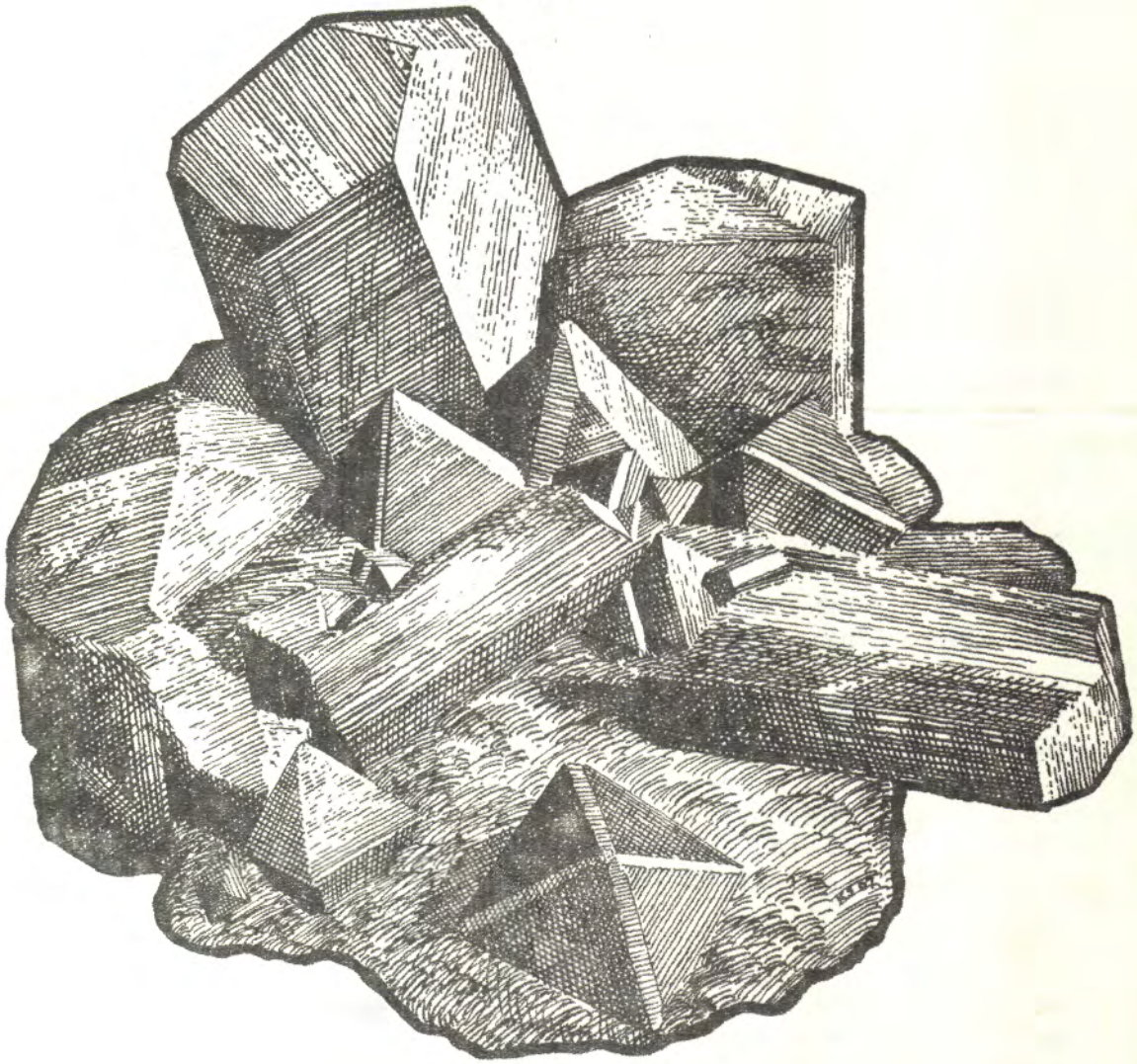
THE PICKING TABLE

JOURNAL OF THE FRANKLIN·OGDENSBURG MINERALOGICAL SOCIETY



VOLUME 11 FEBRUARY 1970 NUMBER 1

CLUB PROGRAM - SPRING 1970

All meetings will be held at the Hardyston School, intersection of Routes #23 and #517, Franklin, New Jersey. Pre meeting activities start at 1:00 P.M. Speaker will be introduced at 2:30 P.M.

Sunday, March 15th	Field trip to the Franklin Mineral Museum and/or The Gerstmann Private Museum, Franklin, N.J. 9:00 A.M. to Noon.
	Meeting 2:30 P.M. Speaker, Frank Edwards re The New Minerals of Franklin-Ogdensburg
Saturday, April 18th	Field trip to the Buckwheat Mineral Dump, Franklin, N.J. 9:00 A.M. to Noon.
	Meeting 2:30 P.M. Speaker Prof. James Yolton re The Geology of the Delaware Water Gap
Saturday, May 16th	Field trip - to be announced.
	Meeting 2:30 P.M. Speaker, Dr. Vincent Manson
Saturday, June 20th	All day session at intra-club outing at the Trotter Mineral Dump, Franklin, N.J. Mineral collecting, sales and swapping.

Daily Franklin Attractions

Buckwheat Mineral Dump - entrance through the Franklin Mineral Museum, Evans Street, Franklin. Daily collecting fee.

Franklin Mineral Museum - Evans Street, Franklin. Entrance fee.

Gerstmann Private Mineral Museum - Walsh Street, Franklin. No charge, courtesy of the owner. Open weekends; on weekdays by arrangement.

Trotter Mineral Dump, Main Street, Franklin (behind the Bank). Daily collecting fee.

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THE PICKING TABLE is issued twice a year; a February issue to reach members about March 1st with news and the Club Spring program; and an August issue to reach members about September 1st with news and the Fall program. THE PICKING TABLE is written and prepared by Frank Z. Edwards; the mimeo and typing by Louise W. Borgstrom; the cover by Kenneth Sproson.

FRANKLIN OGDENSBURG MINERALOGICAL SOCIETY, INC.
BOX 146 FRANKLIN, N. J.

BULLETIN - MARCH 1970

We start the 1970 collecting season with our annual mineral museum visits:

SUNDAY, MARCH 15TH, FIELD TRIP TO THE FRANKLIN MINERAL MUSEUMS

Meeting place: 9 A.M. on Evans Street, at the Museum.

- Franklin Mineral Museum - - Gerstmann Private Museum -

Mr. Gerstmann will again open the museum early this year to accomodate our members. There will be a fine display of Trotter minerals, including some of the rare Franklin minerals found there. - A fine time to get together to discuss your questions on those hard-to-identify minerals.

The Franklin Mineral Museum will have its doors open at 9:00 A.M. Members of the Identification Committee will be on hand to answer questions during your visit. A pleasant surprise is in store for those who have not seen the new fluorescent display.

Weather permitting, the Buckwheat Dump and the Trotter Dump will be open. Entrance fee - regular charge.

The Gerstmann Museum is located on Walsh Road. On entering Franklin from the east on Routes 23 and 517, proceed past the Franklin Shopping Center for approximately 1 mile; turn left opposite the SHOP-RITE, up hill to Walsh Road. The museum is on the left.

The Franklin Museum is located on Evans Street. On entering Franklin from the east on Routes 23 and 517, turn left on Franklin Avenue, opposite the Franklin Shopping Center. Continue to Buckwheat Road. Turn right; continue up the hill to the first left turn, Evans Street. Museum is on the left.

MEETING:2:30 P.M. at the HARDYSTON SCHOOL, ROUTES 23 AND 517, FRANKLIN, N.J.

Don't forget that today's museum trip and mineral sale is only half of the day's activities. In the absence of our president, our vice-president, Henry Althoen will conduct the meeting, and I know you will all be glad to see Henry back and taking an active part once more.

Our speaker at this meeting will be our good friend and fellow-member, Frank Edwards, who will share with us his knowledge of the newly discovered Franklin minerals. Don't miss this opportunity to keep informed of the increasing numbers of minerals from our local area.

President's Message

Through the courtesy of Mrs. Butler, Jack's minerals have been made available for sale, the proceeds to be donated to the Franklin Mineral Museum, Inc. in memory of Jack. These minerals will be on sale at nominal prices, at the Museum, from 9 to 12 A.M. Sunday, March 15th, as part of our field trip for the day. We hope each F.O.M.S. member will purchase at least one specimen in memory of Jack and in appreciation of his devotion to our Society and the privilege we had of knowing and working with him.

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We learn with sadness of the death recently of one of our faithful members, Mr. Laslo I. VanYur. Our deepest sympathy goes to Mrs. VanYur and her family at this time.

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Coming Events

A field trip to the fossil area near Port Jervis has been confirmed for April. Look for the details of this trip in your April bulletin.

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DUES

Membership dues for 1970 are payable now. The dues were increased starting 1970 to $3.00 per year. Past dues must be paid up in order to continue your membership.

The address of our new treasurer is as follows:

Bernard Kozykowski,
Box 634
Port Jervis, N.Y. 12771. Tel. 914 - 856-6015.

F.O.M.S. OFFICERS FOR THE YEAR 1970

President	Alice L. Kraissl	Box 51, North Hackensack, N.J.
Vice President	Henry M. Althoen	319 Third Street, Dunellen, N.J.
Secretary	Louis Benedict, Jr.	442 S. 21st St. Irvington, N.J.
Treasurer	Bernard Kozykowski	Box 634, Port Jervis, N.Y.
Asst. Treasurer	Robert Thomas	802 Lindsley Drive, Morristown, N.J.

TRUSTEES

Lee Areson	'70	Richard Hauck	'70
Bruce Barr	'70	Alexander F. Knoll	'71
John L. Baum	'71	Frederick A. Kraissl	'71
Frank Z. Edwards	'70	William Spencer	'71
John E. Sebastian	'71		

COMMITTEE CHAIRMEN

Auditing	William Clinton
Field Trip	John E. Sebastian
Field Trip Registration	Trudy Benedict
Historical	Henry M. Althoen
Identification	John L. Baum
Membership	Bernard Kozykowski
Mineral Sales	Henry M. Althoen
Museum Coordinating	John L. Baum
Nominating	John E. Sebastian
Program and Entertaining	Frederick A. Kraissl
Publicity	Betsey Althoen
Publications	Frank Z. Edwards
Safety	John E. Sebastian
Welcoming	Jennie Areson

F.O.M.S. Notes

For the first time in our short history we will hear the words "Madame President". For the year 1970, Alice Kraissl will preside as our chief officer. Since 1964 Alice has been an important member of our Executive Board and has proven to be most conscientious and capable. Her fellow officers are equally capable and qualified for the posts to which they have been elected. The Society is assured that, as usual, their officers will fulfill their duties with honor, dignity and ability and that all members will benefit from their leadership.

New committee chairmen have been appointed by our President. All of these chairmen require additional club members to complete their committees. If you would like to serve on any of these committees, please contact the chairman shown.

Henry Althoen, as Chairman of the Historical Committee, would appreciate information from our "old timers" for his records.

Also, Henry announces that two tables will be available for mineral sales at our monthly meetings. A small fee is charged for such sales privileges. Members interested in these sales tables should contact Henry at 319 Third Street, Dunellen, N.J. 08812.

Betsey Althoen requires information and news for her Publicity Committee. Frank Edwards is looking for information (for the Picking Table) concerning Franklin-Ogdensburg minerals and specimens. Your cooperation with these committee chairmen will be greatly appreciated.

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Club members who attended our September and October 1969 meetings ratified the following amendments to the F.O.M.S. Constitution and By Laws:

1) Addition to Article IV - "Officers and Trustees"

"The immediate past president shall serve as a member of the Board of Trustees for the two years following his term of office."

2) Amendment to Article IV - "Officers and Trustees".

"There shall be nine trustees, four each to be elected in alternate years for two year terms. The ninth trustee shall be the immediate past president as provided in Amendment #1.

3) Amendment to Article VI - "Nominations and Elections".

"The immediate past president shall serve as chairman of the Nominating Committee for the two years following his term of office, and shall choose two F.O.M.S. members, preferably not members of the Board of Trustees, to serve with him".

Our new Executive Board reflects these changes.

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We have been requested to list the Past Presidents of the F.O.M.S. and are happy to comply:

1959-60	Richard Hauck
1960-61	Frank Z. Edwards
1962-63	William Spencer
1964-65	Frederick A. Kraissl
1966-67	Dr. Harry A. Montero
1968-69	John E. Sebastian

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(Cont.)

We hope each F.O.M.S. member will purchase at least one specimen in memory of Jack, and in appreciation of his devotion to our Society and the privilege we had of knowing and working with him.

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As we start our 1970 activities I hope each of you will make an effort to find ways in which you can be of help to F.O.M.S. Your suggestions for the improvement of any of our activities will be welcome, and if you will write them up and send to me, I will see that they receive the attention of your Board of Directors.

My sincere good wishes to all of you for the best season ever at Franklin.

Alice L. Kraissl, President.

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Final arrangements have not been completed for our Spring field trip program. In addition to the events listed on our calendar page, efforts are being made to schedule a fossil trip, a trip to the Limecrest Quarry, a visit to Bethlehem Steel, Cornwall, Pa. and possible trips to new locations. Ample notice of all authorized field trips will be given in our monthly bulletins.

On the other hand, acceptances have been received from the speakers scheduled for our Spring meeting dates. As usual, speakers and subjects have been selected for authority and interest. Please note these dates on your calendar and arrange to attend.

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Dues for 1970 are now payable. Please use the form on the last page for easy remittance. Good reading is also available. Note our offerings on the same page.

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Franklin Area News

Buckwheat Mineral Dump

The New Jersey Herald reported on October 16, 1969 that

"The Buckwheat Mineral Dump, owned by the Borough Of Franklin, has been leased to the Franklin Mineral Museum, Inc., a non profit corporation, for a period of three years.

Under the terms of the lease, the museum corporation will assume all responsibility for the operation of the dump, with the borough to receive one half of the net proceeds.

The lease agreement had been under study by the mayor and Franklin Borough Council for several months. A resolution ratifying the agreement was adopted by the council on October 13th.

The mineral dump, located between Evans Street and Franklin Avenue, has been used by ore and rock collectors for many years. Admission fees were charged by the borough. The operation, however, had been criticized as being inefficient and poorly supervised.

Under the terms of the lease, worked out by members of the Kiwanis Club and the Mayor and council, the museum corporation is required to erect a chain link fence around the dump and to carry public liability insurance coverage in the minimum amount of $3 million for any accident.

No alterations, additions or improvements are to be made at the leased premises without the consent of the borough council. Improvements, if made, will belong to the borough.

The museum corporation is to provide adequate personnel to supervise the admission and conduct of the public at the dump. The fees to be charged will be $1 for adults and 25 cents for children in grades one through eight.

The lease gives the Kiwanis Club the right to turn over the rock and ore accumulations at the dump each year prior to the annual mineral exhibit conducted by the club. The cost of this operation and the other expenses of running the dump are to be deducted from the gross admission receipts before the annual payment to the borough is to be made.

Mayor William Hodas, through whose efforts Franklin Borough has been proclaimed the "Fluorescent Capital of the World" by Congress, the state legislature and the county, hailed the lease as a means of preserving the borough's "heritage".

"This is a unique example of public and private action which may make it possible for this generation to pass along to its children these fascinating wonders and a heritage approaching what we would like it to be. This is ours in an American fashion of "stewardship", Hodas declared."

Complying with the terms of this agreement, The Franklin Mineral Museum has erected a chain wire fence around the perimeter of the Buckwhat Dump. The sole entrance open to the public is through the premises of the Franklin Mineral Museum, Evans Street, Franklin. A new ramp leading from the museum to the collecting area has been constructed. Arrangements for proper supervision are now being made. The Dump and Museum will reopen early in March, dependent upon the weather.

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The 13th Annual Franklin Mineral Exhibit in October 1969 drew more than 6,600 visitors, breaking all previous attendance records. Ticket sales were up more than 20% over 1968. Visitors came from all over the northeast and cars were noted from California, New Mexico, Arizona and Nevada. A new shuttle service proved to be of great value in relieving traffic congestion and providing fast commuting between the various attractions. Boy Scouts from Hamburg and Stockholm helped in handling the crowds at the Museum.

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Officials of two good friends of this Society have been elected members of the board of directors of the National Limestone Institute, a national trade association of 549 limestone producers from 34 states. They are Milton Woolfenden,Jr. of Limestone Products Corporation of America and Dana F. Farber of the Farber White Limestone Company.

Did you know that these are the only two limestone quarries operating in New Jersey?

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Recently one of our younger members, 16 year old Jill Dill, elected to describe a Franklin Mineral specimen in an essay for her English class at the Wayne (Pennsylvania) High School. Deservedly she received an A for her effort. We reprint her essay for your edification. Note the contrast between her literary description and a normal scientific description of this specimen.

A Closer Look at One of Buckwheat's Specimens
by
Jill Dill

This miniature monolith is approximately six and one-half inches long, five and one-half inches high, and three and one-half inches wide. It has six rough faces, weighs fifteen pounds, and is basically brownish-black in color. So much for general appearance.

This description deals with the most irregular side of the rock, which is most varied. It is roughly rectangular with a large chip missing from the left corner and another piece protruding from the lower edge. The variations in color are numerous and unpredictable. The lightest colored areas are of white, usually massive, calcite. These are in contrast to the granular appearance of other sections. The geometrically positioned cleavage faces have a rough, hand-hewn appearance. Some are at obtuse angles to each other, but most form a step-like progression that resembles the plateau-layering of a hillside farm. Grains of calcite are also interspersed among the other minerals of this side.

Next in the color arrangement is the pink willemite which forms two patterns. Most of it is in granular form. These grains are partially amorphous and therefore do not show recognizable crystal faces. They have a flat, slightly iridescent sheen, belying their high metallic content. Even when a light is played over the surface of the rock, the dull texture of the grains does not come to life. The second willemite form is more massive. It consists of fused grains which are not as noticeably interspersed with other mineral grains. The color of all the willemite varies from light to dark salmon pink. These patterns of willemite extend over the entire surface giving it a flecked appearance.

The massive garnet forms the most aesthetically interesting portions of the surface. It seems to have no definite color, but varies from gold to golden brown. Although designated as "massive," this garnet actually is not found in pellets, lumps or crystals. It therefore differs greatly from the reddish-brown stone used in jewelry. This garnet specimen gives the appearance of being a superficial structure, and upon turning over the entire rock one can see that the garnet does run in irregular veins, speckled with pink willemite, white calcite, and black franklinite. Some veins of garnet also appear along the left side of this face, but the middle is dominated by willemite and franklinite.

(Cont.)

The pure black franklinite grains, forming the darkest colored areas, are the dominant feature of the entire specimen, including this face. Like the willemite grains, they are unevenly interspersed among all the other minerals. Unlike its dull associate, however, franklinite has the glittering sheen associated with a metallic mineral. As a light is passed over the rock's surface, it is these mica-like reflections that attract the observer's eye. The sparkling of these franklinite surfaces resembles the effect produced by the summer sun shining on a newly paved macadam road. In addition to the salt-and-pepper appearance it produces in this side, the franklinite forms a kind of curved band extending like a rainbow over the garnet formation in the lower right corner.

When spot-lighted in the dark, the rock produces an eerie double silhouette that seems to ripple like waves as the light source is moved. Every crack, cleavage, and crystal is highlighted and seemingly magnified. The roughness of the surface is exaggerated. Even the colors seem to leap forth. The surface resembles the early stages of a paved road, like light-colored gravel interspersed with tar-colored pebbles.

Standing ten feet away from the object, it looks like a large, black chunk of rock--not very heavy and not very interesting, but after all, this is the remarkable appearance it presents even without an ultra-violet light.

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Mineral Data

Sonolite, Alleghanyite, Leucophoenicite

The first of several long awaited papers on new Franklin minerals by David Cook, Harvard University, arising from his study of leucophoenicite and tephroite specimens has now appeared in the American Mineralogist, volume 54, numbers 9-10, September-October 1969, pages 1392-1398. The paper is entitled "Sonolite, Alleghanyite and Leucophoenicite from New Jersey". Since this paper is of major interest to all Franklin students, much of this paper is reprinted here. Several tables and some data, not normally of interest to Franklin collectors, has been omitted:

"Introduction

A survey by X-ray, optical and spectrochemical methods of 60 museum specimens labelled leucophoenicite from Franklin and Sterling Hill has revealed that sonolite and alleghanyite, not hitherto reported from these localities, have been confused with leucophoenicite in many instances. Additional specimens of sonolite and alleghanyite were found in collections as minerals erroniously labelled glaucochroite, hodgkinsonite and tephroite. In order to obtain a description of authentic leucophoenicite, the type material of Penfield and Warren (1899) preserved at Yale University, and the original specimens later described as leucophoenicite by Palache (1920, 1928, 1935) were reexamined. The type material proves to be distinct from sonolite, alleghanyite and other known manganese silicates and is a valid species. The crystallized leuocophoenicite described morphologically by Palache (1910) is identical with the type material. The X-ray crystallography of the crystals measured by Palache has been described by Moore (1967). He refers to this material as m-leuocophoenicite, in distinction to other kinds of unidentified leucophoenicite-like material mentioned in this paper. His X-ray study shows that leucophoenicite is monoclinic, pseudo-orthorhombic, which in his setting is related to the humite structure cell when the c-axis is halved.

The so-called leucophoenicite, later described morphologically by Palache (1928), comprised two kinds of material. One kind, dull brown to deep tan in color when massive, and showing crystals of a platy habit, has been here identified as alleghanyite. The other specimen, described as showing deep red monoclinic crystals of prismatic habit, could not be found in the Harvard collection. In the summary account of leucophoenicite given by Palache (1935), the crystals of true leucophoneicite described in 190 are represented by figures 151 and 154, the later described crystals of unverified leucophoenicite by figures 152 and 153, and the crystals of alleghanyite by figures 155, 156 and 157. The analysis of the morphology of leucophoenicite by Moore (1967) is based on the composite data.

Palache (1935) also cites two chemical analyses of supposed leucophoenicite made in 1926 or before by chemists of the New Jersey Zinc Co. The specimens are not crystallized and were not further described. Reexamination of the original specimen of the material of analysis 3 as cited in Palache (1937, page 104), proves it to be sonolite. The material of analysis 2, preserved in the U. S. National Museum, proves to be true leucophoenicite.

Additional specimens of leucophoenicite were identified on the basis of the above information among a large collection of minerals from Franklin and Sterling Hill examined during the present study. The optical properties and X-ray interplanar spacings of this material in part vary somewhat from those of the type material. This variation has been found by optical spectrographic and X-ray fluorescence analysis to be caused by compositional variation, chiefly in the content of Zn, from about 4 to 8 percent ZnO, and of Ca, from about 4 to 14 percent CaO. In addition, another mineral closely resembling leucophoenicite in properties and chemical composition, but with an X-ray pattern similar to that of humite was observed. This mineral may be a polytype of leucophoenicite.

Most leucophoenicite specimens show this mineral as a constituent of the small hydrothermal veinlets that cut the main ore body. A few specimens were found, however, in which the leucophoenicite occurs in granular willemite-franklinite ore, sometimes making up as much as half of the sample. In this mode of occurrence the leucophoenicite closely resembles tephroite, and doubtless has been mistaken for that mineral in the past. Leucophoenicite probably was a primary ore mineral at Franklin, at least locally.

Sonolite

This mineral, the manganese analogue of clinohumite, was first described as a new species from Japan by Yoshinga (1963). Sonolite is much more abundant than either alleghanyite or leucophoenicite at Franklin and Sterling Hill. It appears to have been a minor ore constituent in some parts of the ore body at Franklin, where it apparently was mistaken for tephroite in part. Sonolite occurs as pink-brown to brown grains up to an inch in size in coarse franklinite-willemite-zincite ore, and is often associated with manganosite and coarse platy masses of zincite. It also was observed as dull to glassy dark brown masses in veinlets associated with crystallized green willemite and chlorite. Light pinkish-brown crystals of sonolite were observed with zincite crystals and calcite

in a hydrothermal veinlet cutting franklinite-willemite ore. A variety of sonolite found by X-ray fluorescence analysis to contain 17.6 percent ZnO occurs at Sterling Hill. It forms dark brown reaction rims up to 10 mm thick around large tephroite crystals associated with franklinite and zincite in calcite, and it also occurs as dark brown masses in ordinary franklinite-willemite ore.

Alleghanyite

Alleghanyite was first described as a new species from Bald Knob, N.C., by Ross and Kerry (1932). It was shown to be the manganese analogue of chrondrodite by Rogers (1935) and by Campbell Smith, Bannister and Hey (1944). Alleghanyite occurs at both Franklin and Sterling Hill in several different associations. The main occurrence at Franklin was described by Palache (1935):

"Leucophoenicite (alleghanyite) was also found by Mr. Hodgkinson in the north end of the mine near the hanging wall of the west leg of the ore body, within 2 feet of a pegmatite dike, in a continuous seam with swells and pinches, the swells making vugs in which the crystals had formed. The cavities have walls of layered ore containing much franklinite, which, near the margins of the cavities, is in cubic crystals. The walls of the cavities are lined with gray calcite merging inward to pale rhodochrosite, poorly crystallized in parallel groups of rhombohedrons. On the carbonates is a coating of silky, felted sussexite, commonly in a thin, closely adhering films. Massive dull-brown leuocophoenicite forms a central mass 4 inches across, crystalled toward the center, either in slender plate-like crystals, shown in figure 156, their broad surfaces deeply striated by twinning, with bright surfaces of the base or basal cleavage; or in isolated stouter and more brilliant crystals, like figure 157. The latter are clear, vivid pink and the plates are clear to opaque dull brown. Some of the platy crystals are aggregated in fan-shaped groups rising from the massive matrix...."

Alleghanyite also occurs at Franklin as dull pink masses associated with franklinite, willemite and zincite ore, as glassy pink crystals associated with leucophoenicite in veinlets. It occurs at Sterling Hill as dull to glassy reddish brown masses associated with manganoan calcite and serpentine in veinlets. A chemical variety of Alleghanyite with relatively small interplanar spacings and containing up to 11 percent ZnO was found at Sterling Hill in several different types of occurrence: as tiny glassy brown crystals associated with magnesium chlorophoenicite and hetaerolite on fracture surfaces in ore, as brown reaction rims around tephroite crystals, and as brownish pink masses associated with platy zincite.

Acknowledgements

This study was guided by Professor Clifford Frondel. Acknowledgement is made to Dr. Brian Mason, U.S. National Museum, to Professor Horace Winchell, Yale University and to Professors R.C. Murray and L. McKague, Rutgers University for the loan of specimens. Mr. Ewald Gerstmann and Mr. Frank Edwards of Franklin, N.J. Mr. Lee Areson of Middletown, N.Y. and Mr. Henry M. Althoen of Dunellen, N.J. kindly offered the opportunity to examine their collections of Franklin minerals and to borrow specimens for study."

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Cahnite

Another find of the rare mineral, Cahnite, has been described from a location in Eastern Siberia, U.S.S.R. Note that the calculated formula differs from the ideal formula cited by Hey.

"First Find of Cahnite in the U.S.S.R." by S.V. Malinko - Dokl. Acad.Sc.U.S.S.R., Earth Science Section, volume 166, 1966, pages 116-120. Min. Abst., Vol. 20, #3, Sept. 1969, page 226." Abstract:

"Cahnite occurs in zones of pyroxene-garnet and garnet-vesuvianite skarn with superimposed sphalerite-svabite mineralization at a contact metasomatic iron ore deposit in eastern Siberia. The cahnite is associated with svabite and subordinate magnetite, sphalerite, calcite, and garnet. Colourless, vitreous luster, perfect prismatic cleavage, sp. gr. 3.06; The d.t.a. curve shows endothermal peaks at 432° and 930°C. Chemical analysis after deduction for impurities and recalculation to 100% gave the formula $(Ca_{2.047}Mn_{0.086})B_{1.00}(As_{0.985}P_{0.011})O_4(O,OH)_{4.27}$".

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Franklinite

In volume 37, 1968, pages 16-17, of Current Science, Messrs. J.S. Rao and S.R. Krishna report the occurrence of Franklinite in the manganese deposits of Koduru, India. The cell dimensions of this franklinite are given as a 8.932 ± 0.001 Å.

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Gageite

As promised previously, Dr. Paul Moore has analyzed the crystal structure of Gageite. His findings are reported in the American Mineralogist, volume 54, numbers 7 and 8, July-August 1969, pages 1005-1017. The title of his paper is "A Novel Octahedral Framework Structure: Gageite". Abstract follows:

"Gageite, ideally $M^{2+}_7(O)(OH)_8(Si_2O_6)$ where M=Mn and mg, a 13.79(2), b 13.68(2), c 3.279(3) Å, Pnnm, Z=2, is an octahedral pipe structure. This unusual structure consists of walls of edge-sharing octahedra leaving pipe-like channels which run parallel to the c-axis. The octahedral framework has the ideal composition $M^{2+}_7(O)(OH)_{12}$, with the oxide anion octahedrally coordinated by six manganese atoms.

The channels are clogged by disordered silicate tetrahedra which support the framework by a network of hydrogen bonds. The tetrahedra are not geometrically compatible with the arrangement of octahedra, resulting in anomalous behavior of the atoms within the pipes."

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Margarosanite

A paper by R.L. Freed and D.R. Peacor - "Determination and refinement of the crystal structure of margarosanite" appears in the Zeits Krist., volume 128, 1969, pages 213-228; Min. Abst., volume 20, number 4, December 1969, page 280. Abstract:

"The crystal structure of margarosanite from the Parker Shaft, North Mine Hill, Franklin, N.J., U.S.A., with a 6.768± 0.004, b 9.575± 0.004, c 6.718± 0.005 Å, α 110.36± 0.03, B 102.98 ± 0.04, γ 83.02 ± 0.005, and space group P1, was solved by minimum function and heavy atom techniques. This yeilded a trial structure which was refined by least-squares methods using the full matrix (final R 7.4%). The unit cell contains $2(PbCa_2Si_3O_9)$. The structure has planes of tetrahedral sites alternating with planes of Ca sites between sheets of close packed oxygen atoms parallel to (101); Pb and Ca are ordered. Ca(1) polyhedra form an infinite edge sharing chain parallel to (101) and Pb and Ca(2) sites alternate along the edge of this chain. Tetrahedral sites form three membered rings which are linked to the Ca(1) polyhedral chain. The two Ca atoms have 6 fold coordination and the Pb atom has 7 fold coordination of oxygen atoms."

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Svabite

The svabite associated with the cahnite described earlier in this edition of the Picking Table is the subject of another paper. "Svabite from contact-metasomatic deposits of Siberia and the Urals" by S. V. Malinko, G.S. Rumyantsev and G.A. Sidorenko, Dokl. Acd.Sci. U.S.S.R. Earth-Science Section, volume 166, 1966, pages 134-137. Min. Abst., volume 20, number 4, December 1969, page 323. Abstract follows:

"Svabite occurs in a Siberian contact metasomatic iron ore deposit in zones of pyroxene-garnet and garnet-vesuvianite skarn heavily mineralized by sphalerite, as hexagonal prisms, colorless to pale lilac, sp. gr. 3.53, uniaxial negative, negative elongation, ϵ 1.698± 0.001, ω 1.716± 01001; indexed X-ray data shows strongest lines at 2.904 (10), 2.83 (9), 2.814 (9), and 1.867 kX (8); a 9.78± 0.01, c 6.95± 0.01 kX. Chemical analysis by K.A.Dorofeyeva and L.S. Abramova after deductions for impurities and conversion to 100% gave Si O_2 1.12, Fe_2O_3 0.21, MgO 0.12, CaO 41.68, H_2O 1.12, F 0.46, Cl 1.91, MnO 0.42, As_2O_3 14.24, As_2O_5 38.74. The structure of the svabite is discussed; the d.t.a. curve shows no thermal effects. Svabite also occurs in a weakly metamorphosed but strongly mineralized limestone in a contact metasomatic copper deposit in the Urals."

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Additional Mineral Notes

Albaneseite

A number of collectors have asked if I could describe this new mineral (prior to the paper by Dr. Frondel). The Harvard specimen, submitted by John Albanese, came from Franklin and was mined prior to 1954. The albaneseite is a platy dark brown in a serpentine matrix. It is a new manganese silicate and Dr. Frondel says that it is close to parsettensite in composition.

Parsettensite is listed in Hey as #14.17.13 with the formula ($Mn_{10}Si_{12}O_{26}(OH)_{16}$) or ($K\ Mn_{10}Si_{12}O_{30}(OH)_{12}$). It had been classified in the friedelite family but recently has been shown to belong to the stilpnomelane family. Synonym "Manganostilpnomelane".

Ettringite

Another study of the structure of ettringite has been reported by Messrs. Courtois, Dusausy, Laffaille and Protas. (C.R. Acad. Sci., Paris, volume 266,1968, pages 1911-13. Min. Abst. Dec. 1969, page 284). They find that "Weissenberg photographs of ettringite, $Ca_6Al_2(SO_4)_3(OH)_{12}.26H_2O$, show the existence of a six-fold axis and lead to a 11.26± 0.05, c 21.49± 0.08 Å, sp. gr. 1.76, Z=2; possible space groups $P6_2/mmc$, $P6_3mc$, or $P6_2c$. Precession and other data show that the sections of the Patterson function normal to c are strikingly similar to those of jouravskite, space group P6."

Franklin ettringite is unusual in that it contains B_2O_3 and $Si\ O_2$ not reported from other sources. This is reflected in higher indices of refraction.

Fluoborite

Fluoborite has been reported from the uranium mines of Hope, San Bernardino, California. (Min. Abst. June 1969, page 146)

McGovernite

B.J. Wuensch reports that "the lattices of dixenite, mcgovernite and hematolite posses a common a translation. Dixenite and hematolite have the same c translation. That of mcgovernite is larger by a factor 11/2, making it one of the largest known for inorganic material. Dixenite and mcgovernite are indistinguishable in projection along c. Diffraction patterns display common loci of high intensity, but provide no evidence for a simple subunit common to the structures. This, plus differences in chemical composition, suggests that the structures are composed of thick slabs of which only portions are common to all three minerals." Zeits. Krist., 1968, volume 127, pages 309-318. Min.Abst., June 1969, page 105.)

Pyrosmalite

Pyrosmalite from central Kazakhstan was examined. Its cell dimensions are a 13.37, c 7.11 A. The structure found is in the space group P3ml and corresponds to that previously proposed for manganpyrosmalite. (A.A. Kashev - Soviet Physics-Crystallography, volume 12, 1969, pages 923-4. Min.Abst., Sept. 1969, page 191.)

Voltzite

Voltzite from Sterling Hill was found to contain an organometallic compound. A paper by Billy and Caille (C.R. Acad.Sc., Paris, volume 266, 1968, pages 1643-5. Min. Abst. Dec. 1969 page 298) is therefore interesting. We quote "Bacteria with the morphological and physiological character of Bacillus cereus were isolated from natural specimens of black oxide of Fe and Mn forming dendrites or spots

in three different rocks. These bacteria introduced into salts of iron and manganese in cultures produced arborescent colonies resembling the natural formations."

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Roebling Correspondence

With the Washington A. Roebling collection of minerals, the Smithsonian Institute also acquired several files of Colonel Roebling's correspondence. As advised in our last Picking Table, Mr. Paul E. DeSautels, Associate Curator, Division of Mineralogy, U. S. National Museum, was kind enough to send me copies of some of this correspondence in the belief that our members would be interested in the portions that referred to Franklin and its minerals. In full accord with his opinion, I am pleased to offer some extracts from this correspondence. Additional excerpts will appear in future editions of The Picking Table.

1) From Dr. Samueld L. Penfield, Sheffield Scientific School (Yale University) to Col. Roebling - May 3rd, 1897:

"I do not know whether Mr. Nason has communicated with you or not concerning roeblingite, but I rather took it for granted that he had. If not, you may be surprised to learn of this new mineral, and I hope it will be gratifying to you to have this mineral compound bear your name. It is not so beautiful as it is strange, for a sulphite and silicate of lead and calcium is something quite unexpected.

In naming this mineral Mr. Foote and I have complied with a very earnest request from Mr. Nason that this new mineral should bear your name."

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2) From R.B. Gage (who was Col. Roebling's buying agent) to Col. Roebling - 12/12/25:-

"I was in Franklin Furnace on Saturday, the 19th, but unfortunately the company had arranged to work until four o'clock Saturday instead of stopping at noon so that employes would have more time off between Christmas and New Year's. This made it very difficult to see many of the collectors, but I was able to catch a few Saturday night and Sunday morning.

There have been some additional finds of massive hodgkinsonite that looks very good, but I was not able to secure any. A few specimens of schallerite have been found recently, one of which I secured and will send to you. This occurrence is a very narrow vein in the massive ore and is certainly quite unique. This material is found adjacent to one of the ore walls for it was hoisted out from a drift that was being run partly in the limestone and partly in ore.

There has also been a few nice specimens of transparent willemite crystals imbedded in bluish grey serpentine. There has also been analyzed some reddish material, the analysis of which shows it to be hyalophane. I secured a specimen of this and it adds another mineral to the long list already found at Franklin Furnace.

I believe Palache has arranged to have it inserted in his folio. I also secured s specimen of inverted zincite crystals that are coated with smithsonite balls and some fine crystals of an unknown mineral. The latter crystals may be new, but they are so small that their identity can only be recognized by their refrection index so will endeavor to have this done some time after the first of the year.

I stopped to see Mr. Canfield and was certainly very much grieved to be informed of the trouble that he has had recently. You will recall that he tripped over a cat and fell down cellar, hurting his knee. Apparently, his knee has healed and is in good condition, but shortly after this he got some boils on his neck which developed into carbuncles and spread over his back so that he has been confined to bed, I think, for the last month. He is around again now, but is certainly very badly crippled and looks at least ten years older than when he visited you a couple of months ago. He is at a loss to know what has caused these and they apparently have worried him a great deal for his expression shows that he has suffered. We talked minerals for a half hour or so, but it was labor for him to do so since he could only get around with difficulty.

Mr. Canfield would like to go to the mineral meeting at New Haven, but will not be able. He suggested that I try to have some of the mineralogists stop off on their way back and, if I can arrange to do so, will bring some of them with me and we could look at your collection and then I could take them up and show them his later. This is only a suggestion. It may be that their time is quite limited and they will not be able to come.

I will send you the specimens I secured at Franklin as soon as I get them sorted out, which should not be later than tomorrow."

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3) From R.B. Gage to Col. Roebling - 1/21/26.

"I am returning your specimens and am very glad to state that they pleased every one very much.

The Smithsonian Institute had also secured a box of specimens from Russia, but the quality of their specimens did not begin to compare with yours. They did not get any gold crystal and Dr. Merrill was very much surprised that you should get such a nice crystal at the price.

We were able to quite definitely establish the fact that my specimens that I thought were Jerseyite are not the same as Canfield's Jerseyite. In fact, Canfields Jerseyite appears to be Arsenosiderite. I would like very much to see some of your specimens of this mineral. His has practically the same index of refraction and looks very much like it. If Mr. Canfield would let loose of a couple of his specimens, there would be enough of material on them to definitely establish this fact, but mineralogists are not prone to do such tricks. He has had these specimens for about twenty years, and if he wants to know what they are, he will never have a better chance than now.

Shannon is also analyzing the new lead silicate from Franklin and should have this analysis done within the next week. It will certainly be interesting to know what the composition of this mineral is."

(Ed. Note - this proved to be barysilite.)

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4) From R.B. Gage to Col. Roebling - 5/12/26:

"Mr. Hoadley was here almost all of Sunday. He wanted a specimen of hedyphane and also barysilite. I let him have a small specimen of the hedyphane, but there is absolutely no barysilite to be had. This disappointed him very much for he has always made a special effort to keep his collection up to date on Franklin Furnace material.

He stated that at the last meeting of the New York Mineralogical Club, Mr. Bruce (sic - should be Paul) Kerr was elected president instead of Dr. Kunz. Mr. Kerr, I believe is the mineralogist for Columbia University and he is about thirty years old. It appeared that Dr. Kunz's other duties took so much of his time that he could not give the association the attention they thought it should have and that more interest and better results would be secured if a younger man were president. I guess Mr. Allen, who, you will remember, had the discussion about the manganosite, thought he would be selected for president, but, apparently his erratic disposition caused the club to select someone else.

Mr. Hoadley stated that they have been finding some very nice calcite crystals at French Creek and that Mr. Gordon intended to measure one of the crystals and describe them. Apparently, some of these crystals are four or five inches in length, and two or three inches in diameter. (Here a pencil note by Col. Roebling reads "Vaux says only 2 inches").

I sent Mr. Dake about six very nice Franklin Furnace specimens for the laurite specimen he sent me. I also showed Mr. Hoadley a piece of the willemite that had the needle crystals. The specimen I have is very poor and does not show them like the one I had polished for you. He had never seen these before and thought that these crystals might be a new mineral, but they resemble rutile very much and, since both minerals are hexagonal, I see no reason why the rutile could not occur imbedded in willemite the same as in quartz.

I intended to go to Franklin Furnace last week, but our work has been such that I could not get away. However, hope to do so this week. I want to secure enough material to analyze the white crystals on the pyrochroite for these may be new. At any rate they have not been identified and this appears to be the only way to definitely establish what they are. (Ed. note - these indeed did prove to be new - chlorophoenicite).

I certainly hope that your strength will increase sufficiently that you will be back on your feet in fair condition in the near future; in fact, have every reason to believe that you will be before the summer has really begun."
(Col. Roebling's pencil note here "Too late").

On the side of this letter Col. Roebling pencilled the following note:
"Mostly about Hoadley, who wants every Franklin mineral I have. They all do."
"Mr. Paul R. Kerr - mineralogist for Columbia University has a controversy with Larsen about optical properties of "Newtonite" from Arkansas. I sent him 3 good specimens - hope to get them back".

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* * * * * * *

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