

THE PICKING TABLE

JOURNAL OF THE FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY

VOL. 53, NO. 1 – SPRING 2012

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An Evening With Jack Baum
Recollections of Franklin, Part II
Precambrian Rocks of the Trenton Prong



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THE PICKING TABLE

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

Members are encouraged to submit articles for publication. Articles should be submitted as double-spaced Microsoft Word documents to Richard J. Keller, Jr. at: PTMemberFeedback@gmail.com.

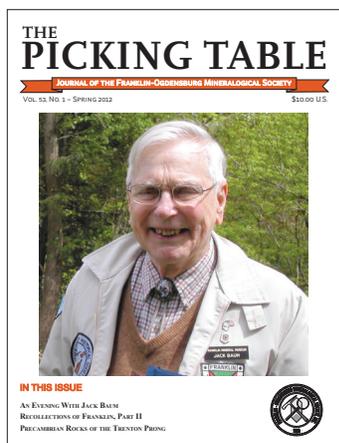
The views and opinions expressed in *The Picking Table* do not necessarily reflect those of FOMS or the editors.

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

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

About the Front Cover

John Leach (Jack) Baum, March 25, 1916 – October 16, 2011, was one of the great men of distinction in Franklin mineralogy. Interested in rocks and minerals from boyhood, Jack pursued studies in the geosciences and graduated Cum Laude from Harvard in 1939. Upon graduation, he was employed by the New Jersey Zinc Company (NJZ), where he became Resident Geologist at Franklin in 1950. Jack's work for NJZ included documenting the mineralogy and geology of the Franklin and Sterling Hill orebodies, as well as prospecting throughout the United States and Canada for deposits of zinc, titanium, uranium, molybdenum, and other mineral resources. Retiring after 32 years with NJZ, Jack remained active in the local mineral culture. Jack was Curator of the Franklin Mineral Museum from 1965 to 2000 and served as a president of the Franklin-Ogdensburg Mineralogical Society. He was the author or co-author of numerous articles in his field, and the bulk of his collection of local mineral specimens, most of which he collected personally, was donated to the Smithsonian Institution. The mineral species johnbaumite, an arsenate apatite that occurs at Franklin, Sterling Hill, and Långban, Sweden, was named in recognition of Jack's many contributions to mineral science. A beloved and iconic presence at the Franklin Mineral Museum, Jack is shown here wearing his equally iconic jacket adorned with buttons and patches of local mineralogical and historical societies. *Photo courtesy of the Franklin Mineral Museum.*



FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY, INC.

SPRING – SUMMER 2012 ACTIVITY SCHEDULE

SATURDAY, MARCH 17, 2012

9:00 am – NOON

FOMS Field Trip

Sterling Hill Mining Museum.

Collecting permitted on the Mine Run Dump and in the Fill Quarry, Passaic Pit, and “Saddle” area.

\$5.00 admission plus \$1.50 per pound for material collected.

10:00 am – NOON

FOMS Micro Group

Franklin Mineral Museum.

BYO microscope and minerals.

Call Ralph Thomas for information: 215-295-9730.

1:30 pm – 3:30 pm

FOMS Meeting

Franklin Mineral Museum.

Lecture: *Collecting at Tin and Silver Mines in Bolivia*,
by Alfredo Petrov.

SATURDAY, APRIL 21, 2012

9:00 am – NOON

FOMS Field Trip

**Collecting at the Braen Quarry (a.k.a. Franklin Quarry)
Cork Hill Road, Franklin, N.J.**

Meet at quarry. If gate is open, drive through and park to the left of the gate.

Please don't block the roadway.

10:00 am – NOON

FOMS Micro Group

Franklin Mineral Museum.

1:30 pm – 3:30 pm

FOMS Meeting

Franklin Mineral Museum.

Lecture: *Finding a Franklin Mineral Hoard*,
by Jim Van Fleet.

6:00 pm

****Franklin Mineral Museum Members-Only Sale.**

Featuring specimens from the Robert Shaw collection.
Meet in front of the FMM to register.

SATURDAY AND SUNDAY, APRIL 28 AND 29, 2012

SPRING SHOW WEEKEND

40TH ANNUAL NJESA GEM & MINERAL SHOW

held in conjunction with the

17TH ANNUAL FOMS SPRING SWAP-AND-SELL.

Sponsored by the New Jersey Earth Science Association, the Sterling Hill Mining Museum, and the Franklin-Ogdensburg Mineralogical Society, Inc.
Franklin Middle School, Washington St., Franklin, N.J.

NJESA Show hours: Saturday, 9:00 am to 5:30 pm;
Sunday, 10:00 am to 5:00 pm.

Swap-and-Sell hours: Saturday, 8:00 am to 5:30 pm;
Sunday, 9:00 am to 5:00 pm.

Admission \$5.00 per person,
children under 14 free with paying adult.

For Swap-and-Sell information, contact Chet Lemanski
after 8:00 pm at 609-893-7366.

BANQUET AND AUCTION

Saturday evening at the GeoTech Center,
Sterling Hill Mining Museum.

Admission limited to 60 people.

Social hour from 5:30 pm to 6:30 pm,
followed by a buffet from 6:30 pm to 9:30 pm.

Banquet Tickets are \$18.00 each and include all food, coffee, tea, and soft drinks. **BYOB!!**

Silent Auction from 5:30 pm to 7:30 pm.

Live Auction begins 7:45 pm.

Both auctions are for the benefit of all three show sponsors:
NJESA, FOMS, and SHMM.

FIELD COLLECTING

****Sterling Hill Mining Museum.**

Organized by the Delaware Valley
Earth Science Society (DVESS).

!!!! Schedule: Saturday, 9:00 am to 11:00 pm !!!!

\$20.00 per person includes extended mine tour
and registration.

\$1.50 per pound for material collected.

Preregistration required; see www.uvworld.org
for more information.

****Sterling Hill Mining Museum, Saturday and Sunday.**
Garage Sale: Christiansen Pavilion, 10:00 am to 3:00 pm

****Sterling Hill Mining Museum, Sunday only.**
Collecting on the Mine Run Dump and in the Fill Quarry,
Passaic Pit, and "Saddle" area.
9:00 am to 3:00 pm (**Open to the public!**)
Fees for mineral collecting: \$5.00 admission
plus \$1.50 per pound for material collected.

SUNDAY, MAY 6, 2012

NOON

****Annual Volunteer Appreciation and Miners Day Tribute**
at the Franklin Mineral Museum, including special events and
a concert by the famous Franklin Band.

SATURDAY, MAY 19, 2012

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

Franklin Mineral Museum.

Lecture: *Mines and Minerals of Connecticut*,
by Charles Merguerian, PhD

SATURDAY, JUNE 2, 2012

7:00 pm – 10:00 pm

****Spring Night Dig and Mineral Sale
at the Buckwheat Dump.**

Sponsored by the Franklin Mineral Museum.
Open to the public – poundage fee charged.
Eye protection, flashlight, and UV lamp advised.
For more information, contact the
Franklin Mineral Museum: 973-827-3481.

SATURDAY, JUNE 16, 2012

9:00 am – NOON

FOMS Field Trip

Collecting at the Taylor Road Dump.

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

Franklin Mineral Museum.

Lecture: *Journey to a Crystal Kingdom in the
Franklin Marble*, by Glenn Rhein.

6:00 pm – 10:00 pm

****Night Collecting at the Sterling Hill Mining Museum.**

Night collecting on the Mine Run Dump
and in the Fill Quarry area.

Fees for mineral collecting: \$5.00 admission
plus \$1.50 per pound for material collected.

(Open to Sterling Hill Mining Museum members only).

Scheduled activities of the FOMS include meetings,
field trips, and other events.

Regular meetings are held on the third Saturdays of
March, April, May, June, September, October,
and November, and generally comprise a
business session followed by a lecture.

FOMS meetings are open to the public,
and are held at 1:30 pm, usually in Kraissl Hall
at the Franklin Mineral Museum,

34 Evans St., Franklin, N.J. (check listings for exceptions).

Most FOMS field trips are open only to
FOMS members aged 13 or older.

Proper field trip gear required: hard hat, protective eyewear,
gloves, sturdy shoes.

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

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

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.**



From the Editor's Desk

RICHARD J. KELLER, JR.

13 GREEN STREET

FRANKLIN, NJ 07416

As you've now seen, or at least surmised from the photo on the front cover, this issue of *The Picking Table* is dedicated to the memory of John Leach Baum (March 25, 1916 – October 16, 2011). This is the initial effort in what is expected to be a series of tributes to Jack in *The Picking Table*. The next issue will contain remembrances of Jack as penned by various FOMS members. Should you wish to contribute to these remembrances, please contact one of the editors. For this issue, we present an extended interview that Mark Boyer conducted with Jack in April 2004.

Mark's interview was recorded on a 90-minute cassette tape. At the time, Mark transcribed the first side of the tape for potential use in *The Picking Table*. The interview remained "shelved" until 2010, when Mark, recognizing the potentially unstable and transient nature of audiotape, asked his father to convert it to a digital format on compact disc. It was only then that Mark realized that he had never even listened to the second side of the tape! Forty-five minutes of Jack's recollections that were presumed lost had been rediscovered! Mark painstakingly transcribed the remainder of the interview so it could be published in the *PT*.

Due to an overabundance of material submitted to the *PT* for the Fall 2011 issue, we decided to hold back some articles. Two of them are included in this issue: another installment of "Recollections of Franklin: The Mining Town" from Bill Turan and an article by Rich Volkert about Precambrian rocks in the Trenton Prong.

The editorial staff is well aware of the errors in Bernie Kozykowski's Mill Site article in the previous *PT*. These errors

were the result of last-minute color adjustments to several photographs. Nobody, including our printer, foresaw that photo corrections could affect the text, but they did — some sentences were repeated, and one was missing. Since I had the final say on the last *PT* going to print, I accept the responsibility for not editing the entire issue. Lesson learned. We maintain the confidence we have in both our layout artist, Caitlin Mack, and our printer, Acorn Graphics, and will continue to use them due to their dedication to the quality we demand.

And now seems as good a time as any to extend my apologies for misidentifying Gary Weinstein in the caption of his photograph in the "Scenes from the NJESA Gem & Mineral Show" in the last issue of the *PT*. He was incorrectly identified as Gary Weingarten.

Lastly, the final proof of the Fall 2011 *PT* was approved in time to have the journal ready for the September 2011 Franklin-Sterling Gem and Mineral Show. All 300+ copies were brought to the show so members could pick up their *PT*s in person. Those who didn't, or couldn't, had their copy mailed to them the day after the show. Should we be in the same position in the future, if you attend a mineral show in Franklin, please visit the FOMS table and pick up your *PT*. Obviously that's not necessary for this issue as we dedicated ourselves to having it printed and mailed *long* before the April 2012 NJESA show. However, we hope you can attend anyway!

You hold in your hands a landmark issue celebrating the life of a true Franklin legend. We hope you enjoy this glimpse into the character of a remarkable man. ✕

A "Speling Lessin"

We all know that some of our local mineral names are hard to pronounce and even harder to spell, but just think of how difficult others must find our species names. Here's an example, taken from the description of a group of specimens recently put up for auction. This is from the auction catalog:

"Minerals included are franklinite, **willimente**, **pauliclephite**, **clinoheadrite**, **heardystonoyte**, **freedlylte**, zincite, **handcockite**, **pictolite**, **hyderohetaeroyoyte**, nasonite, **norbegite**, **tephroyte**, **sussixite**, **glacochroite**, **svaiete**, larsenite, and others." [Emphasis added.]

Score: Four correct out of seventeen, possibly a new record for ineptitude. The "pauliclephite," by the way, is probably a corruption of *polyadelphite*, an obsolete name for andradite. And there's more: The same catalog, in referring to our local zinc mines, places them on "the Easter Seaboard."

At least one error can be traced to the original label that came with the specimen. Most of them, however, appear to be typos that somehow bypassed the proofreading process, for the rest of the auction catalog contains far fewer misspellings of mineral names. We just thought you'd like to know... ✕

President's Message

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

It is with heavy heart and deep sadness that my President's Message for this issue of *The Picking Table* must address the recent passing of John Leach Baum ("Jack" to those who knew him better than I did).

Jack's passing signals the end of a significant part of Franklin's mining history. I can't, in good conscience, sit here and properly eulogize him, as I did not know him as well as I wish I had. The deserved salutations to Jack will come from those who *did* know him. These tributes begin with this issue of the *PT*, and will carry over to the fall issue.

As mentioned in my first President's Message, I moved to Franklin in September 1999. It took around two years before I was bitten by the "rock bug." One year later, I was a member of FOMS and attending every meeting. The people I'd met didn't just show me rocks, but educated me on Franklin's rich history of everything from the mining to the rocks and, most importantly, the personalities.

I recall a FOMS meeting around 2002 when Jack was singled out for being relevant to that day's presentation. I wish I remembered more, but then again, I never thought I'd be in a position to be writing this. This is my first recollection of Jack and his local impact. Later, while shopping in Franklin one day, I saw a man I thought I recognized sitting on a bench outside (possibly choosing not to accompany his wife Augusta, since it's a rare man that loves to go shopping). Since I was an amateur and feared exposing this fact, I did not approach him to introduce myself. To this day, I'm sure it was Jack.

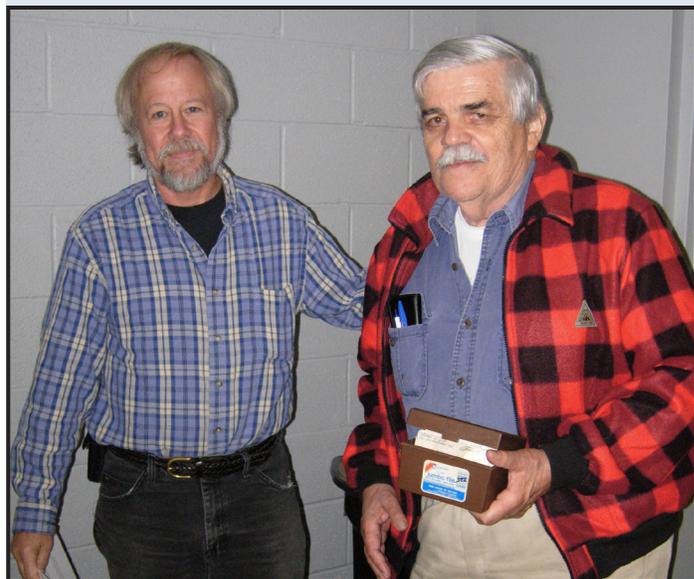
This was a huge failure of judgment on my part. Over the years, I've come to learn that Jack was open and accessible to anyone interested in Franklin. Recently I learned that a FOMS member merely contacted Jack, asked to visit him at his home, and the request was happily accepted.

I do have one cherished memory of Jack. I saw him at the Miners Day celebration at the Franklin Mineral Museum on May 1, 2011. Jack stood and shook the hand of Earl Verbeek, and then shook my hand and called me by name. I was blown away as I'd never truly met the man, but he knew me as the president of the FOMS. The thrill of it all was knowing Jack still found the time, and had the interest, to read *The Picking Table*.

To all FOMS members who know where the Baum homestead is located on Route 23, just north of Franklin, I'd like you to duplicate what previous FOMS president Mark

Boyer has done every single time I've been in a car with him and driven past Jack's house. Vocalize a short phrase that Mark always makes out of profound reverence to John Leach Baum... "Hi, Jack." ✂

With Thanks to Ed Wilk



Ed Wilk (on right) has been the FOMS Slide Collection Custodian for decades. He also was our Field Trip Chairman for many years.

On September 17, 2011, Ed came to the FOMS meeting and relinquished the slide collection into the care of FOMS. These slides will be housed in a secure place at Sterling Hill and digitized for archival purposes by Dr. Earl Verbeek.

On behalf of the Franklin-Ogdensburg Mineralogical Society, and its members, I want to thank Ed very much for taking excellent care of these materials for so long.

Because of Ed, this valuable collection will be used by the mineral community for years to come. ✂

Text and photo by Tema J. Hecht.

The 55th Annual Franklin-Sterling Gem & Mineral Show

September 24th & 25th, 2011

STEVEN M. KUITEMS, DMD

14 FOX HOLLOW TRAIL
BERNARDSVILLE, NJ 07924

As I drove to Franklin on Friday afternoon, the nursery rhyme “Rain, rain, go away, come again some other day” was on my mind; I really don’t like setting up in a rainstorm. Over the weekend several dealers asked why the crowds were thinner than usual, and the thought came to mind that some potential show-goers had probably listened to, and believed, the gloomy prognostications. But, thank God, there was no rain during the show days, only grey clouds over the Franklin School grounds.

This show had thirty dealers indoors, and between Saturday and Sunday, ninety-eight outdoor swappers. There were ten fluorescent exhibits on the stage, and eight “daylight” exhibits in the main hallway area of the school. What may have been lacking in quantity for the daylight displays was surely compensated for by their quality. Dick and Elna Hauck presented minerals from several major mining areas, including the Franklin and Sterling Hill Mining District, and our local specimens were certainly colorful in comparison with those Michigan coppers. I’m sure Mark Mayfield impressed the crowds with his personally collected thumbnail and miniature Franklin and Ogdensburg specimens. The Franklin Mineral Museum took an alternative approach by displaying specimens from Pete Dunn’s collection that were available for purchase, against a backdrop of his 1995 monograph (an essential document for those with a need to know). Kolicite, collected by and named after John Kolic, as well as a host of high-quality Franklin and Sterling Hill classics, were well-studied by all who paused at John’s case. Nearby was a display of rather large Franklin classics, exhibited by yours truly. Bernie Kozykowski presented the zinc ores of Franklin and Sterling Hill, the minerals the two deposits have in common that are the economic basis for mining zinc here: a simple display, yet it made a profound statement. Stephen Sanford had put together a case of unusual specimens that showed how complex the geological history of our mining district really is; many collectors paused to contemplate what each specimen represented, as episodes in a saga that began 1.29 billion years ago. Jim Chenard offered a different perspective with his case of select “Eastern Classics” from other mining districts in the eastern United States, a collector’s pursuit that many Franklin collectors have shared.

The Franklin Mineral Museum led off the fluorescent exhibits with “Petrified Canaries,” a fine selection of outstanding esperites from the Franklin Mine. In contrast, the Sterling Hill Mining Museum showcased “Everything but the Orebodies,” a selection of fluorescent goodies from outside the ores. A mix of colorful “Franklin Delights” was my contribution to the cause. Andrew K. Mackey exhibited “Franklin Favorites,” a case in which a really fine wispy esperite stood out, and Andrew R. Mackey displayed “Franklin and Sterling Hill Specialties.” Next in line was a memorial case honoring Peter Mackey with a display of Peter’s minerals, assembled by Claude Poli: a fine tribute. Many visitors were blown away by the brilliant fluorescent specimens in Dennis DeAngelis’s “Shortwave Sunshine” case; the exceptionally rich, bright red bustamite was my favorite. Rich Keller put in a “Hot Box O’ Franklin Rocks,” which is really what the excitement of the local mining district represents to fluorescent collectors.

“That’s all? Sphalerite!?” That was the theme with variations galore, in Chris Luzier and Mark Dahlmann’s case. Tema Hecht rounded out the field and introduced the word of the weekend in her case, titled “Mimetoliths.” (This is the proper term for what most of us call “picture rocks.”) This was a humorous exhibit that brought smiles to the faces of the visitors who paused to compare their interpretations with Tema’s.

The FOMS 55th annual banquet and auction, with guest auctioneer Vandall King, was held in the nearby Lyceum Hall on Saturday evening. Good fun, good food, and an unusually lively auction were enjoyed by all. Thanks to those who contributed the mineral specimens and literature that were auctioned.

Thanks also to all who volunteered their time and effort to assemble those fine exhibits; for that I compliment you. Hopefully these wonderful displays will inspire more collectors to participate. To the FOMS volunteers who helped with parking dealers, and all the little details involved in making this 55th annual show a reality, many thanks. After all, this show is created by and intended for people who love minerals, and appreciate the many connections between the mineral kingdom and the people who have enjoyed minerals over the millenia. ✕

Scenes From the New Jersey Earth Science Association Gem & Mineral Show

April 30 – May 1, 2011



Paul Shizume reaches for his handy SW blaster to ward off Peter Chin.



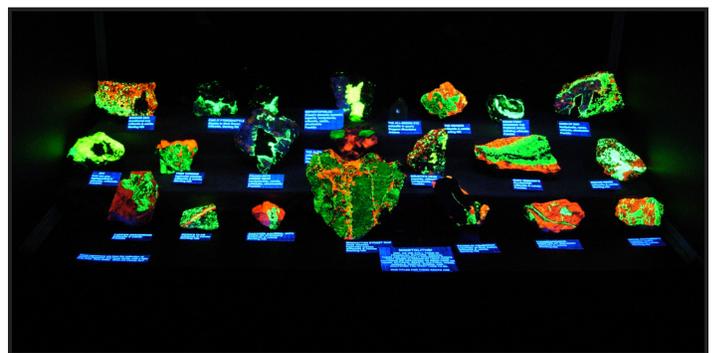
Dr. Steven Kuitens after his winning bid for Joe Kaiser's iconic molybdenite specimen from the Eastern Concrete Materials Quarry in Hamburg.



Gar Van Tassel, whose house was built on part of the Parker Dump. Jackpot!



Elna Hauck and Denise Kroth at the auction, raking it in and taking names.

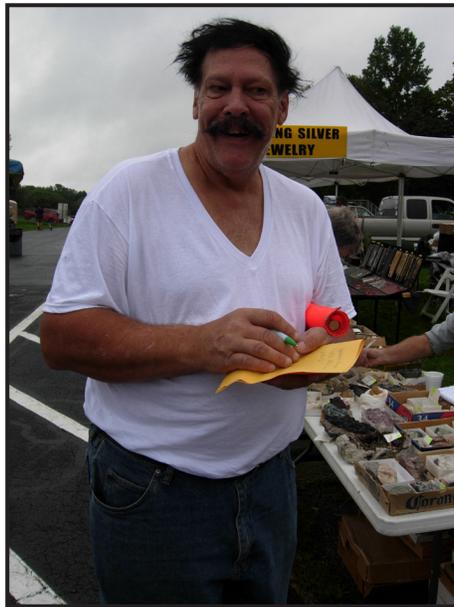


Mimetoliths (picture rocks) from the collection of Richard Bostwick and Tema Hecht, including "The Alligator," "The Franklinite Horsehead," and "The Alien."

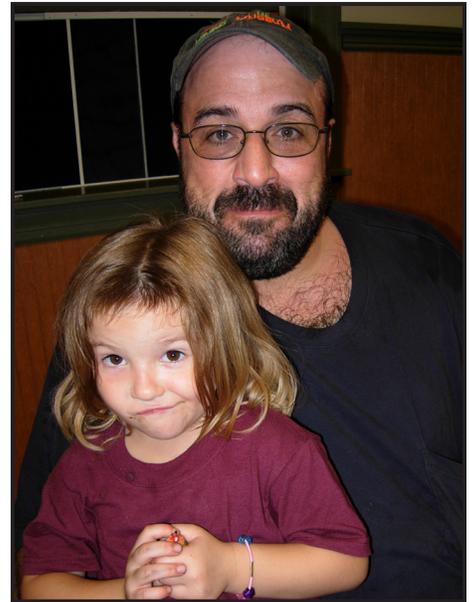
Photos by Tema J. Hecht.



Ron DeBlois finally comes out.



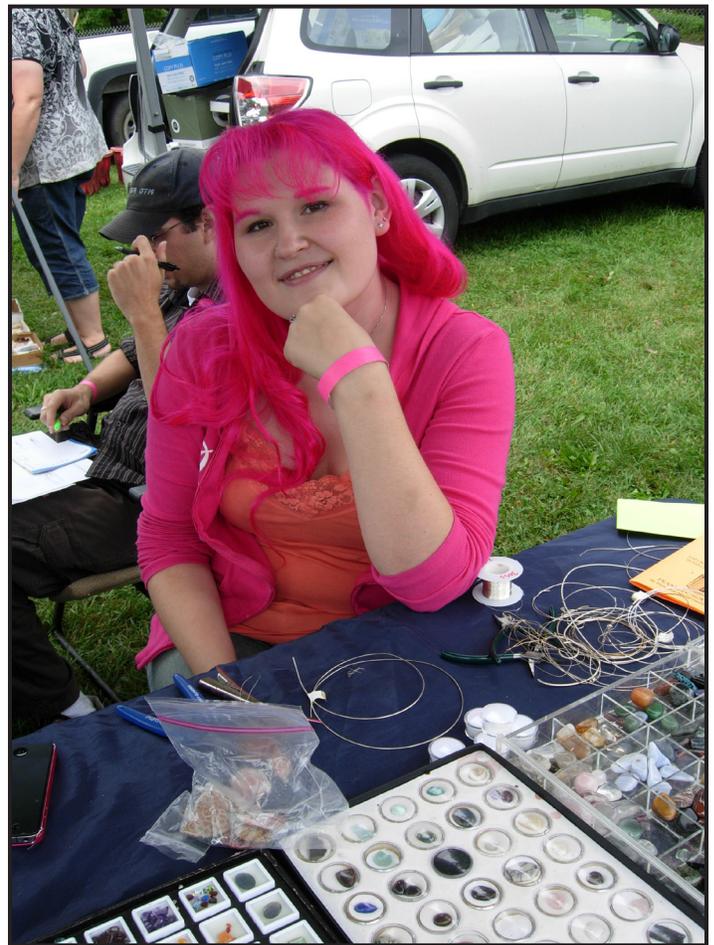
Ray Klingler, the new show management's hardest worker.



Madison Mackey nixes Fred Lubbers's boneheaded bid.



Daniel Kuitems outbids his father.



The most colorful vendor at the outdoor show competes with our fluorescent minerals!

Are Precambrian Rocks of the Trenton Prong Part of the New Jersey Highlands?

RICHARD A. VOLKERT, PhD

NEW JERSEY GEOLOGICAL AND WATER SURVEY
P.O. BOX 420, TRENTON, NJ 08625

INTRODUCTION

It is widely known that the New Jersey Highlands are underlain by metamorphic rocks of Precambrian age. It is perhaps less well known that metamorphic rocks of Precambrian age are exposed about 30 miles south of the Highlands, in a northeast-trending belt in west-central New Jersey known as the Trenton Prong. Rocks of the Trenton Prong crop out along the fall line, which forms the contact between ~200 million-year-old bedrock of the Piedmont Province to the north and less than 100 million-year-old sediments of the New Jersey Coastal Plain to the south (Figure 1).

Compared to the New Jersey Highlands, the geology of the Trenton Prong remains poorly studied because bedrock is sparsely exposed. Most outcrops are in the Delaware River, where they are difficult to access except during times of low water. Bedrock is also sometimes encountered in artificial exposures for development, or in shallow boreholes drilled for construction or environmental issues.

The relationship of Precambrian rocks of the Trenton Prong to those of the Highlands is a mystery that contains many interesting but unanswered questions. For instance, are the rocks the same age? Did they form in the same geologic environment? Does the Trenton Prong continue north beneath the Piedmont and connect to the Highlands? If so, are there any mineral deposits (iron, zinc, graphite) in the buried part of the Trenton Prong? Many of these questions will likely remain unanswered. However, recent bedrock geologic mapping (Volkert and Drake, 1993) and geologic studies (Volkert, 2010) are beginning to provide preliminary answers to questions regarding these enigmatic rocks.

GEOLOGIC SETTING

The Trenton Prong contains a heterogeneous assemblage of metamorphosed rocks that are divisible into a northern block, southern block, and Wissahickon block (Figure 2). The northern block contains Precambrian-age gneisses of igneous and sedimentary origin and minor marble (Volkert and Drake, 1993). Marble does not crop out but was encountered in a test boring drilled in 1960 for the

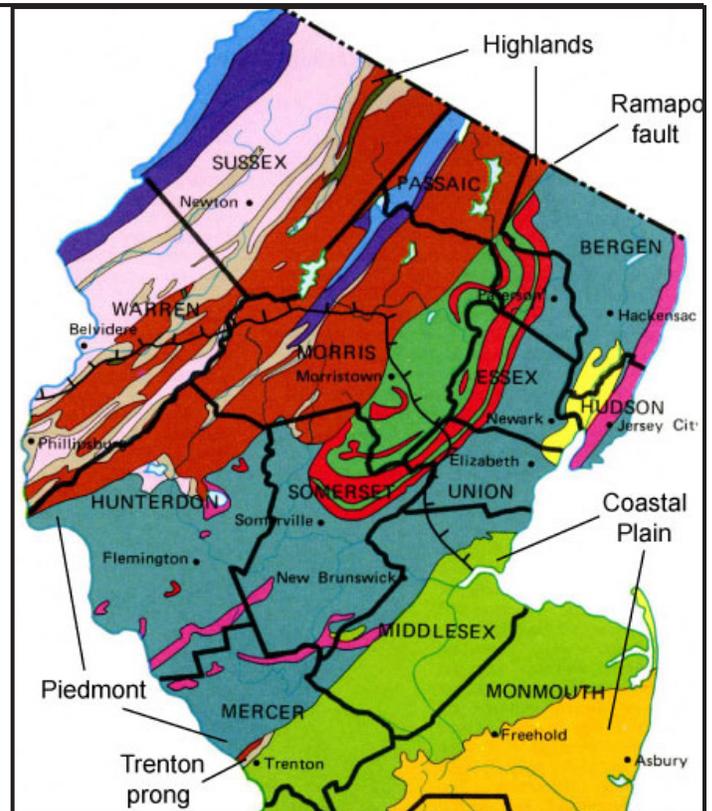


Figure 1. Simplified geologic map of northern and central New Jersey showing the location of the Trenton Prong relative to the Highlands, Piedmont and Coastal Plain Provinces (modified from New Jersey Geological Survey, 2005).

State Department of Education building in west Trenton. The thickness of the marble, its mineralogy, and associated rock types remain unknown. Rocks of the northern block are unconformably overlain on the south by the Cambrian-age Chickies Quartzite (Figure 2). The Chickies contains the trace fossil *Skolithus linearis*, confirming a Cambrian age for that unit (Bascom et al., 1909), and suggesting that it is coeval (i.e., contemporary) with the Cambrian-age Hardyston Quartzite in the New Jersey Highlands. Therefore, based on the fossil evidence and field relationships, Trenton Prong gneisses are older than Cambrian (i.e., older than 540 million years).

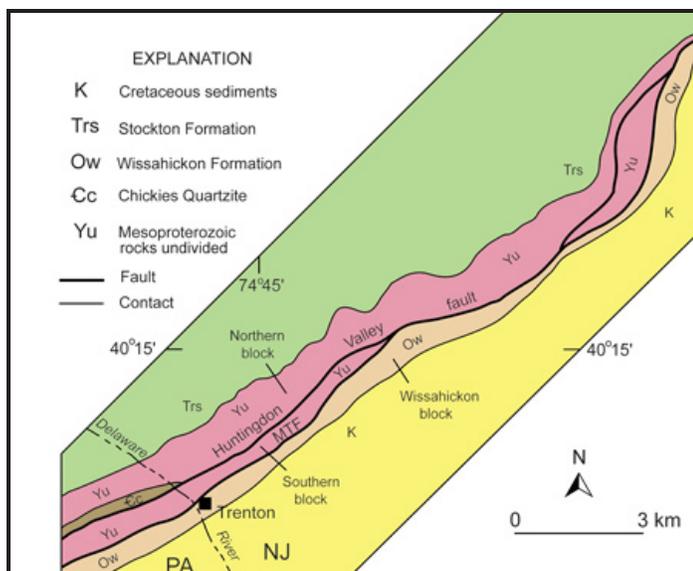


Figure 2. Simplified geologic map of the Trenton Prong (Drake and Volkert, 1993) showing the subdivision into a northern block, southern block, and Wissahickon block. MTF, Morrisville Fault.

The southern block contains many of the same Precambrian gneisses as the northern block, as well as minor amounts of K-feldspar augen granite gneiss (Volkert and Drake, 1993). Rocks of the southern block have been thrust onto the northern block on the Huntingdon Valley fault (Figure 2).

The Wissahickon block includes Ordovician-age schist and gneiss of the Wissahickon Formation of sedimentary origin, interlayered volcanic rocks, and minor amounts of coarse-grained granite. Rocks of the Wissahickon block have been thrust onto the southern block on the Morrisville fault (Volkert and Drake, 1993) (Figure 2).

All of the rocks of the Trenton Prong have experienced at least one episode of high-grade metamorphism. Precambrian rocks contain the mineral assemblage clinopyroxene + plagioclase + quartz ± orthopyroxene ± garnet in felsic (light-colored, quartz-rich) rocks, and hornblende + clinopyroxene + plagioclase in mafic (dark-colored, quartz-poor) rocks. These mineral assemblages are representative of metamorphism

to granulite-facies conditions (>700°C), and are nearly identical to the mineral assemblages and metamorphic conditions experienced by rocks in the Highlands. Timing of metamorphism of the Trenton Prong is imprecisely known but estimated to be older than 900 million years (Volkert, 2010), suggesting it may be coeval with metamorphism in the Highlands at 1045 million years.

Schist and gneiss of the Wissahickon block contain the mineral assemblage plagioclase + K-feldspar + quartz + biotite + muscovite ± garnet that is representative of metamorphism to amphibolite-facies conditions. Timing of metamorphism of Wissahickon Formation schist and gneiss ranges from about 455 to 415 million years as determined by studies in the Pennsylvania and Delaware Piedmont (Aleinikoff et al., 2006; Bosbyshell et al., 2007). Temperature estimates for this metamorphism are ~600°C (Bosbyshell et al., 2007; Srogi et al., 2007).

It is clear that the Precambrian gneisses and Wissahickon Formation in the Trenton Prong do not share a common metamorphic history. The available evidence suggests that the Wissahickon was metamorphosed to amphibolite-facies conditions independently of the Precambrian rocks and then subsequently thrust onto rocks of the southern and northern blocks during continental collision in the Paleozoic Era (Volkert, 2010).

ROCKS OF THE TRENTON PRONG

Precambrian gneisses formed from sedimentary rocks (Figure 3A) are common in both the northern and southern blocks of the Trenton Prong. Quartzofeldspathic gneisses are medium grained, well foliated, and composed of blue and milky quartz + K-feldspar + oligoclase + biotite ± garnet. Calcsilicate gneisses are much less abundant. They are medium grained, well foliated, and contain oligoclase + clinopyroxene (mainly diopside) + hornblende + biotite. Quartz and titanite are present locally. Geochemical compositions of both types of gneisses indicate they formed from sedimentary rocks that were mainly sandstones deposited in an ocean basin adjacent to a volcanic arc (Volkert, 2010).



Figure 3. Principal types of bedrock in the Trenton Prong. Precambrian gneiss formed from sedimentary rocks (A), felsic igneous rocks (B), and mafic igneous rocks (C). Schist and gneiss of the Wissahickon Formation (D) crosscut by a thin body of granite.

Gneisses formed from igneous rocks are also common in both the northern and southern blocks. Felsic gneisses (Figure 3B) are composed mainly of quartz + K-feldspar + oligoclase + biotite. They have geochemical compositions suggesting they are metamorphosed rhyolites. Mafic gneisses (Figure 3C) are composed of plagioclase (oligoclase to andesine) + hornblende + clinopyroxene ± biotite. Accessory minerals include magnetite, epidote, and sulfide. Geochemical compositions of mafic gneisses are consistent with basalt that formed in a volcanic arc setting (Volkert, 2010).

Schist and gneiss of the Wissahickon Formation (Figure 3D) are composed of oligoclase + biotite + K-feldspar + quartz + muscovite ± garnet. Geochemical compositions of the schist and gneiss resemble metamorphosed sandstone and shale and reflect a different sediment source than Precambrian sedimentary gneisses. The Wissahickon formed in an ocean basin that received sediment from a mixture of volcanic arc and continental sources. Mafic gneisses interlayered with Wissahickon schist and gneiss contain mainly hornblende and plagioclase. Geochemical compositions indicate they formed from basalts in an ocean-floor environment (Plank et al., 2001; Volkert, 2010).

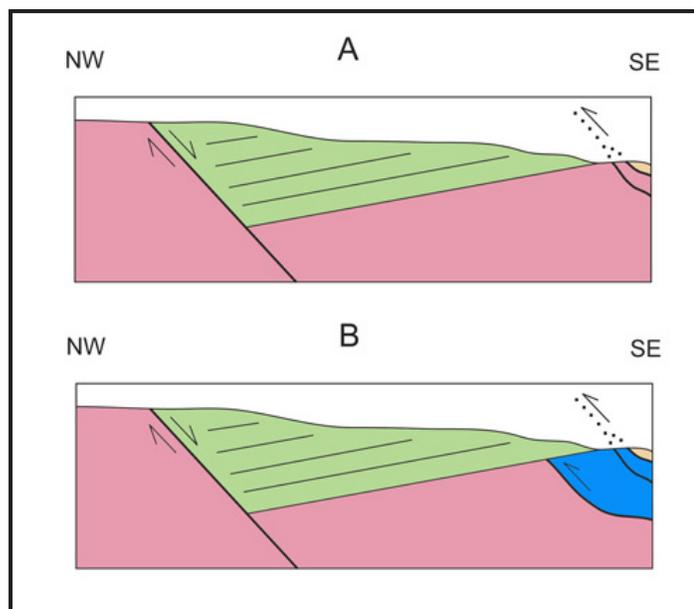


Figure 4. Two possible origins for the Trenton Prong: (A) Trenton Prong (pink, at right) is the continuation of the New Jersey Highlands (pink, at left) from beneath the Piedmont (green), and (B) Trenton Prong (blue) is an exotic crustal fragment that was attached to eastern North America during a Precambrian continental collision. Ramapo Fault borders the Piedmont on the west in both versions.

CONCLUSIONS

Despite the many geological similarities between Precambrian rocks of the Trenton Prong and the New Jersey Highlands, the relationship between these two areas remains largely speculative. It is tempting to interpret gneisses of the Trenton Prong as simply being the continuation of the Highlands beneath the Piedmont Province. That is, the Trenton Prong represents the southeastern part of the Highlands that was dropped down east of the Ramapo Fault. However, it is also possible that Precambrian rocks of the Trenton Prong are not continuous with the Highlands, and instead represent a separate continental fragment that was attached to eastern North America during continental collision in the Precambrian (Figure 4). More work is clearly required in order to unequivocally link the Precambrian rocks of the Trenton Prong and the New Jersey Highlands.

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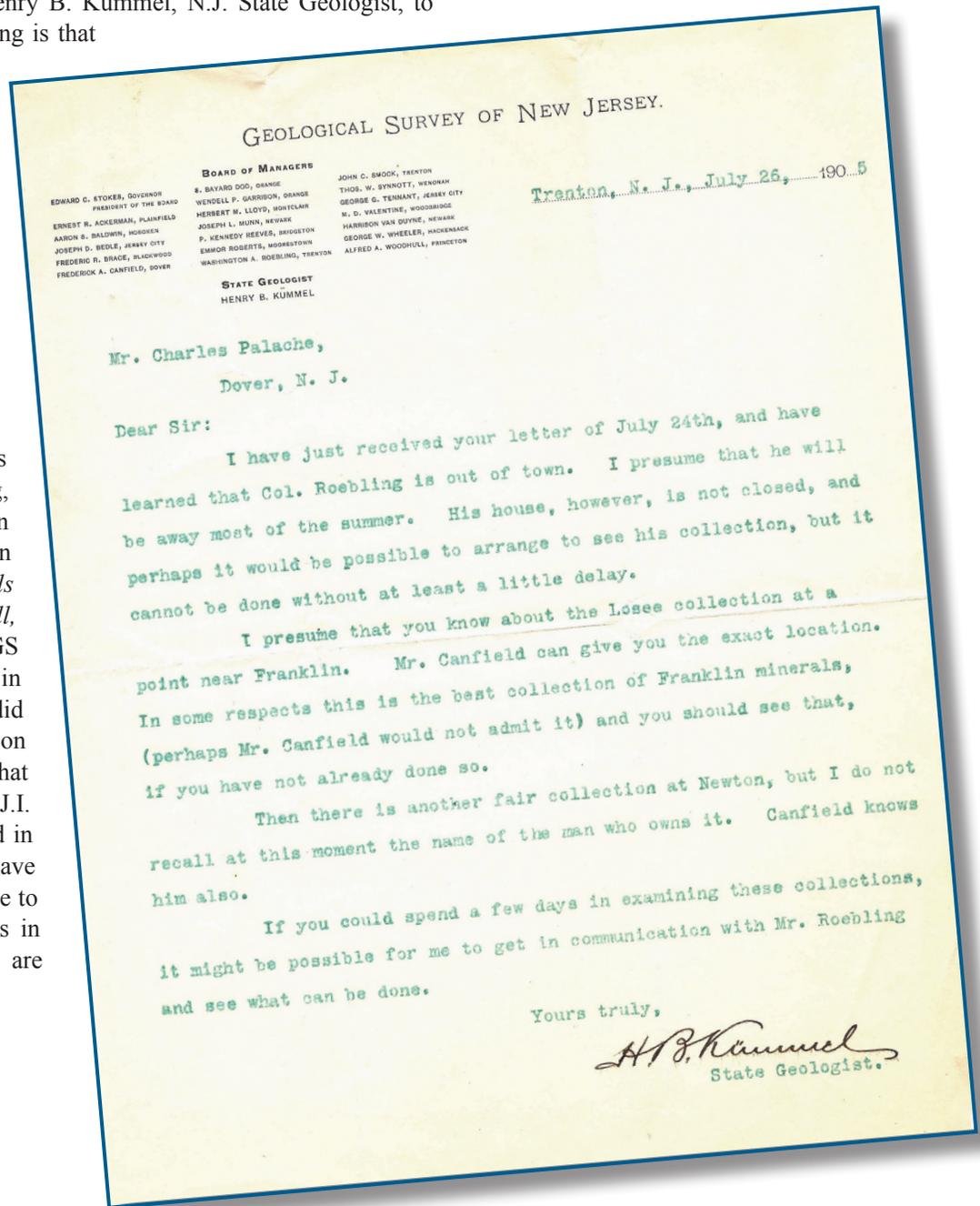
Letters From the Past

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This is the eighth installment of “Letters From the Past.” The letter was written over 105 years ago by Henry B. Kümmel, N.J. State Geologist, to Charles Palache. What is fascinating is that this seems to be at an early stage in Palache’s quest for knowledge about the minerals of Franklin and Sterling Hill. Although we do not have a copy of Palache’s original letter to Kümmel, it is clear that he was inquiring about local collections that he hoped to see, including that of Colonel Washington Roebling, an avid mineral collector and the head engineer of the Brooklyn Bridge.

Each of the collections mentioned—the Canfield, Roebling, and Losey collections—were in fact viewed and mentioned in Palache’s epic work, *The Minerals of Franklin and Sterling Hill, Sussex County, New Jersey*, USGS Professional Paper 180, published in 1935. Although Henry Kümmel did not know the name of the collection in Newton, N.J., it is possible that it was the collection of Mr. W.J.I. Kemble, as he was also mentioned in Palache’s work. Wouldn’t we all have loved to have traveled with Palache to view these magnificent collections in their entirety! Unfortunately, we are 107 years too late. ✕



An Evening With Jack Baum

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With the passing of John Leach (“Jack”) Baum on October 16, 2011, at the age of 95, the last great link to Franklin’s mining heritage was severed. Jack, a New Jersey Zinc Company geologist for more than 30 years, later served as the first curator of the Franklin Mineral Museum. Tributes to and stories about Jack¹⁻³ give us a sense of his importance to the geological knowledge and mining history of Franklin, but we no longer have the opportunity to personally experience his warmth, wit, and candor. Whatever knowledge and stories he had to tell are irretrievable now, but fortunately one visit with Jack was preserved for posterity.

When I was managing editor of *The Picking Table*, I asked Dick Bostwick to write a comprehensive article on Franklin wollastonite.⁴ Desiring to gather additional background information for Dick’s article, I arranged to tape-record Jack Baum’s recollections about the first recognized find of wollastonite from Franklin. Jack had been intimately involved with that legendary discovery back in 1944, and in 1972 he had written an article about it for the *PT*.⁵

Jack graciously agreed to a recorded interview, and on the evening of April 29, 2004, I arrived at the large, well-kept Baum home on Route 23 in Hamburg, N.J. Jack greeted me at the front door, and ever a true gentleman, he immediately introduced me to his wife, Augusta. Jack suggested that he and I sequester ourselves to the basement, ostensibly so our noisy chatter wouldn’t disturb her. However, once we were seated at his basement work table, he admitted how much he enjoyed spending hour after hour in his subterranean sanctum. “I love to come down here and play,” he told me for the first of many times during the course of the evening.

Jack’s work table was strewn with papers, rocks, and assorted curiosities. To the left of the table were 6-foot-tall cabinets, which had once belonged to the New Jersey Zinc Company. Against the wall to the right were several shelves filled with mineral specimens. Jack took a shortwave UV lamp from the closest cabinet, plugged it in, and turned it on. He then handed me a double-fist-sized Franklin specimen to hold under the lamp. The rock blazed in fluorescent glory in golden yellow to deep orange from wollastonite, as well

as in blue, green, and red from hardystonite, willemite, and calcite, respectively.* When I remarked that the specimen was also loaded with nonfluorescing yet translucent barite, Jack replied that he hadn’t noticed that before. I took the rock’s measurements and handed it back to Jack. He then gave me another wollastonite specimen to admire, and I turned on my cassette recorder. What transpired, serendipitously, was much more than Jack’s account of the discovery of Franklin wollastonite. Jack took a casual stroll down memory lane as he recounted some highlights of his life and career—as well as vignettes of notable characters and glimpses of Franklin during its last years as a mining town.

The following is a transcription of our conversation. Appearing within brackets are helpful interpolations to explain the subject matter or describe what was happening during the course of the interview. Also note that ellipses used throughout the dialogue indicate suspended or faltering speech; however, ellipses within brackets indicate omissions of private asides or incoherent passages, as good judgment dictated.



MB: All right, so this specimen here is a “first find”?

JB: A first find (Figure 1). And the way it came to my attention was that I was walking down Main Street toward the mine when the Mine Captain, Art Watt, was coming off shift in the afternoon and he had a rock in his hand. He said, “This is a strange-looking calcite. It doesn’t fluoresce properly.” He says, “You can have it if you want it.” It was the first piece of wollastonite to come out of the mine from that locality. And I recognized it because it looked just like the stuff from Riverside, California, where I had collected. So quick like a bunny, I took it to the lamp that we had in the office up there and I saw what it did. The next morning bright and early I was down at the working place, and I found just two large pieces in the muck on either side of the center where they’d been scraping. Just the two.

MB: What level was that?

* This “Second-Find” wollastonite specimen is pictured on the back cover of *The Picking Table*, 2004, vol. 45, no. 2.

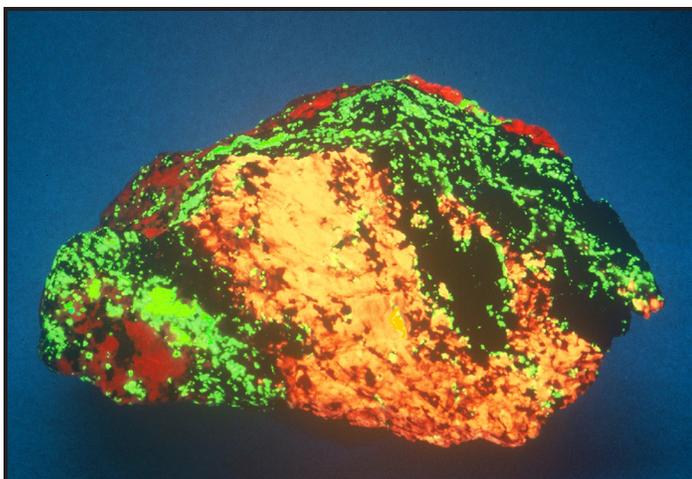


Figure 1. The very first “First-Find” wollastonite specimen from Franklin, N.J. This is the rock that Mine Captain Arthur Watt had in his hand on his way home from the mine and gave to Jack Baum. A few months before he died, Jack gave this specimen to his friend Lee Lowell. Maximum dimension 6.25” (16 cm). *Henry Van Lenten photo.*

JB: Ah, 700 I think it was; I have the information. And I took the two pieces, and they were big! You’ve seen one that John [Cianciulli]* has; the other one was just as large. [Reads from his 1972 *Picking Table* article⁵:] “. . . the 710 North top slice, 70 feet below the 600-foot level in disseminated lean ore . . .” You can have this.

MB: Oh, good.

JB: This is a copy of what was in *The Picking Table* years ago.

MB: Yeah, I don’t have a copy of that, unfortunately.

JB: Uh-huh. And so, anyhow, that’s how I got it. I found these two pieces and I showed them to the fellows who were working there; one was named Harry Hardy, known as “Bake” Hardy to the miners, and his buddy. And when I got up to my office, I made a diagram of the working place and gave it to them so that when they came in on the next lift, or the next layer, ten feet down, they would know where to look. That’s where Hardy got all those beautiful, big chunks, of which we have probably perhaps the finest in the center of our exhibit at the museum—that six-inch-wide stripe there. And there’s another one just as good that is a half circle of wollastonite with these other minerals surrounding it. And that’s . . . I don’t know where it is now, but at one time Ewald† had that one.

MB: Maybe [mineral collector] Warren Miller perhaps has that one.

JB: He possibly has it. Those were the two finest ones I know of. There’s a lot of little ones.

MB: And how much material was collected at that time?

JB: I really don’t know, but there was quite a bit, quite a bit. I’d say, oh, just as a guess, at least ten pieces of good size.

MB: Now when you say “good size,” you mean like . . .

JB: Like the one that John [Cianciulli] has. But maybe not. It all depends what the miner could get away with. But I came out—I don’t know how I ever did it—with two pieces of the size of the one that you’re acquainted with. I broke up the second one and gave a good-sized piece to L.H. Bauer‡ in the laboratory. He was a great benefactor to everybody, myself included. And one went into the Zinc Company’s collection up in the office. The last I saw that, it had moved down to Sterling and was in the office there. When they broke up Sterling, I don’t know what happened to it. [. . .] Then there were a lot of pieces floating around, a lot of small pieces. I gave it out to the shift bosses and various people like that. And I wasn’t competitive; I got what I wanted and that was it. Hardy got what he needed. I don’t know how often they hit the stuff. As far as I know, the next lift down was the only one that hit it. I have a diagram of the working place here (Figure 2) and it shows you what it looked like, sort of. [Jack and Mark together examine the diagram.]

MB: So that was the first encounter of . . .

JB: The first encounter of what they call the “first find.”

MB: The first find.

JB: Yup.

MB: What was the approximate date when that was found?

JB: Uh, was it 1942? They had something contradictory in here.

MB: It says mid ’44.

JB: Mid ’44? OK, well, that would be it then, because I got the working place here—since there’s no other way to look at it.

MB: There’s a date.

* John Cianciulli succeeded Jack Baum as Curator of the Franklin Mineral Museum. The specimen referred to here was donated to the museum by Jack in early 2004.

† Ewald Gerstmann operated a private museum of high-quality Franklin mineral specimens, most of which eventually went to the Franklin Mineral Museum.

‡ Lawson H. Bauer was the chief chemist and mineralogist for the New Jersey Zinc Company.

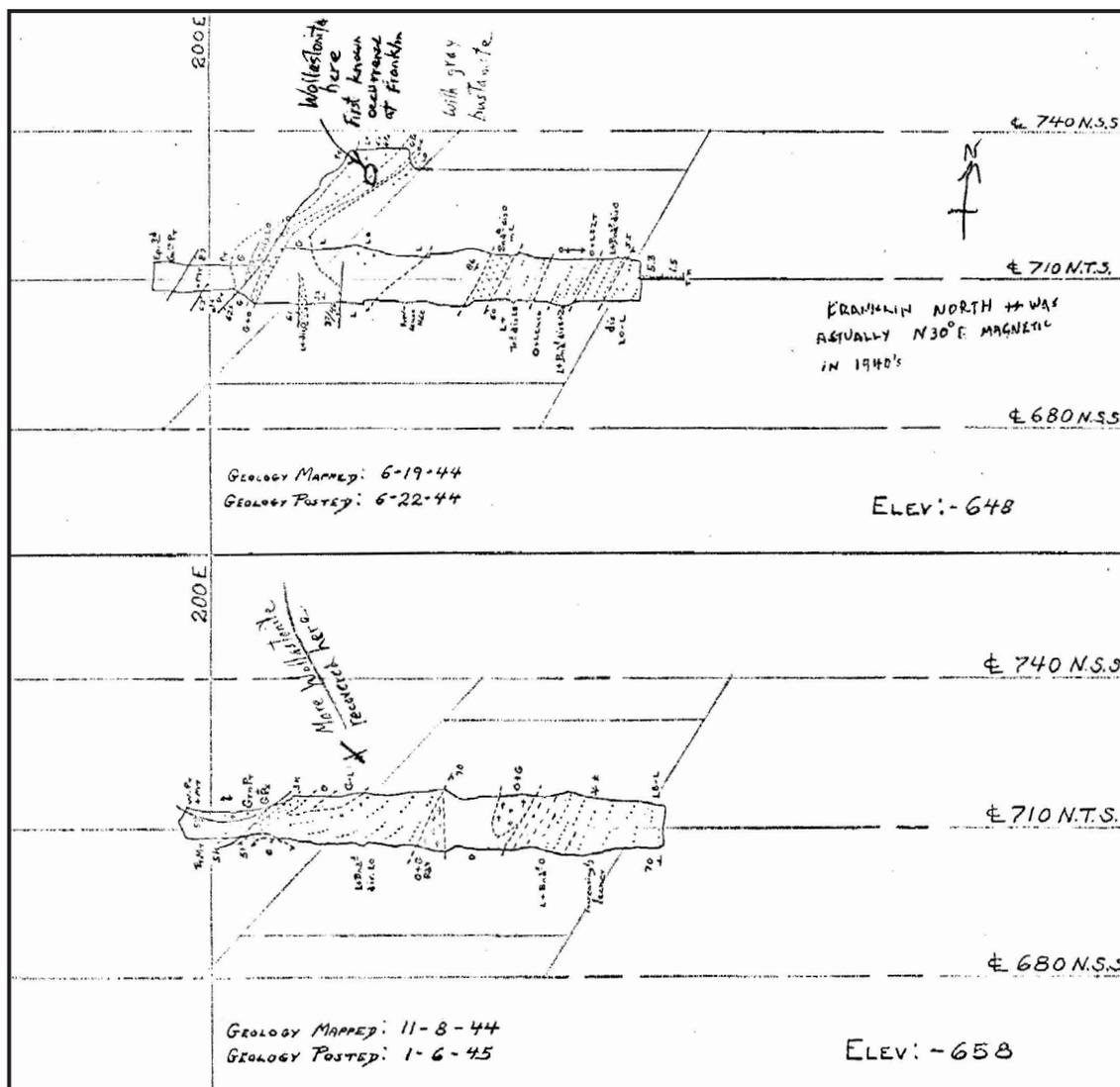


Figure 2. Jack Baum surveyed and drew these mine maps in 1944–45 for the New Jersey Zinc Company (NJZ) of the Franklin Mine 710 North top slice, 648 and 658 elevations (i.e., feet below the collar of the Parker Shaft). At a later date, Jack noted on the diagram at the 648 elevation “Wollastonite here. First known occurrence at Franklin,” and at the 658 elevation “More wollastonite recovered here.”

JB: Yeah, yeah, mid '44. And that's the wollastonite right over there. That's the first find. I mean, yeah, when they came in underneath. Here's ten feet down, this is 30 feet to the inch, and this is your center cut pointing from west to east. You go down a ladderway to get these things, you know. They're ten feet apart. This was what's mined out when you go down one. And when Bake Hardy got down here and they put that off to the side, which is what they're doing taking that out, why, they got over in there, and there was the stuff again. It made a lot of people wealthy sooner or later. As you probably know, that one that I had at the museum was appraised for, I believe, twenty-five thousand dollars.

MB: Yes.

JB: I have a little bit of it, . . . [Raps the first-find wollastonite specimen on the table twice and whispers:] . . . *but I don't think it's worth it.* [Laughs.] It sure isn't to me!

MB: Some folks highly prize these things, that's for sure.

JB: Yeah. [Hands the specimen to Mark.] Well, you'll have to get this to stick there. Hold onto that, unless you want to see it in daylight. There's probably some bustamite in there.

MB: Yeah, I'll take a measurement of that one.

JB: Tug the rope [i.e., the heavy cord for the light switch] if you want to lamp it. One of the pieces I had was from that find and had some nice-grade bustamite rimming, or right next to, the wollastonite. That's the piece I sent to Brian Mason,*

* Smithsonian mineralogist Brian Mason used samples and petrographic thin sections from this specimen for his study, in which he noted that the specimen's fluorescence was “spectacular.”

who wrote an article⁶—and it’s all very scientific about the temperatures and pressures and whatnot that this stuff must have been formed at, and how something was exsolved from something else. [Says with mock gravitas:] *Very important*—for three people. [Chuckles.] It’s nice to have, but—*eh?*

MB: Now this was encountered a second time, what’s known as “second-find” wollastonite. Do you have any information about that?

JB: I wouldn’t say that.

MB: No? You wouldn’t?

JB: I wouldn’t say that, but when I mention “first find,” I’m talking about *this* locality, whether it was the slice that first saw that at the 648 elevation or whether it was the next one at minus 658. They’re measured from the surface, as you probably know, from the zero-zero coordinate, which was the headframe of the Parker Shaft. My job was to map the geology just along the center of each one of these things, and then what you do is you have a vertical section and you merely tick off these intercepts with this hypothetical line of center. And down ten feet, you’ll have another. Tick them off and you join these things, and that way you get a picture of the section. And that’s the work we did that was so interesting to Frondel,* and he would study the section on the basis of these things.

MB: So, there was no later occurrence to your knowledge?

JB: Later on, there were a number of occurrences in the mine, what I would call “second find,” and I don’t know that we call it that here [i.e., on the diagram], probably not formally. So, three other occurrences. That’s what I said; now, other people would say which is the second and which is the third, but I wouldn’t know. As far as I’m concerned, anything that came from here was the first find.

MB: And that was all found within a matter of days, I guess?

JB: Uh, the first, yes. It was found initially as I told you with two large chunks and then they mined it for six months before they came in there underneath again, but probably less time, and got the rest of it down below, the stuff that Hardy got.

MB: That was the next level that they cut?

JB: The next level. It wasn’t six months, obviously—the dates are right here. [Reads the date on the diagram.] Six, yeah, eleven. [. . .] 6, 7, 8, 9, 10—five months later—*almost* half a year.

MB: And these dates reflect the date that you . . .

JB: Reflect the date I measured the center cut, yeah.

MB: Which would have been shortly after it was mined?

JB: Which would be early on in the mining. They would put this center cut in and then they’d go out to either side to the fill, and that takes quite a bit of time. So we’re just starting to go out here to this fill here and they’ve got a long way to go to get this out. Now these are very broad pillars at the north end. Ten feet down there’d be this, and they gotta do the same thing there. And this is fill, of course. This is the working place next-door that’s been filled already.

MB: Very interesting.

JB: What I did was, when we got to shut the mine down, I went through all these books, and got all the things that I considered to be mineral localities. So I have an excellent picture of where the wollastonite came from. It’s not as detailed as students would want, but it certainly tells a helluva lot about the rock that’s in there, if you could read it all. You have to know the key; for instance, “G” is garnet, “L” is lime, and “lime” to us is calcite, of course. It’s all Zinc Company talk.

MB: Would I be able to make a copy of this?

JB: Yeah, I’ll make you one and get it to you. It’s the only one I have. But I’ll do that and I think I ought to make you a copy of this, too. You’ll need that.

MB: Yeah, that would be good. That would be helpful, sure.

JB: And you probably got access to this one, but I’ll make you this one also, so you can have all this stuff.

MB: OK, that would be handy.

JB: If you’re gonna work so darn hard on it, I oughta make it as easy for you as I can.

MB: I appreciate it, Jack.

JB: But I don’t know as much about these other ones. I couldn’t tell you which one had the barite in it right off the bat.

MB: They refer to the find with the barite as “third find.”

JB: Well, there you are. I’d pay attention to them and not to me, because I just don’t go in for that sort of stuff so much.

MB: Right. Now I guess evidently it was encountered earlier, what they refer to as “original find” but it was not identified as such at the time.

JB: At Franklin?

* Dr. Clifford Frondel was a professor of mineralogy at Harvard University.

MB: Yeah, apparently there were some specimens that had been mined out, that were known to have been mined out long before.

JB: I didn't know that. At Sterling, yes. I didn't know that they had, uh . . . Are you nuts on this stuff?

MB: Well, uh, as "nuts" as I guess the average person is. I don't think I'm crazy, but . . . [Laughs.]

JB: [Picks up a specimen from the wall shelf.] That's a nice axinite.

MB: Oh, that's beautiful. That *is* beautiful!

JB: I took that off the wall. For axinite, that's pretty good.

MB: That's one of the best I've seen. [Jack chuckles.] A solid chunk. It must have been quite a thrill to collect your own specimens right off the wall.

JB: Yeah, well, I thought I deserved it. It wasn't much fun working down there. It wasn't bad, either, except that these miners are busy drilling in these places, so you gotta get in there when you can get in the center cut. And if they're scraping, you can't get anywheres near it. And they're scraping a good deal of the time, firing and scraping, firing and scraping. To get the rocks out, you've just got to come back later. Or tell them to stop. [Whispers impishly:] *They didn't like that.* They're working on bonus, you know.

MB: Sure. [Laughs.]

JB: So, that was something.

MB: Now, would you have a [UV] lamp down there?

JB: After I was gone a short while, I got a lamp. It wasn't legal. A fellow by the name of John Obert* traded his little M-12 lamps. You know, they're about three inches square and about this long. John [Cianciulli] has two of them in the cabinet down there. One was mine. And they weren't much, but by golly, they did the job. I carried that thing on behalf of the Zinc Company for quite a while before I let the Zinc Company know I had it, because you needed permission to do something like that, theoretically.

MB: Uh-huh. And I guess none of the miners had them.

JB: Oh, the miners had them, too! John Obert got to the miners, and they were doing great guns, but you never saw one. Never saw one, yup!

MB: [Laughs.] I guess the penalties were severe if they caught you, right?

JB: Well, yeah, it all depends who you were and how often you did it. One guy was Billy Ball—you may have heard about him—he worked at the picking table, and he got minerals off the picking table and he was selling them. Well, nobody knew he was selling them until the Zinc Company got a letter addressed to "Mr. William Ball, care of Main Office, New Jersey Zinc Company." So naturally, they opened it. It said, "We're so delighted with the stuff you've been selling us. Can you get more?" [Laughs.]

MB: Oh, boy!

JB: He was *off* the picking table! They put him down in the mill and took him away from that nice job.[†] But Billy Ball had some nice stuff for sale, I guess, and did science a great deal of good. Of course, it didn't do the Zinc Company any good, but everybody was taking minerals home—because if I saw you and you knew what you were doing, you were taking good minerals. And I just saw *you* taking a rock home, so *I* took a rock home—it didn't matter what it was. I've been in people's cellars who'd just had this big pile of ore, and that's all it was. The widow didn't get anything out of it. Today, of course, that pile of ore would be worth something, too. They liked that banded stuff, you know. But in those days, that pile was just junk. And when I was working underground, I never saw a specimen that I thought was worth more than five dollars, which was a whole day's pay, you understand, before deductions. So when the specimen I had that was featured on the cover of your magazine fore and aft [*The Picking Table*, 2001, vol. 42, no. 1]—the copper specimen with the charlesite and stuff—when I collected that and lost it, I offered five bucks for it, and when that didn't work, I offered a bottle of whiskey for it, and that didn't work, either. And so that was the idea of just about how much that specimen was worth. And [Mine Captain] Kenneth Stanaback had a beautiful piece of that rhodonite crystals with all the brown "fuzz" on there. What's that mineral? I forget what that's called. But it was a nice specimen, anyhow, and he wanted five dollars for it. He had an idea of what a really good specimen was worth. Was that johannsenite?

MB: Johannsenite.

JB: Yeah. It was a piece about three or four inches square and had "fur" all over the whole surface of those crystals.

* Paterson mineral dealer John Obert, acting as an agent for UV lamp manufacturer Tom Warren, gave the miners UV lamps in exchange for fluorescent minerals.

† A detailed account of this incident is in *The Picking Table*, vol. 14, no. 1, pp. 5-6.

MB: As a matter of fact, we'll be featuring a photo in the spring issue [*The Picking Table*, 2004, vol. 45, no. 1, p. 33] of a museum johannsenite specimen.

JB: Uh-huh. Is that a five-dollar specimen?

MB: Yeah, a five-dollar specimen!

JB: [Laughs.] Other finds . . . I'm not following your schedule now.

MB: Oh, that's OK; we'll do it free-form here. I'm sure I'll have some information here that's usable.

JB: [Picks up a "third-find" wollastonite] Here, here, what else is there? Maybe you know that stuff.

MB: Yeah, I believe that's . . . Well, that's interesting. I don't see any barite with that one.

JB: No, I didn't know about barite. [Pokes around shelf looking for another specimen.] And some of the more massive crud. It's around here someplace.

MB: The fibrous? Yes, I see. I believe that one is.

JB: Oh, yeah, that's one of them. There's another around here someplace, too. And I don't know which find that is. I wouldn't even think about it.

MB: Isn't that what they mistook at one time for pectolite?

JB: Probably so, yeah. And I think my pectolite is probably the same thing, too. It's around here somewhere. [Finds it and examines it.] I don't know if that's real pectolite or wollastonite. I just don't know.

MB: That looks like real pectolite in prehnite.

JB: Yes, it does. We got a *little* bit on that one.

MB: Yes, that's what that looks like.

JB: The only piece I got.

MB: A nice one.

JB: Yup. I used to have some other stuff, but the only piece I got, I went and gave it away—by mistake! I gave away what I thought was rhodonite. And it was this little "pyro-something" manganic rubbish—a lot of manganese, anyhow—but otherwise it looked like a rhodonite.* But some of these are nice. You're familiar with this one—the white willemite.

MB: Yes.

JB: That's a nice one. This is the first specimen I ever got the first day I went underground.

MB: Yeah?

JB: Yeah, the guy whose job I was taking took me underground that one day, one trip, and that was my preparation. He says, "OK, now you're on your own. Go down in that." And there was a fellow named Garfield Finnigan who worked down there. And this fellow I was with, he says, "Hey, Gar, where can we find a hunk of white willemite?" And Finnigan says, "Well, you go down such and so, and just reach up on top of the timber and there's one up there." This is it!

MB: He had set it aside, huh? How 'bout that!

JB: Not bad! First day underground, I got a nice specimen! Well, I thought that was great! My kids used to like that.

MB: Oh, that's beautiful. Does it actually have radiating structure to it?

JB: Yeah. [Points to another rock.] John [Cianciulli] likes this one.

MB: Is that margarosanite?

JB: It's pretty, yeah! It's got axinite and margarosanite.

MB: It's gotta be, what, eight inches across?

JB: I would think so.

MB: And four inches tall. It looks like the axinite is kind of almost blending into the . . . just morphs right into the . . .

JB: It does, yeah.

MB: It goes from red on one end to bright blue on the other side. Beautiful!

JB: My only ones I kept. The only other ones like that, they're not very pretty, but I picked them up myself. I wish it was the radiating stuff, you know. So there's my margarosanite.

MB: Now, where was that found?

JB: I don't know; I'd have to look it up in the sheets. From Franklin, certainly. We're digressing now. We'll get back to your whatever-it-is you're interested in.

MB: Did you collect most of these specimens yourself?

JB: Uh, I collected maybe half of them.

MB: That's pretty impressive.

JB: The Sterling ones, of course, are easy to collect. They were all about the same stuff in those days. I had a lot of the, well, like the one on the very end of this shelf here, which is exsolution with tephroite—you know, willemite. And that had the sonolite

* Jack was evidently referring to pyroxmangite.

in it, and I sent it up to Harvard at their request; they wanted to study tephroite. I said, “I don’t care about the tephroite, but I like the brown stuff that’s around it.” And they never answered me. And it turns out, after three or four years later, that mineral was described as sonolite in Japan. Now Harvard could have done it right then and there. They just were never curious. If you’d say, “What’s the mineral X in this specimen?”, they’d send you back a letter telling you what mineral X was, but they never bothered to even wonder what the matrix was. In those days, it was more difficult to determine and characterize minerals than it is today. So, Hurlbut* and I worked on the charlesite and put out a paper and said it was ettringite.⁷ Dead wrong! [Laughs.] But in those days, they apparently didn’t have the equipment.

MB: What’s this specimen over here? It catches my eye.

JB: Johnbaumite! That’s my only piece. [Takes the specimen from the shelf.]

MB: Wow, that’s beautiful! Boy, that is bright!

JB: A big old check and double-check! What’s on the other side? That’s more of it here, see? There’s a crystal of it.

MB: And where was this found?

JB: Uh, that’s a Franklin specimen, but I don’t know. It came to me in quite devious ways.

MB: [Laughs.] Is this axinite in here?

JB: I believe it is, yeah. What I like is the johnbaumite generally manages to make a crystal. See this hexagonal up in here?

MB: Yup, I sure do.

JB: And these are crystals, only you gotta look at them in the right direction to see that. So, it’s a pretty nice piece, and it’s with garnet. John [Cianciulli] was telling me he saw a piece with garnet the other day—the only one he’d ever seen. And I didn’t tell him I got a doozy! So that’s my namesake. I gotta keep that in the family. All these others can go, but that one has to stay in the family.

MB: That is beautiful.

JB: Different. [Puts the specimen back on the shelf.] Nice of you to ask, though!

MB: Well, it just caught my eye; it’s such a gorgeous specimen.

JB: Yeah! I’ll find another freak specimen around here someplace. I bet you that John Cianciulli might like this; it’s got his initial in it.

MB: Son of a gun!

JB: [Laughs.] It’s just a freak. But that’s a tephroite with . . .

MB: There are collectors who *specialize* in the alphabet.

JB: Ah-huh. I wouldn’t be surprised.

MB: That’s a perfect letter C in a cross-section diamond of, what is that? Zincite, I guess, that’s in?

JB: No, that’s tephroite.

MB: Oh, that’s tephroite in calcite.

JB: Used to have a lot of those. Frondel came down here with one of his assistants. He said, “You got any more of that?” I said, “Yeah, I got a whole bag of it.” And so he sends his assistant over and says, “Go over there and get the bag.” [Laughs.] It all went back to Harvard. I don’t know what they did with it. He used to like clinohedrite. Of course, I had solid clinohedrite crystals here at a time, but they went out with the collection[†]; and they’re also in the base of that big specimen that had the copper that got away from me in the mine—that’s got big charlesite and clinohedrite and whatnot. OK, so now we’ve got completely away from whatever it is you were after.

MB: Oh, it was a fun diversion.

JB: I had something down here I just got the other day. I don’t know where it is. [Fumbles around until he finds the specimen.] Here it is. Why don’t you turn the light out again?

MB: Is that a beta-willemite?

JB: Yeah, from Andover. John [Cianciulli]’s got two of them now. I had three of those, and I took two to John. I said, “What can you do with this, John?” He says, “Boy, they’re goin’ on the machine already!”

MB: They’re going on eBay already? Yeah, I’ve got a bid on one of them! [Laughs.]

JB: Oh, yeah, huh? That fast?

MB: That fast. Well, it’s unusual stuff. I’ve got a couple pieces of it, but these are gorgeous pieces.

JB: So I better save one of those for myself!

MB: Yeah, they’re nice. The ones from Sterling, especially on calcite, are beautiful, too.

JB: Yeah! Yeah, I’ve got some of those. I’ve got a lot of crazy stuff here, but I like the stuff that John doesn’t much care for. Foreign, too. I like foreign. I don’t think there’s

* Harvard mineralogist Cornelius S. Hurlbut, Jr.

† Jack donated a significant portion of his local mineral collection to the Smithsonian Institution.

anything prettier than this one—what those boys brought back from Arizona.

MB: Oh, yeah, that's Arizona willemite and fluorite.

JB: There's blue in all that. That is as pretty as anything I ever saw! But John—it's not *massive* enough for John. You know, John's a "five-pound" man—it's gotta be a biggie! [Mark laughs.] So I just think that that's pretty, even though it's small.

MB: You know, you take a photograph of it and you'll never know what the size is if you don't tell people.

JB: Yup.

MB: You dropped something here.

JB: I did, I did.

MB: I think this was it, whatever it is.

JB: [. . .] Yeah, that happens every time I show these things off—I manage to break something. This is a foreign one. I've got it mislabeled, but look at that! Strange mineral.

MB: That *is* odd. I see the zones in it.

JB: Yeah. Of course, I've got it labeled amphibole and quite obviously, it's not the diamond shape of an amphibole cleavage for this. I don't know what it is. It doesn't matter—it's *pretty*! [Puts the specimen back on the shelf.] I've got quite a bit of radioactive stuff. For a while, I was in the radioactive business here with the Zinc Company. Put the light on if you care to and we'll get you back to business now . . .

MB: All right.

JB: . . . whatever that business *is*. Almost the extent of my knowledge is on this sheet that was published.

MB: Well, I had jotted down a few questions, but I think we covered a lot of it. I think you mentioned the fellow's name who first encountered it.

JB: Yeah, Art Watt. Arthur Watt. W-A-T-T. He's was a Scotsman. A tall, thin fella. We have a picture of him (Figure 3) at the museum carrying a rod of drill steel over his shoulder; it's either in the office or it's out on exhibit someplace. And he was a mine captain, and he was the fellow who succeeded Captain Rowe,* see? That means he was important. But in my experience with the Zinc Company, anytime you succeed somebody, you're never as important as they were.

MB: They were living in their shadow, I guess.

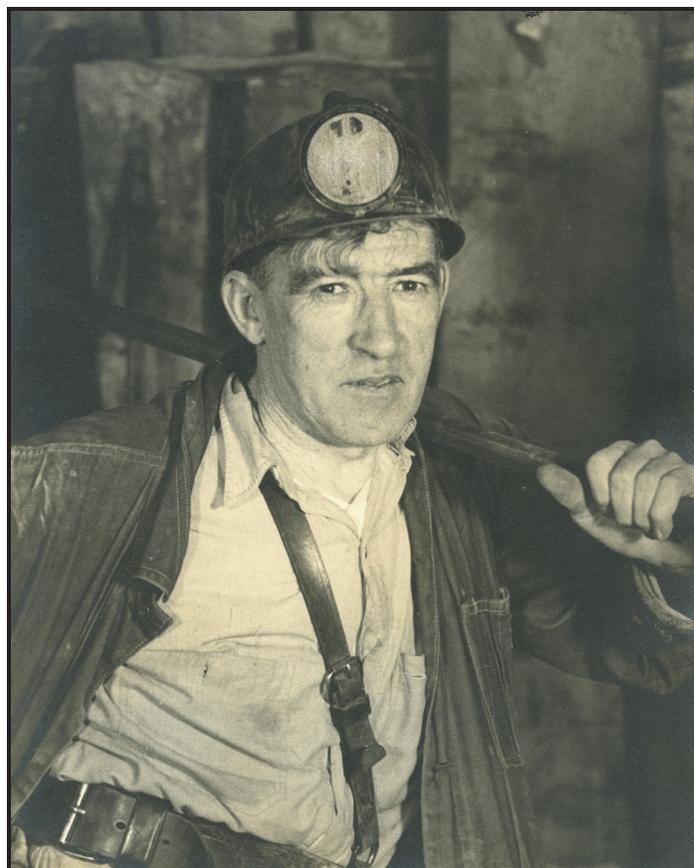


Figure 3. Franklin Mine Captain Arthur Watt was originally from Cornwall, England. As Mine Captain, Watt was the liaison between the shift bosses and Mine Superintendent C.M. Haight.

JB: Yeah. The surveyor there was Shuster,[†] and Shuster was a wheel [i.e., an important person], and when the presidents came out from New York and everything, he went around with them. The fella who succeeded him in my time wasn't all that important. And that's the way it went, you know—Chief Geologist, and I was the "puppy geologist." After a while, when I got to be chief, it wasn't anything like when my boss was chief. It's just the way it went.

MB: So, this Arthur Watt, he came to you with a specimen? He had lamped it, I suppose?

JB: Yeah, he came up, and we were friends because he was the captain, as I say, over the shift bosses. I needed the cooperation of those people to tell me when the working place was ready and I could get in there. And so I knew him real well. It was that kind of a town, anyhow, you know. I knew him; I knew his wife. And she was a photographer. She did bird pictures, and everybody knew her. Anyhow, so he handed it to me because

* George Rowe was Franklin Mine Captain from 1906 until 1934.

[†] Elwood Shuster wrote a history of Sussex County mining and later served as mayor of Franklin. Shuster Park in Franklin is named for him.

he knew I was a geologist, and that's what started it. I'm just so happy that I was the one that was coming this way and he was going that way. It was very fortuitous.

MB: So he encountered it with a lamp, I suppose?

JB: He must have had a lamp, yup. That was back before, as you see, '44. Earlier than that, I had a lamp for some time, of course. So he must have had one, too. The Zinc Company had a lamp when I first started to work, and I forget what it was called now, but it had no filter. It was an exposed mercury vapor lamp. It threw out a helluva lot of light. But for willemite and calcite, it's what the company needed, because that's all they wanted to see. And it worked very well. As a matter of fact, as you well know, in the mill, of course, they used the iron spark, and that worked as well as they'd want anything to work, because it showed red from green. You keep the red and throw out, uh . . .

MB & JB: [In unison:] You keep the *green* and throw out the red.

JB: That's what it was. And then there's a division on the table,* so if they were shaking ore on that line, put the divider on there and this goes to waste and that goes to Palmerton. So that's what they used the lamps for.

MB: Now would they use the lamps for the drill cores as well?

JB: I used the lamp on drill cores and got some beauties here. You've probably seen those. They were very nice. And I had to use those because we were looking for red in the drill cores, which would signify a near miss. As you probably know, the rocks near the ore fluoresce.

MB: How close to the ore?

JB: Within a couple feet.

MB: So anything beyond that . . .

JB: Would be barren rock. We'd be close to it, though. The drill hole would not have just missed an orebody if it didn't fluoresce. But, hell, I drilled down in Tranquility, New Jersey; we got fluorescent drill cores down there, but all you need was a little manganese or something like that in there and it would fluoresce, yeah.

MB: Really? No ore down there, I guess.

JB: No. I've got put up for sale with John [Cianciulli] just a rhombohedron of calcite from Elmo, Wisconsin, where we had an unfortunate mine—they built a mine that couldn't pay

the bill—and that fluoresces red. That fluoresces like this—it's red, yup. Here's a fluorescent mineral—I don't know whether you've ever seen it—a sanbornite.

MB: Sanbornite?

JB: Sanbornite is a barium mineral. It's not from here, but it interested me.

MB: [Reads label:] "Rush Creek, Fresno County, California." Got a little bit of weight to it, doesn't it?

JB: Oh, it's barium, yeah. Here's something they mailed to me out here without telling me what it was. Anyhow, a little manganese barium silicate that somebody thought they could make an orebody out of that stuff. So they did a lot of drilling, but it didn't work. Anyhow, this fella, who was a Zinc Company engineer at one time for a few years before he got drafted, ended up in consulting work in California, and he recently sent us at the museum a lot of stuff and sent me some more stuff from out of a collection. This was a piece of sanbornite that he sent. He also sent us gold—leaf gold, I guess it was, in flat flakes, which John [Cianciulli] has on the bottom of the shelf there with gold.† And he sent us the stuff that the gold comes in, which is sort of interesting. He says there's still gold in it, but if it is, it's pretty *umph*. [Picks up a plastic bag of milled ore.] That's magnetite concentrates from a sand and gravel pit up near Sacramento. And this fellow who was running that had enough brains to put it through a shaking device that took the heavy separations out and they pan gold out of this stuff. So, this fellow that I knew said his father when he was younger used to go down to this man's plant, give him a hundred dollars, and say, "Give me a hundred dollars' worth of gold." Well, in those days, you got quite a bit of gold. So this fella's been very generous with us, sending us this flake gold. And it's good-sized stuff.

MB: There's a lot of weight to it.

JB: He suggested we take some of the flake gold he sent us and put it in here [i.e., the Franklin Mineral Museum] and let the kids pan, but panning isn't native to this country and I don't think the kids would even know what they were doing. They've maybe heard of it, but they wouldn't know. So John [Cianciulli] and I decided, "What the hell we gonna try to do? We gotta stand there while kids spill water all over the place?" That wouldn't be worthwhile. These are some things he sent, too, but of no value to me. This is "turkey fat"—that means smithsonite. I didn't even try it for fluorescence. And this was some graphite from New York State, too. It was an embarrassment, he was sending so much stuff. He sent me

* Jack was referring to a Wilfley table, which is a gravity separation shaking device used to concentrate ore.

† Former N.J. Zinc Company mining engineer Charles T. Weiler of Palo Alto, California, sent gold flake samples to the Franklin Mineral Museum that are on display in Welsh Hall.

gold assays from a little mine out there somewhere. What am I gonna do with that? This thing here is stibnite. I hafta get rid of all this crud.

MB: It just accumulates.

JB: That's why you need a big house, see?

MB: Sure.

JB: The attic is just as bad as this, only it's not the interesting stuff. It's all genealogy and stuff like that. But I do like to come down here and play!

MB: Who did the analytical work on the wollastonite when it was found?

JB: Ah, what analyses that we do have were done over at Palmerton, Pennsylvania, so far as I know. We had wonderful equipment over there.

MB: And so that's how it was determined what it was?

JB: Didn't have to. I *looked* at it, I knew what it was.

MB: And you knew what it was.

JB: Yeah, because I had collected wollastonite, as I say, at Riverside, California. It just *looked* like it. Now, let's see if I can find something here.

MB: Was a specimen sent out to them for analysis?

JB: No. Well, somebody did; I didn't. [Hands Mark a specimen.]

MB: This is from Riverside?

JB: Nope, this is New York. That's the stuff I mentioned in the article,⁵ there being a pile of it at the bottom of the headframe in Franklin.* The Zinc Company was interested in whether this would make a pigment or not. Put the light on it. It doesn't fluoresce worth a darn, but some of it faintly. And so my boss and I were sent up there to the New York locality to see the stuff being mined up there by the Cabot Carbon Company, and of course the Zinc Company decided they didn't want it. You see, the Zinc Company was a pigment company. We like to think of it as being a metal company, but it was organized in the beginning to produce zinc oxide for white paint. And they tried to get the City of New York to make everybody use zinc paint instead of lead paint. This was back in the 1850s. If they'd've done it, itta been great.

MB: They should have listened to them.

JB: Yeah, now they're still ruing the day. But I thought you'd be interested in seeing that, because I deal in this article as

to the different-sized grains and whatnot that you have in here. But this looked just like the Riverside, California, stuff. And the stuff from Franklin just looked enough like it with, hell, even the little junk that's in there, and I knew it right off the bat.

MB: Interesting.

JB: So whatever I have here in the way of prints I'll duplicate for you. The machine is broken right now, but I think the man's coming tomorrow. I also have to do a picture of Franklin. The town made a drawing showing the orebody and its relation to the streets, because the gas company wants it. They had a subsidence over there.

MB: You know that there's a subsidence on High Street right now.

JB: Yeah, exactly, I know. They said, "Anybody here, an old-timer, know where the pipes went? Where we don't put pipe?" or something like that. I said, "Yes!" [Laughs.]

MB: "As a matter of fact . . ." [Laughs.]

JB: "Yeah, I got it for you! The machine's broken, but I can make you a dirty copy." So they went away happy, but asked for a clean copy, and maybe I'll get that to them. It's just so nice for me to be of some service to somebody.

MB: Yeah, well, all that information is useful.

JB: I guess it is.

MB: And will be for years to come. I'm surprised the town does not have maps.

JB: Now, the Zinc Company would have had them, but the Zinc Company was the town. So the Zinc Company rotten stuff went elsewhere, and that was that.

MB: I'm surprised no one in Franklin, the borough, made any effort to ascertain where the old . . .

JB: Well, they did have a water company. I was on the board when they first organized the water company. Well, the Zinc Company ran it; it was just part of the engineering business, you know. But then the Zinc Company knew they were gonna get out of town, so they turned the water company over, and I screamed bloody murder. I said, "Do you realize what you're doing to us taxpayers? That thing is all shot. Big pipes go into little pipes and back into big pipes again! You don't do that to water!" [Laughs.] You just make them big and make it smaller as you go on, you know, but *they* didn't do that.

* Several tons of wollastonite from Willsboro, N.Y., were dumped at the Franklin plant for experimental purposes. Inevitably pieces of it "contaminated" many local collections of Franklin minerals.

MB: Who designed that system?

JB: Anything they had in the warehouse that day, they brought it up and made it fit, and so it was a mess. But in any case, the Zinc Company had drawings; they had engineering drawings. They were correct, but if they turned them over to the water department when it was there, I don't recall seeing them. They probably did. They also turned over to us one of the chemists, Paul Chorney, who had minerals. Now I think Hauck has the Chorney collection, if he hasn't sold it. And Paul Chorney was a chemist with the Zinc Company. They said, "Why don't you go work for this other outfit?" and deaccessioned him so to speak, and he took over the water company. And because I was on the board of the water company, when they had a clog or something like that, I'd grab my wife's hand mirror off her dresser and we'd go down there, put our head in the septic tank, shine the mirror around [. . .] trying to see what was wrong with that in there. And that's the way things were, you know, in this town. Same way with Hamburg. Hamburg had a boiler department that took in thirty thousand dollars a year for the little town, and we made enough money doing that, that we could lend money to the school when they had a bond issue, or to the firemen when they wanted to buy another engine. But towns aren't like that anymore. We didn't have a single full-time employee in this town when I was on the council. At Franklin, I was on the various boards, but when I moved here, they could see I could read and write, so quick like a bunny I got a job. I didn't ask for it; I just went to some meetings and looked as though I was interested, so the mayor appointed me. I could never get elected. I tried it one time. Ran for council and it didn't work. So the mayor appointed me. [Laughs.] He wasn't out of business at all anytime. But later on, politics got to be what politics are, and I lost that job, which is just as well. Later on, I got the Sussex County Municipal Utilities Authority. I had that for seventeen years, which was unheard of at the time, because I had never contributed to the politicians of the county who appoint the members. They said, "You gotta make a donation," but I was stubborn as hell. I've got some German in me, you know, and I wasn't gonna do it, and I *didn't* do it. So ultimately, I lost the job. And it paid very well, actually. And so long as I didn't try to do something when the politicians come to town, which they should have. And I was glad to get off because it was getting complicated. We just had a water plant here in Hamburg at that time without a sewer plant. Then they started that big garbage pile—and that is a headache and that's when I lost my job. I felt happy about that. Oh, the smells are something wearisome, you know. So . . . Here's a hunk of ore that guy sent me. It's from Sweden; it doesn't *look* like magnetite, but it's as magnetic as hell!

MB: Is it?

JB: Yeah! It's high-grade iron ore, but it doesn't look like it. Like I say, he keeps sending me these strange things. I don't know why he sent that rock. I sort of like it because it fools me every time I see it sitting around here. I have to heft it.

MB: [Reads label:] "From Sweden. Strossa Mine, Sweden." I used to traipse all over the hills of West Milford, where I grew up, all the iron mines there, and I'd always pick up samples of the ore and keep them in coffee cans at home. I still have a lot of that stuff.

JB: Isn't that something, though? I was raised in New York City and as far as I knew, they didn't have any minerals at all. Well, it turns out they did, of course.

MB: Oh, sure they did!

JB: J.G. Manchester, and all the minerals they had—we have his cabinet incidentally in the passageway opposite the men's room there [at the Franklin Mineral Museum], that's the Manchester's cabinet—and so there were minerals, but I didn't know enough about them. I bought a collection from Peter Tovach [?] to identify a thing or two [. . .] And I was so pleased that I went up to visit somebody in the Catskills and see some shale. "That's shale? I gotta have some of that!" All we had was gneiss and schist in New York City, and a little of some white stuff, marble, actually. Anyhow, I got a lot of that. No more questions?

MB: Well, basically, all the questions I had were concerning the wollastonite.

JB: Wollastonite. We really didn't get much when you get right down to it. Because I didn't have too much. It numbers two or three finds. I didn't make it myself. By that time, I had been elevated to head of the department, which means I had other young fellas doing the job I used to do. So they were the ones that brought the pieces up, and I got chunks of what they brought up.

MB: I imagine a fair amount of that stuff was collected by the miners at the time.

JB: Oh, yeah. They got smarter and smarter as the lights came around, you know. They got some nice stuff out of Franklin. We were collectors of, uh, the opposite of micromounts, what, "megamounts?"

MB: "Macromounts"?

JB: Macromounts! Yeah! Most of us, at least I felt sort of, not really, but sort of like Fred Pough* used to say, “Real collectors, real mineralogists and stuff brush all this crap off the outside of the rocks so that we could see the important minerals.” But of course, the crap you’re brushing off are the things that they like so much today. So I didn’t have much in the way of micros until they got big enough for me to see.

MB: Uh-huh. Were most of the collectors way back then species collectors or were they more for crystals and colors?

JB: I think they were trying to get as many different Franklin minerals as they could. There was Joe Cilen, a collector, if you knew Joe. [Mimics Joe:] “*If the label says that’s what it is, check it off—I got it!*” [Laughs.] I don’t think poor Joe ever really knew whether he had it or not, but he was a doozy. I always wondered what his apartment must have looked like with all the rocks that he had. Bet he couldn’t get his feet on the floor.

MB: I can imagine. How many specimens did he have? Tens of thousands?

JB: I don’t know. About everything there was, from Russia and all kinds of places like that, yeah. I got something around here; it’s an original pitchblende from Great Slave Lake, I guess it is. It was given to somebody like Cilen who wrote this guy who discovered the deposit, saying, “I would like a piece.” And the guy sent it to him! It’s a historic specimen, you know, from the discoverer of the big uranium deposit up there. Somewhere that’s around. I don’t know where it comes from, but I can tell you it radiated. [Reaches for a yellowed polycarbonate sphere with a chunk of mineral inside.] This Zinc Company paperweight—this is high-grade copper/uranium ore. You can see the copper color in there. All the rest of it’s uraninite.

MB: Wow!

JB: That is high grade! I’m just amazed that it hasn’t cracked the plastic, but it hasn’t. That belonged to the vice president in charge of exploration and mining for the Zinc Company, Sid Goodwin, when he was in the New York office, and he had it and gave it to me when he retired.

MB: I don’t think the plastic shields the . . .

JB: No! Hell, this thing works like a charm! That’s why I keep it over there. I had a big collection of uranium minerals; I still have it, but it sits out in the passageway here.



At this point, my tape recorder reached the end of side one of the 90-minute cassette. Unaware that the recorder had stopped, Jack continued to talk for several minutes about the radioactive specimens he had tucked away in a remote corner of his basement. As Jack went on to talk about his prospecting work, I flipped the cassette over and started recording some more. Side two of the recording picks up in the middle of Jack’s recollections of the New Jersey Zinc Company’s uranium mining operations.



JB: We got a permit from the government that said half of the mill we’re gonna allow you to build has to come from the little dinky mines surrounding your big one. The Zinc Company says, “OK, we can handle that.” Well, it turns out, we had an awful lot of ore to process, and the little dinky mines didn’t have enough ore. And the Zinc Company’s plant out in Utah there was importing uranium ore from Alaska; it had to come down by barge and be sent into the middle of Utah, just so we could run that mine and have enough foreign ore from there to carry out the commands of the federal government. Stupidest thing we ever heard of, so they got out. They said, “To hell with it. Anybody want a plant?” But before they did, I was told that, so I wrote a formal letter to the New Jersey Zinc Company’s Franklin office. I was interested in the uranium business, as you well know. “Kindly send me a specimen of every uranium mineral you’ve encountered.” They came. [Points to a pile of unlabeled specimens and says under his breath:] *The dirty b-----s!* [Mark laughs.] So they shipped them out, but they didn’t label ’em! I don’t know what they are. It’s just a lot of uranium, I guess. Well, you can see what I do when I’ve got nothing to do. I come down here and I look and I play, and of course I have to exercise a half an hour down here every day now, anyhow.

MB: Is that your treadmill there?

JB: Yeah. And I got some interesting stuff—fossils. I don’t know if you’re interested in fossils or not, but I’ve got a few fossils—a big hunk of dinosaur bone over there.

MB: I see that.

JB: A phony award down there that the “elite” Sussex Club gave me. Can you imagine the nerve the club had to present me that plaque for fifty years of service to Sussex County? They’ve got no more right to give me a plaque that said that. They don’t represent the county, that’s just *crust*. Put that back. The rest of it’s nice enough, you understand. It’s just that somebody . . .

MB: Well, it’s the sentiment that counts, I guess.

* Fred Pough was a renowned mineralogist, mineral collector, curator, and author.

JB: Yeah, it sounds like it's good. It was fifty years that I've been around here in this town, and I think Pete Dunn was behind that. [. . .] He got the plaque for the museum; that's where I wanted it to go. Well, it's nice, anyhow. [Jack points to a hand-lettered sign.] No Baum has ever been able to spell. You can see that sign there—"ukulele" is spelt wrong. My father, when he was a student at Syracuse University, drew that up in a contest of some kind, and that was duplicated just as it's spelled there on big signs throughout the city of Syracuse, which was where the Franklin automobile was made. That's a Franklin automobile, and I have the postcard from which my father drew that picture.

MB: He actually drew that whole picture?

JB: He drew that from a postcard. He was an architect, you see.* As you can see from the little picture from the dots, see?

MB: I can see the construction lines that he drew on that.

JB: Oh, the sign painter had to do that. He carries this thing up onto the sign platform with him and he takes these squares and he puts them up big like this and just fills them in. No matter what it is, he fills it in the way the intercepts come on the edge of the squares and he's got a picture when he's done. So that's how these are done—and they're all hand-done on signboards. But I don't know whether my father ever realized, my mother said, "There was some controversy as to whether that verse that he spelt could've been in any kind of dictionary." [Laughs.]

MB: And that was the advertisement for the Franklin automobile?

JB: The Franklin automobile. And we had Franklins. Air-cooled, you know, they're not water-cooled, they were air-cooled. We always had Franklins while they were made. I think my father had one of the last ones. He was driving in Yonkers, New York, and the thing caught fire in front of the fire department. He went into the fire department and said, "Hey, fellas, there's a car on fire out here." Then he walked up to the Packard place and bought a Packard. I inherited his Packard. The damn thing cost him eleven hundred dollars.

MB: Big money.

JB: Big money. It was what you called a "business coupe" in those days. It had a front seat, and, in the back it had two little taxi seats, that you could put down and sit on, but they weren't really made for anybody you'd respect. [Mark laughs.] That was a business coupe, you know. College boys used to buy those little coupes because they just sat two or three in front—and that's all there was to it. They had a rumble seat.

The first car I had had a rumble seat. It was a convertible 1934 Pontiac. Straight eight. It got something like fourteen miles a gallon, which was pretty bad, but in those days, a gallon was seventeen cents.

MB: Hmm. It didn't hardly matter.

JB: Didn't hardly matter. I drove that thing all the way out to California. [. . .] It's still out there somewhere. [. . .] [Picks up a carved religious figurine.] Every time I see this thing, I remember the shock my family got. We went to Niagara Falls in 1928. From Buffalo, we took a steamship, a sleeper, all the way to Duluth. You went to Duluth those days in a big steamer. And in Niagara Falls—I like rocks, see?—and there's this rock, so I bought it. My mother says, "You know what that thing is? That's Catholic! Ugh! Get rid of it!" [Mark laughs.] I wasn't gonna get rid of it; it's a *rock*—I like it!

MB: A beautiful carved stone.

JB: Yeah! I don't know how they did it. [. . .]

MB: You've got quite a collection here of interesting things.

JB: We stopped off in Michigan. A miner was comin' down off the ship and gave my little brother that piece.

MB: These are copper crystals in there, aren't they?

JB: I don't know what they are, but it was an interesting specimen.

MB: Sure is.

JB: So I did have stuff around. [. . .] [Hands Mark a Harvard University commemorative beer bottle.] So, I went to the 25th reunion.

MB: [Reads bottle label:] "Class of '39." Now this is a Red Cap Ale.

JB: [Giggles.] Yeah, the vice president of the company was a classmate. So he just had Carling [Brewing Company] turn these bottles out for our reunion.

MB: Isn't that something? That's quite a collectible, huh?

JB: There's a can there, too. Same thing, 25th reunion with a Harvard seal on it.

MB: That would have been, what, 1964?

JB: Yeah, twenty-five years. My father went back to Syracuse for his 25th anniversary and they gave him a doctor's degree. He really amounted to something. I didn't amount to much.

* Jack's father, Dwight James Baum, was a prominent New York architect.

MB: And all *you* got was a can of beer!

JB: All we got was all the beer you could drink and all the liquor you could drink. They say we drank over \$40,000 that week. [Laughs.]

MB: Oh, yeah? And that was in 1964 dollars.

JB: Yeah. Forty thousand! Can you imagine that? Oh, and the liquor flowed like crazy! Every place you walked in, the bar was set up there with students running it. And they didn't hold back, you know. I was drinking gin and tonic. Finally I had to go to beer because I just couldn't drink anymore of that stuff. [Laughs.] [. . .] But it was a lot of fun.

MB: [Laughs.] I hope you had a motel room to stay in.

JB: Oh, we had dormitories. I had the second layer of a bunk. I had to climb up in a bunk bed. Of course, I was young enough to do it then.

MB: I've always enjoyed these. [Picks up a flat rock and reads the words painted on it:] "Please turn me over." [Turns rock over and reads the other side:] "Thanks!"

JB: Isn't that silly? A simple thing, but somebody made a lot of money out of it. [Picks up a fossil.] I like this one though. It's a ginkgo. A ginkgo. It isn't good for anything, but it's sort of a revelation, you know. There's another one I had here . . .

MB: A piece of petrified wood?

JB: Yeah, but it's got algae in it. See the algae up through here?

MB: Oh, yeah.

JB: I never saw petrified algae before. [Picks up a piece of ore.] At Tonopah—I went underground at Tonopah. That was a silver town back in 1906. So I went out there and they were still cleaning up the mine and I got a tour of the mine. A fascinating place. I brought back the ore and I neglected to ask what the ore was. It's silver, but *what* silver? So I got a couple of specimens here—I don't know what they are.

MB: Betcha that fluoresces.

JB: Put the light there. Oh, it does, yeah.

MB: A little bit. Some of them really go like the dickens, though. This one does a little bit.

JB: I don't think I've ever gone over that stuff I have back there.

MB: I lamp everything. I see you've got a nice little Edison briquette there.

JB: Oh, I got oodles of those!

MB: That's a good one.

JB: In the old days, you could do that. You could go and pick them up there by the bushel.

MB: I remember that, going there when I was about 10 and finding some.

JB: Here's petrified wormholes. That's from Siam.

MB: Oh, that's strange.

JB: Yeah, I thought so, too [. . .] This was something my father had. These came from Herkimer, New York—Herkimer diamonds, though they're not the kind you're used to seeing. A big cruddy-looking thing. This was on my grandfather's corner cupboard, a table in the living room. And when he was old and I was in college, he made a case for me. Just a box with a glass in the top. And he had some of these specimens, including some calcites, and in order to make them fit into the case, he sawed the tops off of the specimens.

MB: Ugh! [Laughs.] That's criminal!

JB: They didn't know; they did it. This is a . . . You can't make out much of it, but it says, "Ringling's bathroom" on it. John Ringling was the head man of the circus, you know—Ringling Brothers, Barnum, and Bailey.

MB: Um-hmm. He had a house over in Jefferson.

JB: Yeah, and he had a big place down in Sarasota, Florida, that my father built for him. And this was a sample of the marble they were going to put in the bathroom. So we went down to see it. The whole bathtub was one piece of this marble.

MB: One solid piece?

JB: One big solid piece. How they ever got that up there, I'll never know. It's a magnificent house, of course, but too big. Anybody would be uncomfortable in it, 'cause it's just a big Grand Central Station. They liked it, I guess.

MB: Well, if you've got the money, you might as well live it up, huh?

JB: One of my father's triumphs. He built for a lot of people. There was a guy by the name of Powel Crosley, who owned the Cincinnati baseball team at one time, and he made the Crosley radio and a little bitty automobile.

MB: I've heard of the Crosley.

JB: Yup. And my father built a house for him out in Cincinnati. He came to the house one day in New York City, and talk, talk, talk. I almost heard everything. So when I wanted a radio at college, I said to my father, "Get me a Crosley radio," thinking he could get it cheap, and I guess he did, because the next thing I knew, I had it. It sold for about \$36 in those days—just about twice the cost of a bicycle. If I had \$18 when I was

a kid—or if you got a good one, it was \$22—you had something called a Raleigh, with three speeds. That was the elite—if you were a rich kid, you had a Raleigh. That was 42 bucks. Forty-two bucks was steep. Helluva lotta money. I never had a Christmas present that cost 42 bucks. Well, anyhow . . .

MB: When did you move to this area?

JB: '39, when I got out of college. I came directly here. In fact, my spring vacation of my senior year, I went down to New York with a list of mining companies, and just went bang, bang, bang through the mining companies. And the Zinc Company, when I hit them, they said, “Why, you go out to Franklin. We do our hiring out there. The geologists, go out there and talk to them.” So that’s what I did. And I got here in the morning and the guy says, “Well, you stay till the afternoon and you pass the physical, you’re in.” A “spring vacation,” yeah. I had an appointment in the afternoon with the National Lead Company in New York City. So I said, “To hell with *them*, I got *this* one.” So I stayed and they accepted me. I weighed 112 pounds. I never weighed more than that—112 pounds. They took me anyhow. [Mark laughs.] Well, I don’t know why, but there were two things: They were trying to build up a geology department and the boss of my section was a Harvard man. He wasn’t there at the time, but I guess they must have got in touch with him, so I got the job (Figure 4). And my boss and me and my wife and his wife hit it off—my wife’s from Boston—and at a big garden party, when my wife went, she had gloves up to here and a great big hat—and that’s what they did in Boston—and that impressed the hell out of them! [. . .]

MB: [Laughs.] That’s funny.

JB: And when we had our party in mid-winter—a big liquor-drinking party—the president of the company came, R.L. McCann, and Sid Goodwin, the head of mining, Bill Callahan with his lieutenant in charge of all the exploration, they were all there. And Mr. Haight, in charge of the Franklin mine, and his wife. We also had to have special punch to drink ’cause they wouldn’t drink.

MB: A nonalcoholic punch?



Figure 4. A young Jack Baum as a “puppy geologist” at work for the New Jersey Zinc Company, surrounded by rock samples from the Franklin Mine, early 1940s. *Photo by Harry Senchuk.*

JB: Nonalcoholic for them, yeah. And they invited us down to the house for dinner and said, “Now, if you want *hootch*, you take it before you come to our house.” [Mark laughs.] Later on after he retired, he had trouble with his heart. His wife did, too. The doctor said, “You know, it wouldn’t hurt you people to have a drink before dinner.” And later on, we’re talking to Mrs. Haight and she says, “You know, we had a little drink before dinner—and we sort of *like* it!” [Laughs.]

MB: [Laughs.] Well, it’s good medicine.

JB: Yeah, he being a wheel in the company—*gracious people* with background and all that stuff. They were in the Presbyterian church, naturally, the company church, and they were on the school board.

MB: The “company church”? What do you mean by that?

JB: The company ran the Presbyterian church. All the big wheels were there and on the school board. They were all Zinc Company people. It was that kind of a town. If you were salaried, as I was, it was just a real wonderful place to be. That’s why we say, they didn’t pay much, but it was a wonderful place to live and raise your kids.

MB: Good quality of life?

JB: Yup. Two months out of the year, the electricity was free.

MB: Which two months?

JB: You never knew which. You’ve probably heard me say this, but maybe you haven’t, but you never knew which month it was. And when the guy came to the door at the north end of town and said, “This is a free month,” you got on the telephone and called your friends down the other end: “Start your ironing. It’s a free month!” [Laughs.] Yup, two free months. They made their own electricity. In the power house, there was a big dial down there for cycles. Sometimes it was at 60 cycles, sometimes it was 62 cycles. We got an electric clock as a wedding present—we couldn’t use it. [Laughs.]

MB: That’s funny. It wasn’t necessarily precise.

JB: I guess it wasn’t, but it ran things. It ran Sterling, too. The power line went over the hills and down through the dales down to Sterling on those towers.

MB: Did it come down Cork Hill Road then?

JB: Right on through the woods. Right straight through from the Buckwheat Dump and went right on through and right up Cork Hill in the center of the hill, you might say, all the way down to Sterling. I was working down that line one day and the thing got hit by an electrical storm—a thunderstorm—and we got the hell outta there in a hurry.

MB: So it ran up on top of the hill?

JB: Ran right up on top of the hill through the woods.

MB: It didn’t follow the road?

JB: Oh, no. They were big towers, you know. Steel like this. If you want to see ’em, they’re holding up the lights down at the Memorial Field at the Pond. Those are some of the same ones that they used.

MB: Oh, sure. They reused them?

JB: Reused them, yeah.

MB: I guess the Zinc Company did a lot of reusing of things, huh?

JB: Why, yes. You probably know that that bridge that goes over, is it Plant Street? [Actually, it is over Passaic Avenue.] The railroad bridge. That one was over the Wallkill down at Franklin Pond at one time, and brought waste and whatnot into the dump [i.e., the Buckwheat Dump].

MB: That’s the one that went out toward the Buckwheat? [. . .]

JB: Yeah, that’s the same bridge.

MB: Huh! I didn’t know that. I live just down the road from that.

JB: Oh, I see.

MB: I live right by the tunnel there.

JB: Oh, yup, uh-huh. And the old headframe that they used to have at Sterling, the really old one, that was the one they used at Parker. Now the one at Parker was a vertical shaft, but it had props on it that went this way. So what they did, they just turned it around. Instead of running the cars up and down the one end, the cars run up an down *this* end. The same headframe—just pick ’em up, take ’em down, and put it back together again. Waste not, want not.

MB: Sure. Do you recall—or, I guess maybe these were long gone when you arrived here—the aerial tram?

JB: Yeah, that burned way back in the ’tens, I guess—the early part of the last century, I should expect. No, I don’t know more about it than you do. I know where the footings are up at Cherapy’s house, and we do have the pictures. Then way up on top of that was a hundred and fifty feet, close to it.

MB: It must have been quite an impressive sight to see.

JB: I would have thought so, yeah. Yup, good old place.

MB: A lot of change has taken place, I guess. I hear now they’re thinking about tearing down the old hospital (Figure 5).

JB: Yeah, that makes people feel bad. It would make me feel *better*. The place is a wreck! I mean, it’s nothing like what it was. At one time, it was the borough’s offices and everything like that. So any resemblance to a hospital is long gone. My kids were delivered there and it cost me fifty dollars apiece.

MB: I guess they ran a good hospital, from what I heard.

JB: I guess they do. I used to refer to it as “Murder Incorporated.” [Mark laughs.] Well, somebody did tie off an artery in somebody’s leg, thinking it was a vein. Finally, they got to it, but he lost his leg.

MB: Oh, boy.

JB: He complained and said, “This leg is awful cold!” They killed his leg and had to take it off. That was one thing they shouldn’t’ve done, but in general, it was important. It was the only one in the county when it was the company hospital. They were always there when I needed ’em. I used to get the flu a lot, because I was such a lightweight. I’d stagger up there and they took care of me and gave me important shots and whatnot. And if they ever charged, I didn’t know about it because we had health insurance with the company. I had health insurance, unemployment, Social Security. It all came out of my \$27.50 a week—and my room and board the first year ’cause I lived in what they called the Catlin House—Westwind Hall—they built for Catlin.* When he got outta there, then they had a dormitory for young engineers. That first night I went in there, and they took care of me for a year until I got married. So it was planned—my wife was a year behind me in college, so I worked for a year until she got out of college, and then we married.

MB: Then where’d you live after that?

JB: They got me a “Better Home”† up on Rutherford Avenue. There were two houses there right where Route 23 goes through the Better Homes, if you know what I mean by Better Homes—Green Street. They took those two houses and put ’em down Rutherford Avenue. I had one of them. Of course, it wasn’t new at that time. They were built in the 1920s and they’d been moved in the very early 1930s, I guess, from 23. I got it just about the beginning of the war, it would’ve been. And I rented it for \$27.50 a month, I think it was. And we lived in that house for twenty years. Of course, I insulated it as soon as I could. I did a lot of work on it myself. And then we added a couple of rooms to it just before we sold it. Just the way I used to do with automobiles—get it all fixed up and say, “I can’t keep this thing anymore,” and sell it. People do that—spend a lot of money gettin’ the car in shape. Well, anyhow, I got it all fixed up. We paid \$3,350 for it and sold it for \$12,000, which I thought was a pretty good deal, except that we put \$8,000 more into it. And that was the down-payment for this place. That was damned near half the cost of this place, too. There’s a lot of house here. That was 43, 44 years ago.

MB: It’s a beautiful house.

JB: Yeah, I *like* it! As you can see, I can just sit in my little corner here.



Figure 5. This is the operating room of the Franklin Hospital, built in 1908 by the New Jersey Zinc Company. The hospital generally had a good reputation, but Jack Baum jokingly referred to it as “Murder Incorporated.” Primitive by today’s standards, this was state-of-the-art healthcare when the photo was taken in the late 1910s. The hospital was razed in April 2005. *Photo courtesy of Art Jordan, antiquephotostore.com.*

MB: You spend a lot of time in the basement here?

JB: Yeah. Of course, I use the exercise machine six days a week. But I do spend a lot of time. You like to look at the rocks?

MB: Oh, sure!

JB: That’s a nice diopside.

MB: Diopside. What were those drill cores that the museum had in their garage? Where were they from?

JB: They were from a hole out there on the Rude place. The Rude place is in Hardistonville. There’s a farm there we had the mineral rights on. And they put a big hole down there, very deep, to cut across the horizon that contains the Franklin-Sterling mines in the white limestone. And we had those every 500 feet up the valley from the south of Sterling mine up to the area I’m speaking of.

MB: Looking for other orebodies?

JB: Looking for other orebodies, yeah.

* Robert M. Catlin was Mine Superintendent at Franklin from 1906 to 1930.

† These were about 60 homes designed and built for the New Jersey Zinc Company by the Better Homes Development Corp.

MB: Never found any?

JB: Never found any. We also had 3-D ones at Sterling from the 1850 level, looking for the severed segment of the orebody.

MB: The “Lost Orebody”?

JB: Never found that either.

MB: Never found that either, huh?

JB: We had one [drill hole] down at the Pond that is 6,000 feet deep.

MB: At which pond?

JB: The Franklin Pond.

MB: Six thousand feet deep?

JB: Yeah. They got that new bridge across there for pedestrians, you know, from the little pergola. And at the south end of that, we had a hole up there. We had a big tower to drill that with, and we put the rods down the outside of the tower so it would angle off to the east very steep, because we knew that the rotation of the rods was going to carry them over around. We’re headed from Cork Hill, and that’s what it does, of course.* So that way we covered the whole . . .

MB: So it’s not a straight line that goes in . . .

JB: Yes, it does. This goes around this way, and ultimately it crossed into the gneiss, under the big quarry over there on Cork Hill.

MB: Sort of like a spiral when it goes down?

JB: Yeah, and they all did that. Of course, they had to learn that the hard way. The way we learned it, of course, was at the Parker—Parker Shaft, Parker bore. They drilled what they thought were vertical holes and when they put the Parker Shaft down to find the ore that those so-called vertical holes had hit, they had to go 500 feet over to the west to find the ore. But the *holes* did! So, we knew that we had to survey those holes to be sure where they were going. And a number of them we had to correct.

MB: Now, how deep were they?

JB: They were, well, let me see. They hit the ore at twelve hundred feet or something like that. Less than that. So they weren’t terribly deep.

MB: So in twelve hundred feet vertical, you had a five hundred-foot drift?

JB: Yeah, uh-huh. They used big bits with carbons in addition. Big diamonds, eight to ten of them [. . .] Today we use little dust ones. Well, that’s what they brought up. So I got some of that core on exhibit at the Franklin museum. You may have seen it. Show ’em how smart “Judge” Parker† had paid attention. I had quite a bit of that stuff in the house for a while, but I don’t know what happened to it. I mean, I just stole one piece and felt guilty as hell. It was all thrown out.

MB: One piece of core?

JB: Yeah, sure. Discovery core—you know, if you could put that on your damned computer—John [Cianciulli] could do that—and he’d get five or ten bucks for each piece of it. [Laughs.]

MB: [Laughs.] Sure he could. I got a bunch of cores from Sterling. I guess when they, the town, took that over at first, I guess they just dumped a bunch of cores out not thinking that they were any good for anything.

JB: Yeah, I know. You should have seen some of the old cores in there. And then there was spiral on the outside of them just like on a railing in a fancy hotel or something like that made of marble with spirals on the outside of it. The cores were like that because of the vibration apparently. If you could get those things, they were nice just to look at. They’re all, I guess, wasted. But I had to log those cores. Split them—or a lot of them, anyhow.

MB: How would you split them?

JB: Quartered them with a damned core splitter that for a long while was in the garage at the museum, you know, with two knife blades. I spent winter after winter putting these little three-inch pieces of core in there, splittin’ those things. It’s easy enough when you open them up, but they wanted a quarter. So I had to take a half and then split it again, and keep in one quarter of the core, and try to put those pieces back in the box again. They wouldn’t fit! Make ’em big so I don’t have to break them up like that. I had a hell of a time. Every once in a while, I looked around like that—*phht!* [Flips his hand as if tossing pieces away.]

MB: And toss ’em! [Laughs.]

* Jack was referring to the tendency of a diamond drill to curve toward becoming perpendicular to the rock layers it is cutting through. The Franklin Marble and associated gneisses in the Franklin area dip eastward at about 55 degrees, so any hole drilled vertically downward will tend to turn westward and progressively deviate from the vertical.

† Attorney Richard W. Parker, called “Judge” Parker by Franklin locals, in 1887 obtained a mining lease to property north of the Taylor Mine, surmising correctly that the orebody extended at depth that far north. The shaft that was eventually sunk was named for him.

JB: Yeah. Then we took them down to the chem lab, we dissolved them and got what we call the insoluble residue fairly easily. The idea was that maybe there was an insoluble mineral down there that could be traced from hole to hole to hole and we could plot those and we'd get a structure. In those days, they said, "Any damned fool knows that these orebodies are the replacement for plunging synclines." They weren't. They weren't.

MB: They thought they were.

JB: They thought they were. So we hired people to go out look for plunging synclines, even in the gneisses, because if you found a plunging syncline in gneiss, who knows but what there might be some white limestone down underneath it, you know. There might be an orebody in there. Oh, well, a lot of our bright scientists were completely wasted on a half-assed idea.

MB: A lot of effort looking for . . .

JB: Plunging synclines. We had the head of the Precambrian section of the Canadian Survey down there for two years. And he was up there mapping the orientation of amphibole crystals of the Franklin limestone because they always line up parallel to the axis of folds. As you look at 'em in the open pit at Sterling, you'll see them all [. . .] statistically, all going down this way parallel to the fold of the Sterling Hill orebody. So that's another way to find a syncline. And that's their job, but they're barking up the wrong tree.

MB: [Laughs.] Who did you work for?

JB: My boss was a fellow by the name of Alan Pinger. He was the first Resident Geologist the company ever had. He was in essence the chief geologist. His base happened to be at Franklin. So he had a fellow by the name of Ralph Cannon in the '30s, the early '30s. Another guy by the name of Olaf Rue and then another guy—it doesn't matter what his name was—and then me. We were never more than two of us at a time for a long while till the war was just about over and then we could get the young men we needed for an exploration program. They had a geologist by the name of Bill Callahan, who was the MIT mining engineer and geologist five years. And he was sort of put in charge of the exploration for new orebodies here. So I worked as pit boy on his orders, but I was working for Pinger just the same. When Pinger retired in 1950, I got his job. But over me, I had people you wouldn't believe—Callahan and Goodwin, and at various times, these smart young a-----s that always knew the answers. They might not know anything else, but they knew the answers to impress the people in the

New York office, you know. So you ended up working for those guys.

MB: Did you ever work with Lawson Bauer?

JB: Oh, yes. Well, only that I would give him stuff to do and he would give me stuff to do. I'd clean the opticals. We'd bring him something new and he'd send it up to Palache.* And he always opened his letter: "One of our geologists gave us . . ." He never gave any credit. But he didn't look for any for himself, either. He said, "One of our geologists . . ." So I wanted to let Palache know that *I* was the one, because I was Palache's student. When I was at Harvard, Harvard decided that every professor oughta have a pet in his field. And Palache was assigned me. He said, "Okay, you're gonna be my tutorial student in mineralogy; we're gonna work closely together. You know what paragenesis is?" "Nope." "You know what replacement is?" "Nope." He said, "Oh, my God!" [Mark laughs.] I transferred out of mineralogy, which was a good thing 'cause I'm not really interested in mineralogy. You can see how deep I get into that stuff. It's fun, geology.

MB: Geology. That's funny.

JB: Okay. I've killed your evening.

MB: Oh, you didn't kill my evening at all.

JB: Yes, I did. It's 9:25. But it's sorta fun. I could just run on with stuff like this.

MB: I always enjoy listening to all these stories.

JB: All this stuff has a story to it. I've got a few things in the cabinets there—ores and whatnot that I've picked up on my trips. We were down in Tonopah and they have a mineral there called iodyrite, it's silver iodide, sort of rare. The miners said, "You want any iodyrite?" I said, "Yeah. Well, how can I find it?" "You take your carbide light and shine it over the wall. When it hits the silver iodide, it glows!" You'd think it would ruin it, but it didn't. It just glows brilliant. So then you chip off the rock, it was silver iodide in it. And I was collecting that stuff, but it's just little dinky stuff, you know, not worth doing anything with. I brought back some of that. But that was fun. In Tonopah, they had what they call square-set stopes. You know, the timbers all square. And some of them weren't filled, so it looked just like a New York skyscraper on its way up there. And four feet apart. You go swingin' across there and there's nothing down below. You gotta get from a passage that's come in there, then it comes in here and you gotta go the square sets across there.

* Charles Palache, Harvard mineralogist, wrote a landmark text on Franklin minerals, *The Minerals of Franklin and Sterling Hill, Sussex County, New Jersey*, better known as "Professional Paper 180" or simply "Palache's monograph."

MB: You walk the timbers?

JB: Yup.

MB: Nothing like that in the Franklin mines?

JB: [Continues talking about Tonopah.] The thing was hot! God, it was hot underground there for the miners. Unbearably hot! I can't see how the miners could do it. So a few of them were up a raise trying to get a ventilation drift from one place to another out of the raise to get some air through there. I wouldn't stay. I decided I'd go back down a level. "You go up." But they were nice to me and put me on the payroll for one day. They said, "We got insurance problems if you get killed here. You're on the payroll." Twenty-five hundred feet down. But fun.

MB: What were the last levels worked at Franklin before it closed?

JB: Ah, well, let's see, they were working up in the center. There were 47 working places. So some of them were way down near the bottom and some were up in the middle and none near the top, really. But the shaft pillar, it protected the Palmer Shaft. That was the place where they did much of the work in my time. All the ore came out from there. And there would be, if you worked, let's say, on the 730 working place at the north end, why, there'd be one up here, there'd be another one way down there, and there might even be a third one way down there, so there was a few places with that same number, but the elevation made a difference. So they were . . . all those 47 did not have different numbers, but whatever elevation you were at. Of course, the elevation changed every ten feet.

MB: Right.

JB: But I liked that mine!

MB: How soon did they know before the end that they were running out?

JB: I'll betcha almost ten years.

MB: Ten years? So they pretty much knew when . . .

JB: Depends what the production was every day—they knew the limits of the ore. And sometimes people wonder what the hell they need a geologist for. You can't try to snow that thing. [Chuckles.] Mapping for the record was what it was. I used to bristle when I planned out something—[Imitates his critics:] "*What are you doin'?* *Mappin' for the record?*" I'm an expensive science. It turned out pretty well—it gave Frondel something to write about.

MB: But it was during that time that you were desperately looking for other orebodies around?

JB: Oh, yeah. I was prospecting. I worked up in Canada at the titanium project up there at Allard Lake.* And I prospected all the beaches from New Jersey down to Florida in the summertime with my boss. That was a rough time! [Chuckles.] Summertime on the beach! Everybody else was swimming and we're down there wearing our little miner's suits or whatever like that. But we were after the black layer that you see on the beach. That's ilmenite. Ilmenite's a titanium white. We ended up at a plant run by DuPont in the fossil beaches in Florida. They were actually mining the stuff. Interesting place to work, because it had been a military base at one time, and they kept turning up bullets. They weren't supposed to touch the bullets, the cartridges. Leave 'em lay right where they were. But we developed quite a bit of ore down under Lakehurst Naval Air Station [in central New Jersey]. I had some adventures down there.

MB: Under Lakehurst?

JB: You weren't supposed to be there on the Lakehurst base, you know. They had a secret rocket sled they were building in there. And so we had a jeep with a big drilling rig on the back of it. And we went right down there right by the secret tracks, and we had the maps on the hood of the car, and there were trailers, you know. And when the helicopter came over looking at us, why, we're goin', "Hey, guys!" And there's all this stuff, you know. We're looking at maps and they're lookin' at me. And I had our little drill going like mad and getting a sample of something. They sent a couple of MPs around the jeep. They just looked at us and shrugged and went back—never bothered us. God, we would've had a lot of explaining to do if they asked us, "What the hell are you guys doing?" [Mark laughs.] But we developed a lot of ore down there, but the company didn't want it. They wanted that solid stuff. There's a big slab of it right there, that black thing.

MB: And where was that from?

JB: That's Allard Lake, Canada. We flew in there, but the airplane never came back to get us. That was the time we went in with three days' food, you know. We flew in there and two weeks later, fourteen days later, we walked outta there, and I had that thing in a suitcase. Can you imagine me walkin' out . . .

MB: You had to *walk* out?

* In 1946, the world's largest deposit of ilmenite was discovered in the remote Allard Lake area of Quebec. The New Jersey Zinc Company in partnership with Kennecott Copper mined and processed this ore to extract iron and titanium dioxide.

JB: All I could do was stoop, 'cause we were walkin' out over the tundra, and me carryin' a suitcase—the stupidest-lookin' thing . . .

MB: Why couldn't they fly you out?

JB: The pilot got mad at the airline and he quit. Canadian Pacific Airlines had a lot of little bases in various lakes and whatnot. We got one of 'em at the Romaine River, I guess it was, and he got pissed off and he quit. So they knew we were in there, but they didn't know where we were. And nobody much cared because that was the time when the war was over. The atomic bomb and all that stuff—we knew nothing about it. And the Zinc Company got worried that they hadn't heard from us, so they got after Canadian Pacific. Finally, Canadian Pacific figured out where we should have been and they sent a plane in for us, but by that time, we had gotten so pissed off waiting, why, we were walking out and canoeing—we canoed and walked and canoed and walked—and there's thirty miles, and we were just pulling into town on the Saint Lawrence River, when this damned float plane flew over. They'd been out and seen our empty tents and all that stuff. We were pissed off. We didn't stay in town, either. We went back where we came from, where we looked up a telegraph officer. Next day they came and got us out.

MB: Quite an adventure!

JB: Oh, yeah. We did a fair amount of flying up there. These young fellas flying the planes were Canadian Air Force. They didn't know float planes, you know. They didn't have float planes in the service. So we flew back in the dark one night and the pilot says, "You know, I never landed one of these things on the ocean in the middle of the night." It was black as pitch, you know. If he'd've turned around when he was out above the bay and had looked at the town, he could have seen the lights from the water. But he didn't; he flew out the other way. He had a mechanic. He said, "You let me know when I'm supposed to do the proper thing." The mechanic is looking out, and the pilot says, "Nah, no." Finally, the mechanic says, "Okay, *now*." So he could flip the pontoons up just enough so he wouldn't turn over when he hit the water. And I'm sittin' in the back of the plane without anything to hang onto, you know. Just sittin' on some webbing. So I'd have been all over the place. I'd have gone right through the skylight if that thing had cracked up.

MB: Boy! [Laughs.]

JB: That was definitely crazy. We drilled sand up there, too. Ontario, Saint Lawrence, has fossil beaches, too. And so we stopped to the store and got four-foot lengths of pipe and pieces to join 'em with and a handle and a big digger for post holes. And before we were through with the holes, some of 'em were

twenty feet deep. And the thing's way down there, and we're going like this, putting on another four feet, you know, and then pull that rod up there. And the rod's up there going like this and we're trying to hang on to the bottom without spilling the sand. It's thick on the bottom of those blades until we could get those someplace where finally we bagged it. And later on we hired a barge and barged it to Quebec or someplace like that and shipped it down to Palmerton. They went through all that stuff to determine the grade of the sand and all the rest of it and calculated the orebodies that we found. It was never of use at all. But at Allard Lake, they drilled that and they sent all the cores down to Palmerton. My boss and I went down there and he said, "How the hell are we gonna figure out the grade of this stuff?" I said, "Well, you got all this core that's got heavy ilmenite in it; it's got like a microcline or some feldspar in there, and that's the gangue. It doesn't weigh anywhere near as much with the specific gravity of this stuff." So we got some buckets and we weighed it dry and weighed it wet and got the specific gravity and got some analysis to go with it, and we were able to figure out the weight of the orebody that way. I've got a piece of the ore, got a piece of the ilmenite core up in my little collection upstairs. And I got a piece of the barren rock, which happened to be labradorite with schiller in it.

MB: Oh, sure.

JB: Those were my souvenirs for all that work I did up there. It was interesting work—with flies! And mosquitoes! It was all French up there. *Moustique*, *mouche*, and *maringouin*. *Moustique* means "mosquitoes" and the *mouche* is a "fly." *Maudit mouche* is a "cursed fly." And the *maringouin* are what we call "no-see-ums." And we had the three of them all at once, hangin' all around your face like that. We had something called 6-12; they call it DEET. It would take the paint right off a lead pencil.

MB: Sure.

JB: [Laughs.] Works two or three hours, and we gotta put it on again. Boy, we were grungy! What a way to make a living. And we were off, you know, a month or two at a time. And people don't realize that—of course, today I know of people who go work six months or more on these oil rigs and whatnot. But with the United States, that was a hell of a tour. I was raising kids then, you know. The doctor at the hospital said, "Why don't you let me take your appendix out?" "What do you want to do that for?" "What if you're out there in the woods? You know that could kill ya. Let me take it out." I said, "No way!" I still got it!

MB: [Laughs.] Didn't want to go to "Murder Inc.," right?

JB: That's right. He was gonna "take care of me"—but I wasn't gonna die if I wasn't sick!

MB: [Laughs.] That's funny!

JB: Yup.

MB: Well, I've had quite an entertaining evening.

JB: You did twenty minutes' worth of work and . . .

MB: I did twenty minutes' worth of work and the rest of the time . . .

JB: You listened to a lonely old man.

MB: Nah, I enjoyed the evening! Very enjoyable. I thank you very much for your time.

JB: You're welcome. I don't know that we've contributed much, but . . .

MB: Well, basically I was looking for information on that one specimen.

JB: I will get your address somewhere, and I'll print this stuff up for you. But we gotta get the machine fixed.



At this point, my recorder ran out of tape as I fished one of my address cards out of my wallet to give to Jack. Before we headed back upstairs, Jack once more stated how much he loved to “come down here and play.” Indeed, the nearly two hours we had spent in his basement seemed like only a few minutes. We then ascended the cellar steps and entered the living room. “You didn't make any noise down there at all,” Augusta told us.

Jack wasn't done with me quite yet. Like a perky tour guide, he gave me the grand tour of their home. Many of Augusta's own paintings adorned the walls, and I complimented her skillful artwork. Jack pointed out various antiquities displayed on shelves and small tables throughout the living room, and then he led me into a parlor with panel doors on two adjacent walls. With a puckish smirk, he said, “I'd like to show you my other big hobby, which I had to give up a while back.” He opened up the first set of panels that hid a well-stocked wet bar—evidently a source of pride.

Jack then opened up the panels on the back wall to reveal a wonderful collection of mineral specimens and other collectibles in a glass-enclosed wall display. From one end of the display to the other, Jack elaborated on his treasures. Each item had a special memory for Jack, and he told me a little detail or anecdote about each item.

“Well, I've taken up too much of your time,” Jack said as he closed up the doors of the display. “I'm an old man with nothing to do. I'm sure you've got lots of things to do and I've wasted your entire evening.” No, I insisted, I had had a thoroughly enjoyable visit, and I thanked him for showing me some of his marvelous treasures. As I left, I thanked him once again for the opportunity to pick his brain and record some of his recollections. “Well, thanks for coming by,” he said. “I'm glad somebody's getting this stuff down before it's too late.”

As soon as I got back home, I wrote down details of my visit while they were still fresh on my mind. Then I started a years-long, painstaking process of transcribing the audiotape. Since that night in 2004, I visited Jack at his home on several occasions and listened to countless great stories, but I only ever recorded him that one time.

Sometimes after visiting Jack, I would write down things he had told me. One thing Jack said that I thought was especially significant was when I informed him about a previously unknown mineral association that had been found illegitimately on the posted and fenced-off Zinc Company Mill Site in Franklin. Fearing Jack's disapproval of the clandestine digging, I quickly uttered the caveat that the collectors who found it were trespassing and not supposed to be digging there. To my delight, Jack retorted in their defense, “It's important to science for you to *do* things you're not supposed to do!” Words of wisdom, for sure.

Many of Jack's long-term friends recall with a smile the amusing stories he loved to tell. My last visit to see Jack was in the spring of 2011, when he entertained Lee Lowell and me with some spicy anecdotes about Zinc Company executives—stories perhaps best left undocumented!

Jack contributed greatly to the Franklin mineral-enthusiast community, yet he was modest about his importance and stature. At the 2010 Miners Day at the Franklin Mineral Museum, when he was approached several times for his autograph, I told him, “You're a real ‘rock star,’ Jack.” In his typical dry, self-deprecating wit, Jack quipped, “Yeah, I should wear a T-shirt that says, ‘The famous John L. Baum—one nickel per autograph!’” While Jack's autograph might not be worth more than a cherished keepsake for some, considering his nearly 70 years of involvement with Franklin as a geologist, curator, historian, author, mentor, and general benefactor, the legacy of John L. Baum is priceless.



Figure 6. Jack Baum and Mark Boyer in front of the Franklin Mineral Museum, Miners Day, May 1, 2011. This was Jack's last visit to the museum where he had devoted 35 years as Curator.

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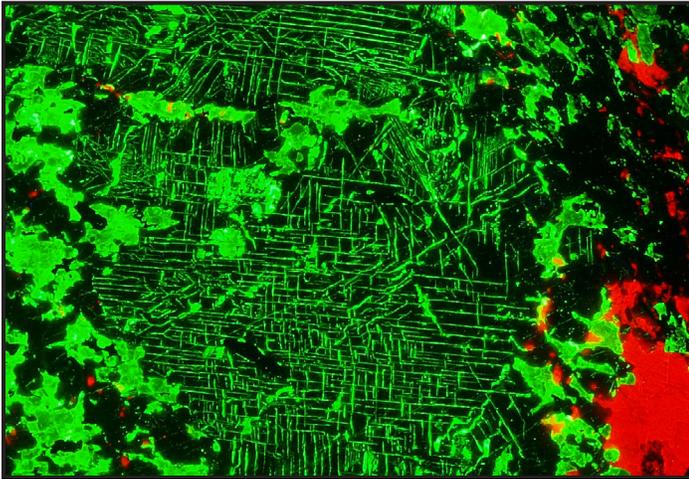
Exsolution Willemite: The Big Squeeze

Second in a Series on Franklin Collectors' Jargon

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The term *exsolution willemite* is frequently bandied about by collectors to describe the parallel layers or lamellae of fluorescent willemite in nonfluorescent tephroite. Such specimens, with striking fluorescent patterns often resembling tightly spaced rectangular grids (see accompanying photo), are known from both Franklin and Sterling Hill. A good amount of this material is in the hands of collectors far and wide.



Exsolution willemite “grid” pattern in tephroite from Sterling Hill. Author’s specimen; field of view is approximately 3” (7.5 cm).
Earl Verbeek photo.

Unfortunately, misunderstanding about this term has also circulated among collectors. For example, on a 2010 eBay listing came this description: “Exsolution willemite is where the willemite permeated in a liquid state into the existing tephroite, creating the fine, minute lines. These lines are typically crisscrosses and can have some incredible patterns” This explanation may *sound* plausible, but it is quite wrong. Although willemite is very soluble and mobile in hydrothermal solutions, that is not the case here—there was no opportunistic “liquid willemite” seeping into vulnerable,

fractured tephroite! No doubt part of the misunderstanding is that some collectors confuse the word *exsolution* with the word *solution*. The two are not synonymous—*exsolution* does not refer to mineral *infiltration* in the liquid state but to mineral *transformation* within the solid state.

So, here’s what actually occurred to create these linear patterns: One of the minerals that formed during the period of high-temperature metamorphism of the zinc orebody was tephroite (Mn_2SiO_4). Zinc ions, which are larger than manganese ions, normally would not “fit” in the crystallographic structure or lattice of tephroite. But in a high-temperature, hence, expanded state, the crystal lattice of tephroite could accommodate abundantly available zinc. Accordingly, a significant amount of zinc substituted for manganese at the “roomier” crystallographic sites, thus creating a single solid phase, a zincian tephroite. As the rock gradually cooled and the host tephroite’s crystal lattice contracted, the crystallographic sites became too small for the zinc ions. The zinc was then “squeezed out”—or *exsolved*—to form thin sheets of willemite (Zn_2SiO_4) along multiple crystallographic planes of the tephroite. This created the “crisscross” pattern of willemite lamellae often seen under ultraviolet light. Willemite exsolved from tephroite is thus a *primary* metamorphic mineral, not secondary as is often supposed.

Although exsolution willemite is well-known in tephroite, it is also seen in other minerals, such as glaucochroite, petedunnite, and bustamite, albeit not in such well-ordered patterns. In petedunnite, for instance, the exsolved willemite appears as a profusion of tiny dispersed spots. Generally, exsolution willemite has little or no phosphorescence, as is true for most primary willemite.

Exsolution willemite makes a great case to demonstrate that mineral fluorescence is more than just a geeky fringe hobby for amateur rock nerds. Fluorescent patterns are often of scientific and instructive value for visualizing and understanding mineral structures and geologic processes. ✂

Recollections of Franklin: The Mining Town, Part II

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The men behind the mining of Franklin.

This is the second part of my recollections of life in Franklin, New Jersey. Franklin is known throughout the world as having been endowed with one of the largest and richest deposits of zinc in the world. It is likewise world-famous for its diversity of minerals, number of mineral species unique to this deposit, and number of fluorescent species. Among the latter, some of the local specimens are among the most spectacular fluorescent specimens known. But none of the zinc ore of the Franklin deposit—22 million tons of it!—would have been brought to the surface and processed into zinc products had it not been for the miners. Their story is told here.

As the years go on, we are finding that first-hand descriptions of mining in Franklin are increasingly rare. The last generation to work here, concluding in 1954, has been slipping away. And miners of the great heyday of the Franklin mining experience—the teens through the forties of the last century—have been gone for a number of years. What I wish to do now is provide a picture, through stories from my personal family life, of the life and times of these miners and their families. The interpretations that I offer here should help you gain a more robust understanding of what life was like when operations at the Franklin Mine were at their peak.

First in the minds of the men who worked in the mines were their jobs, which enabled them to feed their families. Their work ethic probably extended back to before the Revolutionary War, with the first miners who came to our area. A long procession of hard-working laborers followed. These are the people who became citizens in our part of the Wallkill River valley and provided us with the colorful history for which the zinc mines are so well known.

The impact of the people who came here to mine ore dates back to the times of the old Franklin Furnace, and to the first workings of the Sterling Hill zinc deposit in Ogdensburg, and the old iron mines atop nearby Sparta Mountain above Ogdensburg. These mines were so important to our young country that George Washington frequently came through our area, in part because northwestern New Jersey held the valuable iron ore that was used for cannonballs. This rich heritage in iron mining, and, conversely, the difficulties in smelting franklinite as an iron ore, had brought the attention of some of the big names of the 1800s: the Ames family of

Massachusetts, Moses Taylor of New York City, and Thomas Edison. Thus, in addition to common laborers making a home in our valley, some of the most important people in United States history had staked interest, money, and time in our local mines.



Workers at Thomas Edison's iron mining and milling works on Sparta Mountain above Ogdensburg.

Immigrants to the Franklin area followed some general trends. The Irish came early, in the early 1860s, to labor in the local iron, zinc, and limestone works. They were soon joined by some of the Italians who had worked on the several railroads in our area in the 1870s, and by local and regional Americans who had experience in iron mining from places such as Ramapo and Ames' works in Connecticut. As zinc mining began in earnest in the late 1800s, miners came to Franklin and Ogdensburg from nearby Hurdstown, which in its day was one of the region's premier iron mines but closed down and lost its workers as iron was losing economic favor. My great-grandparents were among them; they came to Franklin as a result of Hurdstown closing down. Many Cornish came to America because of the decline of tin mining in Great Britain—for me this represented several sets of ancestors coming to America as the tin mines shut down one by one. The Cornish started to come about 1870, some going to Hurdstown and some to the Wharton area; my own folks arrived in Franklin somewhat later, around the 1910-1915 time period. Lithuanians, meanwhile, came here from the coal-mining areas of Pennsylvania, and around 1900 or so, many Hungarians looking for work came across the seas to New Jersey. In time, about one-fourth of the zinc-mining workforce was made up of Hungarians, and to this day their heritage is a large part of Franklin history.

Below is an alphabetical listing of some of the countries that provided workers to the mines and mills of Franklin:

- Chile
- Czechoslovakia
- England (esp. Cornwall)
- Hungary

- Ireland
- Italy
- Lithuania
- Mexico
- Poland
- Russia
- United States (those already living here)

These miners were, at their core, hard workers. Many played football, and the Franklin teams were known as bruising and intrepid winners through the first half of the Twentieth Century. The Franklin area also produced standout players for the national pastime of baseball, one of whom (Billy Glynn) made it to the major leagues. The Chileans who came here played soccer. Stories abound even to this day about the special place that sports held for the proud mining community.



Playing football on the grounds of the future high school, with the Parker shaft headframe in the background.

Some miners played in various musical groups, including the Cornet Band and the Hungarian Band. Memories of these times live on through the award-winning Franklin Band of today, one of the longest-playing bands in the nation—since 1870!

Typical of a mining town were the stories of hard-drinking men who spoke broken English and spent their paychecks at local taverns outside the time office gate before they got home. This created a need for some storekeepers to be stationed outside the gate on payday to intercede. Here is a poem of an unknown Hungarian miner as recorded by Janos Makar in his 1969 book:

*When I go to Antalics'
I strike the big table loudly
Antalics asks what I would like
Is it beer or wine for me?*



The Franklin Cornet Band.

While there are stories of individuals who acted up, the greater number of mining families worked hard and saved. Many would send money back to the “Old Country.” Up to a quarter of the Hungarians, for example, saved their money and returned home prior to World War I. I recall “Little Jimmy,” who lived on Rutherford Avenue; he had come from Cornwall and waited 20 years to return home for his bride.

Life was tough for the miners’ wives as well. As Makar tells us, the concept of “hot beds” was in place in just about every house and boarding house. Any families that lived in the small four-room bungalows were required by the New Jersey Zinc Company to provide room to unmarried workers. The tenant and his family generally bedded in the kitchen, and the other rooms had double beds. Often three persons slept in a bed. Prior to World War I, electricity, gas, and plumbing were not available in these houses. One can imagine the primitive conditions of those times—times when three shifts were working the Franklin Mine and mill around the clock. A tenant back then would pay the Company \$8 per month. A boarder would pay \$30 a month for room and board. In 1912, a typical shift was a ten- or twelve-hour day, and the wages were up to about 25 cents per hour. And the wife of the miner had to care not only for her family of typically four to five, but also eight to twelve boarders. Plus she had to clean, wash the dirty clothes of miners, and tend to ironing, sewing, and cooking. She used as much as 100 pounds of flour a month.

The families of these times were dirt-poor and worked in tough conditions. A look at their clothing in the photo at top right attests to the difficult environments in which they worked. The children in this photograph were in the kindergarten in the Neighborhood House. It was necessary to hold classes in several areas around town to take care of all the new kids in school. The Franklin School system, which began as a vocational school for the mines around 1916, in time became one of the leading school systems in New Jersey.



Kindergarten students on the steps of the “Nabe” in Franklin.

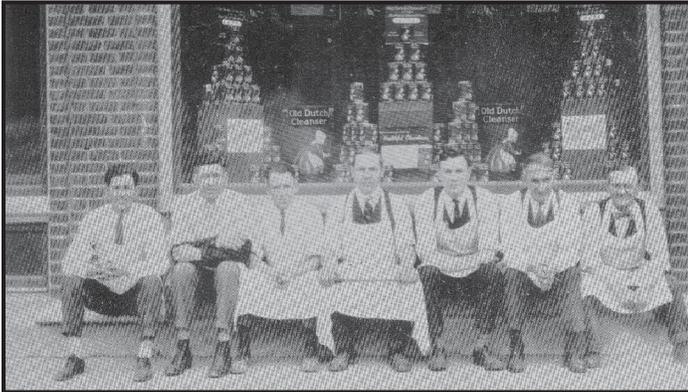
The next photograph, which was described in an issue of *Zinc* magazine as “six nationalities under one flag,” actually shows people whose origins were rooted in 20 or so nations. The overflow of families created a need for extra housing (as discussed in Part I of this article series) and for additional and expanded schools. These included expanded kindergartens in the Neighborhood House (the “Nabe”) and in a converted home on Spry Street. Starting in 1870, the railroads came in, and with them came a great boost in the number of laborers. As a result, the old wooden school near the Baptist church graveyard was replaced by a four-room brick schoolhouse, and around 1915 the vocational-technical school, which had been built to aid in teaching the locals about trades used in the Palmer plant, was converted to a 13-grade school that served until the 1980s.



“Six nations under one flag” is how this photograph was originally described — but the children pictured here, at the “Nabe,” had roots in at least 20 countries.

The railroads, too, figured prominently in Franklin history and its legacy of zinc mining. The Midland Railroad extended over Sparta Mountain from Paterson, taking its ridership from the old stagecoach road known as the Paterson-Hamburg Turnpike. The Midland Railroad became the New York,

Susquehanna, and Western Railroad in 1881, and it was the way many of the immigrant miners came to Franklin and its environs. The Sussex Railroad also came in, from the Newton direction. This became part of the Delaware, Lackawanna, and Western and ran side-by-side with the Lehigh & Hudson River Railway, which had the Mine Hill Railroad as a spur. These rail lines came through the Franklin Junction section of Franklin, just below the Greenspot section of town (Greenspot was where the old company store and the newer brick company store stood).



Male clerks in The New Jersey Zinc Co. store at Franklin. Left to right: Lewis McGovern, Ellsworth Wright, Perry Moyse, John Vhik, Leo Osborne, Ed Glynn, and Wildrick Hulshizer.

The New Jersey Zinc Company transformed the lives of all who lived here. They provided facilities for bowling and swimming, and enacted a Christmas bonus of free electricity from the power plant for the laborers. The company also built a hospital and a golf course. These were social amenities unheard of in the “Old Country” from which the immigrants came, and led to a quality of life previously unknown to them. Although some immigrants did return home across the sea, the majority stayed here and settled into family lives that continue to today’s generation. Those miners were proud of their jobs. Many, such as the Mine Rescue Squad, participated in parades where they could display their talents.



Members of the mine safety crew at Franklin on parade. Note the carbide lamps on their caps.

Over the years, more than a century, the community that was centered on the mines and cared for by the Zinc Company became integral to the American way of life that all aspired to achieve. In fact, the miners who brought their families to the Franklin area to work the mines and to “fit in” with their newly adopted nation came to define, in part, what the “American way of life” truly means. Our immigrant miners did indeed succeed in the New World, helped produce products from nature’s bounty to strengthen America through their hard and dangerous work, and became symbolic of what America means to the world.

REFERENCE

Makar, Janos (1969), *The Story of an Immigrant Group in Franklin, New Jersey, Including a Collection of Hungarian Folk Songs in America*. Translated by August J. Molnar. Privately published, Franklin, New Jersey, 170 pp. ✕



A parade in Franklin, led by “Uncle Sam” carrying the U.S. flag.



The Franklin Mineral Museum



Evans Street/P.O. Box 54, Franklin, NJ 07416
(Between Main Street and Buckwheat Road)
Phone: (973) 827-3481
www.franklinmineralmuseum.com



Exhibited by means of guided tours: Franklin-Sterling Hill mineral specimens, educational exhibits in mining methods and history, including a life-size replica of underground workings, artifacts, gemstones, zinc uses, and a 32-foot-long fluorescent mineral display.

Included in the tours is the Jensen-Welsh Memorial Hall, built especially to contain the Wilfred Welsh collections of fossils, Native American relics, and worldwide minerals and rock specimens assembled for teaching purposes.

Mineral collecting on the Buckwheat Dump. Ample parking. Picnic grounds. Gift shop offering for sale: local and worldwide minerals, fluorescent specimens, agate slabs, onyx carvings, UV lamps, hammers, mineral books, T-shirts, postcards, and much more.

Separate admission fees to the Museum and the Buckwheat Dump. Admission to the Museum includes guided tour.

OPERATING SCHEDULE:

Open to the public

March – Weekends Only

April 1 – December 1

Monday through Friday: 10 am – 4:00 pm

Saturday: 10 am – 5:00 pm

Sunday: 11 am – 5:00 pm

Closed Easter, July 4th, and Thanksgiving

Groups by reservation, please

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

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

On the last Sunday of each month (or other times for groups by prior arrangement), a collecting site will be open for a nominal additional fee.

Contact the mine office for details.



Schedule of operation:

April 1 through November 30, 7 days a week, 10:00 am to 3:00 pm

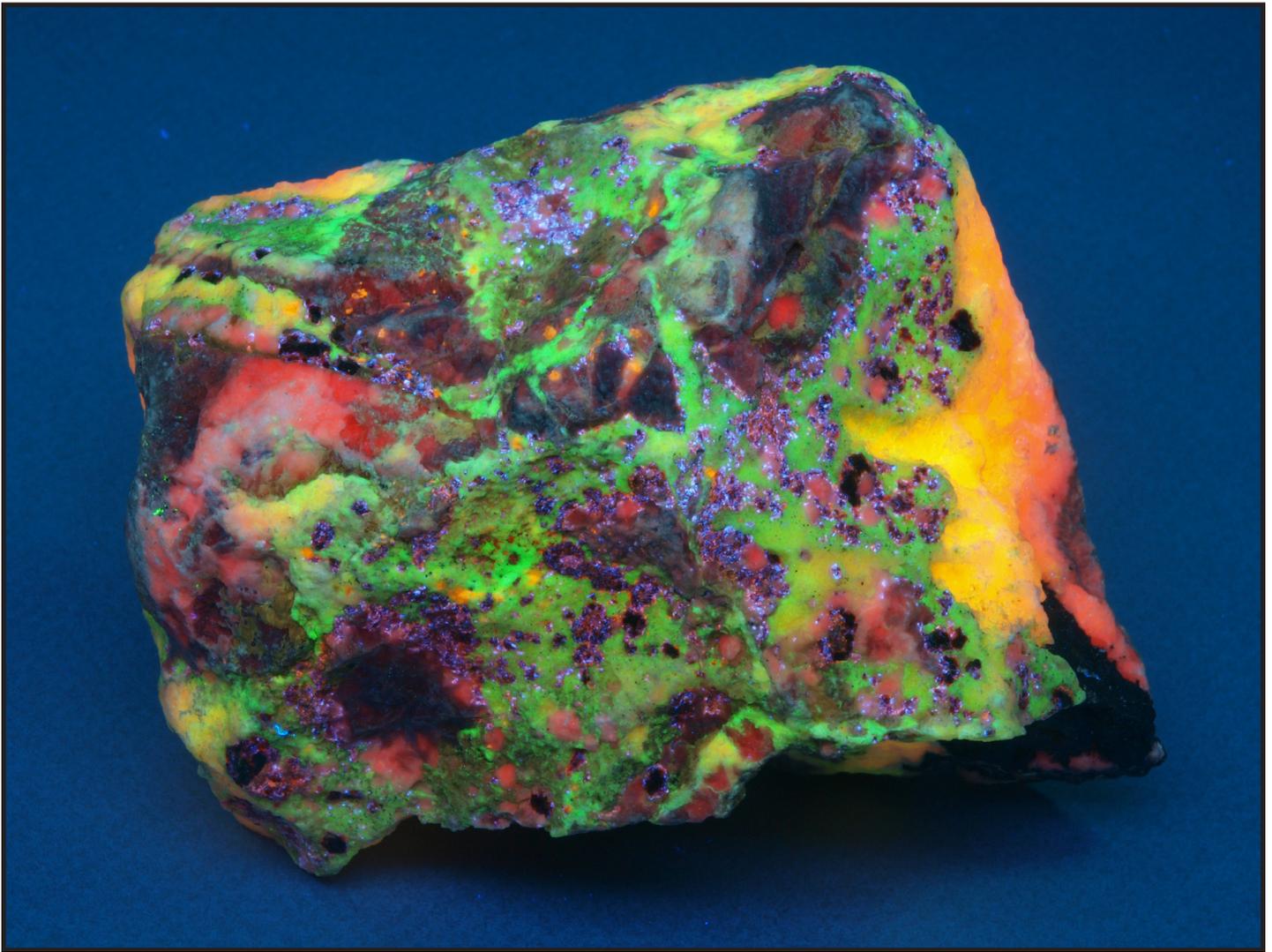
Open March and December on weekends or by appointment, weather permitting.

In March and December, tours at 1:00 pm

In April, May, June, September, October, and November, tours at 1:00 pm or by appointment.

In July and August, tours at 11:00 am and 1:00 pm

The temperature in the mine is 55°F.



A remarkable specimen of willemite, calcite, sphalerite, and dolomite from Franklin, N.J., in visible light at left and longwave ultraviolet light (UV) above. Under shortwave UV (not pictured), most of the specimen, except for the nonfluorescent dolomite, serpentine, and franklinite, fluoresces and phosphoresces green; however, in visible light the green-fluorescing areas appear to be (and are) *calcite*. In longwave UV, as seen in the photo above, that calcite fluoresces a range of hues from red to orange to yellow to green, a phenomenon believed to be caused by the irregular dispersion of minute particles of willemite in the calcite. (Emitted colors mix by addition of wavelengths, so mixing equal parts of red and green fluorescence yields yellow to orange fluorescence.) Small grains of blue-fluorescing sphalerite

provide additional color accents. Under midwave UV (not pictured), the balance of fluorescent colors is again different. One more unusual feature is that this is the *back* of the specimen as it was originally displayed. The specimen, 4" × 3" × 1.5" (10 × 8 × 4 cm) in size, was owned by Raytech founder Harry Wain and passed down to his family. It is now in the collection of Mark Isaacs (story in *The Picking Table*, vol. 52, no. 2). Photos by Earl R. Verbeek.