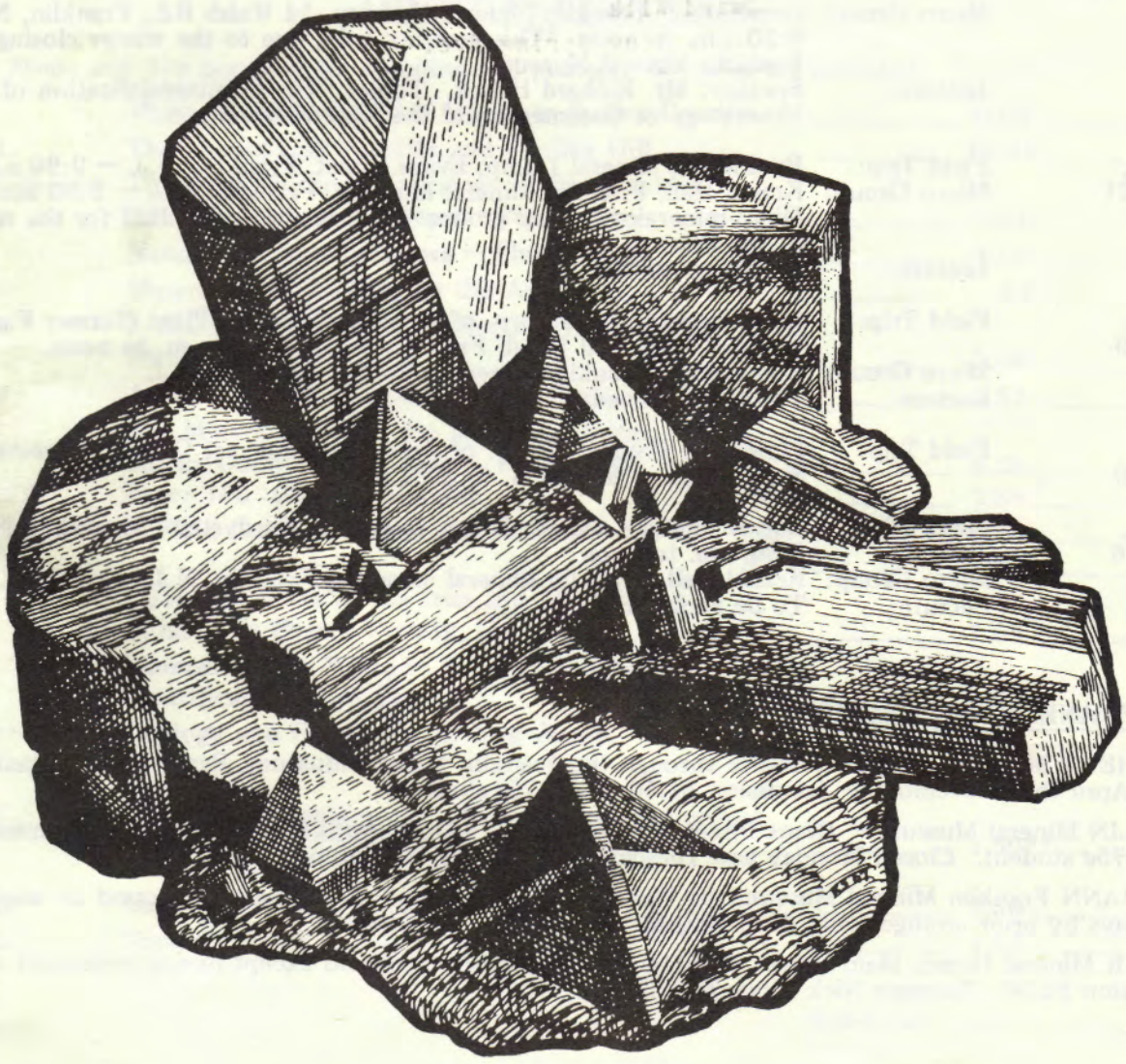
THE PICKING TABLE

JOURNAL OF THE FRANKLIN·OGDENSBURG MINERALOGICAL SOCIETY



Volume 20 March 1979 Number One

Spring Program

FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY, INC.

1979

Regular Society activities consist of Field Trips, Micro-mineralogy Study Sessions and Lecture Programs. Field trips vary in time and location according to schedule. Morning micro-mineralogy study sessions take place from 9:30 a.m. to noon in Kraissl Hall at the Franklin Mineral Museum. Afternoon lecture programs begin at 2:00 p.m. at the Hardyston School, Rt. 23, Franklin, N.J., premeeting activities at 1:00 p.m.

Saturday, March 17	Field Trip:	Gerstmann Franklin Mineral Museum, 14 Walsh Rd., Franklin, N.J. 9:00 a.m. to noon
	Micro Group:	Gerstmann* Franklin Mineral Museum, 14 Walsh Rd., Franklin, N.J. 9:30 a.m. to noon. *This meeting only, due to the winter closing of the Franklin Mineral Museum.
	Lecture:	Speaker: Mr. Richard Hauck. Topic: "The Commercialization of Mineralogy or Commerce and the Mineral Specimen."
Saturday, April 21	Field Trip:	Buckwheat Mineral Dump, Evans Street, Franklin, N.J. — 9:00 a.m. to noon.
	Micro Group:	Kraissl Hall, Franklin Mineral Museum, Franklin, N.J. — 9:30 a.m. to noon. Micro-mineralogy study groups will meet in Kraissl Hall for the remainder of the year.
	Lecture:	To be announced.
Saturday, May 19	Field Trip:	Limestone Products Corp. of America, Franklin Plant (former Farber Quarry), Cork Hill Road, Franklin, N.J. — 9:00 a.m. to noon.
	Micro Group:	Kraissl Hall, Franklin Mineral Museum, Franklin, N.J.
	Lecture:	To be announced.
Sunday, May 20	Field Trip:	Limestone Products Corp. of America, Limecrest Quarry, Limecrest Road, Sparta, N.J. — 9:00 a.m. to 3:00 p.m.
Saturday, June 16	Field Trip:	Bodnar Quarry, Quarry Road, Rudeville, Hardyston Township, N.J. — 9:00 a.m. to noon.
	Micro Group:	Kraissl Hall, Franklin Mineral Museum, Franklin, N.J.
	Lecture:	To be announced.

DAILY FRANKLIN ATTRACTIONS

BUCKWHEAT Mineral Dump — Entrance through the Franklin Mineral Museum, Evans Street, Franklin, N.J. Open April thru November — Admission $1.50 adult, 75¢ student.

FRANKLIN Mineral Museum — Evans Street, Franklin, N.J. — Open April thru November — Admission $1.50 adult, 75¢ student. Closed Monday and Tuesday. Hours apply to dump.

GERSTMANN Franklin Mineral Museum, 14 Walsh Road, Franklin, N.J. — Open year round on weekends. Weekdays by prior arrangement. No admission fee. Donations accepted.

TROTTER Mineral Dump, Main Street, Franklin, N.J. — Open year round except during inclement weather. Admission $2.00. Manager Nick Zipco on call.

THE PICKING TABLE is published semi-annually by the Franklin-Ogdensburg Mineralogical Society, Inc., P.O. Box 146, Franklin, New Jersey 07416, a non-profit organization.
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Assistant Editor: Frank Z. Edwards, 726 Floresta Drive, Palm Bay, Florida 32905.
 Subscription: $5.00 per year which includes membership in the Society. Contributed articles and news items are welcome. Acceptance is subject to the approval of the editor.

F.O.M.S. OFFICERS FOR THE YEAR 1979

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THE PICKING TABLE

The first issue of The Picking Table appeared nearly two decades ago in February of 1960. That first issue was certainly a modest effort by comparison with issues of recent years. Nonetheless, it was immediately obvious that this was not going to be just another journal. This collection of words was compiled with a purpose. It had direction. After all, it reflected the ideals of the Franklin-Ogdensburg Mineralogical Society. Those very important first issues were edited by John G. Hendricks who was instrumental in the founding of our Society.

In the Fall of the following year Frank Z. Edwards assumed the role of "interim editor", as he preferred to see it at the time. In fact, he immediately began seeking a "permanent editor". The prerequisites were "a thorough knowledge of mineralogy, the ability to write good English, and a desire to participate actively in club affairs." Well, Frank continued to seek a permanent editor for the next eighteen years. In that eighteen year period of what Frank initially looked upon as "a chore," The Picking Table became one of the finest amateur mineralogical publications of its type in the country. Today, more than anything else, The Picking Table stands out as the most successful achievement of the Society. Incidentally, Frank never did find a volunteer to serve as "permanent editor". He did succeed by drafting the new editor, but, only after committing himself to the position of assistant editor.

Much of the success of The Picking Table can be attributed to its close alignment with one of the Society's principle dictates, "to obtain and make available accurate up to date information on Franklin minerals and mineralogy." In recent years the horizons of our journal have been expanded to assist our Society in providing "a framework for a series of active programs designed to benefit the community, the collector and those interested in the minerals, mineralogy and geology of Franklin and Sterling Hill, New Jersey." Of late, articles appearing in The Picking Table have not only been important in scientific terms, but, also significant in their cultural and historical aspects as well. These activities too, are becoming popular with our members and shall be continued.

This issue of The Picking Table appears with a new editor. Serious effort will be made to enhance the fine work of the previous editors; a task that will not be an easy one. In addition to this, new approaches will be considered and undertaken. Membership participation in the development of future issues will be strongly encouraged. Where appropriate, an editorial position will be established. Expanded distribution of The Picking Table with a remunerative advertisement program may become a necessity. Further refinement of these ideas remains before they can be implemented. In time, they will improve the quality of our journal. Toward this end, your response will prove to be invaluable. Your reactions and ideas, pro and con,will ultimately establish the worth of The Picking Table. Let us know what you think.

Bernard T. Kozykowski, Editor

F.O.M.S. NOTES

A look at this years administration reveals a dramatic change in our governing body. Last Fall many of our officers and trustees moved away or declined further office. The people whom you have elected to represent you in their place constitute an unprecedented gathering of intense interest and ambition. All have expressed their committment to further the interests of our Society.

President Warren Miller served previously as 1st Vice President and program chairman. His interest in the minerals of Franklin and Sterling Hill began while pursuing his Ph.D. in chemistry over a decade ago. His efforts in assembling an outstanding fluorescent mineral collection have encouraged very important related research work. 1st Vice President John E. MacDonald's mineralogical interests predate our Society. Today, as a successful mineral dealer and collector, he has developed a very comprehensive collection with particular emphasis on Sterling Hill. 2nd Vice President Ewald Gerstmann has preserved what is considered to be the finest collection of Franklin-Sterling Hill minerals in existence. To his credit is the mineral Gerstmannite. Our secretary, Helen Warinsky, has generously served our Society in that capacity for several years. Enjoying her retirement with her husband Joe, she is helping establish a new direction for many of our members in micro-mineralogy. Toward this effort, she contributed an article on the subject for this issue of our journal. Treasurer William J. Trost has been an avid mineral collector for many years. A busy consulting engineer by profession, he manages time to travel from Bucks County, Pennsylvania to Franklin to regularly participate in our activities.

Those trustees who return this year to serve out the second of their two year terms have consistently given freely of their time and effort. Of our new trustees; Warren Cummings is a geologist with the State of New Jersey, Ralph E. Thomas is another avid collector who has volunteered to help carry on the workings of our Society, and Robert Svecz is a geologist with the Gulf & Western Resources Group — the New Jersey Zinc Company and presently serves as resident geologist at the Sterling Hill mine. Also, immediate Past President Wilfred R. Welsh joins the trustees in accordance with our constitution. His past experience as an officer will be invaluable to the new administration.

There can be little doubt that as members of our Society we will benefit from the efforts of our new administration. This can be an exciting time for all of us who wish to work together to strengthen our many programs. There are many improvements to be made. There are new directions to be taken. There are new ideas to be heard and pursued. Our officers and trustees have already begun their work. Informal gatherings have generated intriguing ideas; hopefully, they can be aired at our first meeting of this year. Your participation and support are the key to anything the new administration might do to improve and expand our Society activities. Renew your membership, participate in our field trips and micro-mineralogy study sessions, attend our lecture programs and encourage a friend to join us.

A full schedule of activities for our Spring program is in the offing. All of the previous years field trips will be held this year. Our field trips present an opportunity for our members to personally collect mineral specimens, in and around Franklin. Directed by John E. Sebastian, they are well organized and safety oriented.

Last Spring, our Society began conducting micro-mineralogy study sessions. These study groups, directed by Alice Kraissl, have proved successful enough to become a regular part of our activities program. Normally, these study groups meet in Kraissl Hall at the Franklin Mineral Museum from 9:00 a.m. to noon on regular meeting days. However, with the closing of the museum for the winter months, the March study group will meet at the Gerstmann Franklin Mineral Museum as part of our field trip program. One of the highlights of this meeting will be a display of several of the recent mineral discoveries from the area.

The schedule of speakers for our Spring lecture program is in the process of being refined. A combination of events has caused an unanticipated delay in its finalization. Our first speaker will be Richard "Dick" Hauck. It has always been Mr. Hauck's habit to amuse, inform and tantalize his audience with the vigor of a Brazilian lawyer. Plan to make the time to join us as we begin our new year of activities.

The publication of The Picking Table is something nearly all of our members take for granted. However, few issues of The Picking Table come to pass without incident; most are minor, some are quite significant. This issue is no exception.

The composition work, that part of production which lies between editing and printing, has been placed in jeopardy. Our composer has announced her intention to discontinue her work and dispose of her equipment. This announcement seriously threatened this issue and remains to affect future issues. Initially, it meant an immediate delay in the Spring issue. Untimately, it forecasts the loss of the professional appearance and

efficiency of future issues. The improved composition work of recent years has enabled us to increase content, reduce overall printing costs, and place The Picking Table in the forefront of similar publications.

Efforts have been made to find a new person to do the composition work. Several contacts have been made. The results have been consistant. They all indicate the cost of composing a typical future issue of The Picking Table will be somewhere between $190.00 and $280.00. This is four to five times what it previously cost. Our treasury could sustain a short term expense of this amount without serious effect. However, a prolonged series of such expenditures would soon erode away our financial reserves and threaten our stability.

Consideration has also been given to purchasing the equipment being disposed of by our former composer. The cost is $2,000.00. The equipment consists of an I.B.M. Selectric Composer, a set of various type heads and a supply of ribbons. The price has thus far proven to be reasonable. However, such a purchase would have a serious impact upon our treasury.

Simultaneous examination of our treasury has revealed a cash balance of approximately $2,500.00. There appears to be additional sources of revenue as well. In any event, whatever action is undertaken must be practical and financially feasible.

Considering the ultimate consequences all of this might have upon our treasury and The Picking Table, your editors suggest that the Society purchase the equipment. To achieve this, it is suggested that $1,000.00 be withdrawn from the treasury for this purpose and that the additional $1,000.00 be raised through member donations. In support of this, your editor has volunteered to personally perform the composition work at no cost to the Society. This would be done to offset the cost of the equipment through future savings in composition costs.

The action that will ultimately be taken will be decided by our membership. Our executive committee will make its recommendations at our March meeting. At that time the matter will be put to a vote. Written comments from those members who will not be able to attend this meeting are requested by the executive committee.

FRANKLIN MINERAL MUSUEM

The Franklin Mineral Museum will open for the year on April 1st. There has been a significant change in the daily schedule. This year the museum will be closed on Monday and Tuesday. However, opening of the museum on Tuesday for large groups can be arranged through advance reservation with the museum manager. The regular open hours will be 9:00 a.m. to 4:30 p.m., Wednesday thru Saturday, and 12:30 p.m. to 4:30 p.m. on Sundays. These hours will also apply to the Buckwheat Mineral Dump. Admission to each remains the same; $1.50 per adult and 75¢ per student.

THE 22nd ANNUAL FRANKLIN STERLING HILL MINERAL SHOW

The 22nd annual Franklin-Sterling Hill Mineral Show is now history. This mineral show, sponsored by the Kiwanis Club of Franklin, represents the high point of activity for the mineral collector at Franklin.

Traditionally, the major emphasis of this show is placed upon the mineral exhibits provided by local collectors. In many instances this is the only time during the year when these smaller private collections are publicly displayed. They frequently contain outstanding specimens that can only be described as unique. In all, there were seventeen displays this past Fall which undoubtedly constituted the finest group of exhibits this show has had to date. The trend toward more Sterling Hill exhibits was again in evidence. For the first time in many years, the New Jersey Zinc Company provided an exhibit. This outstanding display offered a suite of recently encountered mineral specimens and an outstanding group of photographs of the Sterling Hill mine. The "best of show" trophy went to John Kolic for his comprehensive display of recent mineral occurences at Sterling Hill. The quality of the exhibits was enhanced by several new "federation" style display cases provided by the Kiwanis Club. They were a welcome improvement, hopefully more will follow.

The show was well attended despite an all too obvious lack of advertising. While many mineral shows across the country have experienced serious declines in attendance, this show experienced only a small loss in attendance from the previous year. A contributing factor was, without doubt, the offering of advance discount tickets. This was a new undertaking by the Kiwanis Club that has since fostered some reservations from within. However, noting that between twenty and twenty five percent of those who attended the show made use of the discount tickets, its obvious that the increased attendance more than offset the reduced revenue from the discount tickets. It is hoped that the 23rd annual Franklin-Sterling Hill Mineral Show will be preceeded by a vigorous advertising program and advance discount tickets.

NEW MINERALS

The Picking Table is at its best when it is able to announce a mineral species, found first at Franklin or Sterling Hill, which is new to science or when it is able to announce an existing mineral as being new to the locality. This issue of our journal will do both.

Your editor quotes the following, intact, from recent communication received from Pete J. Dunn of the Smithsonian Institution:

"A new mineral has been found at Sterling Hill, Ogdensburg, Sussex County, New Jersey. It is bright orange in color with a glassy luster, and is a new manganese zinc silicate arsenate hydroxide. The new mineral has been named KOLICITE in honor of John Kolic of Rockaway, New Jersey, in recognition of his contributions to the increase of knowledge about the mineralogy of Franklin and Sterling Hill. Subsequent to the formal publication, more details on this species will be published in the Picking Table."

We congratulate John Kolic and extend our thanks to Mr. Dunn for providing the Picking Table with this announcement.

Marsturite

A new mineral species, marsturite, was announced in the paper "Marsturite, $Mn_3CaNaHSi_5O_{15}$, a new mineral of the nambulite group from Franklin, New Jersey" by Donald R. Peacor, Pete J. Dunn, and B. Darko Sturman, which appeared in the American Mineralogist, volume 63, number 11-12, November - December 1978, pages 1187-1189. Again, portions of interest to our members are quoted here:

"Prismatic crystals having a unique appearance and coating manganaxinite and rhodonite in a specimen from Franklin, N.J., were first observed by one of us (P.D.) on a specimen in the collection of Mr. Neal Yedlin. Mr. Yedlin subsequently generously donated this specimen to the National Museum of Natural History. Qualitative electron microprobe analyses then indicated that these crystals are an unusual Mn,Ca, Na silicate. They were therefore subjected to a detailed study using quantitative electron microprobe and x-ray diffraction techniques, confirming that they are crystals of a new mineral with the ideal formula $Mn_3CaNaHSi_5O_{15}$ and isostructural with nambulite.

Marsturite is found on only one specimen measuring 1 cm. The type locality is Franklin, Sussex County, New Jersey. The original label did not state any precise part of the Franklin-Sterling Hill mineral deposit, and the date of collection is not known. However, the mineral assemblage is representative of the manganaxinite known to have come from the mine at Franklin.

Marsturite occurs as white to very light pink, euhedral, prismatic crystals up to 0.5 mm in size, implanted for the most part on yellow manganaxinite. The mineral is associated with rhodonite, willemite, and abundant manganaxinite. The sequence of formation is as follows: manganaxinite, containing euhedral colorless willemite, followed by rhodonite, followed by marsturite. The complete sequence was noted on only one part of the specimen, and an incomplete sequence, with most of the marsturite deposited on manganaxinite, is predominant. Hence, marsturite is found coating willemite, rhodonite, and manganaxinite and is the last mineral to form. Marsturite is found on only one side of the specimen in a manner suggesting gravity controlled deposition or growth from a solution flowing in a preferred direction relative to the specimen. For the most part, marsturite occurs as an incrustation of small crystals with their direction of elongation normal to the surface of the host manganaxinite. No epitaxy between the associated minerals and marsturite was noted.

Marsturite is transparent to translucent and white to light pink in color. The density was measured as 3.46 using heavy liquid techniques, as compared to a calculated value of 3.465. There are two imperfect pinacoidal cleavages (100) and (001). Marsturite does not fluoresce in either short or long wave length ultra-violet radiation. The Mohs hardness is approximately 6."

Considerable data on the crystallography, chemical analysis and crystal chemistry is also supplied. For complete information see the original paper.

Jack Baum, Curator of the Franklin Mineral Museum, advises us that a micromount of this new species will be on exhibit when the Museum reopens in April.

Kraisslite

The paper announcing kraisslite appeared in the American Mineralogist, volume 63, numbers 9 and 10, September-October 1978, pages 938-940, by Paul B. Moore and Jun Ito. Portions of interest to our members are quoted here.

"The new species kraisslite is known only from the Sterling Hill Mine, Ogdensburg, Sussex County, New Jersey. It closely resembles mcgovernite in physical appearance. We are indebted to Mr. John Kolic, who mined the area where specimens occurred and provided the bulk of the information on the occurrence. All samples came from the 1010 stope, which is located in the narrow portion of the central zincite zone. Between the 950' and 700' levels, kraisslite was encountered in a variety of associations, usually along the surface of fractures in the ore. It occurred as films or lenses up to one inch thick along fractures mostly from the central portion of the ore to the footwall. The ore was cut by a series of faults, separated from each other by three to four feet, whose strike was north-south and dip approximately 45° west. The walls of the fault are slickensided and their maximum displacement was about three feet. Associated minerals include pyro chroite, barite, sphalerite, rhodochrosite, and minor amounts of a host of arsenate minerals (Table 1).

Table 1 — Ores, Gangue and Secondary Minerals with Kraisslite

Ores	**(Synmetamorphic)**
Franklinite	$(Zn, Mn)(Fe,Mn)_2O_4$
Willemite	Zn_2SiO_4
Zincite	ZnO
Gangue	
Calcite	$CaCO_3$
Secondary Minerals	**(post-metamorphic)**
Sphalerite	ZnS
Pyrochroite	$Mn(OH)_2$
Rhodochrosite	$MnCO_3$
Barite	$BaSO_4$
Hodgkinsonite	$MnZn_2(OH)_2(SiO_4)$
Sussexite	$Mn_2(OH)(B_2O_4(OH))$
Magnussonite	$Mn_9(As_6Mn\ O_{18}C1)$
Holdenite	$(MN,Mg)_6\ Zn_3\ (OH)_8\ (AsO_4)_2(SiO_4)$
Synadelphite	$(Mn,Mg)_9\ (OH)_9\ (AsO_3)\ (As\ O_4)_2$
Kraisslite	$(Mn,Mg)_{24}Zn_4\ (OH)_{12}(AsO_4)_4(SiO_4)_8$
Chlorophoenicite	$(Mn,Mg)_3Zn_2(OH)_6(As_{½}H_{½}\ )\ (O,OH)_3)_2$
Austinite	$CaZn(OH)(AsO_4)$
Sarkinite	$Mn_2(OH)(AsO_4)$
Eveite	$Mn_2(OH)(AsO_4)$
Allactite	$Mn_7(OH)(AsO_4)_2$
Retzian	$Mn_2(OH)(AsO_4)$

Mr. Kolic informs us that a cross cut between the east and west veins encountered arsenic, realgar, stibnite, berthierite, and arsenopyrite in the drift, about five feet east of the 1010 stope hanging wall contact.

The ore was high grade and consisted of willemite, franklinite and zincite with little or no calcite. The willemite is flesh pink in color and the grain size of the ore is about 1-4mm. A visit by the senior author to the 700' level showed the narrow thin faults and thin coatings of kraisslite. It was apparent that the occurrence of the arsenate minerals was very sporadic and comprised but a tiny fraction of the vein and fracture minerals, the greater portion being carbonates.

About thirty specimens were examined in more detail and identification was made by x-ray powder, single-crystal, and reflection goniometric techniques. Of the list in table 1, eveite, synadelphite, and retzian were hitherto known only as late stage fissure minerals from the manganese mines in central Sweden; austinite from oxidized zinc-ore deposits; holdenite, previously known only as a single specimen from the nearby Franklin Mine. Hodgkinsonite, sarkinite, synadelphite, retzian, eveite, and allactite occur as single crystals to 0.5 mm in greatest dimension, morphologically closely resembling earlier goniometric drawings of these species. One specimen in the Gerstmann collection shows dark red hexagonal kraisslite plates up to 1 mm, but no goniometric results of pyramidal and prismatic faces could be obtained, as the surface evinced some later dissolution and etching.

The source of the As-bearing minerals is a puzzle. They all post date the ores and gangue, but it is not clear if they are the products of oxidation of pre existing arsenides and sulfarsenides or if they crystallized from late stage solutions from an entirely different source. The presence of arsenic bearing minerals and of the borate sussexite may have originated from the reworking of an evaporite deposit, but the evidence is not clear. The duplication of unusual late stage species between the Sterling Hill and Franklin deposits and the central Swedish manganese ore deposits is remarkable, the only substantial difference being the presence of major zinc in the New Jersey deposits. Of the list in table 1, the eleven minerals which contain no zinc are known from both types of deposit, the six arsenite-arsenate minerals occurring exclusively in these deposits.

Kraisslite, originally suspected to be mcgovernite, is easily distinguished from that mineral only by x-ray diffraction. Optical, physical, and chemical properties so overlap that other tests are ambiguous. Owing to perfect basal cleavage, samples of kraisslite and mcgovernite ground in acetone and allowed to settle on glass slides afford main (0001) reflections, thus admitting a good refinement of the c axis. Randomly oriented mounts of powders yield very complex powder patterns and the consequent difficulty of distinguishing a single phase from a mixture. Although no mcgovernite was found in situ in this study, investigation on that mineral was done on an old specimen from the 800' level and approximately 700' north in the west vein, proven to be identical with the original material studied by Palache and Bauer (1927).

Kraisslite occurs as thin curved compact foliated scales of pale red-brown color to coarse (up to 1 cm) plates of deep coppery brown color, much resembling mcgovernite, hematolite, and dixenite. The streak is golden brown, luster sub-metallic, hardness, between 3 and 4, cleavage (0001), perfect to micaceous; specific gravity 3.876. Thin plates are brittle and inelastic.

It is a pleasure to name the new mineral in honor of Mr. Frederick and Mrs. Alice Kraissl of Hackensack, N.J., who play a pivotal role in the mineralogy of Franklin and Ogdensburg. They have been deeply involved in the Franklin-Ogdensburg Mineralogical Society and have contributed substantially to the Franklin Mineral Museum."

Ganomalite

A new mineral for the locality, ganomalite, is described by Pete J. Dunn, of the Smithsonian Institution, in a paper entitled "Ganomalite from Franklin, New Jersey" which appeared in the Mineralogical Record, volume 10, number 1-2, January-February 1979. We quote portions of this paper:

"Ganomalite, $Pb_3Ca_2Si_3O_{11}$, was originally described from Langban, Varmland, Sweden by Nordenskiold (1877) and later recognized as a constituent of the skarn assemblage at the Jacobsberg mine, a small mine about 1 km. south of Nordmark in Sweden, by Sjogren (1883).

This new find, some 100 years after the original discovery, is from Franklin, Sussex County, New Jersey. The mineral has been noted on two specimens in the Smithsonian Institution, but likely exists on many other specimens in private and public collections. On the two specimens studied, the ganomalite is associated with yellow andradite, pink clinohedrite, barysilite, willemite, franklinite and an unanalyzed mica (likely hendricksite). The ganomalite occurs in small (about 0.5 cm) vugs intimately associated with clinohedrite upon which it is deposited. The ganomalite appears to be the last mineral to crystallize in the assemblage.

Franklin ganomalite occurs as colorless hexagonal crystals, tabular on c (0001) and exhibits no unusual morphological characteristics beyond the tabular habit. The crystals have very simple morphology, being composed of only the pinacoid c, (0001), and the prism m, (1010). Several additional observations may assist in the visual recognition of the species at Franklin. The ganamolite crystals studied are arranged within the vugs in sub-parallel groupings, generating tabular platelets of crystals attached edge to edge (prism to prism). It is also quite noteworthy that the only other mineral in the lead silicate assemblage which occurs in colorless hexagonal crystals is nasonite, but all nasonite crystals seen to date by the author are equant or elongated along (0001), and in no case are they tabular. The refractive indices of these Franklin ganomalite crystals could not be measured accurately but are above nD=1.90. The crystals are uniaxial positive with a trace of biaxiality in some crystals. There is no response to ultra violet radiation from conventional filtered sources, nor any phosphoresence. However, the crystals are clear and colorless and may appear to be fluorescing light violet due to absorbed or reflected visible violet light.

The ganomalite studied herein was verified by x-ray diffraction using a Gandolfi camera (114.6 mm diameter), a powdered ball mount, and Cu Ka X-radiation (nickle filtered). The diffraction pattern of Franklin ganomalite is in good agreement with the data for Langban ganomalite which was published by Welin (1969) in his compendium on x-ray diffraction data for Langban minerals.

The x-ray powder diffraction patterns for ganomalite and nasonite are distinctive and permit a facile laboratory identification. Fortunately, a microchemical test also serves to distinguish between nasonite and

ganomalite. In dilute HNO_3 (nitric acid diluted 1:1 with water), ganomalite dissolves slowly with no activity. However, nasonite slowly decomposes by shedding shards of acicular fragments while a colorless gas evolves on the surface of the crystals. This test of five minutes duration also serves to distinguish nasonite and ganomalite from colorless non fluorescent willemite which is inert in the same solution and time period.

In summary, ganomalite is a new mineral for the Franklin, New Jersey ore deposit and is an interesting addition as it occurs in euhedral crystals. The Franklin ganomalite is of much better quality than the Langban or Jacobsberg material and the excellent crystals may permit a rigorous definition of the species. The crystallography of this ganomalite specimen is being investigated in another laboratory."

Note: Jack Baum, Curator of the Franklin Mineral Museum, advises that the Smithsonian Institution is graciously loaning one of its two specimens of ganomalite to the Franklin Mineral Museum. Upon the receipt of this specimen, sometime in May, it will be placed on exhibit.

Tilasite

A mineral for Sterling Hill, Tilasite, is described in a paper entitled "Tilasite from the Sterling Hill Mine, Ogdensburg, New Jersey" by Fred J. Parker, with photographs by Thomas A. Peters. It appeared in the Mineralogical Record, Volume 9, Number 6, November-December 1978, pages 385-6. Portions of this paper of interest to our members are quoted herewith:

"The rare arsenate tilasite has been recognized from a new locality, the Sterling Hill Mine, Ogdensburg, N.J. in good, free standing crystals. X-ray powder diffraction data are in satisfactory agreement with previously published data and microprobe analysis shows only minor chemical substitution. Another more recent occurrence of the species in massive form from Sterling Hill is also described.

Tilasite, $CaMg(AsO_4)F$, is an arsenate previously reported only from Langban, Sweden, Kajidengri, jhabun State, India; Bisbee, Arizona; and the manganese deposit at Guettera, Algeria. The Sterling Hill mine at Ogdensburg, Sussex County, N.J. has recently been recognized as a new locality for crystals of that mineral even though the specimens were collected many years ago. The tilasite occurs as free standing monoclinic crystals to 4 mm in length and milky white in color. They fluoresce a soft pinkish orange color under short-wave ultraviolet radiation, a response similar to that of the Langban tilasite. There was no response under long wave ultra violet radiation nor was there any observed phosphoresence in either case. The crystals are implanted upon a dark red brown seam of massive friedelite and light brown friedelite crystals coat some of the tilasite crystals. Additional tilasite crystals are partially or wholly imbedded in white, opaque cleavages of barite. The entire assemblage rests upon calcite fault breccia, the fragments of which fluoresce vivid red under short wave ultraviolet, only, an unusual occurrence of limited extent within the mine. The friedelite vein was the first phase to be emplaced upon the breccia, followed by the tilasite crystals. The friedelite crystals were deposited next and lastly, the barite. As inferred from evidence elsewhere in the mine, the decomposition of the mineral arsenopyrite, scattered throughout the Franklin marble and/or the loellingite locally associated with dark willemite in the ore body, likely served as the source for the arsenic in the tilasite. Friedelite and barite are common minor constituents throughout the ore body at Sterling Hill.

While the above occurrence of tilasite crystals is unique, the author has recognized the mineral as a non discrete milky white coating intimately admixed with white willemite on red willemite-franklinite ore matrix from a recent working at Sterling Hill. This tilasite is non fluorescent and x-ray powder patterns of the massive material and the crystals are identical. Thus, there is an excellent chance additional crystals will be found among the crystallized secondary arsenates which have been emerging from Sterling Hill the past few years."

MINERAL LIST

In recent years numerous changes have occurred in the list of validated mineral species from the Franklin-Ogdensburg area. Scientific research constantly provides additional species and eliminates others. It has been several years since a revised list was published in The Picking Table. We are indebted to Jack Baum for providing us with an updated list for this issue.

Mineral Species Found at Franklin-Ogdensburg, New Jersey

by John L. Baum

Acanthite
Actinolite
Adamite
Cuproadamite
Adelite
Allactite
Allanite
Alleghanyite
Zincian
Almandine
Analcime
Anatase
Andradite
Hydroandradite
Anglesite
Anhydrite
Annabergite
Anorthoclase
Anthophyllite
Antigorite
Apophyllite
Aragonite
Arsenic
Arsenopyrite

Augite
Aurichalcite
Austinite
Azurite

Bannisterite
Barite
Barkevikite
Barylite
Barysilite
Bassanite
Baumite
Bementite
Berthierite
Bianchite
Biotite
Birnessite
Bixbyite
Bornite
Brandtite
Brochantite
Brookite
Brucite
Brunsvigite
Zincian Manganoan
Bustamite

Cahnite
Calcite
Carminite
Celestite
Celsian
Cerussite
Chabazite
Chalcocite
Chalcophanite
Chalcopyrite
Chloropal
Chlorophoenicite
Chondrodite
Zincian manganoan
Chrysocolla
Chrysotile
Clino chlore
Penninite
Clinochrysotile
Clinohedrite
Clinozoisite
Conicahalcite
Copper
Corundum
Covellite
Cryptomelane
Cummingtonite
Cuprite
Cuspidine

Datolite
Botryolite
Descloizite
Devilline
Dippside
Manganoan
Djurleite
Dolomite
Dravite
Dypingite

Edenite
Fluoredenite
Enstatite
Epidote
Epsomite
Erythrite
Esperite
Ettringite
Eveite

Fayalite
Magnesian Manganoan Zincian
Feitknechite
Ferroaxinite
Flinkite
Fluoborite
Fjuorapatite
Fluorite
Forsterite
Zincian
Franklinite
Friedelite

Gageite
Gahnite
Galena
Ganomalite
Ganophyllite
Gersdorffite
Glaucochroite
Goethite
Gold
Graphite
Greenockite
Grimaldite
Grossular
Mangangrossular
Groutite
Antimonian
Gypsum

Halloysite
Hancockite
Hardystonite
Hastingsite
Hausmannite
Hedenbergite
Manganoan
Hedyphane
Hematite
Hemimorphite
Hendricksite
Hetaerolite
Haulandite
Hodgkinsonite
Holdenite
Hopeite
Hornblende
Huebnerite
Hyalophane
Hydrohetaerolite
Hydromica
Hydrotalcite
Hydrozincite

Illite
Ilmenite

Jacobsite
Johannsenite

Kaolinite
Kentrolite
Konickite
Kottigite
Kraisslite
Kutnahorite

Larsenite
Lead
Legrandite
Leucophoenicite
Limonite
Linarite
Loellingite
Loseyite

Magnetite
Mg. Chlorophoenicite
Magnesioriebeckite
Magnussonite
Malachite
Manganberzeliite
Manganite
Manganaxinite
Manganosite
Manganpyrosmalite
Marcasite
Margarite
Margarosanite
Marsturite
McGovernite
Melanterite
Microcline
Barian Microcline
Millerite
Mimetite
Strontian Calcian
Molybdenite
Morreite
Monohydrocalcite
Muscovite
Fuchsite
Oellacherite

Nasonite
Natrolite
Neotocite
Niccolite
Nickel-skutterudite,
Chloanthite
Norbergite

Orthoclase

Pararammelsbergite
Pargasite
Pectolite
Pharmacolite
Pharmacosiderite
Phlogopite
Phosphosiderite
Picropharmacolite
Pimelite
Pitticite
Plagioclase
Albite
Anorthite
Oligoclase
Powellite
Prehnite
Psilomelane
Pumpellyite
Pyrite
Pyroaurite
Pyrochroite
Pyrolusite
Pyromorphite
Pyrophyllite
Pyroxmangite
Pyrrhotite

Quartz
Agate
Chalcedony
Flint
Jasper
Rock Crystal
Rose
Smoky
Rammelsbergite
Realgar
Retzian
Rhodochrosite
Rhodonite
Richterite
Riebeckite
Magnesian
Roeblingite
Rosasite
Roweite
Rutile

Sarkinite
Sauconite
Scapolite
Schallerite
Ferroschallerite
Scheelite
Schorl
Scorodite
Serpierite
Siderite
Sillimanite
Silver
Skutterudite
Smaltite
Smithsonite
Sonolite
Zinc Sonolite
Spessartine
Sphalerite
Spinel
Stilbite
Stilpnomelane
Strontianite
Sulfur
Sussexite
Svabite
Symplesite
Synadelphite

Talc
Tennantite
Tenorite
Tephroite
Zincian tephroite
Thomsonite
Thorite
Tilasite
Titanite
Todorokite
Torreyite
Tremolite
Asbestos

Urananite
Uranophane
Uvarovite
Uvite

Vesuvianite
Cyrine

Willemite
Wollastonite
Woodruffite
Wurtzite

Xonotlite

Yeatmanite

Zinalsite
Zincite
Zircon
Zoisite

You will find some new names included in this list — adelite; clinochrysotile; dypingite; huebnerite; hydrotalcite; monohydrocalcite; picropharmacolite; pitticite; pumpellyite; strontianite. All of these minerals have been verified. However, the scientific papers describing these occurrences are still pending. Upon publication of these reports, we will give you complete details of these finds.

Several deletions should be made from previous lists.

Manganbrucite should be deleted as a variety of brucite. Specimens in the Franklin Mineral Museum have been determined to be stained brucite and not a valid variety.

Hydroxylapatite should be deleted as the type specimen was reexamined and determined to be from Portland, Conn. Since this was found on the Trotter Dump, some visitor must have abandoned it there.

Stibnite also to be deleted. The original verification was made on a micromount. Reexamination and lack of supporting data make the original verification highly suspect.

Sursassite — reexamination of this specimen shows that the original verification was overenthusiastic and in error. Delete from the list.

Argentite should be deleted and Acanthite added. It is now generally accepted that argentite has a short life and that the permanent form of this mineral is acanthite.

Metastrengite to be deleted and Phosphosiderite added. These are synonymous but the preferred usage is phosphosiderite.

Orpiment to be deleted. The yellow alteration of realgar is now generally considered to still be realgar; hence the removal.

OTHER MINERAL INFORMATION

Green Zincite

Sterling Hill has constantly produced unusual mineral occurrences. One of the strangest and most unexpected is of green zincite. This occurrence is described by Pete J. Dunn in his paper "Light Green Zincite from Sterling Hill, Ogdensburg, New Jersey", appearing in the Mineralogical Record, volume 10, numbers 1-2, January-February 1979, pages 45-46. We quote from this paper:

"In late 1977, some peculiar, distinctly hexagonal crystals were found in the Sterling Hill mine, Ogdensburg, N.J. An x-ray diffraction pattern of the mineral is in excellent agreement with established diffraction data for zincite, and chemical analysis by electron microprobe has confirmed the identification. The analysis, using synethetic zincite as a standard for zinc, manganite for manganese and hornblende for magnesium and calcium, yielded ZnO=98.88%, FeO=0.23%, and MnO=0.29% (total - 99.39%). Associated minerals include franklinite, acicular calcite and orange hodgkinsonite.

Most well crystallized zincite from the Franklin and Sterling Hill mines is pyramidal in habit and hemimorphic. Light green zincite from the recent Sterling Hill discovery, is at first glance, of simple platy development. The same crystal viewed along an a axis (edgeon) shows that this is an apparently twinned, pedial crystal having a re-entrant groove around the edge.

Scanning electron microscopes (SEM) photographs also reveal an encrustation of an unknown mineral which forms small bunches of platelets partially filling the re-entrant groove and partially covering the pedial faces of the zincite.

A second crystal appears to be composed of several crystalline units and shows traces of a spiral growth which is common in hexagonal minerals. A view of the same crystal along the a axis shows it to be composed of many, many units. The net result is a texture similar to lacy corrugated cardboard. This is a most unusual habit for zincite crystals and the lace like delicacy of the crystals is esthetically pleasing.

The author is indebted to John Kolic for calling his attention to these crystals."

MICROMINERALOGY

STALKING THE ELUSIVE BROOKITE

by Helen U. Warinsky

Early in our Franklin venture, we met collectors on the "Buckwheat Dump" and listened eagerly to their "pearls of wisdom". One such gem was "look for the vuggy dolomite". Frankly, it looked neither beautiful nor colorful but we had not yet become acquainted with the binocular microscope as an aid in viewing these minerals. What we did see was a dark area in a vug, a glint and even a sparkle but we were inept with the hand lens, so we set those aside and looked further. However, we did bring some home and grudgingly allotted it shelf space, carefully marking the year of acquisition, 1969. And so it began.

Dr. Alex Knoll spoke at an F.O.M.S. meeting and he, and his wife, Mandy, generously gave some of this dolomite micro material, with labels, to anyone who was interested. So we added some informative material and again were inspired to add to our hoard but again, very sparsely. Later we heard Neal Yedlin mention "grungy vuggy dolomite" which sent us on another hunt.

Our dear friends, Muriel and Dick Starke, now took us in hand and devoted a lot of time to show us how a microscope and this material should be approached. Not realizing what had happened to us, we purchased a very inexpensive "scope" (this might not "take", so why waste a lot of money!). Then we discovered a fairy land of perfection! We started to micromount and became fascinated and intrigued by the "glamorous" crystals of Mexico, Arizona, California, Europe, Africa, etc.

Now occurred another turning point in our lives — an Anniversary gift from friends in Canada — a gorgeous microscope! Following this came the opportunity to join Russ De Roo's talented Micromount Study Group and somewhere, down in the basement, sat those paper bags of dated Buckwheat dolomite, ignored.

Our library started to increase rapidly (buy a good book — many!) and how any collector can function without the "Picking Table" is beyond me! I am constantly impressed and, yes, somewhat intimidated by the knowledge of the contributors but sincerely thank them for sharing. We had hoped to sign up for some courses but instead of more time at Joe's retirement, we find we have less. And so we bumble along.

The winter of '77-'78 developed into a real "stay-at-home" time, especially during the early months of 1978 when it was impossible at times to venture out of the driveway due to the slow snow removal, etc. Parking was the greatest problem — no place to put all that snow! Even some of our micromount sessions were cancelled! Field trips were impossible. Now what?

Ah, PROJECTS! Now is the time. Check over collected material not touched in years. Dispose of some of it. The Paterson Museum has an on-going children's program, and the North Jersey Mineralogical Society has a Small Mineral Sales table. So, we started.

Prior to this decision, I had collected much information as to what had been found in the Buckwheat Dump. Alice Kraissl's list and excellent micromounts, Muriel Starke's beautifully mounted cyrstals and Mandy and Alex Knoll's findings were a tremendous help. Articles in the "Picking Table", "Rocks and Minerals", etc. and then actually seeing the minerals, close at hand, in our Micromount Study Group, spurred us on.

My dear husband, Joe, carefully broke up some of the larger pieces of the 1969 dolomite to facilitate the work of the small Yost breaker. (Later followed those bags of dolomite dated 1971, 1973, 1975, 1977 and 1978).

We sat opposite one another at the long worktable in the basement and passed our "finds" to each other to view and admire. Lovely sphalerites! Clear dolomites! Limpid quartz crystals (no quartz in Franklin?)! At this point, Joe decided to alternate his micromounting efforts with lapidary as he had uncovered some unusual material and was anxious to see what results he would get.

Using 20 power, I reached out for a piece he had just broken for me and looked at it through the scope (dear Lord, could it be?). Looks very much like the one on the cover of the July-Aug. 1974 Mineralogical Record. Not at all like the one Sam Gordon reported! But . . . color, striations, associations . . . it IS! A BROOKITE! (Oh, thank you!)

That night, we were up till dawn. Found a few more. (Barely able to walk after so much sitting — must remember to get some exercise and rest for the eyes every hour. Our granddaughters tease us about having a deli in our home, so what with the refrigerator, freezer and shelves, we are all set — so, go ahead, snow!) We were off and running!

Now we sorted out the Buckwheat dolomite. Some was gray, some was almost white, with sparkling clear pockets. Several had quartz crystals and needles of rutile. Yes, I know, some of it does look golden, like millerite, but from all we have heard and read, it has not been proven. Sphalerite and pyrite were also

evident. Some of the dolomite was, indeed, very grungy! Very rusty looking, vuggy, and when opened to view, these pockets contained clear, flat crystals radiating into a hemi-spherical form. Many in small clusters and a few in high-fashion bow-ties. A few were elongated, etc. Could these be what they were calling stilbites? On further examination, they turned out to be hemimorphite.

One piece of dolomite, (not grungy or dark gray and really not particularly vuggy) when broken in two, displayed a tiny silvery sliver. Arsenopyrite? Had not yet found one. I took a needle probe and carefully picked at the matrix — flicked off several fragments and checked it under 40 power. Lovely splendent face showing! Hold on . . . go back . . . striations! Slowly, carefully, I released this beauty . . . never saw one like it before . . . silvery, elongated, flat with beautiful markings and a slight irridescence. I was trying to contain my excitement and could only exclaim "Uh Oh!" and, from then on, that was the signal to Joe that another brookite was freed from its dolomite prison.

During one session, I had decided that the piece in my hand was not vuggy and was about to throw it into the "driveway fill" box, when I hesitated and thought, "should be something . . . right association; quartz, pyrite, sphalerite, white dolomite — Oh, let's get to the heart of it". I placed it in position under the blade but the material resisted (had I worn out the breaker?). Must be more quartz than I had thought — a little more pressure — C R A C K ! Watch where that piece lands! A good sized vug appeared and it glittered! Good heavens! A gorgeous pile of doubly terminated quartz crystals! As I turned it around to view it from all sides, a glint of light cranberry color flashed! From where? Ah, tucked underneath the crystals . . . long, flat . . . striations! A lovely color! "Uh, Oh"! Quickly and carefully I looked around and found another chunky one of the same color! Brookite (I hope)! (Someone else may call this a wine brown, but I saw a glint of cranberry!)

Another exciting find, deep within a piece of vuggy dolomite, was beautiful red spheres with some pale pink thick needles. Could it be something new? Wait, that pale pink needle quivered . . . a prehistoric monster moving amongst the spheres? Oh, I get it, insect and eggs! Now how did they get into that rock?

As we worked our way through the years, we discovered quite a few brookites. Some were chunky and very dark, some were transparent, some pale gold. The most recent, October 1978, is a delicate pale mauve and was almost overlooked. Many were single, others were overlapping. The heartbreak when they pop off into oblivion! But always, thankfulness for the privilege of being the first person to see this one of God's creations! Reaching the top of the tallest mountain is but an individual's moment in time but these beauties may be viewed and enjoyed by many for generations to come!

Our mineral acquaintenances have looked at us aghast, offering to purchase our divining rod, or a map of the exact location, etc. Most were enthusiastic about our serendipity venture into the Buckwheat. Both Tom Peters and Fred Parker have viewed our "gems" and concur with our visual identifications. We are truly grateful for their encouragement.

Stephen Sanford and Dick Bostwick enjoyed our accounts of our discoveries and urged us to write this as an incentive to others. You may even have the same attitude as I, "I don't know enough". Take heart, go on your own expedition — the Buckwheat or wherever, who knows, the next thing may be anatase! We have seen only one blue one (so far)!

Nothing left in the Buckwheat? Don't you believe it! We will continue to search for the elongated brookite as described by Sam Gordon. See you on the Buckwheat (or in your basement!)

HISTORY

The following article appeared in Volume 5, No. 3 of The Mineral Collector, which was published in May 1899.

A Trip To Franklin Furnace

by John A. Manley

By request I write this account of a recent trip to Franklin Furnace, N.J.

We left New Brunswick at 7:17 A.M., and made good connections with the "Middletown Flyer," on the New York, Susquehanna and Western Railroad, which landed us in Franklin Furnace at 11:10 A.M., in the midst of a fierce rain and snow storm.

By actual count this "Middletown Flyer" made 32 stops in the trip of 61 miles, still the journey is not tiresome and the country is fine and always changing, and many things of interest are to be seen.

At Charlottesburg and in that vicinity are some of the finest puddingstones any one ever saw, of all sizes up to several tons, and all of a fine pinkish color, and completely filled with milky quartz pebbles. Near here we also saw a huge boulder, as large as a small house, perched away up on a hillside.

Upon reaching Franklin we went direct to the Sterling House, at Greenspot. This hotel furnished first-class accommodations at moderate cost, and possesses the advantage of being close to the mine. Mr. and Mrs. Pollard did everything that was possible to make our stay at their hotel pleasant. There is a large room here which was formerly the Zinc Co.'s office, which offered a fine place for packing up specimens, so that every thing a man needed could be had at the Sterling, including the services of Harry, who is a good man to keep on the right side of, as he always has just one more box when you need it bad for a fresh lot of specimens.

First see Mr. J. A. Van Mater, the superintendent of the mine, and state your case to him, and then hunt up Mr. James J. McGovern. He is thoroughly posted on all the localities, and what he tells you you can make up your mind is all O.K.

The Parker shaft is down 1,000 feet, and the depth of the mine is further increased by the working of a slope, which follows the pitch of the ore. This slope is on the bottom of the deposit and follows bed rock, for about 600 feet on the slope, and in this distance has a fall of 175 feet.

The ore is a fine grained willemite and franklinite, with more or less milky white calcite as a gangue rock. The ore runs very uniform, and as the slope is dug through the ore deposit, leaving a wall of ore on each side, no contact rock is encountered, and as most of the fine specimens come from the contact at the foot and hanging walls, you can readily see that the chance for good specimens is very slim. A few franklinites of fair quality, and some highly modified crystals were obtained, some massive rhodonite, a few willemite crystals, one of large size and fine color, and one small, nearly transparent green crystals in white calcite were obtained. Some good specimens of a new massive mineral of a deep red color, supposed to be a new variety of willemite, but which has not yet been determined, also some native copper was found in a green willemite, and also in the garnet. Still, the amount of any of the specimens mentioned are small indeed. Mr. Stephens, the mine boss at the Parker shaft, presented Mrs. Manley with a fine specimen of native copper in willemite. Caswellite is no longer to be had; a few specimens were obtained from a fill in on the railroad, which had been made from rock from the dump of the Parker shaft.

Roeblingite came up once and that was the end of that, so that you cannot get that for love nor money. Three specimens are all I saw in Franklin, and none of these were for sale except one, and you had to buy the whole collection and then Roeblingite went with it.

The old Trotter mine on Sterling Hill is shut down now, and so nothing was to be had there except some fine specimens of spartaite on the dumps. From this mine came some years ago fine specimens of rhodonite, zincite, chalcozincite and tephroite. I succeeded in getting some fine specimens of chalcozincite, some tephroite and zincite, and one good crystallized specimen of rhodocrosite, which is very rare from this locality, and can only be had by getting an old find. I will say I did not collect these specimens at the mine, but a person who is collecting minerals cannot be particular as to the place he collects them, so long as he can get the original locality for his label. Good specimens of calcite were found in digging the foundation for the new mill, and through the kindness of M. J. Tonking, superintendent of the work at South Mine Hill, I obtained some fine specimens. At South Mine Hill or the old Buckwheat Mine, the Zinc Co. have an immense undertaking on their hands, but are making fine progress. The work consists of stripping the limestone from off the ore body, which will then be worked open cut or pit mining. The old slope is now working, producing about 100 to 125 tons per day, andthe ore runs ton after ton straight willemite, franklinite and zincite in fine grains, and the only things coming out of use to the collector is an occasional mass of red oxide or ruby ore as the miners call it, and some good green willemite in fine large masses. Lately a small cavity afforded some zincite crystals and another mineral still undetermined. I secured one good specimen, thanks to a good friend of mine.

In the stripping some fine spinels and a few good tourmalines were found. They are very few but very good, what there is of them. At Ogdensburg no work is being done, so the place furnishes nothing in return for the visit made to that locality.

From these few notes you can see that while the name has a charm all its own, it is a hard place to collect minerals. In fact it is likely to be a disappointment to any one who goes to collect specimens only. Still some things are always to be had and then there are several fine collections which are well worth the visit to see.

In fact, this is really one of the principal attractions to me, to see the fine local collections. On the other hand, these fine collections are one of the principal reasons why your trip may prove a disappointment

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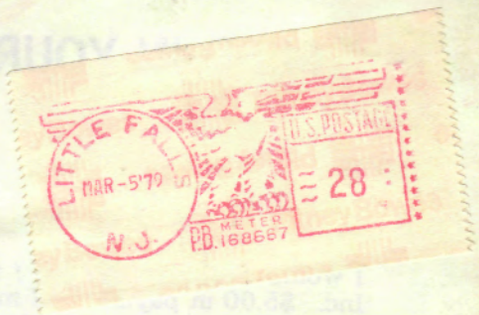

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