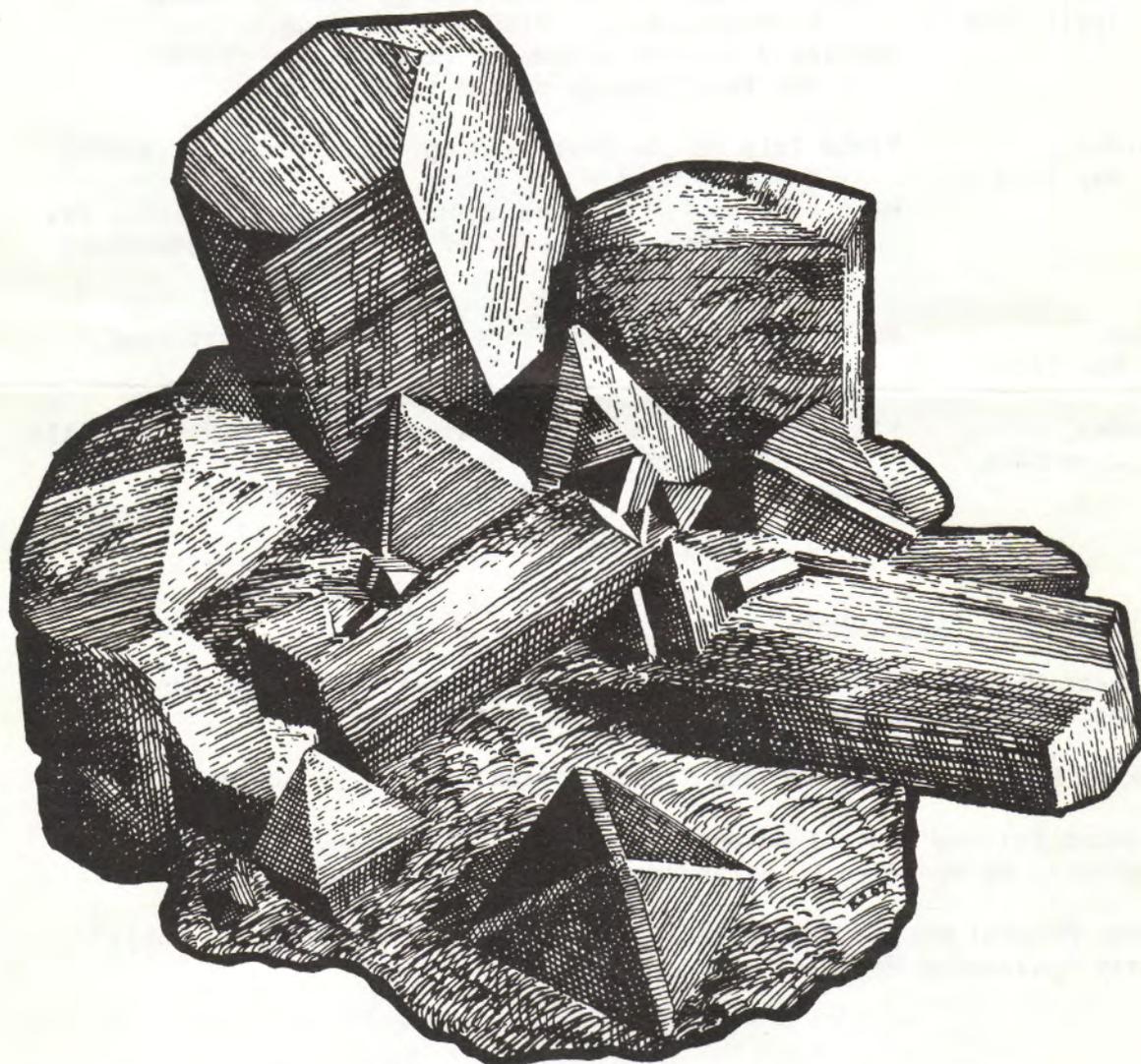


# THE PICKING TABLE

JOURNAL OF THE FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY



VOLUME 16

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NUMBER 1

CLUB PROGRAM - SPRING 1975

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

- Saturday, March 15th      Field Trip to the Franklin Mineral Museum and the Gerstmann Private Museum - 9:00 A.M. to Noon. Meeting 2:30 P.M. - Speaker Mr. Richard Hauck re: "Memorabilia and the Native Elements of the Franklin-Ogdensburg Mining District".
- Saturday, April 19th      Field Trip to the Buckwheat Dump, Evans Street, Franklin, N.J. - 9:00 A.M. to Noon. Meeting 2:30 P.M. - Speaker Prof. Walter Sprink re: the "Geology of the Franklin Area".
- Saturday, May 17th      Field Trip to the Trotter Dump, Main Street, Franklin N.J. - 9:00 A.M. to Noon. Meeting 2:30 P.M. - Speaker Mr. Frederick Kraissl, Jr. re: "Simple Silicates of the Franklin-Ogdensburg Mining District".
- Sunday, May 18th      Field Trip to the Limecrest Quarry, Limecrest Road, Sparta, N.J. - 9:00 A.M. to 3:00 P.M.
- Saturday, June 14th      Field Trip to the Bodnar Quarry, Quarry Road, Rudeville, N.J. - 9:00 A.M. to Noon. Meeting 2:30 P.M. - Speaker 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. - Admission fee.
- Gerstmann Private Mineral Museum - Walsh Road, Franklin, N.J. - Open weekends; on weekdays by arrangement. No charge, courtesy of owners.
- Trotter Mineral Dump - Main Street, Franklin, N.J. (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 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, Editor, and David A. Cook as Assistant Editor; the cover was designed by Mr. Kenneth Sproson.

F.O.M.S. OFFICERS FOR THE YEAR 1975

President	Bernard Kozykowski, De Kay Lane, Livingston Manor, N.Y. 12758
1st Vice Pres.	Robert Thomas, 802 Lindsley Drive, Morristown, N.J. 07960
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Secretary	Jennie Areson, 21 Irwin Avenue, Middletown, N.Y. 10940
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Lee Areson '76	Ewald Gerstmann '75
Bruce Barr '76	Alice L. Kraissl '76
John L. Baum '76	Frederick Kraissl, Jr. '75
Frank Z. Edwards '76	John E. Sebastian '75
Stephen Sanford '76 (alternate)	

COMMITTEE CHAIRMEN

Auditing	Robert Thomas
Field Trip	John E. Sebastian
Historical	John L. Baum
Identification	John L. Baum
Museum	John L. Baum
Nominating	John L. Baum
Program	Frederick Kraissl, Jr.
Publication	Frank Z. Edwards, David A. Cook

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F.O.M.S. Notes

After serving, most ably, as President of the F.O.M.S. for the year 1974, Jack Baum, for personal reasons, declined a second year of office. For 1975, therefore, we have a new administration headed by Bernard Kozykowski as President. Bernie has previously filled the offices of Treasurer and Vice President. He has demonstrated leadership and ability, and should make a most capable Chief Executive. The two Vice Presidents, Bob Thomas and Bill Welsh, have also moved up the ladder because of ability and willingness to serve. Jennie Areson as Secretary, and Rudolph Appeld as Treasurer, are new to these offices. Their records as active and highly interested members prove them to be worthy additions. Overall, these members make up an Executive Board that will faithfully serve the best interests of the Society.

It is particularly gratifying to see Jennie Areson as Secretary. The women in our Society are most important and necessary members. When asked, they will serve on committees and perform other duties. But, for some reason, they are reluctant to assume office and responsibility. We would like to see more of the ladies on the Executive Board to present the feminine point of view. Please bear this in mind when submitting nominations for our next elections.

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The only Mrs. President that we have had, Alice Kraissl, continues to gather honors. In the 1974 Eastern Federation Show held at Palm Beach, Fla., her display of Advanced Thumbnails, All From One Locality (Franklin, N.J.) was awarded First Place. Our congratulations to Alice.

Congratulations and best wishes are also extended to Miss Jill Dill. In the February 1970 issue of The Picking Table, we published her essay description of a Buckwheat Dump specimen. This was written when Jill was still in high school. Last June, Jill graduated from Bryn Mawr University, magna cum laude, majoring in Geology. She is now in England for graduate study on a Rhodes Scholarship, a signal honor.

We are extremely proud that a number of young people, who, through their association in the F.O.M.S., have learned to enjoy minerals enough to decide on Geology or Mineralogy for their education and career. This sort of foster parenthood creates an inner glow within all of us and supplies an added incentive to work for the Society.

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Attendance at our 1974 meetings increased. We believe that this was due to the high caliber of our speakers and to an interest in the subject matter presented. For the Spring of 1975, Fred Kraissl has again prepared an excellent program featuring selected speakers on topics dealing primarily with the paragenesis of Franklin minerals. Attendance at these lectures will enable you to better appreciate and understand your Franklin mineral specimens.

John Sebastian has also completed his field trip schedule. It includes visits to our museums and main collecting areas. The date for the annual Limecrest field trip has also been confirmed. Still possible is a trip to a fossil locality. Gasoline uncertainty and parking problems must be resolved. More on this later.

Working members are still needed for the Safety Committee. Volunteers for this essential duty will please contact John Sebastian.

The scheduled dates for our field trips and meetings are shown on the Calendar Page. Please note them on your own list of important dates.

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You will find that this issue of The Picking Table presents a different appearance. All previous issues were typed and mimeographed by Louise Borgstrom, a charter member of the F.O.M.S. Last Fall, Louise ran into a number of health problems and, under doctor's orders, can no longer do this type of work. Because of her conscientious efforts and the high quality of her work, Louise was in great demand and prepared the bulletins and literature for just about every Mineral Club in Northern New Jersey. We will all miss her fine work on our behalf. We extend to Louise our sincere wishes for a speedy and total recovery.

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Please note that payment of your 1975 membership dues is now required; use the form on the last page for easy transmission.

At the same time please check the literature available from our Treasurer. Particularly note that now available by mail is the new book by Ervan F. Kushner - "A Guide to Mineral Collecting at Franklin and Sterling Hill, New Jersey". This Guide includes chapters on the History of the Mining Industry, Rock Formations, Theories Relating to the Origin of the Ore Bodies, Minerals of Franklin and Sterling Hill, Crystal Forms, and Fluorescence. There are more than 70 photographic illustrations plus a large folding map. The Lapidary Journal had this to say about the Guide - "Despite the voluminous technical literature that has been written on the minerals of Franklin and Sterling Hill, New Jersey, it is surprising to find that very little has been published for general distribution to the average collector of these facinating minerals. Ervan Kushner's new book more than fills this lamentable gap. It is a book for the collector, written by a collector. ----- Judge Kushners's new book is a timely up date of information for the general and specialized collector; and, best of all, it is at a price that doesn't strain the pocket book."

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The Franklin Mineral Museum and the Buckwheat Dump will reopen on March 15th for the 1975 season. Admission fees remain the same as last year.

On my last visit to the Museum, I found some noteworthy additions to the Kraissl and the Hauck collections. Many fine and one of a kind specimens are always on display throughout the Museum. I find that an annual visit here is a must. It not only feasts the eye and stirs the senses, but provides a most useful refresher course in Franklin mineralogy. And, good mineral specimens are also for sale at a wide range of prices.

Ewald Gerstmann likewise is selling some surplus material from his fine collection at reasonable prices. When in Franklin visit his Private Mineral Museum also. You will thoroughly enjoy seeing this superb collection.

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There is good news for those who enjoyed the slides of fluorescent minerals, used by Bernie Kozykowski in his talk last spring. We have been advised that the photographer, Henry Van Lenten, has prepared a series of slides of this type and arrangements have been made with the Franklin Mineral Museum and Gerstmann Private Museum to have them for sale to the public.

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#### Mineral News

In response to questions after his talk of September 1974, Mr. Robert W. Metsger, Geologist of the New Jersey Zinc Company, estimated that there is still sufficient ore at the Sterling Hill mine to last 17 or 18 years at maximum rates of production. He also confirmed that the North Ore Body would be exhausted by year end.

#### Fluorescent Minerals

Just about all the news of fluorescent minerals for this issue comes from Bernie Kozykowski. In a recent letter, this is what he had to say.

"I concur with your feelings toward admixtures, i.e., calcozincite, roeblingite, etc. I also feel, however, that we may very well have a new candidate for the fluorescent list - fluorescent Talc. I shall state my case, you be the judge. Specimen material tested came from both Franklin and Sterling Hill. The fluorescent response in both cases is the same; weak cream S.W. and a much brighter cream with a blue-green cast L.W., with no perceptible phosphorescence. The specimen from Franklin is a hydrothermal product from what have been called the "carbonate veins." It consists of a non-fluorescent calcite matrix base with scattered franklinite. This in turn is covered by a one inch thick layer of beautifully fluorescent and phosphorescent willemite rosettes, which in turn are covered by a half inch layer of serpentine, red-brown in color. On top of this is the layer of cream colored talc. The second specimen, from Sterling Hill, is again a hydrothermal product which may have come from several areas in the mine. It consists of a partially fluorescent calcite matrix base which is very lean in further mineralization. This in turn is covered by a one inch layer of light green talc. Incidentally, this specimen came from the Edwards collection. Under these circumstances, my feeling is that the talc certainly deserves consideration. If it is an admixture, it is no more so than the manganese activators in calcite or willemite."

"The second mineral for discussion is gypsum or selenite. We concur on the reported weak ghost like blue-green fluorescence, which is strongest under L.W. with a brief phosphorescence. There may also be an occasional weak cream response as the material grades from clear selenite toward the opaque gypsum. Since you've gone over this briefly before, I only wish to mention it for the record."

"Recently, John Kolic, miner, member, and friend, presented me with a very fine specimen of cleiophane sphalerite. The specimen which measures about 2 x 3 x ½" is primarily good grade granular brown and black ore. The specimen is cut by several veinlets of a fibrous white and brown mineralization. Within this fibrous material are fingernail sized grains of silver blue cleiophane sphalerite. Though massive, the cleiophane is the finest I've ever seen. The fluorescent response, as might be expected, is an incredibly fine blue white, being brightest under L.W. ultraviolet light. Cleiophane is not all that scarce. However, specimens of this calibre are unique and worthy of mention. Unfortunately, as seems to be the rule of late, very few specimens were encountered."

"Last Spring John Sebastian and Al Lord were able to steal away on the fields trip at the Bodnar Quarry and do a little rockhounding. Neither one of them is Irish, but they should be; for as usual they came up with another good find. The mineral they found, scapolite, isn't all that rare. However, the unusual thing about it is its form and different response to ultraviolet light. The material occurs as small elongated ¼" x ½" clear white crystals in a massive snow white calcite matrix, in association with chondrodite/ norbergite, graphite, and tiny spinel crystals. It responds to S.W. ultraviolet light with a fairly strong cream white fluorescence. There is no L.W. response, nor is it phosphorescent. My initial reaction was diopside as I am sure yours would be. However, there appears to be a strong possibility that a fair amount of the material may be around, for it is found in typical Franklin marble."

"While adding to my collection recently, I decided to reorganize it according to geological paragenesis. At first I was doubtful as to what the results would be. These fears have been put aside. After completing the task, I have strong reason to believe this is probably the most appropriate way to arrange a collection of Franklin minerals. The thought certainly is not a new one. However, I am sure that the practice might well become a new trend. One of the greatest benefits of such an arrangement is that you can better relate to the mineral assemblages and the process, answer many of the "why" type questions whose answers are more directly related to geology than systematic mineralogy." (end quote)

From his letter, it is quite evident that Bernie enjoys working with his minerals. Before including talc and gypsum as fluorescents from Franklin and Sterling Hill, we would like to have discussion or confirmation from other members. If Bernie's observations are correct, and these minerals do fluoresce even occasionally, this information should be on record. Please check your specimens of these two species under U.V. light and let Bernie or me know of your findings.

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### Scapolite

In his letter, Bernie advises that fluorescent scapolite from the Bodnar Quarry was identified by Jack Baum. Jack was kind enough to send us his report on this occurrence, which we are pleased to quote herewith:

"During a field trip to the Bodnar Quarry, Rudeville, N.J., Al Lord and John Sebastian collected a quantity of specimens of disseminated norbergite which contained as well, an even more abundant disseminated scapolite. The scapolite is fluorescent short wave in blue-white like diopside, and occurs in rough crystals and rounded grains up to a fifth of an inch in diameter. Under magnification the grains appear glassy and fractured with, in some instances, a reflection which suggests a poor cleavage. Identification was made by optical means. Lacking this, the blue-white fluorescing grains would probably be called diopside, in error. There is no fluorescence long wave. Lamps used were Ultra-Violet Products Mineralight SL-2537 and SI-3660. The norbergite is a tawny color and its poor fluorescence is eclipsed by that of the scapolite. Graphite accompanies these minerals in a calcite matrix."

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Your Editor has also observed another interesting fluorescent response on one of his specimens recently. The matrix of the piece is Franklin calcite with grains or blebs of garnet, willemite, and franklinite. On the upper surface is a crust of small pearly stalactitic mounds of smithsonite. When placed under the short wave light, the smithsonite did not fluoresce the expected cream or blue-white, but did fluoresce a bright violet or purple. A check showed that the violet was a fluorescence and not a reflection. Further examination seemed to indicate the reason for the purple response. The smithsonite crust is from 1/8" to 1/4" thick and translucent. Evidently the short wave light is strong enough to penetrate the smithsonite layer and to activate the red fluorescent response of the underlying calcite matrix. The

result seems to be an unusual beleding of the two responses of the calcite and smithsonite rather than two different and distinct responses that are expected. I have not previously noticed such a blended response. Have any of our members? Please advise me.

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### Mineral Notes

There are no new minerals for the Franklin-Ogdensburg area to report for this issue of The Picking Table. There are several specimens, at different institutions, on which preliminary work indicates the probability of new species. These reports, however, are incomplete and we await complete test results. Harvard particularly misses the services of Dr. Jun Ito, the brilliant chemist, who is now at the University of Chicago. But, we do have information on some previously varified minerals, such as:

### Ganophyllite

In the last issue of The Picking Table we quoted John Mac Donald as follows.- "I have just acquired some showy quartz crystals in ore from Sterling Hill. They fluoresce green S.W. with a weaker green L.W. The quartz crystals are in what appears to be agatized quartz in calcite with franklinite and willemite. The agate is pinkish. Most unusual. It looks like real agate, but the matrix proves that it is from Sterling Hill."

Identification of these agate like bands has now been made as per this letter from John Mac Donald. - "In my letter of March 6th, 1974, I mentioned having some fluorescent quartz crystals in ore with an unknown pink mineral. According to Jack Baum, curator of the Franklin Mineral Museum, the unknown pinkish mineral is Ganophyllite." In his letter to me dated November 22, 1974 he says, "The fluorescent quartz occurs on ganophyllite. The ganophyllite is mixed with quartz and forms agate like bands in the calcite. The admixed quartz threw me off by lowering the index of refraction." Therefore, ganophyllite may now be listed as occuring at Sterling Hill. It is found as pink to tan agate like bands in calcite with fluorescent quartz crystals. Grains of willemite and franklinite are also found in the calcite matrix. Very little of this find was saved."

Additional information was supplied by Jack Baum, as follows: "Among specimens recently submitted to the Franklin Mineral Museum for identification were ganophyllite and shallerite from Sterling Hill as well as an allactite of unusual shape and a brown chlorite in minute rosettes."

"The ganophyllite formed the base for fluorescent quartz crystals which showed a green response in the tips of the crystals. Since quartz passes ultra-violet light, it appears that zonal growth has incorporated elements or even a minute quantity mineral which is responsible for this unusual fluorescent response. The ganophyllite resembles a hard clay the color of massive axinite, a yellow brown, and contains a vein of platy ganophyllite of the same brown shade with a pearly micaceous texture resembling (although a different color) the white pearly prehnite which lines cavities at Franklin. The quartz is crystal clear and up to 1/4" in size, while the ganophyllite vein is a millimeter or so in thickness."

Editors note: Ganophyllite, now appears, as a most deceptive mineral at Franklin-Ogdensburg. This is the fifth completely different habit or appearance of this mineral that has been verified by investigators. In none of its guises is ganophyllite plentiful. It still rates as a scarce to rare species for the area.

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### Datolite

Datolite, in the variety Botryolite, has also been confirmed in a new form. Botryolite is familiar to us as light tan, slightly botryoidal, powderlike coatings covering axinite or axinite/rhodonite specimens from the Parker Shaft area. Recently, Alice Kraissl noticed some micro opaque white balls perched on axinite crystals in a vuggy axinite matrix. These balls did not have the pearly translucent luster of the smithsonite balls which are occasionally found on exposed surfaces of Franklin specimens. When analyzed by David Cook at Harvard, the balls proved to be Botryolite, in a new habit or form for this area.

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### Chlorophoenicite

In the August 1973 issue of The Picking Table, we referred to pink hodgkinsonite that had been verified from Sterling Hill. One piece of this material, in the Ewald Gerstmann Collection, had a number of white needles deposited on the crust of pink hodgkinsonite and recrystallized orange zincite crystals. These needle like crystals have been confirmed as chlorophoenicite by Jack Baum and the Smithsonian Institution.

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### Schallerite/Allactite/Chlorite

In the February 1974 issue of The Picking Table, page 8, we provided a description of a Sterling Hill specimen, from the Gerstmann Collection, on which John S. White of the Smithsonian Institution had identified some unusual allactite crystals. Still unknown, however, remained an unusual brown crust suspected to be mc governite. This material has now been identified. A report on this occurrence is made by Jack Baum as follows:

"The allactite and schallerite occurred with blue-white smithsonite spheres and rare chlorite on calcite. The schallerite formed a light brown coating of closely packed plates of millimeter size and resembled altered mc governite. In canities are smithsonite balls and coatings, and projecting crystals of allactite, darker brown than the flaky schallerite, in sharp flat tabular crystals with stubby pointed or even flat terminations like those of calamine crystals. The major dimension is a few millimeters. The brown chlorite similarly is minute; the rosettes are composed of flakes dipping towards the center and occurs singly or in trains curving across the surface for half an inch. One allactite bearing specimen from this location in the Sterling Mine is several inches on a side, flat, and displays a number of allactite groups resembling sprays and requiring no magnification to see. This area of the mine was mentioned in The Picking Table, Vol. 15, No. 1, page 8, when it was stated that; 'the bronze crust was still unidentified.' This is the schallerite. Identification of the schallerite was made by Dave Cook at Harvard."

Mangan Brucite

Jack Baum also appears to be the only collector or investigator who finds the rare Manganese Brucite from Sterling Hill. He has described another specimen of this species that he located and verified as follows:

"Found another manganese brucite from the North Ore Body. It resembles yellow to colorless mica and comes in the typical alteration of reddish brown hemetitic dolomite and serpentine with white calcite and, in this case, zincite finely divided. It wouldn't be to hard to confuse with mooreite in cases where it is interstitial and no crystal outline is apparent; but this specimen had plates 1/4" as well. I'll bet there has been a lot of it."

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Some interesting finds made by David Cook at Harvard in his investigations into Franklin/Sterling Hill minerals have not previously been reported in The Picking Table. We remedy that situation.

Anglesite/Cerussite - A thin vein of galena and chalcocite cutting through a Buckwheat Dump specimen of garnet/pyroxene contains many vugs with well formed micro crystals of anglesite and cerussite plus a few malachite balls. Although previously verified from Sterling Hill, this is the first reported find of anglesite and cerussite from Franklin.

Arsenopyrite - Also verified was the first find of simple micro arsenopyrite crystals in the vuggy grey dolomite from Franklin.

Barysilite - An unusual grey botryoidal type of barysilite found as 1/8" balls on a fracture surface in massive yellow-brown garnet and red-brown hancockite from the Parker Shaft. This differs from the barysilite previously found at Franklin as white masses with a curved lamellar structure.

Carminite - Previously described as being the Buckwheat Dump material which contained crystals of flinkite and cahnite. Carminite, a rare arsenate, has also been found in this material as radial aggregates of dark red prismatic micro crystals associated with other micro crystals of flinkite, cahnite, franklinite and andradite lining vugs in a yellow-green garnet/franklinite matrix.

Kaolinite - Authenticated from Sterling Hill as a white powdery clay on altered Aegerine-augite (jeffersonite).

Uranophane - Determined to be the major constituent of the reaction rim surrounding the uraninite crystal identified by Charles Keys in Sterling Hill ore. The reaction zone surrounding the 3/4" crystal was brown-yellow in color ranging from 1/8 to 1/4 inch thick. As previously mentioned, the uraninite crystal was cut up for age determination studies.

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## Native Copper

The native copper specimen, acknowledged by one and all as the finest from Franklin, is currently on exhibit at the Franklin Mineral Museum through the courtesy of the owners, Richard and Elna Hauck. Most unusual is the fact that the complete history of this unique specimen is known. Here for the record is that story as told by Mr. John L. Baum, formerly Resident Geologist of the Franklin Mine, New Jersey Zinc Company. -

"During the latter part of 1945 an area of unusual minerals was encountered in the Franklin Mine of the New Jersey Zinc Company in Sussex County, N.J. Immediately above the 800 ft. level, about 15 feet into the ore from the hanging wall (east edge) and close to the North side of the Palmer Shaft pillar (central portion of the ore body), occurred a vein system arranged in an H pattern as viewed in vertical section. The veins connected with potash feldspar above. The veins, a foot or so wide, consisted largely of andradite garnet and hendricksite but there were local concentrations of hancockite near the floor of the 10 foot high working place and of other silicates and native copper closer to the feldspar above. The silicates such as roebingite, hancockite, clinohedrite, xonotlite, rhodonite, datolite and others post date emplacement of the feldspar and represent a reworking of the adjacent vein by solutions which have corroded cavities and formed spongy zones in the garnet/hancockite vein system. The locality is described with emphasis on the ettringite by Hurlbut and Baum in the American Mineralogist, Volume 45, 1960, pages 1137-43."

"The working place was being mined by Nick Trofimuk and others, and this writer visited the spot right after a blast. Sticking out of the wall on a corner, fully exposed, was the rounded shape of a chunk of native copper. I pointed it out to a miner visiting from a neighboring working place, and loosened the specimen so that it fell the short distance to the muck pile. Before I could pick up the piece, the visitor, Andrew Opatic, snatched it up and ran away with it, saying that he always wanted a piece of native copper. The mine management offered to recover the specimen for me, but I turned the offer down (a mine is no place to have enemies) and instead offered another material for trade but the specimen was not for sale or trade. Years later Ewald Gerstmann bought it from the Opatic mantel piece for the highest price paid for a Franklin specimen up to that time. He broke it while transporting it to or from display elsewhere and later sold it to John Hendricks. Ewald, a short time later, tried to repurchase this specimen from John Hendricks but was unsuccessful. Two or three years ago, Dick Hauck finally purchased the Hendricks Collection and obtained the specimen. While I cannot guarantee any of this story from the point where it was sold by Opatic, I do believe the sequence of events is accurate."

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One of the great pleasures of attending the Annual Kiwanis Franklin Mineral Show is the opportunity to inspect the displays of fine minerals owned by some of our lesser known Franklin collectors. Good to find specimens are common and often some one of a kind specimens may be seen. The 1974 Show was no exception. Briefly described are a few of the pieces that particularly captured my attention.

In the Jim Gouger collection - a Sterling Hill specimen of brown willemite ore containing a vug, about 1½" x 2½", loaded with about 100 very sharp tan crystals of mooreite averaging 1/4" tall. By far, the finest specimen of this type, about 3" x 3" x 4", of calcite, willemite, franklinite ore is cut by a ½" thick vein of Mc Governite. This species is usually found in rosettes on surfaces of ore material. A vein of this mineral and in this thickness is an extreme rarity.

The Alice Kraissl display featuring a combination of her prize winning micro specimens with large blown-up photographs of these micromounts.

Fred Kraissl's fine educational exhibit of specimens illustrating the paragenesis of Franklin minerals as classified by Dr. Charles Palache.

The Lee Areson collection - a superb Bementite specimen about 10" x 12" x 4", with the upper surface covered by fine typical tan rosettes of bementite. But, very unusual, the entire piece shot through by small and large veins of a similar bementite.

And a new addition to the Jennie Areson collection; a one of a kind piece. Typical grey dolomite from Franklin with a nice sphalerite crystal down in one corner but the upper half covered with about 30 superb bright pink crystals of Dolomite, averaging 1/4" square. Beautiful and most rare.

Every exhibit contained specimens that merit description. All exhibitors at this Show deserve our thanks for permitting us to see some of their fine material.

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### Research Reports

#### Birnessite/Todorokite

Paper by E.A. Perseil - "Precisions minetalogiques sur la nature des bronstenites" C.R. Acad. Sc., Paris, volume 277 series D, pages 2113-2115; Mineralogical Abstracts, Vol. 25, No. 4, December 1974, page 327. Abstract as follows:

"The brostenites occur as alteration products surrounding cores of rhodochrosite with associated tephroite and accessory friedelite and manganophyllite. They comprise a mixture of birnessite and todorokite, the former sometimes concreted with  $\gamma$  MnO<sub>2</sub>, which have arisen partly from the original Mn carbonates and silicates and partly from braunite."

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#### Franklinite

Paper by B.G. Stevenson - "An occurrence of franklinite from Western Australia." Bull. Austral. Min. Devel. Labs. No. 15, 1973, pages 37-48. Min. Abstarcts, Vol. 25, No. 3, Sept. 1974, page 235. Abstract follows:

"An exsolution intergrowth of franklinite and magnetite is reported from a prospect in Western Australia where lenses up to 20 feet long of the franklinite/magnetite intergrowth with accessory hematite, goethite, and quartz occur in feldspathic manganese rocks surrounded by massive granite. Electron probe analysis, chemical analysis, and x-ray diffraction data are given and the existence of a miscibility gap in the Zn-Fe-Mn spinel system is postulated. The compositions of the Western Australia franklinite differ considerably from those of franklinite from Franklin, N.J. and resemble more closely that of franklinite recently reported from Langban, Sweden."

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#### Rhodonite

Paper by R.B. Gibbons, T.J. Ahrens and G.R. Rossman - "A spectrographic interpretation of the shock-produced color change in Rhodonite". The shock induced reduction of Mn(III) to Mn (II). American Mineralogist, Volume 55, 1974, pages 177-182. Min. Abstracts, Vol. 25, No. 4, December 1974, page 295. Abstract as follows:

" The characteristic colour of the fowlerite variety of rhodonite from Franklin, N.J. is attributed to a minor amount of Mn<sup>+++</sup>, estimated at 0.3%, which gives rise to an absorption band at 540 nm. This band is weakened in shocked rhodonite and disappears at shockloaded pressures of 986 Kbars. It is suggested that Mn<sup>+++</sup> is reduced to Mn<sup>++</sup> by water present in the sample during the shock event."

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#### Roepperite

Paper by B. Mason - "Manganese silicate minerals from Broken Hill, New South Wales." Journal Geol. Soc. Australia, Volume 20, pages 397-404. Min. Abst., Vol. 25, No. 3, Sept. 1974, page 227. Abstract follows:

"Classical and electron microprobe analysis of manganese silicate minerals from Broken Hill are presented and their relationship with tephroite and garnet are discussed. The reported occurrence of zincian tephroite (roepperite) at Broken Hill is discredited."

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Overlooked or unnoticed is the number of former officers of the F.O.M.S. who remain active in our organization. Like all clubs, the F.O.M.S. has only a small cadre of working members despite continuous efforts to expand in number. Fortunately, our working group does not decrease only because of this unusual ability to retain the interest and active participation of our ex officials. Our readers may weary of names that appear repeatedly in the pages of this Journal. Such mentions are not made for the purposes of publicity or glorification. These people are mentioned solely because they have earned the right by contribution.

A most important source of news, information, and articles of interest continues to be Ex-President John L. Baum. Without his assistance this Journal would be incomplete and uninteresting. To him, we all owe a strong vote of thanks. Here are two more articles of historical interest contributed by the oft mentioned Jack Baum.

### The Weights and Measures Opening

A description of the Franklin surface workings is given in a thesis written by Edgar Palmer who graduated in 1903, probably from Princeton University, since the family ties with that collage were strong, and dividends from Franklin helped build Palmer Stadium. Young Palmer wrote that the outcrop of the ore body had the general shape of a V open to the North, with a long West limb beginning on the North just across the Hamburg road, now High Street, from where it ran South 16 degrees, West for about 2970 feet, to a point from which there was a shorter outcrop continuous with the first but running North 53 degrees East for about 480 feet. Here it disappeared below the surface where it was cut by a dike of diabase which ran East-West. He wrote that the vein having the longer outcrop was called the front or West vein while the one with the shorter outcrop was called the back or East vein. At the juncture of these two was a working called the South-West opening.

Mine Hill was divided by a line running East and West from a point about midway between the South-West opening and where the front vein disappears to the North. The portion of the hill to the North of this line is called North Mine Hill while that to the South is known as South Mine Hill. Continuing his geography lesson, young Palmer wrote that in the front or west vein there was the old Hamburg opening to the North, then the Trotter Mine, then the Weights and Measures opening, and to the South, the South-West opening. The vein was from 8 to 30 feet wide at the outcrop but broadened out below.

The Buckwheat Mine was in the back or East vein, and North of the dike, where the East vein was entirely underground without outcrop, the ore was being mined in a large opening with a rock roof, the barren walls coming together in an arch overhead. This opening was called the Taylor Mine. Plunging Northward, the ore entered the territory of the Parker Shaft workings. So much for Edgar Palmer for now.

Palmer had written that little was known about the front or West vein until Congress ordered manufacture of standard weights and measures. The Constitution calls for establishment of weights and measures and coinage of money; George Washington advocated such establishment and Jefferson pushed for an entire decimal system which would have saved all of us a lot of trouble. There were plenty of weights and measures around but there were no uniform standards to compare with. Each State had its own standards, so that in 1830 the Senate directed the Secretary of the Treasury to initiate a comparison of the weights and measures in use at the major custom houses. The resulting study revealed large discrepancies but the average accorded closely with the British standards, and fundamental standards were adopted by the Treasury Department. Weights and measures for the customs service were constructed to conform to these.

Congress was so well pleased with the progress being made that in 1836 it directed that similar standards be provided to each State. Present in Congress from 1833 to 1837 as Representative was Dr. Samuel Fowler, owner of Mine Hill from 1810 to 1836. Dr. Fowler had painted his house with zinc white smelted from his ore, and made every attempt to interest men of science and industry in the use of the deposit. He spent large sums in attempts to produce zinc metal on a large scale but was forced to sell out his ownership due to reasons of health and lack of funds. At his insistence, the zinc and copper in the brass standards were American, and he supplied the zinc, mining the ore from the front vein and concentrating the zincite. The copper came from Pennsylvania.

Thus it came about that in the time of Edgar Palmer, Bachelor of Science, 1903, the so called Weights and Measures Opening could be seen between the Trotter Mine and the South-West opening. All indications of it are now long gone, obliterated when the open cut worked its way from East to West, having started with stripping of the soil in 1897, but the Weights and Measures opening played a part in the commercial history of the United States, and produced some of the first zinc metal to be put to practical use.

As an addendum to this account, I remember a gentlemen of near retirement age coming into the Geology office at Franklin sometime in the early 1940's. The room was once a sitting room in the former living quarters over the Zinc Company's office. He looked around, spoke of the old days, and added that in his time they used to keep liquor in the built-in corner cupboard. He had to be a real mining man! After he left, I asked who he was. It was Edgar Palmer, class of 1903.

John L. Baum; Franklin, N.J. Sept. 24, 1974.

References:

- E. Palmer - The Mining of Zinc Ores in the State of New Jersey, unpublished thesis, 1903
- E.D. Shuster - Historical Notes of the Iron and Zinc Mining Industry in Sussex County, New Jersey, privately published, 1927
- L.V. Judson - Weights and Measures Standards of the United States; Dept. of Commerce, NBS Misc. Publ. 247, October 1963.

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The Trotter Mine

A former Mine Superintendent at Franklin, J.A. Van Mater, was transferred elsewhere at the end of 1899 and saw fit to record his association in the Franklin area before departing. His valuable account has been preserved and tells us something about the Trotter Mine as follows:

"I first became identified with the property on October 12, 1882, during the Trotter vs. Lehigh Zinc and Iron Company litigation, on contract, the Court of Chancery having appointed an officer to supervise the fulfilling of a Contract between the two parties for the delivery of Ore. I was selected to represent the Court Officer at this end of the line, and continued in that position, sampling the ore as it was shipped and generally familiarizing myself with the operation until April 1884, when, upon the death of Mr. Trotter's Superintendent, I succeeded to that position.

At this time the only portion of what was then called the West Vein that was being worked, was Five Hundred Foot (500 ft.) running North along the Vein from what is known as the East and West Line, the same being the dividing line between the Trotter Lease and that portion owned by the New Jersey Zinc and Iron Company.

This portion of the Deposit had scarcely been scratched and comparatively little was known about its formation and extent. The Mine, if it could be called by that name, had been badly opened; was only about forty feet (40 ft.) deep and had been open cut for about two hundred and fifty feet (250 ft.) along the Outcrop. There was no development work ahead, and at this time it was almost impossible to produce the one thousand (1,000) tons per month of twenty six per cent (26%) ore necessary to comply with the terms of the contract.

I remained in this position until January 1887, just prior to the settlement between the contesting parties, when Trotter transferred his lease to the Lehigh Zinc and Iron Company. August 13, 1889 I again returned to take charge of the property for the Lehigh Zinc and Iron Company, and remained with them until January 1897, when I entered the employ of the New Jersey Zinc Company, who acquired all the right, title, and interest to the property at the time of the consolidation of all the Zinc interest in this section.

The Trotter Mine was worked with but little interruption from August 1882 until December 22, 1894, at which time we were producing about two thousand (2,000) tons per month. On account of the Development of the Ore Body discovered upon the Rutherford Tract, from which we were obtaining sufficient ore for our own requirements, it was decided to close down the Trotter Mine, and with the exception of six (6) weeks work from May 14 to June 29, 1895, the property was idle until October 1, 1897, when it was again operated for three (3) months. During this period we mined out nine thousand, four hundred and twelve (9,412) tons of ore at an average cost, delivered on Bank, of \$.4044 per ton including Taxes, Insurance, and all expenses. This Mine was then closed down, the Pumps, Piping, Tools, Machinery, etc., were taken out, and it has not since been worked. This Mine is now five hundred (500) feet deep on the incline (400 feet vertical) and has two large stopes of Ore blocked out between the 400 foot and 500 foot levels, containing many thousands of tons, which can be mined out at a very low cost, if there were any provision for getting out the ore after it was broken."

The above quotation, complete with engineering (or checkbook) English of the late nineteenth century, covers the life of the Trotter Mine as an entity. Its shafts were on the vein, and mineralogically it is but remembered for the nickel minerals it produced from a calcite-fluorite matrix. The Trotter Shaft, as we know it, the cap of which is still to be seen on surface, was sunk or mostly raised, to use the mining term, for digging such an opening upward, under the supervision of C.M. Haight during the twentieth century. Much of its gneiss rock, as was not used for fill below, can be found in the Trotter Dump which in a way reflects the history of the area, containing as it does the waste from at least five occupations. These would be the primitive Trotter Mine, Van Mater's Trotter operation with hopefully traces of nickel yet to be found, the gneiss and pegmatite from C.M. Haight's Trotter Shaft, the hand picked waste from the consolidated mining properties including esperite and other minerals more at home to the North, and covering all else, the tailings from the last days of the mine, when the fill raises had collapsed and there was no longer room for them underground.

John L. Baum - January 7, 1975

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