard | Chet Lemanski |
| Ron De Blois | Steve Misiur |
| Mark Dietz | Charlie Puzio |
| Manny Honig | John Sebastian |
| Bob Jenkins | Dave Wellbrock |

In addition to supervising collecting activity and keeping track of attendance and the quantity of minerals collected, the committee also received, dispersed, and reserved collecting fees. Those fees were intended to offset excavation costs and, based upon the amount of material apparently on site, future expenses that might arise during the relocation of any remaining uncollected material to the Buckwheat Dump at the Franklin Mineral Museum, if allowed by the property owner’s attorney.

BIG DIGS

Heavy earth-moving (Fig. 5) equipment was returned to the Mill Site later in the fall of the first year of collecting, to complete previous efforts to determine the full extent of collectible material present. The final stripping of the ground surface from the trestle's cap timbers revealed its length. The removal of the discarded mill fines concealing the mine run fill, and the timber trestle hidden within it, quickly followed over the next several days.



Figure 5. Caterpillar 955 "trackscavator" working at mid-point along the west side of the yet-buried trestle. Mill fines were discarded to the low side. The easily recognizable coarser mine run fill was pushed forward and stockpiled ahead for collecting.

The trestle, at its tallest, stood more than 20 feet high. The repose of the enclosing mine run fill formed a receding pile with a trapezoidal cross-section over 150 yards long, and 40 feet across the base at its widest point (Figs. 6 and 7).

The long sloping face of the fill (Figs. 8, 9, and 10) was now open to view. The subgrade upon which the trestle supports rested had caused concern for its stability. Nearly the entire heavily timbered trestle buried deep within the fill remained undisturbed. The railroad grade for another 50 yards beyond the end of the trestle, which had also been stabilized by the use of mine run fill, was exposed to our further delight and that of the mineral collectors who followed.

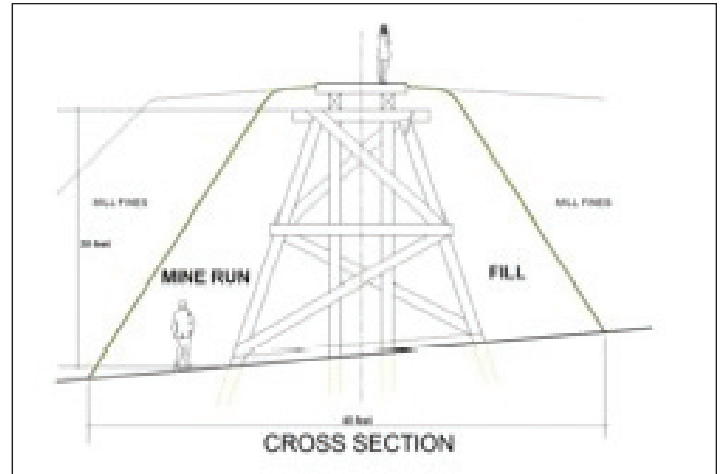


Figure 6. Cross-section drawing of timber trestle at its tallest point, portraying emplacement by the New Jersey Zinc Company of mine run material as fill to assure the structure's stability. Drawing by Bernard T. Kozykowski, RA.

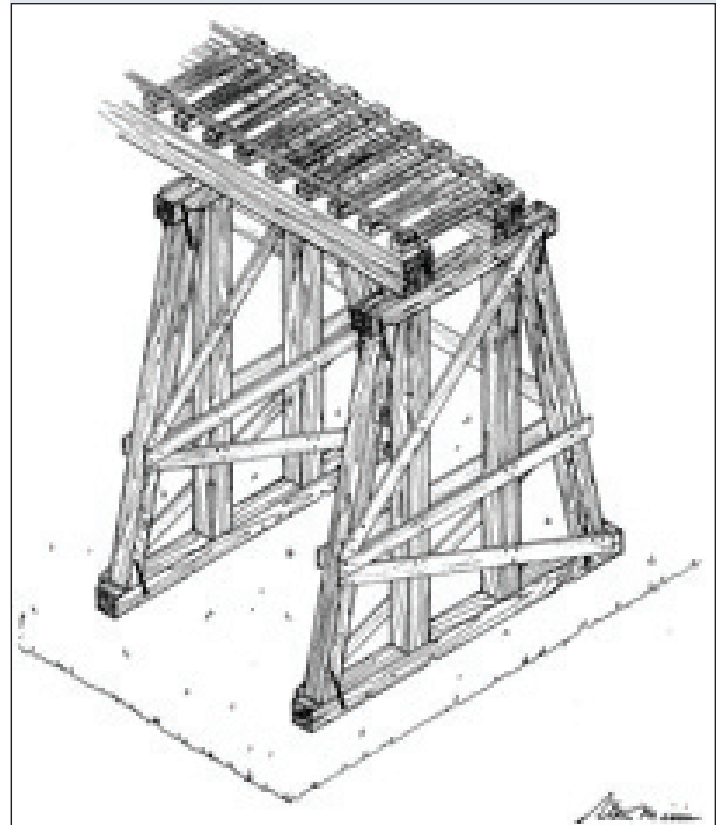


Figure 7. Drawing by Steven Misiur of the type of timber trestle unearthed at Mill No. 2.

AMBITIOUS COLLECTORS

Historically, the Society conducted its field trips on a seasonal basis, rarely visiting the same site more than once in the same year. Collecting at the Mill Site was immediately recognized as the opportunity of a lifetime, and as with life, it would not last forever. The Mill Site Committee, in response to the needs of the property owners and requests of the membership, made a commitment to offer as many field trips to this site as time and circumstance would permit. For more than three years, collecting became a monthly occurrence, during the spring and fall, in between field trips routinely scheduled for other sites.



Figure 8. View of exposed mine run fill looking south toward the north end of former Mill No. 2, with powerhouse smokestacks in the background. Timber supports protrude in the distance from stockpiled fill, recovered in its separation from the mill fines.



Figure 10. Exposed mine run fill lying between the yet-buried heavy timber supports, seen midway along the former railroad bed. Coarseness, character, and content of the fill varied dramatically, as did its depth.



Figure 9. View of exposed mine run fill looking north. Recoverable collecting material diminishes in depth and width as the original ground level rises to meet the old railroad grade.

Collectors visited the site almost immediately after (and in some cases *before*) the heavy excavation equipment was removed (Figs. 11 and 12), competing to see whether they or the machines would reveal the most treasures.

These gatherings provided participants with a wealth of valued mineral specimens and fostered a close community of collectors who, even today, continue to revisit the Mill Site, if only in memory.

THE DIG GETS BIGGER

The first year of organized collecting at the Mill Site in 1984 sparked an inferno of interest in Franklin. By the end of the year the limits of collectible material were reasonably well defined. However, only one face of the mine run fill used to stabilize the heavy timber trestle buried deep within it had been exposed. The highly successful collecting throughout the fall demanded that deep excavations into the side of the mine run fill material be pursued. This would require the return of the excavator that first revealed the presence of the buried trestle.

The spring of 1985 was “déjà vu,” as the huge beast lumbered across the Mill Site to reach its goal. Its mission (Fig. 13) was to again dig; dig deep down between the heavy timber trestle supports into the fill material that remained, and bring it forth.



Figure 13. The excavator, working from the original railroad grade, commences excavation of the mine run fill that remains between the still-buried timber trestle supports.



Figure 11. Collectors viewed to the south, laying open the recently exposed mine run fill stabilizing the still-buried trestle.



Figure 14. Excavator bucket scouring the bottom of trench as it reaches the ocher-colored clay that gave rise to concern by the New Jersey Zinc Company for the long-term stability of its new railroad trestle.



Figure 12. Collectors viewed to the north, laying open the recently exposed mine run fill stabilizing the still-buried trestle.

The excavator, digging deep into the mine run fill between the heavy timber trestle supports, finally “reached bottom,” exposing the ocher-colored clay (Fig. 14) that first gave rise to concern for the stability of the trestle. Over the next few days it moved along the abandoned railroad grade, pulling



Figure 15. The huge excavator, reaching, digging, scooping, lifting, turning, and dumping its load of mine run fill, as it expands the opportunity for mineral collecting at the Mill Site.



Figure 16. Mine run fill and broken timbers, from the original base of the trestle to the excavated material piled high above, over the length of the site.

up now-broken timbers among the much-sought-after mine run fill. As it turned away from its excavation (Fig. 15) and emptied its bucket, it created a tall pile of collectible material parallel to its excavations that extended the entire length of the site. The resulting accumulation presented a collecting face extending from the original grade at the bottom of the trestle to the top of the pile (Fig. 16) which, at its tallest point, was over 30 feet high.

At last, the excavations presented the mine run fill to its fullest extent. The immense sense of success and exhilaration was exceeded only by the quantity and quality of material that would now be available to mineral collectors.

COLLECTOR VERSUS MACHINE

The previously mentioned competition between man and machine continued and grew with the magnitude of collecting during the field trips at the Mill Site through the spring and fall of 1985 and into the two years that followed. The excavations of the collectors (Fig. 17) deep into the mine run fill remaining in place, and that which had been piled above, gave little doubt that they were up to the challenge.

Development of the abandoned railroad bed on the property of the former New Jersey Zinc Company mill into an unrivaled mineral collecting site for Franklin minerals was complete. However, mineral collecting had really just begun. The competition between machine and collector continued on a lesser scale over the next two years as the last remnants of the heavy wooden trestle leading into long-gone Mill No. 2 were exhumed, and the remaining low-grade ore, gangue minerals, waste rock, and even mule shoes (Fig. 18) were dug up and turned over for the collectors.

FOR NOW

The first two years of collecting at the Mill Site, and the two that followed, are fondly remembered by those who were fortunate enough to experience those times. The first of our stories of the Mill Site (see *The Picking Table*, vol. 50, no. 2, 2009) told of the many important happenings that provided for this remarkable collecting opportunity. This, the second story, tells of the development of the site for mineral collecting. The wonderment of the site itself has become transformed into the wonder of collecting.



Figure 17. Several members of the Mill Site Committee inspecting recent excavations hand-dug deep into the mine run fill. From left to right above are Jim Chenard, Ron DeBlois, Mark Dietz, Charlie Puzio, and Dave Wellbrock, with Steve Misiur below.

A FEW WORDS IN PASSING

Franklin in former times was a community of communities linked together by its mining heritage; much has changed. The Franklin-Ogdensburg Mineralogical Society is a broader-based “community of interest” linked to that heritage. The Kiwanis Club of Franklin existed as the local community’s club, a community within. At the end of the mining era, and until its demise in 1987, Franklin’s Kiwanis Club was also a vehicle for the preservation of that heritage.

The Franklin Mineral Museum and annual Franklin Mineral Exhibit (as originally known) were founded and staffed by volunteers from the Kiwanis Club of Franklin.



Figure 18. One of several “lucky mule shoes” encountered during collecting activity at the Mill Site. Its presence reaffirmed the belief that the mine run fill had come from the underground workings of the Parker Mine.



Figure 19. The Mill Site as it appeared on August 29, 2011. The photograph was taken from the same vantage point as that on the front cover. E.R. Verbeek photo.

We mention this in recognition of the linkage that existed through its members, which has had a more far-reaching effect than most of us know. A Kiwanian helped organize the FOMS; a Kiwanian was instrumental in securing the SPEX-Gerstmann mineral collection for Franklin; a Kiwanian provided the opportunity for the Society to collect at the Mill Site and another Kiwanian provided the much needed heavy equipment at bare cost. Our memories of the Mill Site (Fig. 19) should include this as well. ✂

MINERS DAY AND VOLUNTEER APPRECIATION DAY

FRANKLIN MINERAL MUSEUM, MAY 1, 2011

TEMA J. HECHT 600 W. 111TH ST., APT. 11B NEW YORK, NY 10025

Photos by Tema J. Hecht.



The famous Franklin Band, still in full cry after 141 years. The oldest town band in New Jersey and the fourth oldest town band in the United States. Play on!



Jack and Augusta Baum relax at Miners Day. Why be a snowbird in Florida when you can stay where everyone knows your name?

After making the rounds to collect fees from vendors at the FOMS-sponsored Swap & Sell at the New Jersey Earth Science Association show, Richard (Dick) Bostwick and I arrived at the Franklin Mineral Museum so Dick could assume his role of Master of Ceremonies at Miners Day.

On this glorious day, the food was mouth-watering as always, and the beverages very satisfying!

The Franklin Band entertained us with flair and excellence on this, their 141st year. (The Franklin Band is the oldest town band in New Jersey, and the fourth oldest in the United States.) Selections performed included “Sheik of Araby,” selections from “Porgy and Bess,” “Just a Closer Walk With Thee,” and “Do You Know What It Means to Miss New Orleans?” A technical aside from the band’s director: A bassoon can sound “like a burping bedbug.” As the band packed up, Dick reminded the audience, “You’ve got a national treasure here in town!”

Our M.C. introduced the Franklin dignitaries present, including Franklin’s mayor, Paul Crowley, and freeholder Phil Crabb. Dick then introduced museum manager, Doreen Longo, and her staff, observing that their bright orange shirts made them easy to find. Then he asked, “Is there anyone here who doesn’t know that this is the Franklin *Mineral* Museum?” He added, “It’s pretty strange stuff. We’re famous, except here sometimes. Keep the secret to yourself as much as you can...”

Dr. Tom Turner, superintendent of the Franklin School, presented the science awards, which included a U.S. Savings Bond. Anne Wronka was singled out as the benefactress of those awards.

It was wonderfully thrilling to see Jack and Augusta Baum present at Miners Day. Jack had recently turned 95, and upon seeing him, our M.C. declared, “Zinc is good for you!” Ron Mishkin, who worked in the Franklin Mine in 1952 and 1953, was also there, and the M.C. added, “Definitely zinc has to be good for you, because Ron looks like he’s only 50 years old.” Al Grazevich mentioned later that Sterling Hill miner John Paiva is still alive at 104.

Dick continued to speak. “Mining is a community all its own. We’re all friends; this is a Zinc Company reunion!” He added that the history of mining in Franklin goes back more than 200 years, and spoke about the “Crystal Mountain”

described by an early Dutch prospector: “It could have been here.” He then asked the miners present to raise their hands if they brought out specimens in their lunch pails. Every miner present raised his hand.

Our M.C. reminded the audience that having preserved specimens from the mine is good, but preserving the mining history of Franklin and Sterling Hill is also up to them. “It’s still in your power to commit this stuff to paper. If you don’t write it down and something happens to you, it’s gone.” He added, “It’s pretty cool to be a miner and you guys ought to be very, very proud of what you’ve done. Thank you!” John Antal responded, “Everyone should thank you, Dick, for a great job.” The M.C. answered, “I did it for you, John, so put that in your pipe and smoke it.” And thus we continued to enjoy Miners Day at the Franklin Mineral Museum. ✂



John Kolic, miner extraordinaire, for whom the mineral kolicite is named.



The dynamic duo of Richard Bostwick, who collects (and sometimes makes) Franklin history, and William Truran, who writes about it.



Ex-Sterling Hill miner Al Grazevich, vivid proof that Miners Day is a festive occasion.



Anne Wronka, the museum’s hardest-working behind-the-scenes volunteer, whose efforts keep Lee Lowell from losing (what’s left of) his sanity.



Earl Verbeek and Rich Keller, focusing on the festivities and having a wonderful day, 12 ounces at a time.

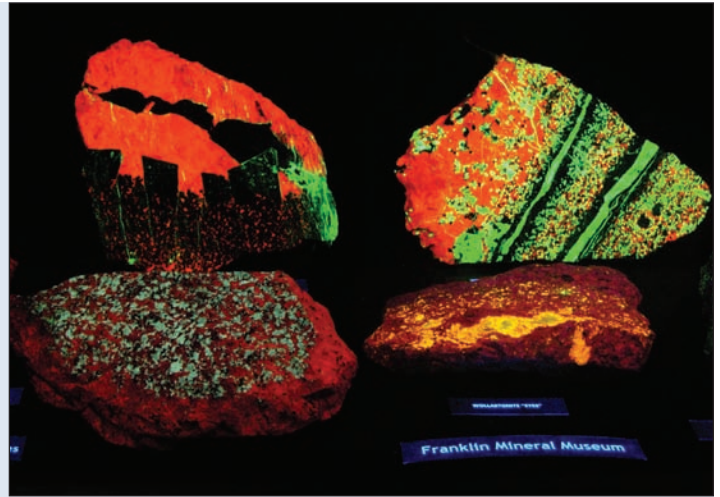
SCENES FROM THE NEW JERSEY EARTH SCIENCE ASSOCIATION GEM & MINERAL SHOW

APRIL 30 - MAY 1, 2011

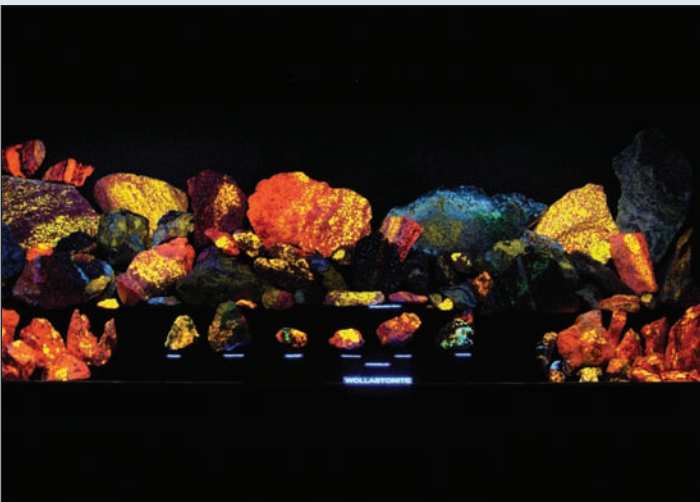
Photos by Tema J. Hecht.



Jan Wittenburg, president of the Fluorescent Mineral Society, enjoying his first visit to "The Holey Land."



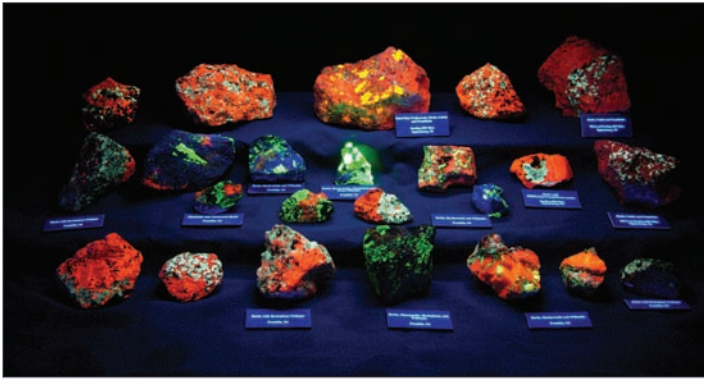
Four of the more spectacular specimens acquired by the Franklin Mineral Museum from the Robert Hauck collection.



Pete Gillis's display of virtually every variety of Franklin-Sterling Hill wollastonite known to man.



At the NJESA banquet and auction, Ron DeBlois won this "impressive" franklinite and andradite garnet crystal specimen from Franklin.



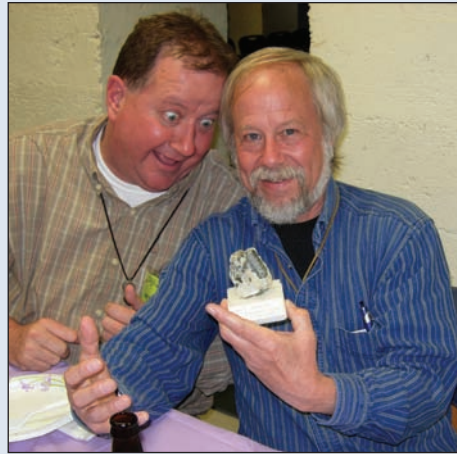
The "Barigtheous" display of Chris Luzier and friends.



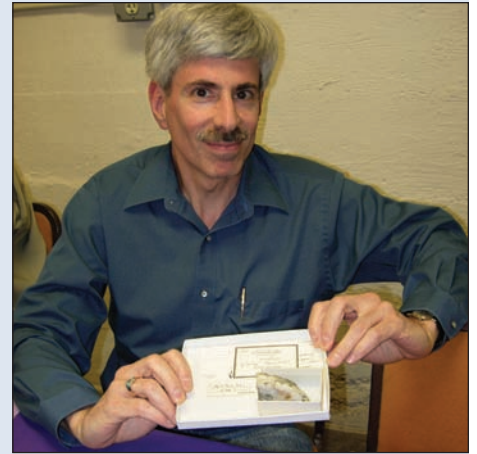
Jim Van Fleet, double-fisted drinker, shares a laugh, and a repast, with FOMS president, Rich Keller.



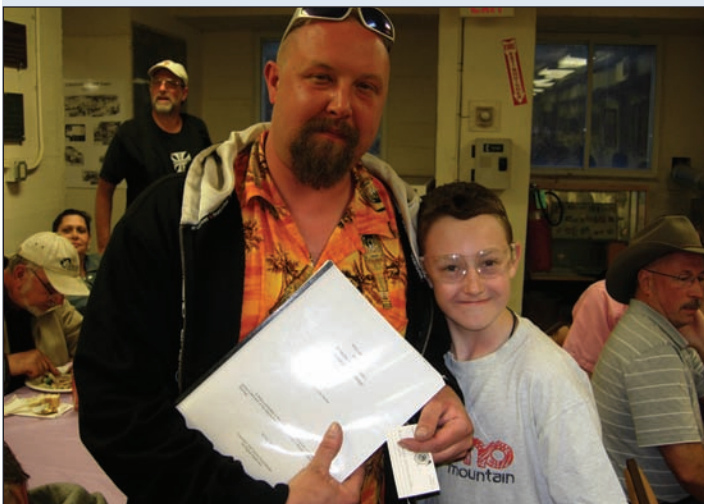
Harold "Pat" Hintz won this outstanding willemite specimen. It's tutti-frutti and a real beauty.



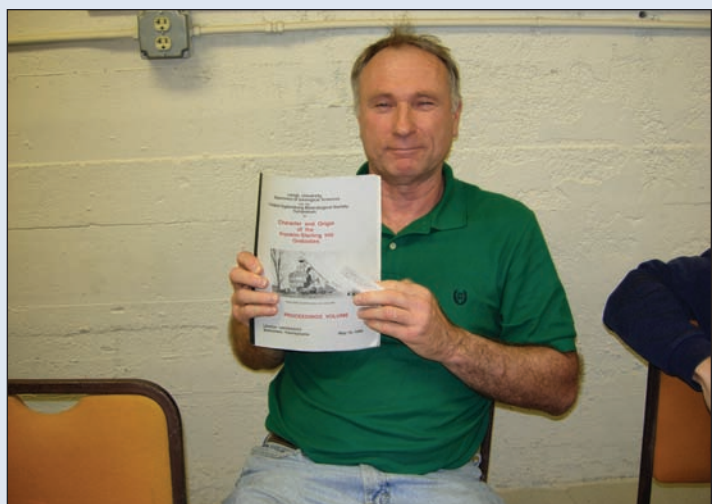
Rich Keller, lookin' like a rookie in his "admiration" for Earl Verbeek's doubly terminated amphibole crystal specimen.



Gary Weingarten went for the gold...and got it. Specimen from Grass Valley, California.



Andrew R. Mackey with his prize, a.k.a. Drew. By the way, he'd also just won that large tome on wollastonite a few moments before.



Mike Pearce won this copy of a 1990 symposium volume on the character and origin of the Franklin and Sterling Hill orebodies.

THE 39TH ANNUAL NJESA GEM AND MINERAL SHOW AND OUTDOOR SWAP

STEVEN M. KUITEMS, DMD 14 FOX HOLLOW TRAIL BERNARDSVILLE, NJ 07924

What were you expecting from this show? Well, I had a few concerns, not about the format, but about the content. The weather was fine, so that was not the issue. The economy was weak, but people still came out with high hopes to find their own bit of treasure to bring home. But my thoughts were on the exhibits: Would there be enough, and would they be of sufficient caliber to be worthy of this show? I can certainly give a hearty “Well done!” as I review what transpired.

I am happy to report that there were 16 great cases of daylight specimens and 12 fluorescent displays. Did you know that one of our outstanding veteran Franklin-Ogdensburg collectors, Phil Betancourt, also has an interest in agates and how they form? What a pleasant surprise. Brad Plotkin displayed a fine assortment of cabinet specimens from Mont St. Hilaire, Canada—and my eyes zeroed in on a 5.5-cm gray willemite crystal that was much larger than I expected for the locality. Dick and Elna Hauck brought back childhood memories with their mineral locality sets. Who cannot remember their first boxed mineral set, especially if they started the hobby as a young person? Brendan and Connie Dunn showed off the diversity of color and pattern of petrified wood, and also put together a case highlighting “The Diversity of Calcite Forms.” There are at least 300 known crystal habits for calcite, and the Dunn’s examples were superb. The Franklin Mineral Museum had a case full of my favorite classics from our local Franklin-Ogdensburg mining district. Juan Gonzales put together several collectors’ New Jersey-only specimens, including a particularly fine 13-cm-long fluorapatite crystal on matrix from the Sterling Hill Mine. Arlene Castleman let us know about the “Diversity of Life” with her fossil exhibit. John Kolic humbled us with many superb local specimens, some of which he collected underground at Sterling Hill. I just smile when I look at his superb mcgovernite specimen, and the finest known kolicite with crystals so large that they do not need magnification to be viewed.

The Morris Museum had a nice sampling of copper specimens with some slabbed pieces from the Chimney Rock Quarry “just down the road” in suburban Millington, N.J. Bernie Kozykowski put in two superb cases of large, colorful cabinet specimens that represented some of the most famous world-wide mining locations and their iconic species. Another bold color splash, guaranteed to turn the head of even the most jaded collector, was assembled by Rudy and Beth Greipel. Their display featured

colorful azurite and malachite, and an outstanding, bright golden barite from the Meikle Mine. The New Jersey Mineralogical Society put together a case illustrating copper mineralization. Steve Sanford displayed what had to be the most thought-provoking exhibit with his “Contact Specimens”—slabbed and polished geologic specimens from the Franklin and Sterling Hill mines. I could only wonder what tortured and mysterious geological events had produced what Steve displayed—events that have fascinated students of geology and mineralogy for decades.

Not to be outdone were the 12 exhibits in the dark and under various ultraviolet wavelengths. The Franklin Mineral Museum wowed us all with a few superb, impressively large fluorescent specimens. Two cases of California specimens were displayed by the Sterling Hill Mining Museum and Lee McIlvane. I especially liked the variety of wollastonite and scheelite specimens. The local minerals were emphasized by Steven Kuitems’s “Franklin Delights” and Warren Miller’s “Exceptional and Unusual Specimens From Franklin and Sterling Hill.” Chris Luzier and friends put in “Barighteous Barites” with assorted other species from Franklin and Sterling Hill. George Durland’s case highlighted “A Couple of FrOg’s Compared to the World’s Best.” I would have to say our local specimens outshone the rest. Esperite was the theme of Andrew K. Mackey’s “Yellow Brick Road” exhibit, while Andrew R. Mackey emphasized wollastonites in his display. Rich Keller, in his display of “Reds and Greens and In-Betweens,” reminded us of the almost infinite patterns of calcite-and-willemite specimens; interspersed with these were colorful examples of other fluorescent species. Chris Gillis showed off a variety of willemite crystals and why they are so attractive when they fluoresce. Last but not least was a monumental double-wide case of “Wollastonite Revisited” put in by Pete Gillis. I was certainly impressed by the wide variety and subtle to startling color represented. Laid out in one row were fine examples of Original-Find, First-Find, Second-Find, Third-Find, and Fibrous wollastonite from the Franklin Mine, and the finest types from the surface and various underground levels of the Sterling Hill mine. A case worthy of study and appreciation, it was especially helpful to any collector who wanted a greater depth of knowledge for building his or her own collection of the local fluorescent minerals.

Both the daylight and fluorescent displays certainly amounted to visual enjoyment and satisfaction for this collector. Many thanks to all who served to make this show a reality! ✂

YELLOW-FLUORESCING CALCITE FROM STERLING HILL

JAMES VAN FLEET BERTRAND LIBRARY BUCKNELL UNIVERSITY LEWISBURG, PA 17837

EARL R. VERBEEK, PhD STERLING HILL MINING MUSEUM 30 PLANT ST. OGDENSBURG, NJ 07439

INTRODUCTION

In the mid-1990s, as the Edison Tunnel and Landmesser Decline were being developed by the Sterling Hill Mining Museum, collectors combing through the newly blasted rock began finding specimens of ore that showed not only the typical red to orange-red fluorescence of calcite under shortwave ultraviolet light, but also a patchy to streaky, pale yellow to cream-colored fluorescence under longwave ultraviolet light. Many such specimens contain sphalerite in tiny grains that fluoresce pinkish orange to blue, resulting in attractive multicolor pieces. Collectors soon began referring to the yellow-fluorescing mineral as “longwave barite,” based, we assume, on the similarity of its color of fluorescence to that of barite specimens from the 600, 700, and 900 levels of the Sterling Hill mine. Although typical Sterling Hill barite fluoresces a cream to pale yellow color under shortwave ultraviolet light and shows only a weak response under a longwave lamp – the opposite of the new material – “longwave barite” quickly became part of the local folklore. Few seemed moved to question its identity, though some traded and marketed the material as “unidentified,” “unknown,” or simply “strange stuff.” As reported here, however, the yellow-fluorescing mineral is not barite, but calcite.

SPECIMEN DESCRIPTION

The specimens we examined from the Edison Tunnel – Landmesser Decline area (Figs. 1-4) are lean ore consisting of franklinite, brown willemite, scattered and locally abundant grains of sphalerite, and much calcite. The longwave yellow fluorescence of the calcite does not occur throughout that material but is confined to thin, discontinuous planes parallel to cleavage surfaces within individual grains, thereby resulting in sets of short fluorescent “streaks” whose orientations differ from grain to grain. Because calcite has three directions of perfect cleavage, some individual grains also display fluorescent planes in more than one orientation (Fig. 4). Emission of light from cleavage surfaces of different orientation, combined with “bleeding” of some of the emitted light through the adjacent calcite, gives an overall impression of patchy fluorescence to parts of some specimens, but examination with a hand lens reveals that the yellow emission originates only from the planar areas. An obvious inference is that the yellow fluorescence is due



Figure 1. Lean franklinite-calcite-sphalerite ore from the Edison Tunnel – Landmesser Decline area at Sterling Hill, daylight view. Specimen measures 9 x 5 x 5 cm. E.R. Verbeek specimen and photo.

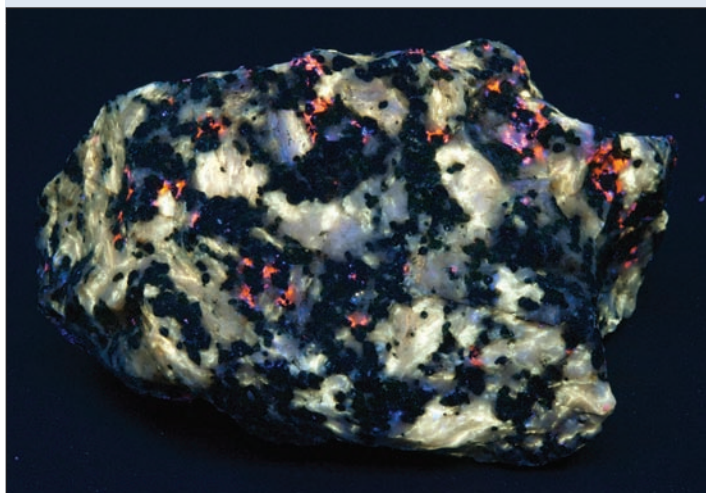


Figure 2. Same specimen as Figure 1 shown under longwave ultraviolet light. E.R. Verbeek photo.

to chemical alteration of pre-existing, red-fluorescent calcite by fluids infiltrating incipient cleavages, but the nature of those fluids and the chemical changes they produced have yet to be addressed.

During the course of this study we also briefly examined yellow-fluorescing calcite specimens from several other finds at Sterling Hill (Figs. 5 and 6) and Franklin, but no special study of these was undertaken, other than establishing their identity as calcite. Results are given on the following page.



Figure 3. Lean franklinite-calcite-sphalerite ore from the Edison Tunnel - Landmesser Decline area at Sterling Hill, daylight view. Specimen measures 9 x 6 x 4 cm. Jim Van Fleet specimen; E.R. Verbeek photo.



Figure 4. Same specimen as Figure 3 shown under longwave ultraviolet light. E.R. Verbeek photo.



Figure 5. Coarse-grained franklinite-willemite-sphalerite-calcite ore from the North Ore Body, Sterling Hill. Specimen measures 7 x 5.5 x 5 cm. Jim Van Fleet specimen; E.R. Verbeek photo.

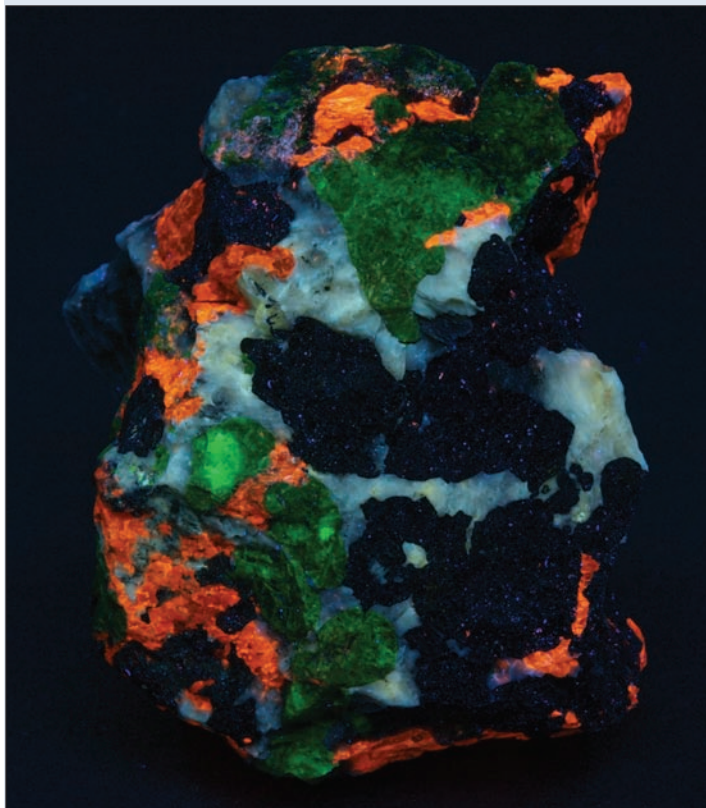


Figure 6. Same specimen as Figure 5 shown under longwave ultraviolet light. E.R. Verbeek photo.

IDENTIFICATION METHODS AND RESULTS

Among the numerous methods used to identify minerals, hardness, streak, luster, cleavage, and response to hydrochloric acid are easy to observe. The first three are of limited use in distinguishing calcite from barite, but the cleavage angles of barite are different from those of calcite, and of the two minerals, only calcite shows vigorous effervescence in dilute hydrochloric acid (HCl). These are techniques readily available to collectors. Among all specimens of purported “longwave barite” examined by us, all effervesce in dilute HCl. An attempt to prepare a sample for further testing, by immersing a chip in acid to remove the calcite and purify any barite present, resulted instead in the complete dissolution of the sample! Examination of yellow-fluorescing grains with a hand lens and binocular microscope revealed only the characteristic rhombohedral

cleavages of calcite, and not the right-angle cleavage of the two best cleavage directions of barite. At this stage the evidence seemed clear that the longwave yellow-fluorescing mineral is calcite, not barite. To be certain, however, we turned to X-ray diffraction for further proof.

Samples for X-ray study were taken from five specimens, using a steel dental tool to remove material from the matrix. Three of the samples are from Sterling Hill, a fourth is labeled Franklin, and the fifth is unlabeled but is probably from Franklin. Sample purity was improved by crushing the yellow-fluorescing grains, separating franklinite grains with a magnet, and checking the samples with a longwave UV lamp. The purified samples were then X-rayed at Bucknell University, using a Philips (now PANalytical) X'Pert Pro MPD powder diffractometer with a Cu K-alpha radiation source. Settings were 45 kV and 40 mA. The scanner software ran a program that scanned for two seconds every 0.05 degrees, from 20 2-theta through 800. The resultant data were analyzed by X'Pert Highscore, a software package that matches the resulting diffraction peaks to a digital library of known samples to identify the mineral(s) present.

For sample #1, the resulting peaks were a good match for calcite. Diagnostic peaks were seen at d-spacings of 3.032 Å (relative intensity 100%) and 1.911 Å (13%), with weaker peaks at 1.874 Å, 2.493 Å, and 2.283 Å, all important diagnostic peaks for calcite. No diffraction peaks that might be associated with barite were observed. Results for the other four samples were similar, with the X-ray diffraction data providing a match either for calcite (mineral ID# 86-2334) or magnesian calcite (mineral ID#s 86-2335 and 43-0697). Together with the optical examination and physical characteristics of these samples, the identity of the yellow-fluorescing mineral as calcite, and not barite, is now well established. Copies of the X-ray data for all five samples have been deposited with the Franklin Mineral Museum and Sterling Hill Mining Museum.

PRIOR EXAMPLES

The specimens recovered in the mid-1990s did not mark the first time that yellow-fluorescing calcite had been found at Sterling Hill – or, for that matter, at Franklin. Manuel Robbins, in his 1983 *The Collector's Book of Fluorescent Minerals*, wrote on p. 112:

We now consider what are undoubtedly some of the most interesting of mineral fluorescences – those in which the color differs depending upon whether short wave or long wave is used, as well as those in which the fluorescent and the phosphorescent colors differ. While such effects are found in many different mineral species the phenomenon finds its greatest expression in calcite.

Robbins went on to cite a specific example of “a calcite from the ore body at Ogdensburg... which fluoresces a weak dark red under short wave. Under long wave, some portions continue to fluoresce red, but other segments now fluoresce a light yellow.”

Our own *Picking Table* provides additional examples, from as far back as 1966, when Frank Edwards reported that “a cream or yellow calcite contains areas... that fluoresce a vivid yellow, short wave.” Richard Bostwick (1977, p. 21) also reported “fine-grained ore bearing calcite, with weak conventional fluorescence and phosphorescence under SW, but showing an obvious moderate cream fluorescence LW.” Similar unusual fluorescent responses in calcite were reported in *The Picking Table* six more times over the years, including by DeMenna (1984), Jenkins and Misiur (1994), and most recently by Grenier (2004). The literature on our local minerals thus includes ample references to yellow-fluorescing calcite, most of which show the yellow response most strongly, or only, under longwave ultraviolet light.

DISCUSSION

Yellow-fluorescent calcite is moderately common at Sterling Hill and is also known from Franklin. As noted above, calcite specimens showing yellow fluorescence, most commonly under longwave ultraviolet light, have been mentioned repeatedly in the local literature. In addition, longwave yellow-fluorescent calcite was found sparingly in “black ore” near the Buckwheat Dump in the early 1990s, around the piers of the Taylor Mine crusher. Specimens from the mid-1990s find at Sterling Hill are still fairly common on the market, and more recently, in 2002, longwave yellow-fluorescent calcite was again found at Sterling Hill, this time in the “genthelvite pit” near the entrance to the Passaic Pit from the Fill Quarry (Leavens et al., 2009). Specimens from other finds doubtless reside in systematic collections of the local minerals.

Specimens from the various finds of yellow-fluorescent calcite show significant differences in texture, mineralogy, and the character of the yellow fluorescence. Most specimens examined to date are of lean willemite-franklinite ore, generally containing sphalerite as an accessory mineral. Some are normal, fine- to medium-grained ore, but a few are quite coarse-grained. One anomalous Franklin specimen of fine-grained dolomite, coarse-grained calcite, and brown sphalerite contains, within a single large calcite grain, several tiny areas that fluoresce yellow. In this specimen the yellow fluorescence seems not to emanate from planar zones along the calcite cleavages, but instead from rhombohedral volumes *bounded* by cleavage surfaces. In still another specimen exhibiting mottled

YELLOW-FLUORESCING CALCITE FROM STERLING HILL

JAMES VAN FLEET EARL R. VERBEEK, PhD

white to pale yellow fluorescence, the fluorescence appears throughout the entire extent of the calcite grains. No common factor has yet emerged as a “predictor” of yellow fluorescence, and clearly much remains to be learned. Similarly, the activator of yellow fluorescence in calcite from Sterling Hill and Franklin is unknown and remains a subject for future study.

REFERENCES

Bostwick, R.C. (1977), Fluorescent Minerals of Franklin and Sterling Hill New Jersey – A Progress Report for 1977: *The Picking Table*, vol. 18, no. 1, pp. 15-24.

DeMenna, G.J. (1984), Fluorescent Calcites – A Comprehensive Chemical Study: *The Picking Table*, vol. 25, no. 1, pp. 3-4.

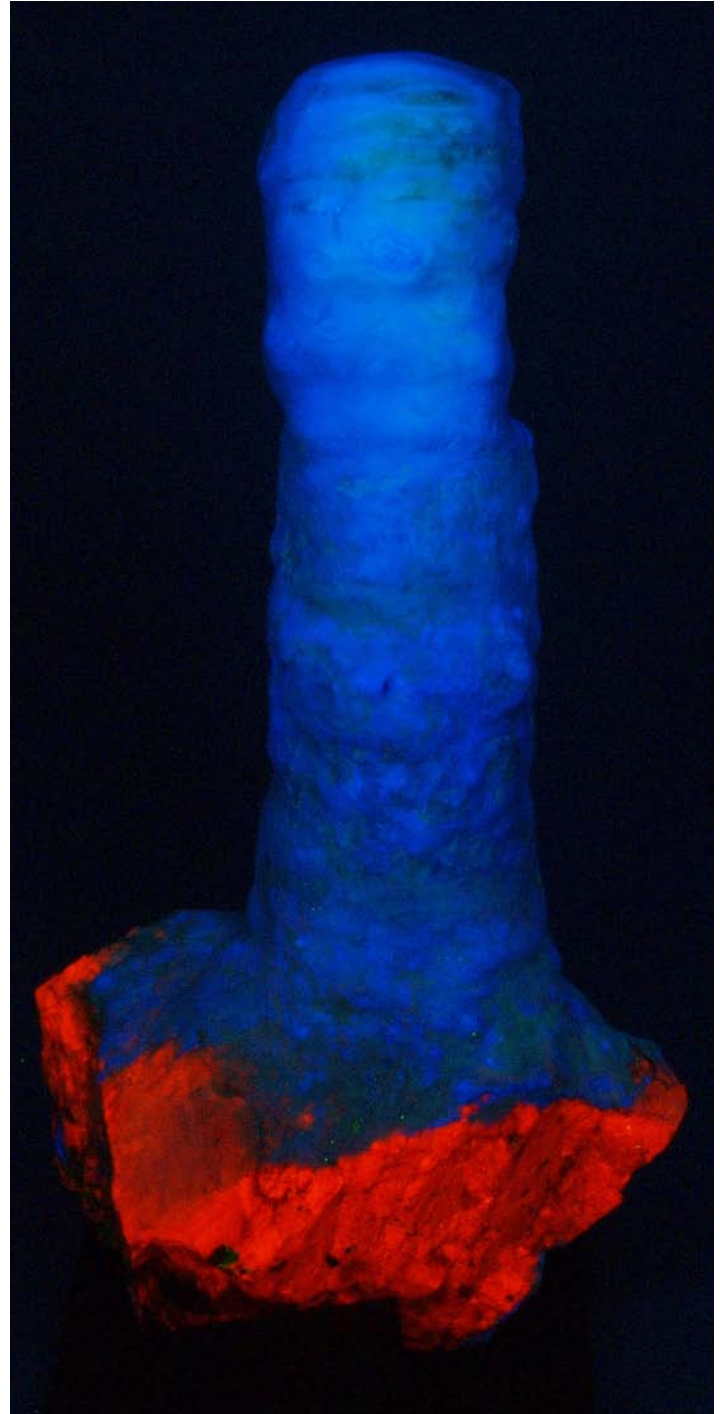
Edwards, F.Z. (1966), The Minerals of Sterling Hill 1962-65: *The Picking Table*, vol. 8, no. 2, pp. 3-15.

Grenier, Gary (2004), The Art of Fluorescent Mineral Photography, With Special Attention to the Minerals of Franklin and Sterling Hill, Part II: *The Picking Table*, vol. 45, no. 1, pp. 9-21.

Jenkins, R.E., II, and Misiur, S.C. (1994), A Complex Base-Metal Assemblage from the Sterling Mine, New Jersey: *The Picking Table*, vol. 35, no. 2, pp. 16-24.

Leavens, P.B., Zullo, Joseph, and Verbeek, E.R. (2009), A Complex, Genthelvit-bearing Skarn from the Passaic Pit, Sterling Hill Mine, Ogdensburg, New Jersey: *Axis*, vol. 5, no. 1, pp. 1-26.

Robbins, Manuel (1983). *The Collector's Book of Fluorescent Minerals*: New York, Van Nostrand Reinhold Co., 289 p. ✂



This post-mining stalagmite is one of the many pieces recently dispersed from the collection of Robert Hauck. Many such stalagmites were collected, but few were as brightly fluorescent as this one. Fewer still were “pulled out by the roots” to show a generous chunk of fluorescent calcite at the base. This specimen measures 23 cm in height. The blue shortwave fluorescence is probably due to hydrozincite as a component of the carbonate minerals that make up the stalagmite. Privately owned. E.R. Verbeek photo.



California FOMS member Gabe Reyna (right), representing the legend of the New Jersey Zinc Company to the Left Coast, with his yellow T-shirt. He's a rocker...in more ways than one!

REMEMBERING BOB JENKINS

STEVEN C. MISIUR 309 FERNWOOD TERRACE LINDEN, NJ 07036

The passing of Bob Jenkins on October 4, 2010, was devastating to me and many others in the Franklin and Sterling Hill minerals-and-mining community. He was a good friend to me for many years, and I came to know him as a consummate geologist, as well as a loving husband and father.

I first heard of his death through that modern conveyance, e-mail: ironic in that Bob himself was old-fashioned in so many ways. He valued common sense, personal trust, and the importance of one-on-one communication, values that became clearer and clearer to me the longer I knew him.

We met in 1983 during a field trip at the Franklin Mill Site, when I was a member of the Mill Site Committee of the Franklin-Ogdensburg Mineralogical Society, Inc. (FOMS). At this time, FOMS conducted open-house field trips to what had formerly been the New Jersey Zinc Company's property at Mill No. 2, a legendary plot of land north of the Palmer Shaft and "behind the fence." This area was rich in rocks brought from the Parker Dump and elsewhere to stabilize the railroad tracks and trestles built to bring ore to the Franklin Mill, and it had been unavailable to collectors for nearly a century.

Today, the short period that the Mill Site was open to collectors is recognized as the last great renaissance of field collecting at Franklin, but for me it was a time of frenzied activity. Among my many duties was manning the sign-in table to collect signatures and fees from those wishing to tread upon, and extract specimens from, this mysterious and hallowed patch of earth. Among them was Bob Jenkins. At first glance, he was unassuming, a regular guy, but he nevertheless caught my attention. By degrees I became aware of his cowboy hat, the cowboy boots he always wore, and his distinctive beard—call it his signature beard.

During one of the Mill Site field trips, Bob came up to me toward the end of a long day at the sign-in table, saw I was drinking a beer, and asked, "Can I have one of those?" I looked around for another, saw none, and said, "You can have mine." He answered, "I don't know you that well." We laughed, introduced ourselves, and began not only a long conversation but also a lasting and rewarding friendship. At that time, Bob was a field geologist for E. I. duPont de Nemours and Company, or as most of us call it, DuPont. Over the years, I heard of his travels to the Dakotas and especially Brazil, where he met his wife, Nadir. Their union was graced with a daughter, Stephanie.

Bob had a keen intellect, and the longer I knew him the more I appreciated it. His knowledge of geology was deep and broad, and he freely shared it with me and patiently answered my questions. Also, his access to DuPont



laboratories allowed him to delve into the mysteries of the minerals from our odd corner of the earth. In fact, on the day we met, he handed me a list of minerals he had collected on the Mill Site and analyzed in the lab. As time went on, he identified dozens more visually and 26 by instrumental means, a significant proportion of the 111 mineral species harvested from the Mill Site.

Once the Mill Site was closed to collectors, Bob and I kept in touch via mail, phone calls, and FOMS field trips. Then came 1989, the year the Sterling Hill Mining Museum was born. It has grown ever since, not without pains and difficulties, into a robust institution that is a source of pride for all who contributed to its growth and maturity. Bob was one of those contributors.

When the museum took its first baby steps I volunteered for the lowly role of staple puller, which for some odd reason endeared me to the Hauck brothers—or they took pity on me, I'm still not sure. Later I graduated to other roles, one being the museum's first curator; this was intimidating

but ultimately both challenging and extremely rewarding. One of the duties I particularly relished was preserving the geological and mineralogical treasures of Sterling Hill. This of course involved thousands of hours taking samples and making observations, above and below ground. However, I knew that analyzing and understanding these samples with academic rigor required intellect, education, and talent far above mine. It didn't take me long to think of Bob Jenkins.

Franklin-Sterling Hill's mineral-collecting community has had a long and often awkward relationship with scientists. Some come across as raging egocentrics with Machiavellian foibles, gods of mineralogy who regard mineral collectors as mere mortals. In contrast, Bob really was a regular guy, who would share a beer and pizza with you, and understood the everyday worries and cares we all have. For me he epitomized what a scientist should be: approachable, patient, and always willing to share his knowledge. He was a true friend.

So Bob was my candidate for Sterling Hill Mining Museum scientist, but would he be willing? Friendship with a scientist of his caliber was a privilege, but one easily abused, and I always tried not to burden Bob with petty requests. However, one fateful day in 1990 I called him and discussed my ideas about involving him at the museum, and taking him underground before the mine filled with water. Obviously Bob's access was subject to the approval of Dick Hauck, the museum's president, so I arranged a meeting and the two met. The result was a long and fruitful collaboration for us all. Bob and I spent hundreds of hours together underground, in a race with time as the water rose at the rate of a foot a day. He showed me many techniques for refining and expanding my powers of observation—and in short taught me how geologists accumulate and quantify data in the field. This was his element, and this is where his intellect and abilities gleamed most brightly.

A significant result of our working together was an article we coauthored, "A Complex Base-Metal Assemblage From the Sterling Mine, New Jersey." It appeared in the March-April 1994 *Mineralogical Record* and was reprinted in the Autumn-Winter 1994 *Picking Table*. That article describes the mineral assemblage found in the "Chalcopyrite Room" between October 1990 and March 1991, identifies tetrahedrite as a mineral new to the area, and confirms two minerals whose identify had been in question, bianchite and rosasite. Along the way, I was able to provide Bob with samples that yielded two more species new to the area, duftite and piemontite. Both of us collected samples for Anna Duzs-Moore, who was working on her master's thesis about wollastonite at Sterling Hill. Copies of Bob's voluminous reports and analyses now reside in the archives of the Sterling Hill Mining Museum.

Our shared experience underground wasn't all work and no play. We took breaks to relax and talk about our daily cares, and walked many miles, on many levels of the mine, to take in the sights. Bob often reminisced about working underground as a miner during his college years, and as I had learned to be a miner more recently at Sterling Hill, I appreciated his stories even more. He enthralled me with tales of his life as a geologist at the Homestake Mine in Lead, South Dakota, the deepest mine in the Western Hemisphere. On many occasions, his sense of humor shone through. One time, when on the Sterling Hill 340 level, we became frustrated trying to extricate a particularly stubborn sample. Bob stepped back, looked at me, and uttered one of my favorite quotes: "The accuracy of a geologic map is inversely proportional to the distance from the nearest saloon." We guffawed, and went on to successfully remove the sample. Another time, perhaps to test my powers of observation, he mailed me a geologic map of the adit level, with particular attention to recently excavated areas. As I eagerly reviewed his work, I was somewhat taken aback, then amused, to see a point of interest along the tour route labeled "Steve's Fault." That map too is ensconced in the museum's archives. Needless to say, there are many other stories and experiences we shared that are not printable in a journal of this sort, but to appreciate them it helps to have been a miner.

Another rewarding aspect of our friendship was getting to know Bob's family. I came to call his wife, Nadir, "Momma," and I fondly remember their daughter, Stephanie, jumping from boulder to boulder around the edge of the museum's parking lot. On another occasion, Bob's sister and her family were visiting from Washington State, and Bob asked me to give them a tour of the mine. He later told me it was the highlight of their stay in New Jersey.

Bob will always be a part of Sterling Hill. It was fitting that some of his ashes were scattered there, a place where he and I shared delving into its many mysteries. I miss his voice, his friendship, his humor, and his knowledge. I'll sign off now, and hoist a bottle of one of his favorite beers, Negra Modelo. Here's to you, Bob.

As a sad postscript, not long after the memorial ceremony for Bob at Sterling Hill, his wife, Nadir, also passed away. She was only 59 years old. Bob, Nadir, and Stephanie had agreed that Nadir should return to Brazil after Bob's death, in part to reunite with her family, and in part because they preferred the Brazilian health care system to ours. However, Nadir suffered from diabetes, and on April 1, 2011, she succumbed to complications from that disease. Stephanie remains in Delaware and will be returning to school as this issue of the *PT* goes to press. ✕

JOE KAISER

JULY 22, 1947 – FEBRUARY 25, 2011

TEMA J. HECHT 600 W. 111TH ST., APT. 11B
NEW YORK, NY 10025



Photo by Tema J. Hecht

After the sudden accident that took Joe's life, I asked those present at the following FOMS meeting if they would be willing to write about Joe. Everyone was so shocked at the finality of his death that many just couldn't express themselves.

I and two others came forward, and I believe the three of us meant a lot to Joe. We were his good friends, and he confided in us. I hope you get a sense of the person who was Joe when you've read our memories of him.

I met Joe at the Franklin Gem & Mineral show in September 1989, and we were friends almost at first sight. During show setup, Joe couldn't stop staring at me. I assumed it was because I was a woman in a mostly man's hobby, and I was also the "new kid on the block" doing work he usually did, carrying tables and chairs, setting up cases, putting out signs, and so on. As time went on, Joe and I began talking about our families, and what we did as young adults. We had both loved going west in the summer; we'd camp and see the sights. When Joe and I talked about it, he got very excited; he had traveled to many of the same places and was able to describe how beautiful they were, and how much he loved being there. Joe also talked about his family, his beloved wife, Anne, and his beautiful daughter, Kathleen. He was so proud of them. When Joe talked about Anne, he would call her "The Wife." I'd always yell at him about that expression, but Joe wouldn't budge. And when he said "The Wife," there was a twinkle in his eye and a soft expression on his face.

Joe was one of the most faithful, devoted mineral friends that I and my partner, Dick Bostwick, ever had. When Joe said he'd do something, he never forgot. Every time we had a Fluorescent Mineral Society meeting at Sterling Hill, Joe would be there for the festivities, food, and drink. More importantly, he would be there for the FMS "night dig" after the meeting, to weigh the rocks members had collected and take their money. I remember one FMS meeting in December when it was 4 freaking degrees outside, and, yes, our friend Joe was out there waiting for those crazy guys to come out of the darkness to the parking lot with their precious rocks.

At every Franklin Gem & Mineral Show and every NJESA show, Joe was there, helping me put up signs and drape black garbage bags over the windows to block light from falling on the fluorescent displays. We'd fight over who would tear the duct tape for those bags, but Joe mostly

won. During the shows there were afternoon breaks when Joe and I would stand outside the exit doors, enjoying the sun and having a beer together. I made sure Joe was okay with that since he had diabetes, and he said, with a smirk, "A man has to do what a man has to do."

A few years ago, Dick and I were asked to put in a four-case fluorescent mineral display at the New York Mineral Show in Manhattan. We said, "Yeah, sure, okay," and realized we had no idea how to get all the cases and minerals and UV lamps to the hotel on West 57th Street. I couldn't believe it when Joe showed up at our apartment with cases and lamps in his van, eager to load the rocks we'd selected and help us set up. Then he came back on Sunday to help us tear down, and carried our rocks and show gear back to Sterling Hill. All he asked in return was free admission to the show. Nobody who Dick and I knew wanted to come into New York City for any reason, but Joe, our dear friend, was there when we needed him.

We saw Joe often, at every FOMS and FMS meeting and at NJESA board meetings as well. As a rule, he and I exchanged hugs after each meeting—big hugs. At the end of FOMS's 2010 season, after the November meeting, we hugged again. I told Joe, "I'll see you at the March meeting, and don't forget my spring hug!" Joe said, "You betcha! I'll be there."

JOE KAISER, DUMPMEISTER

**ANNE M. WRONKA 23 HIGH POINT CIRCLE
FRANKLIN, NJ 07416-2143**

The Dumpmeister: that's how Joe Kaiser was endearingly known to many of his friends.

Joe faithfully monitored mineral collecting at Sterling Hill for many years. He would sign collectors in, weigh their finds on their way out, and collect any fees due. He made sure his wife Annie knew that the last Sunday of every month belonged to Sterling Hill...and she knew better than to make any plans for him then!

Joe enjoyed "dump day" so much. He loved helping newcomers and visiting with the regulars. He also made sure to bring a few samples home for his own collection. But he was so sly about it! Because Annie didn't share Joe's interest in minerals, he'd hide his new finds in the back of his van and sneak them into the cellar when Annie wasn't home. I'm sure she was wise to his antics, but she never let on to Joe. I think he enjoyed the subterfuge as much as the minerals.

Joe always supported both the spring and fall mineral shows. You just knew he'd be there to help set up and tear down. He transported not only cases and other supplies back and forth, but also electrical wiring, displays, tables, vendors—you name the task, and no doubt he did it at one time or another. He will be sorely missed at both shows.

Joe worked well with everyone at these shows, but it is particularly noteworthy how he befriended one special worker. Her name is Nina, and she was born with Down Syndrome. Each year she helps staff the FOMS table, and always does a great job. Joe took a particular liking to Nina. He would always give her a big, warm hello and then begin "busting her chops." Nina loved it! Of course, she'd begin busting Joe right back. Not only did Joe make her feel special, he treated her as an equal. It takes a unique person to make all kinds of people feel so good, but that was Joe.

I first met Joe at Picatinny Arsenal's finance office. He was one of those dependable folks you knew you could rely upon for a good answer to any question. He always took the time to explain everything and was a pleasure to work with. This was before Joe met Annie. During that time, he took many trips out West...touring mines and collecting rocks, of course! He often brought in some of his "gems" and was so lively in sharing his latest experiences.

Joe and Annie were another "marriage made at Picatinny." They had a deep, strong love for each other. After Joe was injured in a serious car accident, Annie stood by her man through his many months of rehab. Throughout the years, Joe continually expressed his appreciation and thankfulness

for Annie's dedication. Joe was never the same after that accident. Where once he had been outgoing and jubilant, he became shy and quiet. But his important qualities never changed. He was always a gentleman, always honest, always dependable, always a person you could trust. He remained someone you were glad to have as a friend.

When Joe and Annie's daughter Kathleen came along, Joe delighted in sharing all she went through growing up, especially when she joined him at Sterling Hill! Whether her achievement was small or large, he was so proud of everything she did.

Joe, I know you're "upstairs" now, finding out the secrets to Franklin's and Sterling Hill's mineral mysteries. Those of us lucky to have known you were certainly blessed. God bless you, your Annie, and Kathleen.

A GOOD JOE

**STEVEN C. MISIUR 309 FERNWOOD TERRACE
LINDEN, NJ 07036**

Our lives are marked with milestones of varying significance. They mark encounters, transitions, advancements. Making a friend is often a milestone encounter, and though many friendships are brief and transitional, others advance over decades. Many milestones in my life were set in place through my friendship with Joe Kaiser.

The first such milestone was set in the spring of 1982, when I met Joe during one of many FOMS field trips to the Limecrest Quarry in Sparta. During this period, the quarry was active and in full swing, producing many finds. Joe and I met while hiking up the infamous ramp out of the quarry, and what I chiefly remember is his smile: a quick smile that conveyed sincere warmth. We commented almost simultaneously that the walk was good exercise, chuckled, and continued to climb while introducing ourselves between gulps of air. Once we crested the top, we compared and talked about what we had found, and began sharing our common interest in minerals—especially those from the Franklin-Ogdensburg area.

Thereafter we met at many FOMS field trips and meetings: milestones all. As time passed, Joe and I got to know more about each other, and we forged mutual friendships with like-minded collectors such as Ron DeBlois and Dave Wellbrock. With time, our group's involvement led to the formation of what became known as the Mill Site Committee, with Joe as one of its charter members. This is the committee that organized field trips to the area near the former New Jersey Zinc Company's Mill No. 2 in the fall of 1983 and spring

of 1984. Here Joe and I shared varied management duties, offered each other sage advice on what to look for, and shared many of our mineral finds. We began digging close to each other when we found spots we thought would be most fruitful, and after working our separate ways through many tons of “mine rock,” we decided to team up and work at one spot. From then on, our teamwork was very productive, and we stayed together until the Mill Site field trips ended. Always we tried to split our finds evenly, though Joe liked many of my rejects and took them home. Many a specimen we remembered, and as long as he lived we talked about our find of hancockite, now known as epidote-(Pb). This venture was fruitful for me in honing my skills in the art of sight-identifying Franklin minerals, but even more fruitful in forging a deeper friendship with a kind and gentle soul. I’m sure the same was true for Joe.

Over the years, there were many other milestones. In early 1996, Joe, Ron DeBlois, and I teamed up and used Joe’s van to transport *two tons* of fluorescent minerals to Arizona, where we helped the Fluorescent Mineral Society with its 25th Anniversary display at the Tucson Gem & Mineral Show, the largest such display ever. We planned the trip at my home, and with a map of the United States on my living room floor, we pointed out places we wanted to visit. We crammed in as many stops as we could, while keeping in mind our deadlines for reaching Tucson and returning home. Along the way, we visited the Bonne Terre Mine in Bonne Terre, Missouri, and the National Atomic Museum (“Atomic Bomb museum”) in Albuquerque, New Mexico, before wending our way from northern Arizona down to our motel in Tucson. While there, we spent time looking for minerals and had many rewards, mineral and otherwise. We visited various collecting sites and made friends who are still friends today. As with all trips, ours was replete with humorous moments; Joe’s habit of chewing gum en route and tossing it out the window prompted good-natured joshing from Ron and me. While driving across Texas, we saw roadrunners crisscrossing the highway, and Ron joked that when the roadrunners stepped in Joe’s errantly tossed gum, they’d remain perpetually stuck, little monuments to our travels.

Another milestone in my relationship with Joe was the tragic accident that tossed him from his vehicle; he survived, but with severe head trauma. I can still remember the phone call about this chilling incident from Joe’s wife, Anne, who was pregnant at the time. Once Joe was transferred to a rehabilitation center in Pennsylvania, his doctors recommended that as many of his friends as possible visit him there. At the time, I was working on the Landmesser Tunnel at Sterling Hill and staying there during the week. Whenever possible, after work I’d drive to the rehab facility and talk to Joe about the times we’d shared, what was going

on at the mine, and his wife and unborn child. Some of these trips I shared with mutual friends, including Bernie Kozykowski and Dick Hauck. As an incentive, I promised Joe that when he got out of rehab, I’d take him underground at Sterling Hill before the mine was flooded and show him the many wonders there. I’d like to think this had a positive effect. After he came home and was able to attend FOMS meetings, I asked Joe if he felt ready. He was, and we spent the better part of a day exploring the mine: a promise fulfilled.

As grateful as he was for our visits, Joe was more grateful for his second chance at life, and having a family with Anne. The birth of their daughter, Kathleen, was a great source of happiness to him. He and Anne shared the duties, travails, and joys of raising her, a beautiful young lady now. When she was quite young and Joe needed help with his computer, I sat in his basement with Kathleen on my lap, trying to entertain a small, energetic girl while advising Joe. This is a fond memory and one I treasure to this day.

Joe remained a good friend on occasions beyond counting. I had long been involved with the New Jersey Earth Science Association (NJESA) and its gem and mineral show, and Joe became the FOMS delegate to NJESA, and eventually its president. As in the past, both of us worked as a team to help put on the NJESA show in the spring and the Franklin show in the fall. When sickness in my family precluded my working for these shows, Joe took on many of my duties. I will always be grateful for this.

Few FOMS members were aware of the extent of Joe’s contributions to the Franklin and Sterling Hill minerals-and-mining community. He was once treasurer of the Franklin Mineral Museum and became editor of *The Picking Table* at a critical time. He also did much volunteer work for the Sterling Hill Mining Museum, where collectors at the special “digs” knew Joe as the stalwart gentleman who waited, regardless of the time or weather, to weigh their rocks and take their money. He also wrote the “Sterling Hill Mining Museum News” for *The Picking Table*, and at the time of his death he was FOMS’s field trip chairman.

Sadly, the last milestone is set in place for all of us. For Joe, it was set on February 25, 2011. His mineral collection was donated to the Sterling Hill Mining Museum, per his wishes, and he leaves a legacy of good memories to all who knew and remember him. During his funeral mass, the priest commented on Joe’s love of minerals, remarking that we are all stewards of the Earth and its natural treasures, and we share with Joe both his wonder about the Earth and his obligation to care for it.

Alas, we are all temporary stewards of the Earth and its treasures. What we leave behind are milestones for others to ponder as they pass by.





One of the most attractive specimens known of Franklin hardystonite crystals embedded in calcite, shown in daylight (top) and under shortwave ultraviolet light (bottom). Note the inclusions of calcite within the hardystonite crystals. The specimen is from the Richard C. Bostwick collection, is 10 cm (4 inches.) across, and is currently on display in Zobel Hall of the Sterling Hill Mining Museum. Tema J. Hecht photos.

