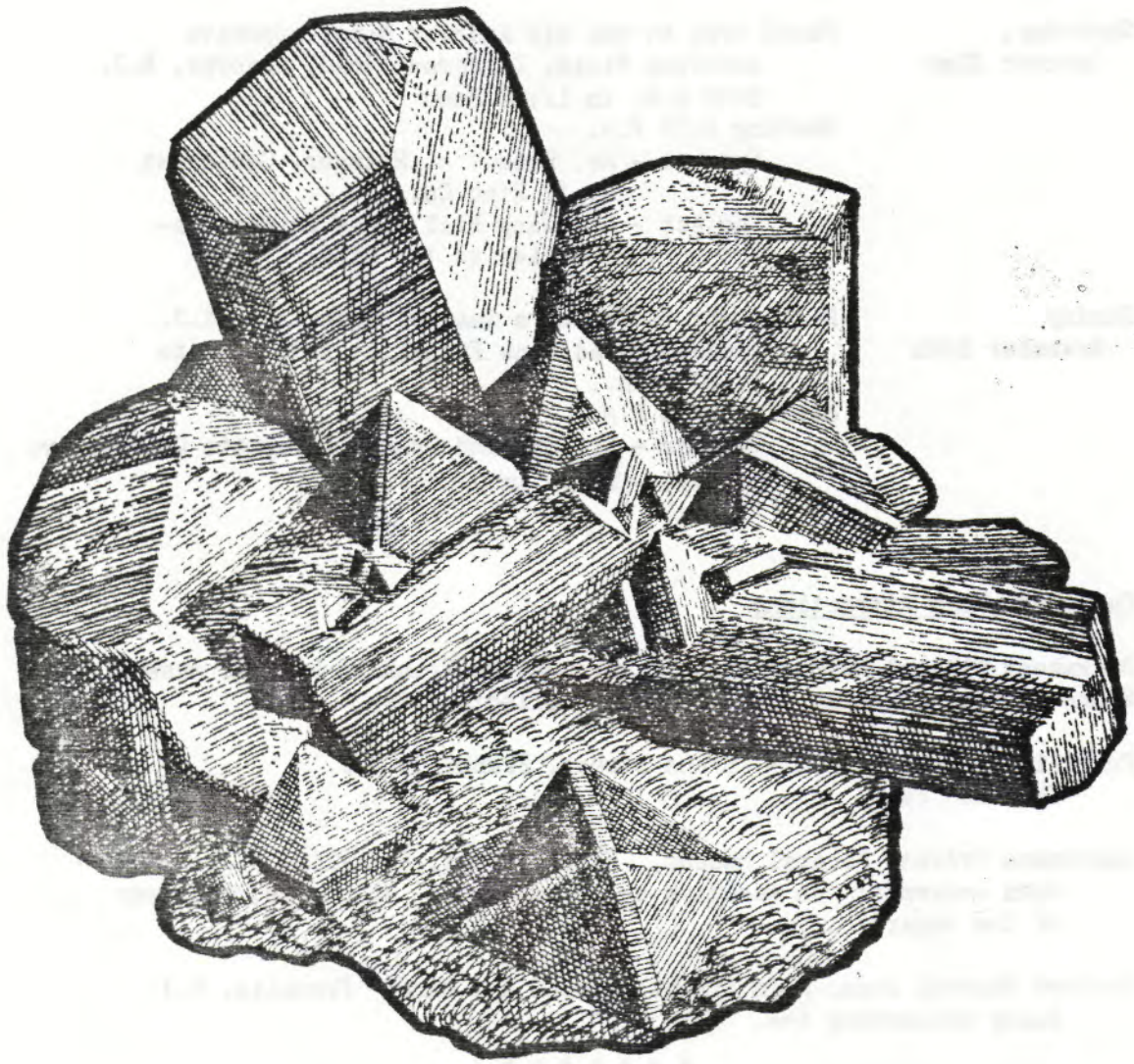
# THE PICKING TABLE

JOURNAL OF THE FRANKLIN·OGDENSBURG MINERALOGICAL SOCIETY



VOLUME 13 AUGUST 1972 NUMBER 2

## CLUB PROGRAM - FALL 1972

All meetings, except where otherwise noted, will be held at the Hardyston School, intersection of Routes #23 and #517, Franklin, N.J. Pre meeting activities start at 1:30 P.M. Speaker will be introduced at 2:30 P.M.

**Saturday, September 16th**

Field trip to the Cellate Quarry, Cork Hill Road, Franklin, N.J., 9:00 A.M. to 12:00 noon.
Meeting 2:30 P.M.
Speaker - Mr. J. Kenneth Fisher
Subject - Mineral Collecting in Franklin During the 1930's and 1940's.

**Saturday, October 21st**

Field trip to the old Andover Mine, opposite Aeroflex Field, Limecrest Road, Andover, N.J. 9:00 A.M. to 12:00 Noon.
Meeting 2:30 P.M.
Speaker - Mr. Robert W. Metsger, Geologist N. J. Zinc Co.
Subject - Sterling Hill Mine- re new discoveries at the Mine.

**Sunday November 19th**

Field trip to Bodner's Quarry, Rudeville, N.J. (Rudeville adjoins Franklin) 9:00 A.M. to 12:00 Noon.
Meeting 2:30 P.M.
Speaker - Dr. Raymond Grant, Lafayette University.
Subject - To be announced.

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### Daily Franklin Attractions

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

Franklin Mineral Museum - Evans Street, Franklin, N.J.
Entrance Fee.

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

Trotter Mineral Dump, Main Street (behind the Bank) Franklin, N.J.
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 and the mimeo and typing by Louise Borgstrom; the cover by Kenneth Sproson.

## F.O.M.S. OFFICERS FOR THE YEAR 1972

| | | |
|---|---|---|
| President | Henry M. Althoen | 319 Third St., Dunellen, N.J. |
| 1st Vice President | John L. Baum | 70 Hamburg Tpke, Hamburg, N.J. |
| 2nd Vice President | Bernard Kozykowski | DeKay Lane, Livingston Manor, N.Y. |
| Secretary | Louis Benedict, Jr. | 412 So. 21st St., Irvington, N.J. |
| Treasurer | Robert Thomas | 802 Lindsley Drive, Morristown, N.J. |
| Asst. Treasurer | William Clinton | 37 Orange St., Bloomfield, N.J. |

### TRUSTEES

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| Lee Areson '72 | Frederick Kraissl, Jr., '73 |
| Bruce Barr '72 | Ervan F. Kushner '73 |
| Frank Z. Edwards '72 | John E. Sebastian '73 |
| Alexander Knoll '73 | Pat Thomas '73 |
| Alice L. Kraissl '73 | |

### COMMITTEE CHAIRMEN

| | |
|---|---|
| Auditing | Bernard Kozykowski, DeKay Lane, Livingston Manor,N.Y. |
| Field Trip | John Sebastian, 36 Roxbury Drive, Kenville, N.J. and Bernard Kozykowski |
| Field Trip Registration | Trudy Benedict, 412 So. 21st St.,Irvington, N.J. |
| Historical | Frederick A. Kraissl, Box 155, No.Hackensack,N.J. |
| Identification | John L. Baum, 70 Hamburg Tpke., Hamburg, N.J. |
| Membership | Robert Thomas, 802 Lindsley Drive, Morristown,N.J. |
| Mineral Sales | Lee Areson, 21 Irwin St., Middletown, N.Y. |
| Museum Coordinating | John L. Baum |
| Nominating | Alice L.Kraissl, Box 51, No.Hackensack, N.J. |
| Publicity | P.E. Scovern, N.J.Herald, Hamburg, N.J. |
| Program | Frank Z. Edwards, 100 West Shore Trail, Sparta,N.J. |
| Publications | Frank Z. Edwards |
| Safety | John Sebastian and Bernard Kozykowski |
| Social | Mr. and Mrs. Leslie Lydiate, Jeanne Marie Gardens, Apt. #10, Nanuet, N.Y. |
| Welcoming | Jennie Areson, 21 Irwin St., Middletown, N.Y. |

### F.O.M.S. Notes

Arrangements for our Fall program have been completed. Please note the dates on your calendar. Attendance at our events is always rewarding in fellowship and information. Please arrange to participate in our meetings and field trips.

Some of our committee chairmen still require additional members for their committees. If interested in serving on any committee, please contact the chairman directly.

We wish to apologize to the members who traveled to Cornwall, Pa., on July 8th, for our scheduled field trip to the Bethlehem Steel Company Mine. Late on Wednesday, July 5th, we received a letter from the Company advising that it would be impossible to host our field trip because of conditions caused by Hurricane "Agnes". It was then too late to send out a written notice to our members. Our officials then telephoned the people expected to attend the trip

and succeeded in reaching many of them. Unfortunately, they could not reach everyone and some members did arrive at Cornwall at the scheduled time. Upon inquiry, they learned of the cancellation. Their disappointment was somewhat assuaged when sympathetic residents directed them to some old dumps on private property where they were able to collect. To these members we apologize for the inconvenience caused them.

Hurricane Agnes which caused such havoc in Central Pennsylvania has probably closed the Cornwall Mine for good. Company officials advise that heavy flooding in the lower levels has severely weakened mine timbers and other supports, causing unsafe conditions. Heavy expenditures would be required to correct these problems. Economically these do not appear justified and it is probable that the mine will be permanently closed.

Franklin Mineral Show

The 16th Annual Franklin-Sterling Mineral Exhibit sponsored by the Kiwanis Club of Franklin will be held on Saturday, October 14th and Sunday, October 15th, 1972. Hours on Saturday - 9 A.M. to 8 P.M.; Sunday - 10 A.M. to 6 P.M.

The admission price of $1.50 per adult - 75 cents for children provides admission to the Franklin Armory with its exhibits and dealer stands; to the Franklin Mineral Museum including the Mine Replica and dazzling Fluorescent Display; and to the Buckwheat Dump for specimen collecting. A shuttle bus will provide quick transportation to all areas; free parking also will be provided.

This year the Franklin Borough Recreation Committee will open a swapping area at the Franklin Pond for collectors. There will be a daily charge assessed against participants. This charge will be fixed by Borough ordinance but has not been determined at this time. The proceeds will go to the Recreation Fund. Neither the Franklin Kiwanis Club nor the F.O.M.S. have any responsibility or jurisdiction over this area.

In response to many requests, several F.O.M.S. members will preside over a booth at the Mineral Show which will sell Franklin mineral specimens only. Look for it at the show.

Franklin Mineral Museum.

On Sunday, May 7th, 1972, a life size statue of a typical Zinc miner was dedicated to honor the memory of the thousands of miners who have worked in the New Jersey Zinc deposits at Franklin and Ogdensburg. The wooden statue, carved by Jarvis Boone of Sugarloaf, N.Y. stands in front of the Franklin Mineral Museum atop an old hoist stanchion.

As part of the ceremonies, a number of the men honored, the miners who worked in the mine, were individually introduced. The entire proceedings were enjoyed so much by everyone present that there have been requests that Franklin hold an Annual Miners' Day.

The statue was paid for by contributions to a special fund of the Franklin Mineral Museum. It is a fine memorial to the men who contributed so much to the community.

Trotter Dump

The new custodian of the Trotter Mineral Dump is Mr. Nicholas Zipco of Scott Road, Franklin, N.J., phone 201--827-7327. If collectors seeking admission to the Dump find the gates closed, a phone call to Mr. Zipco will bring him out pronto. There is no change in the admission charge - still $2.00 per day.

Sussex County One Hundred Years Ago

Mr. P.E. Scovern of Hamburg, N.J. has provided the F.O.M.S. with much favorable publicity in the pages of the New Jersey Herald. Mr. Scovern writes a regular column in the Herald entitled "North Jersey Out of Doors" which always makes interesting reading. A recent article by Dr. Roswell S. Coles in that column will be appreciated by our members. Appropriate quotes follow:

"In 1873, the New York and Midland Railroad published a guide and business directory of the towns along its line. Thanks to a recent facsimile issue of the guide we can take an imaginary trip through Sussex County as it was nearly 100 years ago.

"The Midland Railroad runs from Jersey City to Oswego. It entered Sussex County at Stockholm, 49 miles from New York, where a station had been erected for the joint use of that town and Snufftown, a few miles south.

The next stop is "Ogdensburgh", a growing village of 500, with four or five stores, two good hotels, school house, car repair shop, and a coal and lumber yard. The zinc mine is reputed to be worth $20 million. The Ogdensburgh House gives good accomodations for travelers. "Board by the week on reasonable terms". However, the Adams House advertises the village as one of the most beautiful in New Jersey. "Visitors desiring a healthy climate, quiet and beautiful location, mineral spring, romantic scenery, and pleasant drives will find this village unsurpassed. Fishing is very fine."

From Ogdensburgh we travel to Franklin, 58½ miles from New York, with 500 inhabitants, three stores, two hotels, zinc and iron mines, one church, and a fine public school building. The Franklin Iron Co., a wealthy corporation, is just completing the largest blast furnace in the United States, capable of producing 50,000 tons of pig iron annually.

The Franklin mines are thought to be "inexhaustible" and the town is biled as an "embryo Scranton". The place to stay is the Dennis Hotel, at the "Green Spot", near the junction of the Sussex and Midland Railroad.

Three and a quarter miles beyond the Franklin Station is "Hamburgh". In 1873, Hamburg is quite a place with a population of 600 and three churches, six stores, two hotels, several saloons, lime and cement works, grist mill, saw mill, barrel factory, turning factory, creamery, lumber and coal yard, an academy and a young men's reading room.

The Guide notes that ex-Gov. Haines resides in Hamburg in a pleasant-looking, old-fashioned mansion "in a charming seclusion of luxuriant trees".

From Hamburg, a branch of the Sussex Railroad runs to McAfee Valley, near Vernon, to the iron mines, five or six miles distant. Here another "inexhaustible" deposit has been found, this time of limestone.

According to its advertisement the National Hotel in Hamburg is the "best Hotel in the Walkill Valley, with unequaled accomodations for summer boarders". The bar is supplied with the best of foreign and domestic wines, liquors, and cigars, and good trout fishing and hunting is in the vicinity."

## Crystallography for the Collector

I would like to call the attention of our members to a series of articles entitled "Guide to Crystal Shapes" written by Dr. Arthur Montgomery and appearing monthly in "EARTH SCIENCE" beginning with the January-February 1972 issue. The purpose of the series, directed to the mineral collector, is "to provide a practical working knowledge of crystals. Such knowledge that would make it possible for a collector to look at his own crystallized specimens with fresh understanding, recognize the different crystal shapes, and classify them into categories of clear cut distinction. This could add another dimension of scientific meaning for the hobbyist and at the same time vastly improve his ability to sight identify crystallized minerals."

Members who have heard Dr. Montgomery speak at our meetings know his ability as a teacher. I am sure that every collector will benefit from a study of these articles.

Earth Science, Box 550, Downers Grove, Illinois, 60515 costs $3.00 per year. It is published bi-monthly. The Montgomery series will run through the years 1972 and 1973.

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There is considerable information concerning Franklin/Ogdensburg minerals for this issue. We start with the

## New Validated Franklin/Ogdensburg Minerals

### Barkevikite

Two years ago, when collecting on the Trotter Dump, Mr. Martin Plotkin of Massapequa Park, N.Y. found a number of unusual specimens which he sent to the Smithsonian Institution for identification. Mr. Joel Arem has identified one of the specimens as barkevikite. Barkevikite (Hey, 16.24.11 Dana (6th) 403) is a clino-amphibole near arfvedsonite (soda hornblende) in composition but more basic. Hey's formula is $2/NaCa_2(Mg,Fe^{2+},Fe^{3+},Al)_5(SiAl)_8O_{23}(OH)/$.

Mr. Plotkin advises that the Trotter barkevikite is a vitreous black in masses about 3"x3" and 3"x4". Something to look for at that dump.

### Conichalcite

David Cook reports as validated conichalcite from Sterling Hill. I have no description of the specimen as yet. Conichalcite, however, is usually found as fibrous greenish masses, which can easily be mistaken for malachite. Likely looking specimens may be tested for arsenic.

Conichalcite is $4/Cu\ Ca\ AsO_4\ OH/$ Hey 20.1.9, Dana 7th - 2/806.

Eveite

Eveite, a new mineral from Langban, was described by Dr. Paul B. Moore in the the American Mineralogist of January-February 1970, volume 55, Nos. 1 and 2, page 319. Formula given was $Mn_2(OH)(AsO_4)$. The occurrence was described as apple green tabular or sheaflike crystals encrusting cavities and fractures in hausmannite.

Now, David Cook, on specimens that have been in the Harvard collection for many years, has verified eveite in several specimens. Harvard specimen #109459 (from the Buckwheat Dump) has a cluster of bright tan colored platy eveite crystals on a greyish sonolite, which also contains some cubic red spinels.

In David Cook's micromount collection, specimen F-100 displays the eveite as glistening black micro crystals in a ball like cluster, 3/8" across, on a calcite matrix.

Both specimens were verified by x-ray analysis.

Hopeite

Hopeite, another new mineral from Franklin has been verified by David Cook on Harvard specimens. One that I have seen is his micromount FM 6 in which the Hopeite occurs as micro grayish-white crystals in a cavity in calcite/franklinite. Hopeite is $4[Zn_3(PO_4)_2.4H_2O]$; Hey #19.6.1, Dana (7th) 2/734. In other localities it has often been found associated with hemimorphite and smithsonite. Such Franklin/Ogdensburg specimens may bear reexamination.

In the last issue of the Picking Table, (page 10) it was noted that Mr. George Pigeon, through chemical and optical tests, had found Spencerite on Sterling Hill material. Spencerite has been discredited as a species and such specimen material reclassified as Hopeite. Therefore, hopeite can be sought on both Franklin and Sterling Hill specimens.

Pennine/Brunsvigite/Septedelessite - 3 New Chlorites

Three new chlorites have been verified for the Franklin/Sterling area. The final paper for submission to a scientific journal is still in preparation. The following notes are from a rough copy of a paper to be entitled "Zincian Chlorites from Franklin, N. J." by Clifford Frondel and Jun Ito.

"Two new chlorites and a new septichlorite described herein from Franklin are unique in containing large amounts of zinc.

Chlorites occur very sparingly and inconspicuously at Franklin - chiefly as scaly coatings in low temperature hydrothermal veinlets that locally cut the orebody and that hitherto have not been analyzed.

1) Zincian and manganoan pennine occurs as a crust of tiny crystals overlying and in part intergrown with sonolite in an open veinlet cutting franklinite ore. The mineral is translucent and pale rose in color.

2) Zincian and manganoan brunsvigite occurs as crudely radial aggregates of greenish black scales in thin veinlets cutting dull black septedelessite. The material was found as large masses in the dump of the Parker Shaft. It contains angular fragments of willemite and calcite and may have formed along a brecciated fault zone in the orebody. In thin section, septedelessite is translucent with a pale brownish yellow color and is free from inclusions."

The analyses were not available. Additional information on these minerals will be provided when received.

Reported but not validated

In addition to the above minerals verified, David Cook reports that work is being done on three likely looking new species for the area - Homilite; an unknown zinc arsenate; and a new manganoan olivine. Hopefully, the information may be available for the next issue of The Picking Table.

George Pigeon also has three new species which require final confirmation. In looking through Franklin specimens for Devilline, he found one with pale blue hairs. Chemical and optical tests indicate that these are Plancheite. A specimen recently found on the Buckwheat Dump of three cleaved crystals in calcite indicates Knebelite, and a reexamination of some discredited calcio thomsonite specimens came up with Edingtonite instead of Xonotlite. Material from all of these specimens has been submitted for verification by x-ray analysis.

No confirmation yet on the Konickite previously reported by Mr. Pigeon from Sterling Hill.

Discredited and Doubtful

Specimens from the Parker Shaft, Franklin are still marked "Calciothomsonite". An examination by David Cook of such specimens in the Harvard collection showed them all to be xonotlites. However, last month, two such specimens, one in the Gerstmann collection and one in the Baum collection, did prove to be thomsonites. The original "calciothomsonite" is in the collection of the Philadelphia Academy of Science. It should be x-rayed to determine its actual composition.

Several specimens brought up from Sterling Hill recently have also been verified as thomsonite. It occurs in radiating form. In some pieces it looks like poor calamine or hemimorphite. In one specimen that I have seen the thomsonite radiating crystals were about 1" long and greatly resembled some of the aragonite that came up from Sterling Hill several years ago.

More Epsomite specimens from Sterling Hill have been validated by David Cook. However, he has failed to validate any specimens marked Hexahydrite and Bianchite and these two species should temporarily be marked questionable. These minerals should be and almost certainly are present in the deposits but additional material is required for final validation. It is hoped that the efflorescences that are constantly building on the walls of the Sterling Mine will be studied in depth in the near future.

Magnesioriebeckite was verified in 1969 by Klein and Ito. This was the blue gray material from Sterling Hill originally called crocidolite. Now some specimens of this material have been found to be a blue talc, raising questions as to this species. Additional work on this subject in the future.

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Additional Franklin/Ogdensburg Mineral Notes

On May 20th, 1972, Mr. David Cook made his first talk at an F.O.M.S. meeting. As expected, he gave us considerable information derived from his research on Franklin/Ogdensburg specimens in the Harvard collection. Some of these particulars have already been given in this issue. Other pertinent items given in his talk, plus additional information given to your editor by Mr. Cook, in conversation, follow:

Verified Allactite specimens are very scarce. There is only one hand specimen in the Harvard collection. Some of the problem is shown by two specimens in Dr. Cook's micromount collection. The allactite crystals are transparent dark brown tapering to a point, gathered in several small clusters. A verified Hodgkinsonite (very unusual) has very similar dark brown crystals except that they do not taper to a point. Except under high magnification, the crystals can easily be confused. Unless validated specifically, some specimens marked allactite may well be questionable.

An additional examination of old time azurite specimens from Franklin showed the frequent presence of adamite as well as malachite. On aurichalcite specimens from Franklin, adamite (probably cupro-adamite,) has also been found.

The fluorescent adamite coming up from Sterling Hill (see The Picking Table February 1972) still has not been validated. Several pieces of that material that have been x-rayed have proved to be mixtures of zincite and willemite. Additional material will be submitted for validation. Some pieces of the zincite/willemite mixture are being offered as "fluorescent zincite". Let the buyer beware.

Brookite crystals in the vuggy grey dolomite have been verified.

An examination of Franklin chalcocite specimens in the Harvard collection have determined that a full 50% are djurleite.

A pure chondrodite (in material from the Buckwheat Dump) has been verified. Hitherto all Franklin chondrodite had been found admixed with norbergite.

In the Cook micromount collection, specimen FM 13, are descloizite crystals conforming exactly to the Palache description, minute pale yellow rough crystals implanted on decayed jeffersonite. In the Harvard collection, a hand specimen contains descloizite as ruby red needles, which can easily be mistaken for hancockite crystals. Palache says that this occurrence at Franklin was in a vein that also contained particularly fine crystals of tephroite, hodgkinsonite and green willemite.

In the February 1972 issue of The Picking Table, flinkite was reported as a new mineral for Franklin. Additional material has been found and this is of particular interest to the collector. The source is the Buckwheat Dump. The matrix is franklinite and a yellow green garnet. In the vugs of this material look for flinkite, cahnite, and unidentified arsenates. The next field trip to the Buckwheat Dump should be well attended.

Some of the brown material with azurite and the other copper alteration products from that zone at Sterling Hill has been identified as friedelite.

An unusual gahnite has also been identified. Palache says "Gahnite is found only in crystals". A brown gahnite (old time "automolite") has been found massive only making it a marked exception to the other gahnites from the area.

An additional specimen of montmorillonite, a white clay on hemimorphite, from Sterling Hill has been verified by Harvard. It is the first true clay for the area. The specimen was supplied by Jack Baum, who originally reported this mineral last year (see The Picking Table, February 1971).

David Cook reports that the only two nickel minerals he has been able to verify in Franklin specimens contained in the Harvard collection are chloanthite and niccolite. However, it is my understanding that the bulk of this material went to Columbia University. Dr. Ralph Holmes, working with these specimens, identified rammelsbergite and pararammelsbergite. There is no reason to doubt the validity of these identifications.

Mr. Cook believes that there is more sarkinite and yeatmanite at Franklin than appears in collections. Look for pink minerals in calcite and willemite veins in ore. If the pink does not fluoresce, test for arsenic. If it does fluoresce, it is probably pink or flesh colored willemite.

Some additional notes concerning sonolite. The pinkish material found with platy zincite has always proved to be sonolite. Very often, green willemite veins in ore are lined with a brownish mineral; in most cases this has proved to be sonolite. Cook micromount specimens FM-34 shows sonolite crystals as light tan rectangular elongated, strongly striated across the prism. The striations are a good clue. However, alleghanyite crystals are also striated across the prism so care must be taken to distinguish between the two.

To further complicate these very similar minerals along comes Zincian Fosterite, which has been verified by Mr. Cook. In appearance, it cannot be distinguished from Zincian sonolite and alleghanyite.

The few collectors who have specimens of realgar (or orpiment) from Sterling Hill are urged to reexamine their specimens. Stibnite has been verified in that association.

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George Pigeon has also provided information on some other interesting minerals from the area.

An old Casperson specimen, now in the Gerstmann collection, was submitted for x-ray analysis. The mineral in question was a deep purple massive in garnet, willemite, calcite and hendricksite. It proved to be celsian, a surprise to all, since all the celsian hitherto identified from Franklin had been a typical light blue.

Native copper has finally been found at Sterling Hill. George Pigeon broke up a specimen of vuggy calcite looking for micromounts. He found the minute blob of copper in a tiny vug. This is only important because it is a first for Sterling Hill although copper is not rare at Franklin.

George has also found another manganbrucite from Franklin. It occurs as dark brownish yellow acicular fibers associated with hodgkinsonite and a ruby red zincite. This is only the second manganbrucite reported from Franklin. A verified manganbrucite (from the Baum collection) from Sterling Hill is on display at the Franklin Mineral Museum.

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Reference has already been made to David Cook's micromount collection. Some additional mounts deserve description because they represent unusual occurrences.

Mount FM-69 is a cluster of clear calcite crystals with malachite inclusions clearly visible.

Mount FM-2 is a group of yellow heulandite crystals on gneiss from Franklin (not the ore body).

FM-11 shows single prehnite crystals in a cavity in Parker Shaft material.

Margarite as very pale green micaceous crystals (typical of the material described in The Picking Table of February 1971).

An authenticated manganite in a clsuter of small (1/8") radiating black crystals. Manganite is rarely seen in Franklin collections.

Another fine specimen displays 1/4" hexagonal crystals of niccolite, the best that I have seen.

Of special interest (and envy,) to every collector is the fact that all of Mr. Cook's specimens have been authenticated by x-ray analysis.

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Two additional notes - out of place, but interesting. In the Harvard collection are three specimens from the Gooseberry mine. They consist of axinite, epidote, actinolite and pyrite, etched from limestone. The axinite is the variety ferroaxinite which is rarely seen in Franklin collections.

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Early this year Ewald Gerstmann acquired a number of new specimens which came from the 960 stope on the 340 ft. level, near the copper alteration zone. The best of these was a piece about 5" x 6" x 3-1/2". The matrix was non-fluorescent calcite, with some white willemite, with buckshot of franklinite, micro black octahedral crystals, blebs of azurite, and cut by a number of small veinlets and one vein, up to 1/2" wide of a transparent dark red. On top was a crust of copper alteration minerals plus micro crystals of azurite, the unknown red crystals, a variety of black micro crystals and some green crystals. Over all of these, a crusty mixture of willemite and powdery blue chrysocolla. The specimen aroused considerable interest and portions were distributed for analysis and verification.

The results were interesting. The fine transparent dark red and red crystals turned out to be cuprite. Chrysocolla, which had been on the doubtful list for Franklin/Ogdensburg, was definitely verified (Dave Cook also has verified chrysocolla in several other specimens.) The black crystals were unusual franklinites. The green crystals were adamite and a small amount of native silver was also found. Another fine specimen for the Gerstmann collection.

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Langban

I have been very remiss in failing to call to our member's attention an excellent article written by Dr. Paul B. Moore, which appeared in The Mineralogical Record, volume one, number four, Winter 1970, pages 154-172, entitled "Mineralogy and Chemistry of Langban-type Deposits in Berslagen, Sweden".

Franklin and Langban have often been called similar ore bodies because of the large number of unusual minerals that have been found at both locations. Dr. Moore effectively disposes of such ideas; we hope for all time. Pertinent quote follows:

"Much has been said about the relationship, - more pointedly, kinship - between the Langban and Franklin, New Jersey deposits. There seems to be little ground in support of a common heritage since the differences are the greatest where we would expect them to be the least. Similarity in the mineralogy at the final stage of metamorphism between deposits does not presuppose a common origin of the proto-ore; it merely means that similar reaction temperatures and compositions were encountered during metamorphism. However, even here the differences between the two deposits are too great to be ignored. At Langban-type deposists the iron and manganese ores are differentiated, at Franklin they occur together (along with zinc) in the spinel franklinite. The Franklin deposits have so far not revealed any equivalent of the leptites. Even the lead silicates at Franklin have a texture and paragenesis distinct from the lead silicates at Langban."

The Moore article is a must for anyone interested in the Langban deposits and their unusual minerals.

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Willemite

"The Crystal Structure of $Zn_2SiO_4$ - II, a High Pressure Phase of Willemite" - by F. Marumo and Y. Syono - Acta. Cryst., 1971, Volume B27, pages 1868-70; Min.Abst., June 1972, volume 23, No. 2, page 82. Abstract follows:

Five polymorphs of $Zn_2SiO_4$ are known, designated I to V in order of increasing pressure. Phase I is identical with the mineral willemite. The structure of phase II (tetragonal, I42d, a 7.0069, c 6.4637 Å at 20°C, Z = 4, D = 4.66 $g/cm^3$ is of a new type for silicates. The oxygen atoms lie in an approx body-centered cubic arrangement. The Si and Zn have nearly regular tetrahedral coordination, and each oxygen is shared by one Si and two Zn. The tetrahedral coordination of the cations, which occurs in willemite, is thus preserved in phase II which is stable up to 70 kbars pressure. Only above 130 kbars is there any significant increase in density to form $Zn_2SiO_4$ -V which is known to have a modified spinel structure with octahedrally coordinated Zn atoms."

Manganaxinite

A new occurrence of manganaxinite has been identified in a pegmatite vein cutting metamorphosed Biwabik Iron-Formation on the eastern Mesabi Range, Minn. In the single specimen collected, the axinite occurs as irregular dark grayish brown areas, associated with quartz, K-feldspar, and Fe-rich chlorite. It does not have crystal faces.

This information from a paper by Bevan M. French and Joseph J. Fahey "Manganaxinite From The Mesabi Range, Minnesota", appearing in the American Mineralogist, volume 57, Nos. 5-6, May-June 1972, pages 989-992.

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# THE FLUORESCENT MINERALS OF THE FRANKLIN/OGDENSBURG AREA

Frank Z. Edwards

At the request of several of our members, I am listing below the minerals from the Franklin/Ogdensburg area that frequently respond to ultra violet lights. If any of our members have noticed different responses, I would greatly appreciate notification to that effect, so that information may be placed on record.

ADAMITE - This mineral from Sterling Hill was described in THE PICKING TABLE of February 1972. On the material believed to be adamite (but still is in question), the response is a dull cream -SW and a stronger yellow cream -LW with a very fleeting cream phosphorescence. More information on this mineral later.

ANORTHITE - Two responses are reported for this mineral - anorthite from the pegmatites cutting the ore body are reported to fluoresce pale blue SW - no reaction LW. On colorless grains from the Franklin limestone, the response is given as white or cream SW only. Very few specimens of anorthite from the area have been validated. The responses given above can also apply to microcline and tremolite. Specimens purporting to be anorthite should be carefully checked.

APATITE - Another mineral about which there are a number of questions. Everyone pretty well agrees on the response of the variety SVABITE. This is generally a pinkish orange - SW only, no response LW. However, others claim that the bluish green crystals found in the Franklin limestone respond a very pale green SW only and that the variety manganapatite (which has not been validated for Franklin/Ogdensburg) fluoresces an old rose or orange SW. While these responses appear in the literature, fluorescent tests on specimens in local collections produce no response. The svabite response should be marked authentic, any others questionable.

ARAGONITE - This mineral produces a good response under 1 ng wave either a brilliant blue white (as in the fine crystals from Sterling Hill) or a yellow cream, often found in crusts, etc. The short wave response is always much weaker. A fleeting phosphoresence is the same color as the long wave response.

AXINITE - The variety manganaxinite gives a good bright pink to red response SW; under long wave the response is much weaker. Only occasionally is the mineral phosphorescent, then the same color as the SW response.

BARITE - Most specimens show the barite as grains or masses in calcite. The response is a blue white to cream - SW only. Crystals with pectolite respond a deep blue - again SW only.

BARYLITE - The response of barylite to SW only is a pale to vivid blue.

CALCITE - One of Franklin's spectaculars. The manganiferous calcite from the ore bodies fluoresces all shades from pink to red to violet SW, paler under LW with a brief phosphorescence of red. However, some calcites both from the ore body and the Franklin limestone fluoresce SW a bright blue and calcite from the magnetite ores is reported to fluoresce a delicate bluish green (SW). In all cases the LW response is weaker; phosphorescence is usually short and the same color as the SW response. In all cases, the collector should be able to recognize calcite as the proper mineral.

CERUSSITE - This scarce species, an alteration product from Sterling Hill, fluoresces yellow SW only.

CHONDRODITE/NORBERGITE - In this area these two minerals have not been found pure, they seem always to be a mixture of the two, so the same response applies to both species. Chondrodite and norbergite fluoresce from a dull to bright yellow under SW only.

CLINOHEDTRITE - One of the Franklin spectaculars. The response varies from a chalky to vivid orange, SW. The response under LW is much weaker or not at all. Occasionally there is a fleeting phosphorescence orange after SW exposure.

CORUNDUM - From Sterling Hill only. A good rich red LW, very much weaker SW with no phosphorescence.

DIOPSIDE - A good response usually for this species. Under SW, diopside gives a good blue white response SW. Nothing under LW; no phosphorescence.

ESPERITE - Another major Franklin spectacular. A bright lemon yellow under SW, much weaker under LW. No phosphorescence.

FLUOREDENITE - Identified recently; see THE PICKING TABLE for August 1970. Found on the Gooseberry Dump by Bob Coffee. When pure, a bright blue white - SW only. When admixed with norbergite (a much more common occurrence) a brilliant yellow - SW.

FLUORITE - Only the chlorophane variety and the sherry colored material from Franklin are fluorescent. Both of these give a strong blue to blue green response LW with a weaker response SW. In all cases there is a brief phosphorescence of a blue green.

HARDYSTONITE - Again, all hardystonite is not fluorescent. When so, the response is under SW only and is from a blue to violet.

HODGKINSONITE - I have seen enough hodgkinsonite specimens which fluoresce a dull red LW to consider this a valid fluorescent for the area. For additional information see THE PICKING TABLE of August 1971.

HYDROXYAPATITE - Another new find reported by Bob Coffee - see THE PICKING TABLE of February 1971. A strong yellow orange under SW and a dull orange LW.

HYDROZINCITE - Usually found as crusts and alteration product. Response SW only varies from a powdery to lively blue - blue white.

MARGAROSANITE - This Parker Shaft mineral is quite distinctive. The short wave response is always a strong or vivid blue/blue white.

MICROCLINE - A so-called "pegmatite"constituent. The short wave response is a white or cream. No LW response.

NORBERGITE/CHONDRODITE - See explanation under chondrodite.

PECTOLITE - This unusual form of pectolite from the Parker Shaft, Franklin, fluoresces a very distinctive orange SW. Under LW the response is much weaker or not at all. Occasionally there is a fleeting orange phosphorescence.

PHLOGOPITE - Some specimens of this Mica fluoresce a pale yellow under SW only.

POWELLITE - Found only as alteration rims around molybdenite at Franklin. Recognized by the yellow white fluorescence, SW only.

SCAPOLITE - Only occasionally fluorescent. A scapolite in pegmatite material fluoresces a rich red SW only. A powdery scapolite found in pockets of calcite/dolomite fluoresces a bright blue SW and dull cream LW. See the PICKING TABLE for August 1971. While note reported elsewhere, I have in my collection a group of scapolite crystals which fluoresce a good yellow SW.

SCHEELITE - Another species with a double response. Most scheelite reported from the area fluoresces a yellow SW only. This is because the Mb content exceeds the W (tungsten) content. In a few cases, pin pricks of bright blue SW have been scheelite. In such instances the W content exceeds the Mb content.

SMITHSONITE - Another species which is much scarcer than collectors believe; a very few specimens have been validated as smithsonite. Generally, smithsonite will give a cream to blue white response LW with a weaker response SW.

SPHALERITE - The iron free variety, cleiophane, gives an excellent response LW - varying from a pink to red to strong orange. The SW response is much weaker. Occasionally phosphorescence is a red orange. Masses of this mineral from Sterling Hill are quite spectacular. Other types of sphalerite occasionally show dots of blue and salmon red, both LW and SW. It is now believed that this is a result of excess Zn in the lattice structure.

SVABITE - See apatite.

THOMSONITE - variety CALCIOTHOMSONITE - This is a current puzzlement. The mineral called calciothomsonite from the Parker Shaft, Franklin, often fluoresces a blue to blue white, LW only. Recently, Dave Cook has found that calciothomsonite is not a valid variety and says rhat the material is actually xonotlite. This would, therefore, seem to indicate that xonotlite, at least in this occurrence, is a valid fluorescent. However, prefer to defer this question to clarification in the future.

TOURMALINE - Some of the green and brown tourmaline found in the Franklin limestone fluoresces a pale yellow, SW only.

TREMOLITE - An unspectacular fluorescent for another species found in the Franklin limestone. The response is dull white to blue white, SW only.

XONOTLITE - See thomsonite.

WILLEMITE - The most spectacular of all Franklin fluorescents. A vivid response SW of all shades of green, slightly weaker under LW. Best responses for the light shades of this species with the pure white best under the UV lights and also producing a very long phosphorescence.

WOLLASTONITE - Only the wollastonite found in the calcite at Franklin is fluorescent - a bright orange under SW, with a much weaker response LW. Phosphorescence is a brief orange.

ZIRCON - Only the material from the Franklin limestone has been reported fluorescent and not in all cases. When responsive, it is under SW and gives a pale yellow reply.

The literature on Franklin fluorescents reports occasional responses for other species. When checked, these have proved to be mixtures of fluorescent species with the non fluorescent mineral. Will be glad to hear, however, of any unusual responses you may have encountered when checking your specimens with the UV lights.

Additional Mineral Data

Berthierite - (Hey 5.8.3 Dana 38.10) $4/\overline{Fe}\ Sb_2S_4/$

Berthierite is another new species for the authenticated list. It has just been verified at Harvard. The material is found in an old Palache specimen which came from the arsenate area in Sterling Hill. I have not seen the specimen and so am unable to provide a description. However, berthierite is usually found in small masses, of a dark steel grey color, very often tarnished iridescent or a dark brown. More on this later.

Uranophane - (Hey 14.16.6) $Ca(UO_2)_2\ Si_2O_7.6H_2O$

Another addition to the authenticated list. Uranophane has been found in the alteration zone surrounding the uraninite crystal found in the Sterling Hill ore material, several years ago. Again, verification was made at Harvard.

Carminite

A third addition to the list of verified species from Franklin/Ogdensburg. Carminite has been verified in the Buckwheat Dump material described earlier in this issue, which contains the flinkite and cahnite. Carminite is usually an earthlike red coating. Again, I have not seen the verified specimen but believe this occurrence resembles normal carminite.

* * * * * * * * *

When at Harvard recently, I did examine a specimen of the above material and was greatly impressed by the micro cahnites. These were all sharp single crystals, perfectly clear, about a dozen crystals on a hand specimen 3" x 3". They did not at all resemble the Parker Shaft cahnites, which are usually found twinned, a cloudy white, and mostly with exsolved edges. Dave Cook has several micromounts of these cahnites and also has taken some slides of these mounts. Mr. Cook has consented to speak to the F.O.M.S. next Spring. At that time he will have a considerable number of slides of his outstanding and unusual Franklin/Ogdensburg micromounts, which he will show and discuss with us.

* * * * * * * * *

Mr. Cook will resume his graduate work at Harvard in September. For his Ph.D. thesis, he now plans to describe the Copper and Copper Alteration Minerals of New Jersey. He has a good number of specimens from Griggstown but needs specimens for examination and verification from other New Jersey locations. Collectors who have such material and wish to assist Mr. Cook in this project may reach him c/o Mineralogical Department, Harvard University, Cambridge, Mass. Mr. Cook has done a great deal for our members; it would be nice if we could now help him.

New Jersey collectors will be interested to know that Dave has already found two new minerals for the State in his Griggstown material - Stolzite and Leadhillite.

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