# THE PICKING TABLE

Buick 8 ambulance at Franklin Hospital, Franklin, NJ, September 1930.
Photograph taken from the archives of the Franklin Mineral Museum.

JOURNAL of the FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY, INC.

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## The FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY, Inc.



## PRESIDENT'S MESSAGE

With the ending of winter another year is opening for the FOMS members. Your officers and trustees are committed to further the study and understanding of Franklin-Sterling mineralogy. We are in the process of arranging seminars and planning new field trips. We are striving to increase attendance at our monthly meetings, and to that end welcome suggestions from the membership as to programs and agenda.

The Spex-Gerstmann collection has been moved to the Franklin Museum, and with this noteworthy addition more support will be needed from the FOMS for the museum as well as the Franklin show in October. I am sure both these endeavors will receive the full support of the membership. It is a pleasure to serve as your President, and I welcome all the support you can give me.

Bill Trost

The
# PICKING TABLE
Journal of the Franklin-Ogdensburg
Mineralogical Society, Incorporated

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## ABOUT THE COVER PHOTOGRAPH

When Robert M. Catlin was brought to Franklin in 1906 from South Africa to modernize the mining operations, he was amazed to observe that injured miners were forced to lie on the railroad station platform waiting for the next train to Paterson. As a result, the Franklin Hospital, first in Sussex County, was opened by the New Jersey Zinc Company in 1908. In 1915, the Zinc Company purchased the first motorized ambulance, a Buick 8. Prior to that time, horse drawn wagons had been used. This Buick served for many years, being housed at the Zinc Company plant. Company chauffeurs were on call day and night, the same men who manned the Company's stable.

# from the Editor's Desk

**Omer S. Dean**
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**The Eighth Annual F.O.M.S. Dinner**

This annual dinner was held on Saturday, Oct. 4, 1986, at Wilpert's Newtonian Inn, Route 206N, Newton, N.J. The master of ceremonies was Richard C. Bostwick, the auctioneer was Richard Hauck, and the guest speaker was Vandall T. King of Rochester, New York.

There were several distinguished guests in attendance. Among these were Dr. Rodney Burroughs, the mobile veterinarian, and his wife, Marian. They're from the L. A. area. Dr. Burroughs is the current president of the Fluorescent Mineral Society after serving several years as its treasurer. This was their first trip to the "Fluorescent Mineral Capital of the World."

Gunter Segenschmid accompanied Dr. Gerhard Henkel to the Franklin Show this year. Gunter, who lives in Bammental, West Germany, is the only fluorescent mineral dealer in Europe. He publishes his own catalog, writes articles, lectures, and serves European universities as a consultant on displaying minerals. He is one of the dealers at the Munich Show. This was his first trip to our "Mecca."

For Dr. Gerhard Henkel, of Baden-Baden, West Germany, it was his third trip here. Dr. Henkel is the dean of European fluorescent mineral collectors. He has compiled lists of every known fluorescent mineral, from every locality, and their fluorescent response. Dr. Henkel, eighty-eight years young, is a retired patent-attorney.

Dick Bostwick, F.O.M.S. president, gave well-deserved accolades to retiring F.O.M.S. secretary, Helen Warinsky, for her ten years of service in that post and her handling of arrangements for the annual dinners. Steve Misiur honored Helen with a framed enlargement of a photomicrograph of a brookite recovered from the Mill Site. John Cianciulli presented Helen with the "world's largest brookite"--one of John's realistic fabrications which always astonish the beholder.

The guest speaker, Van King, delivered a delightfully humorous talk-slide show entitled *Franklin is not like Långban!* "Franklin minerals are pretty", he kidded, "but you only see arrows when viewing Långban material." He pointed out that the Långban area is really a group of 7 localties. The following *(with thanks to Dorothy M. Stripp for use of her audio cassette recording)* are some of the comparisons which were mentioned during the talk: there is little zinc at Långban; "jeffersonite" does not occur at Långban; hedenbergite occurs in much finer crystals at Långban; vesuvianite is Mn-rich at Långban and is red in color; jacobsite occurs in fine crystals at Långban; Mn, Fe, and Zn occur together at Franklin but their ores are not mixed at Långban; Franklin does not have långbanite; manganosite occurs as crystals at Långban but only as cleavages at Franklin; swedenborgite is found at Långban; there is no manganaxinite at Långban; lead occurs at Långban in clusters with crystals measuring up to 2cm each and in masses weighing up to 50kg; quenselite occurs at Långban; pyrochroite occurs as rhombs at Franklin but only as needles at Långban; pyroaurite occurs up to 5cm across at Långban versus micros at Sterling Hill; wermlandite (related to pyroaurite) is found at Långban; pinakiolite (a borate) is found at Långban; trimerite has the same crystal structure as esperite and is found at Långban; roeblingite looks like mica in Långban; margarosanite occurs in terminated crystals at Långban; hancockite, leucophoenicite, cahnite, larsenite, chlorophoenicite, fluorapatite, and johnbaumite do not occur at Långban; tephroite and bementite are better at Franklin; manganberzeliite crystals occur at Långban; brandtites occur up to 3cm in length at Långban; svabite occurs in larger masses at Långban and the crystals are better but smaller than at Franklin; allactites at Långban get up to 2cm in length; manganese-hoernesite is better crystallized at Langban; paulmooreite occurs at Langban; retzian occurs at Långban while

*(Continued on page 10)*

# from the Laboratory

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**Cuspidine**

Cuspidine was reported by Palache (1910, 1935) as a result of his interpretation of an 1899 analysis by C. H. Warren of colorless crystals associated with nasonite. No specimen was known to Palache, nor had any been found subsequently; the species has had doubtful status on the Franklin/Sterling Hill list. We have now found cuspidine, in association with crystals of glaucochroite. Cuspidine is a valid species from Franklin. Details will be provided in the Picking Table.

**Kentrolite**

Kentrolite was reported by Palache (1935) as 0.1 mm crystals "which coat a cavity in calcite together with willemite." There has been no validation of this finding, and no valid specimen has been found in Franklin collections. Because kentrolite is a manganese lead silicate, my lengthy searches for this mineral were among the lead silicates, but it was not found. Kentrolite, $Pb_2Mn^{3+}{}_2Si_2O_9$, has now been found, associated with some Mn-oxides, at Franklin, and details of its paragenesis will be reported in the Picking Table. The asterisk (*) on the list, indicating doubtful status, is now deleted.

**Parabrandtite**

Several years ago, Mr. Fred Parker noted the occurrence of a mineral similar to talmessite, from Sterling Hill (Picking Table, 22 (#2), page 6). Our joint investigation of this mineral has resulted in its characterization as a species new to the science, the Mn-analogue of talmessite. Because of the extremely close relationship to brandtite (both have formula $Ca_2Mn\ (AsO_4)_2 \cdot 2H_2O$), we have named this mineral parabrandtite in recognition of this relation. The new mineral will be published by Fred Parker and myself soon, and details will be provided in the Picking Table. The name talmessite will be deleted from the list.

**Wendwilsonite**

Several years ago, Mr. Ewald Gerstmann called to my attention some tiny pink granular crystals from Sterling Hill. Only a little bit was found and it was insufficient for a characterization based on local material. The Sterling Hill crystals, although small, did permit recognition of this pink mineral as the Mg-analogue of roselite. Accordingly, a study of all known roselite occurrences was undertaken and the new Mg-analogue was found in relative abundance in Morocco. The Moroccan material was used for the description, which includes mention of the very minor Sterling Hill, New Jersey, and Coahuila, Mexico, occurrences as well. Thus we have a species new to the science from Sterling Hill. The name honors Dr. Wendell E. Wilson, editor of the Mineralogical Record. Details will be provided in the Picking Table.

**Petedunnite**

Several years ago, while examining some amphiboles and pyroxenes, I found a pyroxene which was unique in that it was zinc-dominant. I involved Drs. Donald Peacor and Eric Essene in the characterization because of their expertise in pyroxenes, and I was subsequently informed that they wished to name it petedunnite in honor of me. Although reluctant, I accepted, and we have a species new to the science from Franklin. Details will be provided in the Picking Table.

**Stibnite**

No specimens of stibnite are known from Franklin or Sterling Hill. Purported ones have been found, upon examination, to be other species with some visual similarities. Because several sulfosalts, notably baumhauerite and zinkenite, occur at Sterling Hill in habits similar to that of stibnite, reports of this species may have been based on visual observation. Stibnite is deleted from the list of species.

# The List

## THE LIST, 2 WAYS, WITH A SIDE-ORDER OF THINGS YOU SHOULD KNOW ABOUT IT!

by
The Editorial Board

**Introduction**
In August of each year Jack Baum, Curator of the Franklin Mineral Museum, prepares an updated Franklin-Sterling Hill mineral species list for use in the program for the Franklin-Sterling Mineral Exhibit. This "Franklin Show" is held the first weekend of October each year. Many FOMS members live great distances from Franklin and cannot attend this affair. The purpose of this article is to provide the membership with an updated mineral species list and to answer basic questions about the derivation of the list. The date of the list shown here is December 31, 1986. It is the intention of the Editorial Board to print an update of changes to the list (as of the end of the previous year) in each Spring Issue of The Picking Table. Every second year the entire updated alphabetical list will be provided in addition to highlighting the various changes.

Since this is the first of a series of articles to appear on an annual basis, the "List" will be given in two ways, both alphabetically and by chemical classification. Accompanying these two listings will be the definition of the Franklin-Sterling Hill area and brief statements of criteria for additions and changes to the list.

**Definition of the Franklin-Sterling Hill Area**
*The definition of the area which appeared in the Picking Table, Vol. 27, #2, page 27, contained an error in the original text as received. The following is the corrected version.*

"Each year the Society publishes a list of the minerals found in the Franklin-Sterling Hill area. This general "area" is, however, undefined and this has led to some ambiguity as to the inclusion or exclusion of collecting areas, and the scope of the list of minerals. After several years of discussion, we have defined an area which encompasses both orebodies, the related magnetite deposits, and the marble quarries which lie between the ore deposits. Although geologic boundaries can be chosen for the east and west sides of the area, there are no clearly defined structures for the north and south limits. After much consideration, we have decided to define the "Franklin-Sterling Hill area", for the purposes of the List of Minerals, in close conformity with the "Special Map" used in the Franklin Folio. Accordingly, we define the below-noted boundaries for the List of Minerals from the Franklin-Sterling Hill area:

East: The base of Hamburgh and Sparta Mountains (Hague et al.,1956).

West: The eastern edge of the Wildcat band of marble to where it plunges beneath the unconformity. The west boundary north of that point is defined by the Wallkill River.

South: Brooks Flat Road (just a bit south of Sterling Hill).

North: A line east-west from the intersection of routes 23 north and 517 east (type locality for the Hardyston quartzite)."

John L. Baum and Pete J. Dunn

**Criteria for Additions or Changes to the List**
"The list of species from the Franklin and Sterling Hill area is now, after over nine years of intensive investigation, complete and accurate. Countless hours of research time have been expended to make this list the extant document for the mineral species representation for this area as defined. To ensure that the integrity of the list is maintained, we have

established certain criteria for the addition of species to the list.

a) That Mr. John L. Baum, curator of the Franklin Mineral Museum, must be convinced that the specimen originated within the defined area.

b) That Dr. Pete J. Dunn, mineralogist at the Smithsonian Institution, must be convinced of the correct verification of the species, and must approve all nomenclature.

Species names or occurrences not meeting these criteria will not be included in the formal list of species published annually in the program of the Franklin-Sterling Mineral Exhibit and from time-to-time in the Picking Table."

John L. Baum and Pete J. Dunn

**Preface to the Alphabetical List**

Upper case letters were used in the list to aid readability after photographic reduction. Notations have been added to the alphabetical list to indicate species first described from the Franklin-Sterling Hill area, species unique to the area, and those species which require further confirmation. The key is shown at the end of the list.

Please note that three species have been removed from the "Unique to the Area" category:

a) Jerrygibbsite, although a recent discovery, has been now found in a second occurrence at the Kombat mine in Namibia. At that locality, it occurs as dark glassy intergrowths with Mn-oxide minerals.

b) Ogdensburgite has now been found in the Ojuela Mine, Mapimi, Durango, Mexico, associated with adamite, arseniosiderite, and chalcophanite. It is being described by Drs. Anthony Kampf and Pete J. Dunn.

c) Loseyite with some admixed hydrozincite has been found as recently formed white crusts on timbers in the Max mine, Bleiberg, Carinthia, Austria. See Gerhard Niedermayr's article in Min.Record, Vol.17, #6, pages 355-371.

**Preface to the Chemical Classification List**

Most mineralogy textbooks utilize the chemical classifications of minerals as a tool to organize much of the subject matter. Many of the major mineral collections are displayed using chemical classification as the format. This does not mean, however, that there is only one correct way to categorize each and every mineral. An attempt to list minerals by chemical means requires often that arbitrary judgments be made in dealing with items which do not neatly fall within readily recognized categories. The system as we know it today has evolved over a period of more than 130 years. Science has changed much during this period and continues to do so at an accelerated rate. Today, it is more important to describe fully than to categorize per se.

You will note, while examining this list, that certain Dana categories are omitted because they do not have a representative among the Franklin-Sterling Hill minerals. Likewise, you will see that some major headings include more than one mineral group (such as the Sulfides & Arsenides or the Oxides & Hydroxides). There is no breakout under such headings to indicate which species belongs to which group. Some of the joy of delving has been left for you, the reader. As a matter of convenience, the arsenites have been listed under the heading which includes the arsenates. There are few statistics provided; if you must know what percent of the total list is arsenates, it is left to you to calculate.

Minerals with compound anions can be listed in more than one classification category. Example: Cahnite is both a borate and an arsenate. You will find it listed under Borates with the notation that it is also an arsenate; likewise, it will appear under the Phosphates, Vanadates, Arsenates, & Arsenites heading with the notation that it is also a borate.

For completeness sake, totals follow the various classification headings. An explanatory key will be found at the end of the list.

**Acknowledgments**

The Editorial Board extends thanks to Lee Lowell for his proposed article entitled, "Franklin and Sterling Hill, New Jersey Minerals Arranged by Chemical Classes". Although Lee's article is not being used as submitted, the incorporation here of some of its aspects has increased the scope and the meaningfulness of this endeavor. Likewise, the Editorial Board expresses its gratitude to John Cianciulli for his past efforts in researching the literature concerning minerals first described from this area. His brochure for the 25th anniversary
*(Continued on page 10)*

# FRANKLIN-STERLING HILL MINERALS:

ACANTHITE
ACMITE
ACTINOLITE
ADAMITE
ADELITE
AKROCHORDITE
ALBITE
ALLACTITE
ALLANITE
ALLEGHANYITE
ALMANDINE
ANALCIME
ANATASE
ANDRADITE
ANGLESITE
ANHYDRITE
ANNABERGITE
ANORTHITE
ANORTHOCLASE
ANTHOPHYLLITE *
ANTIGORITE
ARAGONITE
ARSENIC
ARSENIOSIDERITE
ARSENOPYRITE
ATACAMITE
AUGITE
AURICHALCITE
AUSTINITE
AZURITE

BAKERITE
BANNISTERITE -1968
BARITE
BARIUM-PHARMACOSIDERITE
BARYLITE
BARYSILITE
BASSANITE
BASTNAESITE-GROUP-MINERAL
BAUMHAUERITE
**BAUMITE** -1975
BEMENTITE -1887
BERTHIERITE
BIOTITE
BIRNESSITE
BORNITE
**BOSTWICKITE** -1983
BRANDTITE
BROCHANTITE
BROOKITE
BRUCITE
BULTFONTEINITE
BUSTAMITE

CAHNITE -1927
CALCITE
CANAVESITE
CARROLLITE
CARYOPILITE
CELESTINE
CELSIAN
CERUSSITE
CHABAZITE
CHALCOCITE
CHALCOPHANITE -1875
CHALCOPYRITE
CHAMOSITE
**CHARLESITE** -1983
**CHLOROPHOENICITE** -1924
CHONDRODITE
CHRYSOCOLLA
CHRYSOTILE
CLINOCHLORE
CLINOCHRYSOTILE
CLINOCLASE
CLINOHEDRITE -1898
CLINOHUMITE
CLINOZOISITE
CONICHALCITE
CONNELLITE
COPPER
CORUNDUM
COVELLITE
CRYPTOMELANE
CUPRITE
CUSPIDINE

DATOLITE
DESCLOIZITE
DEVILLINE
DIGENITE
DIOPSIDE
DJURLEITE
DOLOMITE
DRAVITE
DYPINGITE

EDENITE
EPIDOTE
EPSOMITE
ERYTHRITE
**ESPERITE** -1965
EUCHROITE
EVEITE

FAYALITE
FEITKNECHTITE -1965
FERRIMOLYBDITE
FERRISTILPNOMELANE
FERROAXINITE
FLINKITE
FLUOBORITE
FLUORAPATITE
FLUORAPOPHYLLITE
FLUORITE
FORSTERITE
FRANKLINITE -1819
FRIEDELITE

GAGEITE -1910
GAHNITE
GALENA
GANOMALITE
GANOPHYLLITE
GENTHELVITE
GERSDORFFITE
**GERSTMANNITE** -1977
GLAUCOCHROITE -1899
GOETHITE
GOLD
GOLDMANITE
GRAPHITE
GREENOCKITE
GROSSULAR
GROUTITE
GROVESITE
GUERINITE
GYPSUM

HALLOYSITE *
HALOTRICHITE
**HANCOCKITE** -1899
**HARDYSTONITE** -1899
HASTINGSITE
**HAUCKITE** -1980
HAUSMANNITE
HAWLEYITE
HEDENBERGITE
HEDYPHANE
HEMATITE
HEMATOLITE-LIKE-MINERAL
HEMIMORPHITE
**HENDRICKSITE** -1966
HERCYNITE
HETAEROLITE -1877
HEULANDITE
HEXAHYDRITE
**HODGKINSONITE** -1913
**HOLDENITE** -1927
HUEBNERITE
HUMITE
HYALOPHANE
HYDROHETAEROLITE -1935
HYDROTALCITE
HYDROXYAPOPHYLLITE
HYDROZINCITE

ILLITE
ILMENITE

JACOBSITE
**JAROSEWICHITE** -1982
JENNITE-LIKE-MINERAL
JERRYGIBBSITE -1984
JOHANNSENITE
**JOHNBAUMITE** -1980

KAOLINITE
KENTROLITE
**KITTATINNYITE** -1983

## AN ALPHABETICAL LISTING (12/31/86)

KOETTIGITE
**KOLICITE** -1979
**KRAISSLITE** -1978
KUTNOHORITE

LARSENITE -1928
LAUMONTITE
**LAWSONBAUERITE** -1979
LEAD
LEGRANDITE
**LENNILENAPEITE** -1984
LEUCOPHOENICITE -1899
LINARITE
LIROCONITE
LOELLINGITE
LOSEYITE -1929

MAGNESIOHORNBLENDE
MAGNESIORIEBECKITE
**MAGNESIUM-CHLOROPHOENICITE** -1924
MAGNETITE
MAGNUSSONITE
MALACHITE
MANGANAXINITE
MANGANBERZELIITE
MANGANESE-HOERNESITE
MANGANHUMITE
MANGANITE
MANGANOSITE
MANGANPYROSMALITE -1953
MARCASITE
MARGARITE
MARGAROSANITE -1916
**MARSTURITE** -1978
MCALLISTERITE
**MCGOVERNITE** -1927
MEIONITE
MELANTERITE *
METALODEVITE
METAZEUNERITE
MICROCLINE
MIMETITE
**MINEHILLITE** -1984
MOLYBDENITE
MONOHYDROCALCITE
**MOOREITE** -1929
MUSCOVITE

NASONITE -1899
NATROLITE
**NELENITE** -1984
NEOTOCITE
NIAHITE
NEWBERYITE
NICKELINE
NONTRONITE
NORBERGITE

OGDENSBURGITE -1981
OJUELAITE
ORTHOCLASE
ORTHOSERPIERITE
OYELITE-LIKE-MINERAL

**PARABRANDTITE** -1987
PARARAMMELSBERGITE
PARASYMPLESITE
PARGASITE
PARSETTENSITE *
PECTOLITE
**PETEDUNNITE** -1987
PHARMACOSIDERITE
PHLOGOPITE
PICROPHARMACOLITE
PIMELITE
POWELLITE
PREHNITE
PUMPELLYITE
PYRITE
PYROAURITE
PYROBELONITE
PYROCHROITE
PYROPHANITE
PYROXMANGITE
PYRRHOTITE

QUARTZ

RAMMELSBERGITE
REALGAR
**RETZIAN-(La)** -1984
**RETZIAN-(Nd)** -1982
RHODOCHROSITE
RHODONITE
RICHTERITE
RIEBECKITE
ROEBLINGITE -1897
ROMEITE
ROSASITE *
ROWEITE -1937
RUTILE

SAFFLORITE
SARKINITE
SAUCONITE
**SCHALLERITE** -1925
SCHEELITE
SCHORL
SCORODITE
SELIGMANNITE
SEPIOLITE
SERPIERITE
SIDERITE
SILLIMANITE
SILVER
SJOGRENITE
SKUTTERUDITE
SMITHSONITE
SONOLITE
SPESSARTINE
SPHALERITE
SPINEL
STARKEYITE
**STERLINGHILLITE** -1981
STILBITE
STILPNOMELANE
STRONTIANITE
SULFUR
SUSSEXITE -1868
SVABITE
SYNADELPHITE

TALC
TENNANTITE
TEPHROITE -1823
THOMSONITE
THORITE *
THORTVEITITE
TILASITE
TIRODITE
TITANITE
TODOROKITE
**TORREYITE** -1929
TREMOLITE
TURNEAUREITE -1985
TYROLITE-LIKE-MINERAL

URANINITE
URANOPHANE
URANOSPINITE
UVITE

VESUVIANITE

**WALLKILLDELLITE** -1983
WENDWILSONITE -1987
WILLEMITE -1824
WOLLASTONITE
WOODRUFFITE -1953
WURTZITE

XONOTLITE

**YEATMANITE** -1938
YUKONITE

ZINALSITE -1958
ZINCITE -1810
ZINKENITE
ZIRCON

TOTALS:

| | |
|---|---|
| CONFIRMED SPECIES - | 319 |
| SPECIES REQUIRING FURTHER CONFIRMATION - | 6 |
| SPECIES FIRST DESCRIBED FROM AREA - | 63 |
| SPECIES UNIQUE TO AREA - | 34 |

KEY: Species in **bold** type are unique to the area. A species name followed by a year date indicates it was first described in the literature from the mines of the area in that year. An asterisk (*) following a species indicates it has been reported from the area but requires further confirmation.

# FRANKLIN-STERLING HILL MINERALS:

**NATIVE ELEMENTS** - 7

ARSENIC
COPPER
GOLD
GRAPHITE
LEAD
SILVER
SULFUR

**SULFIDES & ARSENIDES** - 26

ACANTHITE
ARSENOPYRITE
BORNITE
CARROLLITE
CHALCOCITE
CHALCOPYRITE
COVELLITE
DIGENITE
DJURLEITE
GALENA
GERSDORFFITE
GREENOCKITE
HAWLEYITE
LOELLINGITE
MARCASITE
MOLYBDENITE
NICKELINE
PARARAMMELSBERGITE
PYRITE
PYRRHOTITE
REALGAR
RAMMELSBERGITE
SAFFLORITE
SKUTTERUDITE
SPHALERITE
WURTZITE

**SULFOSALTS** - 5

BAUMHAUERITE
BERTHIERITE
SELIGMANNITE
TENNANTITE
ZINKENITE

**OXIDES & HYDROXIDES** - 32

ANATASE
BIRNESSITE
BROOKITE
BRUCITE
CHALCOPHANITE
CORUNDUM
CRYPTOMELANE
CUPRITE
FEITKNECHTITE
FRANKLINITE
GAHNITE
GOETHITE
GROUTITE
HAUSMANNITE
HEMATITE
HERCYNITE
HETAEROLITE
HYDROHETAEROLITE
ILMENITE
JACOBSITE
MAGNETITE
MANGANITE
MANGANOSITE
PYROCHROITE
PYROPHANITE
ROMEITE
RUTILE
SPINEL
TODOROKITE
URANINITE
WOODRUFFITE
ZINCITE

**HALIDES** - 2

ATACAMITE
FLUORITE

**CARBONATES** - 19 (22) [23] ((24))

ARAGONITE
AURICHALCITE
AZURITE
BASTNAESITE-GROUP MINERAL
CALCITE
CANAVESITE (also a borate)
CERUSSITE
DOLOMITE
DYPINGITE
HAUCKITE (also a sulfate)
HYDROTALCITE
HYDROZINCITE
KUTNOHORITE
LOSEYITE
MALACHITE
MEIONITE (also a silicate)
MONOHYDROCALCITE
PYROAURITE
RHODOCHROSITE
ROSASITE *
SIDERITE
SJOGRENITE
SMITHSONITE
STRONTIANITE

**BORATES** - 4 (7)

BAKERITE (also a silicate)
CAHNITE (also an arsenate)
CANAVESITE (also a carbonate)
FLUOBORITE
MCALLISTERITE
ROWEITE
SUSSEXITE

**SULFATES** - 20 (22) ((23))

ANGLESITE
ANHYDRITE
BARITE
BASSANITE
BROCHANTITE
CELESTINE
CHARLESITE
CONNELLITE
DEVILLINE
EPSOMITE
GYPSUM
HALOTRICHITE
HAUCKITE (also a carbonate)
HEXAHYDRITE
LAWSONBAUERITE
LINARITE
MELANTERITE *
MOOREITE
ORTHOSERPIERITE
ROEBLINGITE (also a silicate)
SERPIERITE
STARKEYITE
TORREYITE

**PHOSPHATES, VANADATES, ARSENATES & ARSENITES** - 54 (61) [63]

ADAMITE
ADELITE
AKROCHORDITE
ALLACTITE
ANNABERGITE
ARSENIOSIDERITE
AUSTINITE
BARIUM-PHARMACOSIDERITE
BRANDTITE
CAHNITE (also a borate)
CHLOROPHOENICITE
CLINOCLASE
CONICHALCITE
DESCLOIZITE
ERYTHRITE
EUCHROITE
EVEITE
FLINKITE
FLUORAPATITE
GUERINITE
HEDYPHANE
HEMATOLITE-LIKE-MINERAL
HOLDENITE (also a silicate)
JAROSEWICHITE
JOHNBAUMITE
KOETTIGITE
KOLICITE (also a silicate)
KRAISSLITE (also a silicate)
LEGRANDITE
LIROCONITE
MAGNESIUM-CHLOROPHOENICITE
MAGNUSSONITE
MANGANBERZELIITE

MANGANESE-HOERNESITE
MCGOVERNITE (also a silicate)
METALODEVITE
METAZEUNERITE
MIMETITE
NELENITE (also a silicate)
NEWBERYITE
NIAHITE
OGDENSBURGITE
OJUELAITE
PARABRANDTITE
PARASYMPLESITE
PHARMACOSIDERITE
PICROPHARMACOLITE
PYROBELONITE
RETZIAN-(La)
RETZIAN-(Nd)
SARKINITE
SCHALLERITE (also a silicate)
SCORODITE
STERLINGHILLITE
SVABITE
SYNADELPHITE
TILASITE
TURNEAUREITE
TYROLITE-LIKE-MINERAL
URANOSPINITE
WALLKILLDELLITE
WENDWILSONITE
YUKONITE

**MOLYBDATES & TUNGSTATES**- 4

FERRIMOLYBDITE
HUEBNERITE
POWELLITE
SCHEELITE

**SILICATES**- 129 (138) [140] ((144))

ACMITE
ACTINOLITE
ALBITE
ALLANITE
ALLEGHANYITE
ALMANDINE
ANALCIME
ANDRADITE
ANORTHITE
ANORTHOCLASE
ANTHOPHYLLITE *
ANTIGORITE
AUGITE
BAKERITE (also a borate)
BANNISTERITE
BARYLITE
BARYSILITE
BAUMITE
BEMENTITE
BIOTITE
BOSTWICKITE
BULTFONTEINITE
BUSTAMITE
CARYOPILITE
CELSIAN
CHABAZITE
CHAMOSITE
CHONDRODITE
CHRYSOCOLLA
CHRYSOTILE
CLINOCHLORE
CLINOCHRYSOTILE
CLINOHEDRITE
CLINOHUMITE
CLINOZOISITE
CUSPIDINE
DATOLITE
DIOPSIDE
DRAVITE
EDENITE
EPIDOTE
ESPERITE
FAYALITE
FERRISTILPNOMELANE
FERROAXINITE
FLUORAPOPHYLLITE
FORSTERITE
FRIEDELITE
GAGEITE
GANOMALITE
GANOPHYLLITE
GENTHELVITE
GERSTMANNITE
GLAUCOCHROITE
GOLDMANITE
GROSSULAR
GROVESITE
HALLOYSITE *
HANCOCKITE
HARDYSTONITE
HASTINGSITE
HEDENBERGITE
HEMIMORPHITE
HENDRICKSITE
HEULANDITE
HODGKINSONITE
HOLDENITE (also an arsenate)
HUMITE
HYALOPHANE
HYDROXYAPOPHYLLITE
ILLITE
JENNITE-LIKE-MINERAL
JERRYGIBBSITE
JOHANNSENITE
KAOLINITE
KENTROLITE
KITTATINNYITE
KOLICITE (also an arsenate)
KRAISSLITE (also an arsenite & arsenate)
LARSENITE
LAUMONTITE
LENNILENAPEITE
LEUCOPHOENICITE
MAGNESIOHORNBLENDE
MAGNESIORIEBECKITE
MANGANAXINITE
MANGANHUMITE
MANGANPYROSMALITE
MARGARITE
MARGAROSANITE
MARSTURITE
MCGOVERNITE (also an arsenite & arsenate)
MEIONITE (also a carbonate)
MICROCLINE
MINEHILLITE
MUSCOVITE
NASONITE
NATROLITE
NELENITE (also an arsenite)
NEOTOCITE
NONTRONITE
NORBERGITE
ORTHOCLASE
OYELITE-LIKE-MINERAL
PARGASITE
PARSETTENSITE *
PECTOLITE
PETEDUNNITE
PHLOGOPITE
PIMELITE
PREHNITE
PUMPELLYITE
PYROXMANGITE
QUARTZ
RHODONITE
RICHTERITE
RIEBECKITE
ROEBLINGITE (also a sulfate)
SAUCONITE
SCHALLERITE (also an arsenite)
SCHORL
SEPIOLITE
SILLIMANITE
SONOLITE
SPESSARTINE
STILBITE
STILPNOMELANE
TALC
TEPHROITE
THOMSONITE
THORITE *
THORTVEITITE
TIRODITE
TITANITE
TREMOLITE
URANOPHANE
UVITE
VESUVIANITE
WILLEMITE
WOLLASTONITE
XONOTLITE
YEATMANITE
ZINALSITE
ZIRCON

**KEY TO NUMBERS FOLLOWING HEADINGS:**

First number = base number of species from the area belonging to the classification.

Numbers in ( ) = species in the classification if those marked (also a ......) are included.

Numbers in [ ] = species in the classification if the "species-like" or "group-like" minerals are included.

Numbers in (( )) = species in the classification if those requiring confirmation are included.

(Continued from page 5)
of the Franklin-Sterling Mineral Exhibit greatly simplified our task of notation for the alphabetical list.

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(Continued from page 2)
retzian (Nd) and retzian (La) occur at Franklin; and much, much more.

The prime rib was excellent. The fellowship was great. If you are missing these get-togethers at Franklin Show time, consider coming to the next one; the price is modest for what you get.

**1986 E.F.M.L.S. Show, Warwick, R.I.**

This show was held on October 25 & 26, 1986, at the Community College of Rhode Island, Knight Campus, Warwick, R.I. Your Editor and his wife attended on Saturday and spotted the following F.O.M.S. members enjoying the occasion: Earl Sullivan (Trumbull,CT), Joe Cilen (Hawthorne,NJ), Gene Bearss (Sanford,ME), Marcelle Weber (Guilford,CT), and Dick and Elna Hauck (Bloomfield,NJ). I apologize if I missed someone. Needless to say, Franklin-Sterling Hill material was scarce at the show.

* * * * * * * * * *

(Continued from page 15)
Each entry, except for the few pieces collected above ground in the limestone quarries, identifies a pillar or stope, and the level in the Parker. That collection was acquired in 1927, and the Trofimuk came later. Trofimuk was a drill runner (here I want to acknowledge the assistance of John Baum, who kindly told me about Trofimuk), and one of Bauer's best sources of material. Bauer often referred to 'a miner', and this was most often Mr. Trofimuk. It was Trofimuk, according to John Baum, who encountered the unusual pneumatolytic assemblage which so intrigued Palache. This was first mined years before in the early Parker shaft working, and specimens from here had only been known from the Parker dump as witness the Koenig and Penfield paper about such material from the Trotter, or the Penfield and Wolff paper describing the findings of Hancock and Ferrier in 1886. The remainder of this same occurrence, now visible in place, was mined out by Trofimuk's successive working places as the Parker shaft pillar was removed prior to closing of the mine.

These men epitomize the contributions of the miners and collectors to the great collections of this locality. Both the Harvard Museum and geological education have benefited from their efforts.

* * * * * * * * * *

# History of the Franklin Mineral Museum Property

John L. Baum
70 Route 23 N
Hamburg, N.J. 07419

The property of the Franklin Mineral Museum, Inc. is located on Evans Street on the south end of Mine Hill in the Borough of Franklin, New Jersey. Its early history is geological, the property lying over the Precambrian Franklin marble at its contact with the Pochuck gneiss. Both formations are around one billion years old. Man's recorded history of the area begins with the exploration of the Hudson River by Henry Hudson for the Dutch East India Company in 1609 and subsequent establishment of communities along the river provided bases for further exploration. Franklin's Wallkill River joins Rondout Creek and flows into the Hudson River at present day Kingston and this is where the Dutch established a fort in 1614. It is likely, therefore, that the Dutch visited the Franklin area shortly before or after that date.

The English at this time were becoming increasingly irritated at the Dutch presence in America, between their settlements in New England and Virginia, and took New Amsterdam on September 8, 1664. The English king, Charles II, in that year put his brother James, Duke of York, in charge of New Jersey and other land as well. James conveyed New Jersey to Sir George Carteret and John, Lord Berkeley. The two of them divided New Jersey into halves in 1676 with Carteret receiving East Jersey, which included the present Franklin area.

George Carteret, one-time owner of Franklin (although he may not have been aware of that fact), was an important individual. He was born on the island of Jersey and he had a career in the English navy, becoming comptroller. He backed his king, Charles I, in the civil war with Parliament and as lieutenant governor of the island of Jersey he drove out the Parliamentary forces and used his base for raids against the Commonwealth. At length, overcome by Cromwell's power, he went to France, returning upon the Restoration. For his services and loyalty, Charles II rewarded him with a knighthood. He became treasurer of the navy and promoted settlement in America, being one of the proprietors of Carolina. As we have seen, a grateful crown named New Jersey in honor of Carteret's management of his island's affairs. At his death he left East Jersey by will to his wife Elizabeth (whence Elizabeth, New Jersey) and his trustees. These trustees sold East Jersey for 3400 pounds at auction to a Quaker group comprised of William Penn and eleven associates.

Each Quaker sold half his undivided share, making 24 Proprietors who ruled the Province of East Jersey from Perth Amboy. This was a land holding company run strictly as an investment. Any property the Proprietors didn't "return", meaning survey and grant, stayed property of the Proprietors, and strangely, to this day they still own some. Many large tracts were acquired by members of the Board of Proprietors by purchase or as dividends from annual profits of the Association. The area which encompasses the Museum was "returned" to the heirs and assigns of Anthony Sharp in the County of Morris, Province of East Jersey, on June 6, 1750, as the 93.16 acre Mine Hill farm along with a number of other tracts by Thomas Wearne, Proprietor. Sussex County was subsequently separated from upper Morris County on June 18, 1753.

Obviously, from the reference to the Mine Hill farm, ore of some kind had been recognized before then. The zinc ore on the west on Mine Hill protruded as a natural black wall while the eastern portion was hidden (the buckwheat field). Magnetite was evident along the Wallkill at the base of the hill. Three iron mines were eventually opened adjacent to or on the Museum property: the Black Hole, the Longshore, and Pikes Peak mines. The ore bodies were small lenses curved to follow the shape of the keel of the nearby zinc ore body.

The Sharp family was prominent and extensive. Anthony, mentioned above, appears to have been the patriarch. On one of his properties he operated a grist mill which was later owned and used by Dr. Samuel Fowler as a laboratory. One of the old millstones from here tops a monument in Franklin. Isaac, Joseph, and Edward Sharp are known descendants and land owners. Isaac had died a landowner by 1779, and Joseph Sharp, born in 1727, owned so much land with farms, iron forges, forests, a grist mill, slaves--in short a chunk of Colonial America--that it was more than he could handle. As early as 1770 he was advertising the sale of a half interest in his bailiwick. Again in 1774 his brother-in-law and agent offered a lease on the whole thing. Alas, a week later the sheriff advertised sale of the best part of the holdings based on the iron business. It is believed that some of Joseph Sharp's distress was caused by the failure to understand that his holdings on Mine Hill consisted of the refractory mineral later named franklinite and not the readily smelted iron ore magnetite which it closely resembled. It appears that when a Sharp met with financial set-backs, another Sharp attended the auction with such success that the empire endured and suffering was minimal. Joseph Sharp died at age 88 in 1815, but not before he built a mansion in 1800, later called the Governor Haines, taking a wife 44 years his junior and siring a daughter at age 80. Edward Sharp took title to the extensive lands and with them the Museum property.

Samuel Fowler, M.D. came to serve the community in 1800. Born in Newburg, New York on October 30, 1779, he was educated at Montgomery Academy, receiving medical instruction from a relative, Dr. David Fowler in Newburg. He then attended Pennsylvania Medical College in Philadelphia. He established his practice in Hamburg, N.J. where he built a home in 1800. Married in 1808, he fathered three daughters, only to lose his wife and two of the daughters within a three month period. Following this tragedy, Dr. Fowler moved to Franklin Furnace and on May 1, 1813 he bought a 32-acre tract west of town. There were on the property a frame house and the former grist mill once owned by Anthony Sharp. Enlarging the house, Samuel Fowler was married a second time, to Rebecca Ogden, daughter of Robert Ogden of Ogdensburg. Seven children resulted from this union, four boys and three girls. Robert Ogden had been appointed to the office of Quartermaster by General Washington during the Revolution. One of Rebecca's Ogden uncles and also her half-sister's son (Governor Haines) were governors of New Jersey.

In the early 1800s the only individuals with scientific training were the physicians and Dr. Fowler, with his interest in his surroundings, was in an unique position to investigate and attempt to promote the area. In partnership with John Odell Ford, on October 31, 1810 Fowler bought from Edward Sharp some 4000 acres including the 93.16 acre Mine Hill farm covering the outcrop of the zinc vein and the magnetite vein adjacent. For all of this they paid $11,000, a great deal of money in those days. During 1816-17 Dr. Fowler bought the interests of John Odell Ford and set about studying his mineral reserves. Fowler was a doer. As head of the County medical society he forced local doctors to become licensed or to retire. He was a member of the State Senate and later on of the U. S. House of Representatives. He was a Democrat and friend of President Andrew Jackson. He attempted to interest scientists at home and abroad in the mineral values of his property. He collected specimens and supplied Princeton, then Queen's College, with a catalogued collection. A specimen from this collection is currently on display at the Museum.

Important mineralogists visited the property, alerting the owner to the zinc potential to the point where experiments in Fowler's grist mill laboratory produced a zinc oxide paint with which he had his house painted. He restored a Colonial blast furnace--the Franklin Furnace--and attempted to smelt franklinite. Due to failing health, on September 1, 1836, Dr. Fowler and his wife Rebecca sold 3300 acres to Nathanial and William Ames. Within a few years, however, Dr. Fowler's son, also Samuel but known as Colonel Sam in later years due to his Civil War service, acquired the minerals of value formerly owned by his father. It is possible that Wetherill and Ames were interested only in iron. Dr. Fowler went to his reward on February 26, 1844.

At the outset of his ownership, Colonel Sam made an assumption that was to hamper the development of mining at Franklin--he concluded that zinc and iron occurred separately and could be mined separately. This was the case at Sterling Mine nearby to a degree but not to any great degree at Franklin. Then he proceeded to sell the two interests on the same land to different companies, one of which subdivided its interest into two and one of these into two again. (Bless you, Colonel Sam.) From the first incorporated companies to occupy our Museum site in 1848 to the consolidation of all companies existing in the area in 1897, legal cacophony ruled. Mining law was honed to a fine edge and avarice developed apace. Into

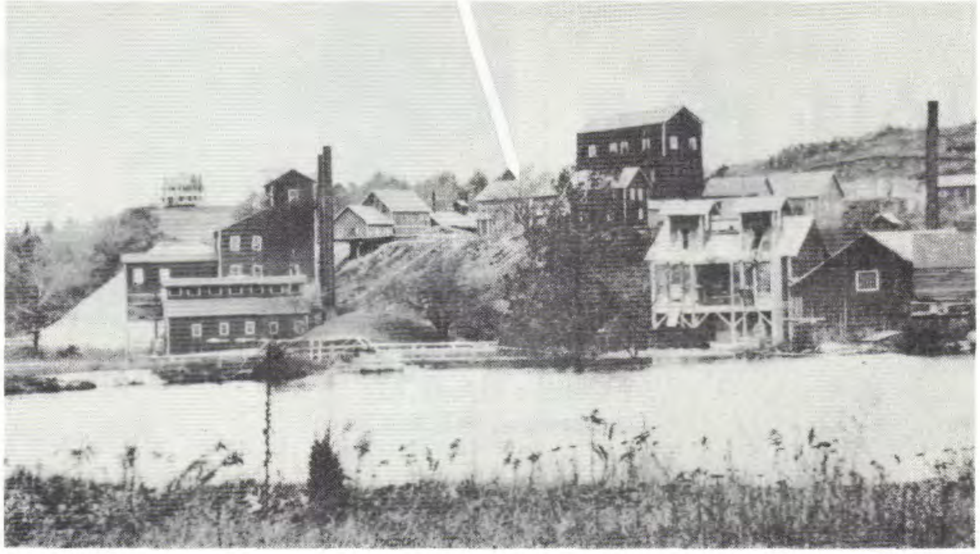

***Figure 1.*** **The Mine Replica Building, circa 1906, is shown at the end of the pointer. Photograph is taken from the archives of the Franklin Mineral Museum.**

the breach stepped Moses Taylor.

The story of Moses Taylor has been published in the Picking Table, Volume 22, #2 and Volume 24, #2. He was certainly the most prominent individual ever connected with Franklin. Taylor was a multi-millionaire industrialist who was influential in raising funds to support the Union cause during the Civil War. He was a friend of the Astors, Vanderbilts, and Abraham Lincoln. He was founder of the ancestor of the National City Bank, a principal stockholder of the Delaware, Lackawanna and Western Railroad in its better days, and a partner of the Scrantons. Taylor preceded the railroad to Franklin, undoubtedly aware of its plans, took over the Franklin Iron Company with the Scrantons and studied the zinc mining situation. Discerning opportunity where others saw confusion, he bought supposedly worthless mining rights and set about litigation which in due time resulted in Taylor's control of the New Jersey Zinc Company. Understandably, officials of the Company were upset, but such was business in those days. Taylor left an estate of forty million dollars.

August Heckscher, General Manager of the New Jersey Zinc Company mine at Franklin, in his annual report for 1897, stated: "At South Mine Hill, underground mining (of the Taylor Mine) has been abandoned. Commencing with March, we have been stripping off the over-burden of earth and limestone......It is proposed to erect a large concentrating plant......connecting it by rail with the mine. Preliminary surveys have been made and it is proposed with the opening of Spring, to promptly proceed with the erection of the new concentrating plant so as to have it ready if possible by the end of the year." Within what is now the replica mine building of the Museum were the engines that powered the excavation across the street. Cableways spanned the enlarged opening to raise and transport broken rock and ore, and on the Museum site the ore was prepared for shipment. A railroad ran along what is now Evans Street connecting with the major lines in the valley below as well as with the concurrent mining operations at the Parker Shaft.

With opening of the Palmer Shaft to feed the new mill at the Junction in 1910, there was no longer need for the plant here as whatever the pit produced could be dropped through the openings in the bottom and transported underground. All but the engine house and some foundations were removed, the railroad vanished without a trace, and much of the dump of waste-rock has been removed. The building was used for storage and then turned over to the Kiwanis to help in their efforts to resurrect a dying mining town. Thus started the Franklin Mineral Museum. The story of this little piece of New Jersey is continuing as the Museum plans for the years ahead.

* * * * * * * * *

# Harvard's Franklin Collection

**F. W. Miller**
**7 Centre Street,#24**
**Cambridge, MA 02139**

Consider a hard rock miner, a chemist, a drill runner, an heir to a publishing fortune, a mineralogist who studied crystallography with the great Victor Goldschmidt, a mine manager, a doctor, a landscape painter, and a variety of other persons! Is this a Wild West show, or the list of characters in an unsuccessful, off-Broadway production? No, this is the real-life conglomeration of persons whose efforts produced one of the most interesting assemblages of minerals in all the groupings of specimens in the Harvard Mineralogical Museum, its Franklin collection. Its contributors, benefactors, and curators run the gamut from the quintessential professional mineralogist to the hard rock miner to the amateur collector. Its describers include some of the great names in mineralogical science today: Palache, of course, but also Wolff, Berman, and Frondel. It numbers some 3700 catalogued specimens, and probably almost as many unnumbered specimens set aside for research. It fills 130 drawers devoted solely to this locality, and more specimens are scattered throughout the systematic collection, both on display and in the reserve drawers under the display cases. Yet more specimens grace the Hancock cases in the curator's offices, and his systematic research collection. The greatest mass of this material, as is true of other great collections of Franklin material, whether in the Smithsonian, the American Museum of Natural History, Rutgers, Yale, or Franklin itself, came originally from the miner or the pit boss, the picking table foreman, or the company's mine manager and the company chemist. The latter was Lawson H. Bauer, chemist for the New Jersey Zinc Company until his death in 1954. As might be imagined, Bauer had immediate access to the minerals coming out of the mine, second only to the miners themselves, and he knew more about the varieties of minerals, their appearances, and what to look for than they did. His collection of several hundred specimens was purchased jointly by the Smithsonian and Harvard in 1955. Bauer didn't stop with collecting and testing--he also published. Eighteen mineralogical papers bore his name as co-author, and these included descriptions of eight new species, among them loseyite, mooreite, larsenite, and cahnite. Bauer's importance in the overall scene can be measured by Professor Frondel's remark (in his memorial to Bauer in the *American Mineralogist,* in 1955) that 1954 marked the end of an era with the deaths of both Bauer and Palache, and the closing of the mine at Franklin. Part of the importance of Bauer's collection was in its detailed labelling, a practice we sometimes sadly neglect, and one which should be assiduously cultivated. For instance, specimen number 341 bears this note:

> "#341 - Yeatmanite.
> Occurrence of this specimen.
> Yeatmanite was found in a small pegmatite located at 830 S, 170 E, elevation -760 in the 730 S Palmer shaft pillar 3rd sub-level below 750 level. At this point the pegmatite was about 6 inches wide and no higher than 10 feet, if that, since it was not found in the working places immediately above or below. To the south the pegmatite broadens to 3 feet and is 50 feet from top to bottom in the adjacent pillar, 760-S. On either side of the pegmatite was franklinite-willemite ore containing limy bands. The composition of the pegmatite is microclinic feldspar, quartz, and garnet, with thin films of native copper in the feldspar. Some willemite is present. The sample was taken 52 feet from the hanging wall contact, and 54 feet from the footwall contact, as an example of a copper-bearing pegmatite, and what proved to be yeatmanite was initially assumed to be garnet, and later, upon, visual inspection, taken to be zircon. The specimen

was collected in April, 1944.
/s/ Baum"

Number 326 is described:

> "#326 - Clinohedrite with calcio-thomsonite and a mixture of two white minerals (calcite and probably datolite; the latter requires confirmation) on mica. Excellent specimen. Fluoresces beautifully. A gift from Mr. J. L. Baum, June 1st, '49. On following sheet is found Mr. Baum's sketch showing its location."

This description is followed by notations about the 730 shaft pillar, so many feet above the 600' level, and 50 feet from the hanging wall, and this is all accompanied by a location sketch with accessory minerals identified and located.

The historical value of Bauer's labels is evident also in items like the following: #224 - "found in 1910 by shift boss 'Dick' Cundy"...#78 - "found in about 1898 by Clinton Down's father who was a shift boss in the 'Buckwheat'"...#28 - "the larger part was first placed in the Roebling collection by Gage who had purchased it from Billy Ball"...#66 - "rec'd this specimen from Jerry McGovern in 1915, just shortly before his death"...#5 - "gift of Mine Captain A. G. Watt"...

Much great material came from dedicated individuals who made a point of regularly visiting the mine dumps, talking with the miners in their kitchens over a cup of coffee, calling attention of Palache or Berman, Frondel or Gage, to the unusual or different looking piece. Among these are some whose collections came in whole or in part to Harvard, and they included Hancock, Losey, Stanton, Trofimuk, and Holden. The latter, the scion of the *Cleveland Plain Dealer* publishing family, was described with great affection and respect by John E. Wolff, then Curator of the Harvard Mineralogical Museum, in a memorial in the *Mineralogical Magazine* of July, 1914 in this way:

> "ALBERT FAIRCHILD HOLDEN (1866-1913) was born at Cleveland, Ohio, and died there May 18, 1913, in his forty-seventh year. He graduated from Harvard in 1888, and, while a good student, was known among the ungraduates of his time as a great football-player, conspicuous for his energy and fairness, qualities prominent in his later career. He was soon associated with his father in silver mines, and became a successful mining engineer and administrator, carrying a load of responsibility in the management of large properties from Mexico to Alaska.
>
> He began to collect minerals in 1895 and continued with ever-increasing activity until his last illness, or for eighteen years. In a history of his collection, prepared not long before his death, many interesting details are given. He called himself essentially a collector, but he had acquired a wide practical knowledge about minerals and the highest critical standards as to what was fairly good and what was superfine, and to obtain the latter he spared neither trouble nor money. It had long been his intention to add his minerals to the Harvard collection, and his purpose was carried out by his trustees soon after his death. In the instructions accompanying the gift he displayed the broadest sympathy with that perplexity, often the lot of curators, who receive large collections duplicating in part their older ones, and a paragraph is worth quoting: 'In regard to the mineralogical collection. There shall be no obligation on the Museum authorities to keep any of the specimens when they have lost their scientific interest. There will be many *duplications as the result of taking over my* collection. All duplicates, if from my collection, may be sold, exchanged, used for scientific purposes, or given away. I only ask that specimens shall not be removed from the collection until others as good or better have been provided. It is my desire not to handicap the development of the Mineralogical Department. I wish to aid in bringing the Harvard mineralogical collection to the highest possible standard.'...
>
> Mr. Holden bought outright several smaller collections of which the Losey from Franklin Furnace contained many fine local minerals, especially tourmalines and corundums. The forty crystallized zincites from there include a number of perfect pyramids, both large and small..."

Losey and Hancock might well be described together, for that is the way they often collected, and searched the dumps. Elwood P. Hancock, a fine landscape painter and sculptor, was particular about his avocation, and he traveled the Franklin scene each year in the company of his friend and co-collector, Samuel R. Losey. They studied closely each area, each mine, each dump, always on the lookout for the unusual or for the strange ones. Hancock's collection is preserved to this day in the specially designed mahogany cases which were originally built for Clarence Bement. When Bement's collection went to the American, Hancock bought these cases for his own specimens, and now they are a feature of the Curator's offices in the museum at Harvard, housing Hancock's prizes. A careful observer, he is credited with the valuable documentation of the occurrence of a number of minerals. Hancock died in 1916, and his collection, including the great phlogopites and corundums, was acquired by Harvard. Losey's collection came to Harvard as part of the Holden collection.

Nicholas Trofimuk and George Stanton were both residents of the Franklin area. Stanton was a miner, and his collection catalogue reflects his careful observation and collecting.
*(Continued on page 10)*

# Franklin Yesterdays

## A GLIMPSE OF JOHN ALBANESE

**Richard Hauck**
**8 Rowe Place**
**Bloomfield, NJ 07003**

Franklin specimens have been sold to collectors and museums for over 100 years. In the 1950-60s the most active and productive dealer was John S. Albanese of Union, New Jersey. One measure of his importance to the collector was the lines at the Franklin Show waiting to get to John's booth first. Those who were successful in so doing almost always added important items to their collections.

John advertised a mail order business. Only a few of his customers ever received the rare privilege of being a guest in the his home. One such collector was Tom Calcina of Hasbrouck Heights, New Jersey. The letter (*shown in Fig. 2*) gives some advance information on a Franklin collection that many consider to be one of the most important collections ever gathered by a Franklin miner. Some of the interesting points of the letter are John Albanese's opinions of fluorescent minerals, his comments concerning the amounts of rare minerals represented in the collection, his view of the availability of native lead, and his lack of respect for his fellow dealers.

The miner mentioned above was Nick Trofimuk. Nick's importance was recognized in Clifford Frondel's book on Franklin, but Albanese never mentioned his name. Indiscretion here might have contributed to possible complications with the New Jersey Zinc Company. The collection was tremendous in size, over 7000 specimens. The price was also somewhat of a record for the time. $4,500 was a lot of money for Franklin rocks in 1958.

John's catalog can be an important research tool. Certainly, it indicates the value he placed on the specimens in 1959. *(See twenty selected entries from this catalog at the end of this article.)* When reading these entries, you will

***Figure 1.*** **John S. Albanese holding the Best Dealer Trophy, October 1966. He is flanked by two of the judges, Alice and Fred Kraissl. Photograph by courtesy of Kiwanis Club of Franklin.**

observe the following facts: the price of a barysilite (2" x 4") was $10.00; a roeblingite was $10.00; a norbergite was $2.50; and a "zinc schefferite" went as high as $10.00. It is apparent that not all minerals increase in value at the same rate. A dealer today would find it most difficult to sell a "zinc schefferite", a tephroite, a norbergite or a hardystonite for what John wanted to get back in 1959. This is not true for most other species. Don't you wish you had bought a few bementites, johannsenites or roeblingites back then?

It must be remembered that the names of species and the informational points made by John were made in 1959 and not in the 1980s. Things have changed. Some examples are: native lead is represented in several collections in small sheets; the barylite he mentioned was checked later and found to be margarosanite; the schallerite turned out to be a rhodonite-friedelite mixture; and "zinc schefferite", along with others have been renamed.

In conclusion, it should be stated that John Albanese's contributions to Franklin mineralogy were very important. Many collections were greatly enriched by his efforts. Many collectors were better informed about Franklin because of the educational characteristics of his many catalogs.

# JOHN S. ALBANESE

*FINE MINERALS*

CABINET SPECIMENS — MUSEUM SPECIMENS — STUDY SPECIMENS

P. O. Box 221
UNION, NEW JERSEY

November 23, 1958.

Dear Mr. Calcina:

I have been very busy lately - I have purchased one of the largest collections of Franklin, N. J. minerals ever assembled. About 7000 pieces. Of course, as with all franklin collections, mostbof the pieces are just fluorescents, and I regard fluorescence as junk. However, there are over 1000 fine and rare pieces, and about 1000 pieces of what are regarded scientific pieces for study. Profs. Frondel and Hurlbut of Harvard are coming down to pick the scientific and some of the rarer pieces.

After that, I will still have about 6000 pieces to dispose of. For example, I have over 200 pieces of micaceous bementite, over 150 pieces of thick barysilite, not the thin veins that were previously known, but this miner found a place in the mine where the barysilite was over 6 inches thick, and I have more barysilite in one piece (about 5 x 6) than all the previuously known barysilite. I have about 150 pieces of hemimorphite (calamine) from Sterling Hill. About 200 pieces of massive and granular leucophoenicite, etc., etc.

About the native lead. At Franklin it was never found in thin metallic sheets, but as microscopic grains or branches which colored the enclosing mineral gray. But a thin polished section under the petrographic microscope will reveal a network of native lead. Even this type of native lead is very rare from Franklin. I have several pieces. I can send you the best piece, showing the most lead (dark gray) and my label is a guarantee that there is lead in it, for I have examined this type of native lead under laboratory equipment at Harvard. I am a sort of agent for Harvard, buy for them, and go to Harvard several times each year, to see and learn. That is how I have gained nearly all my knowledge of Franklin minerals, and even Prof. Frondel calls me a very able judge of Franklin minerals. So when I label a piece, it is a guarantee that the name is right. When I am in doubt, I analyze the specimen, just do not label it any old name like most dealers do - for they are not trained in the study of Franklin minerals. The piece of native lead is about 2½ x 3, and shows the gray lead going through rhodonite. Look up native lead in Palache's book, and my piece is exactly what Dr. Palache describes. Price $5.00. If you want some Franklin minerals, including choice Franklinite xls, willemite xls, roeblingite, send me a list of what you need. But keep it quiet, for this collection is advertised for next February's Rocks and minerals. I do not care to sell to everybody until the ad appears in Rocks & Minerals. Besides, I have to get a catalog ready first. Also getting 47 pieces of choice sulfur from Sicily. Expect them to arrive in two weeks. Better get a few pieces, for there wont be any more. Sulfur has not been mined in Sicily in over 25 years. The Loisiana, Texas and Mexico sulfur deposits put the Italian mines out of business. Sulfur is not mined now. They drill holes, let high temperatute superheated steam in the holes, the sulfur melts and is pumped to the surface. No more sulfur xls, for the next million years, unless a new deposit is found where the sulfur xls stick out of the ground.

Sincerely,

John S. Albanese

***Figure 2.*** **Reproduction of letter from John S. Albanese to Thomas Calcina.**

***Figure 3.*** **(Below) Selections from one of Albanese's 1959 catalogues.**

APOPHYLLITE. F. 900 foot level, pillar 910, 35 feet from foot wall. Rare for locality; first find in over 30 years. 27 specimens. Colorless to white small xls. 1x1 to 2x2, $1.00; $1.50;$2.00;$2.50. 2x2½, $3.50. 2½x3, $3.50.

BARITE. F. 900 foot level. Grains in salmon-colored calcite. Barite fl. cream color, calcite fl. rose-red. Colorful under lamp. 350 specimens. 2x3 to 3x4, $0.50; $0.75; $1.00. 4x4 to 5 to 6, $2.00; $2.50; $3.00; $4.00. Better order a few extra pieces for friends, for there will be no more after this lot is gone. Mine closed forever.

BARYSILITE. F. This is a recent find, not the material found as thin veinlets in the past. This barysilite has been found in masses over 3 inches thick. A single 2 x 3 specimen contains *more barysilite than the total amount in all* previously known specimens combined. Most specimens have nasonite intergrown. Some specimens are associated with hedyphane, transparent green willemite, nasonite in small striated xls. 140 specimens. 1x1 to 1½x2, $1.50; $2.00; $2.50; $3.00. 2x2 to 2x3, $3.00; $4.00; $5.00; $6.00; $7.50. 2x4, $10.00. 3x4½, $7.50. 2x3, $25.00. 3½x5, $40.00. 4x4½, $75.00.

### *Figure 3 (Continued).*

4½x6, $150.00.

BEMENTITE. F. An alteration product of rhodonite. In tiny micaceous flakes. With altered rhodonite in ore. 1½x1½ to 2x3, $1.00; $1.50; $2.00; $2.50. With zinc-cummingtonite (commonly mistaken for actinolite), 2½x3, $3.00. 3x3, $4.00. 3x3½, $2.50. With green microcline, 2½x2½, $1.50.

BUSTAMITE. F. 82 pieces. Several pieces are nearly all bustamite. Some are associated with fr., ca., w. Few fluoresce red under l.w. 2x3 to 3x4, $1.00; $1.50; $2.00; $3.00. 3x5 to 4x6, $4.00; $5.00. All are showy pieces.

COPPER. F. Native, hackly. In ore. 2x2, $2.00; 2x2½, $3.00; 1x1½, $.50. With hodgkinsonite. 2x3, $1.50; 2x2½, $1.50; 1x2¼, $1.00; 1¼x1¼, $.50. Modified cubic xls, with prehnite and fl. pectolite. 1x2, $2.00.

CORUNDUM (ruby). S.H. Small xls up to ½ inch, with calcite attached. Some with mariposite, arsenopyrite, etc. In lots of 6, $1.00 per lot.

CHONDRODITE. F. Small grains in limestone. Fl. apricot color. 60 pieces. 2x2 to 3x4. $.25; $.50; $.75; $1.00.

CHLOROPHOENICITE. F. Choice radiated clusters on xld. transparent calcite xls. On rock. Will make superb m/m. 1½x1½, $2.00. 1½x2½, $2.50. 2x2, $5.00. 1x1½, $2.00. S.H. Silky tufts on seams in fr., w., ca. ore. Some with hetaerolite, fluorite, tiny colorless w. xls. 2x2 to 3x3, $1.50; $2.00; $2.50; $3.00.

HARDYSTONITE. F. Some of the hardystonite associated with calcium-larsenate is colorless and transparent, and is mistakenly labeled "Larsenite" in many collections. Larsenite does not occur massive, but only as colorless acicular xls. Formerly, all hardystonite collected was in the form of large grains, or massive. This collection has a few dozen specimens of large crudely formed hardystonite xls in white calcite. Some of the xls are several inches long, and are clearly shown under the u.v. lamp, with the calcite fluorescing red. Sizes from 2x3 to 4x6. $1.00; $1.50; $2.00; $3.00; $4.00; $5.00. 6x7, $10.00. Several dozen other specimens showing massive white to pink hardystonite associated with willemite, calcite, etc. Sizes 2x3 to 3x4. $1.00; $1.50; $2.00; $2.50.

JOHANNSENITE. P.S. A clinopyroxene. Radiated, associated with nasonite, hedyphane and other Parker Shaft minerals. Rare. 1x1 to 1½x1½, $2.00; $3.00; $4.00; $5.00. A superb specimen, with large nasonite xls, little hedyphane. 1¼x2, $20.00. With hedyphane, little nasonite. 2¼x4, $15.00. With clinohedrite, willemite, garnet, biotite. 3x3, $7.50. Nearly all hedyphane, little clinohedrite. 2½x2½, $7.50. With willemite, nasonite, biotite, axinite. 3x5, $10.00. With nasonite, hedyphane, axinite. 4x5, $50.00. With colorless willemite, nasonite, hedyphane, biotite. 4x5, $25.00.

KUTNAHORITE. F. This is an extremely rare carbonate, and only a few authentic specimens are known. Of more than 200 specimens of carbonate resembling kutnahorite in physical properties, not one proved to be kutnahorite when analyzed by X-ray method. All were calcite. Collectors who have pink colored carbonate specimens in their collections labeled "kutnahorite" would do well to have them analyzed in a laboratory. 44 specimens resembling kutnahorite in physical properties are offered - only as calcite specimens. Some are associated with serpentine, fr., etc. Some show reaction rims by hot solutions invading the host rock. Excellent for geology classes. 3x3 to 6x6, $2.00; $3.00; $4.00; $5.00.

LEAD, Native. F. Unlike the Langban, Sweden, deposit, where native lead was found in masses weighing up to 200 pounds, the Franklin deposit yielded lead in microscopic scales or globules, often staining the enclosing mineral gray. Even in this form, native lead is rare at Franklin, N.J. Several specimens are offered. 2x2 to 3x3, $2.00; $3.50; $5.00.

NASONITE. P.S. A few dozen specimens, all rich with nasonite. 1x1 to 2x3, $1.00; $1.50; $2.00; $3.00. Several very fine specimens 2x2 to 2x3, $3.00; $5.00. Six specimens pure nasonite, masses small xls with striated prisms. 1x1¼, $5.00; 1¼x1½, $6.00; 1½x1½, $7.50. 2x3, $15.00. Other small pieces xld nasonite, suitable for m/m, $1.00 each.

NORBERGITE. F. Grains in limestone. 1½x2 to 2x3, $.25; $.50; $.75; $1.00. 3x3 to 4x4, $1.50; $2.00; $2.50.

ROEBLINGITE. P.S. Loose nodules removed from layered hancockite. About 1x1 to 1½x1½, $10.00; $15.00; $20.00. Broken nodules, some with attached hancockite. ½ to 1 to 1x1½, $5.00; $7.50; $8.50; $10.00. Two split nodules in mass of altered hancockite and its alteration products. 4x5, $50.00. Nodule with clinohedrite and xonotlite. 1½x3, $35.00. Broken nodule, very fine. 1½x2, $35.00.

SERPENTINE. F. & S.H. Brown, manganiferous. In ore. 2x3 to 3x4, $.50; $.75; $1.00; $1.50; $2.00. Rhodonite xl groups, altering to serpentine. With calcite. Large crystals superficially coated with brown serpentine, some also showing alteration to bementite. 2x3 to 3x4, $2.00; $3.00; $3.50; $5.00.

SUSSEXITE. S.H. Silky, fibrous. On ca., w., zincite ore. 3x3 to 3x4, $3.00; $4.00; $5.00.

TEPHROITE. F. Gray to reddish-brown. With zincite, fr. Some of the reddish-brown massive tephroite specimens in old collections contained Vredenbergite, a manganese iron oxide very much resembling granular franklinite, but somewhat dull. 2x2 to 2x3, $1.50; $2.00; $2.50. 2½x5,$5.00. Same, but with calcite. 2x2 to 2x3, $1.00; $1.50; $2.00. 3x3½, $3.50. Tiny bluish-gray xls with small willemite xls in fr. Choice for m/m. 1x1 to 1x2, $2.00; $3.00; $5.00.

ZINC-SCHEFFERITE. F. 160 pieces. Light-brown to coffee-brown. Some with hardystonite, clinohedrite, willemite, calcite, tephroite, etc. 2x3 to 3x4, $1.00; $1.50; $2.00; $2.50; $3.00. 3x4 to 6x6, $4.00; $5.00; $6.00; $7.50. With hardystonite and leucophoenicite, 5x7, $10.00. With hardystonite only. 3x6, $6.50; 3½x4½, $5.00.

# FRANKLIN MINERAL MUSEUM

The Museum closed for the year in mid-November as usual. Despite additional expenses for operation, the able management of Steve Sanford has made for a successful season. His selection of popular merchandise, his familiarity with minerals, mining and geology, and his treatment of visitors and employees alike have served to make for a smooth-running venture. The Spex-Gerstmann mineral collection has been moved from Ewald Gerstmann's where Mr. Gerstmann is continuing his mineral-related business. Increasing numbers of specimens from this collection will be displayed at the Museum on Evans Street in Franklin as space is made available. The fluorescent display has been installed already for the Spring opening to the public on April 17, 1987. Sponsorship of the Museum by the Kiwanis Club of Franklin is expected to continue for 1987 and plans are being made for the annual Kiwanis mineral show in October. In short, with fund raising for the proposed Museum expansion anticipated to start in 1987, a busy year is foreseen.

John L. Baum
Curator

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# A Fist-sized Piece of Ore

Helen U. and Joseph D. Warinsky
695 Suffern Road
Teaneck, NJ 07666

It was the afternoon of a F.O.M.S. meeting day (back in '82 or '83) and some of our members were taking advantage of the pre-meeting sale of minerals by members. As Secretary, my duties kept me at the registration table but my husband, Joe, wandered around looking for something interesting to add to our collection.

Joe has a keen eye for micro possibilities so when he brought me the piece of Sterling Hill ore, which he had purchased at a nominal fee from Dick Bostwick, I was pleased--especially when he pointed out some malachite and blue spots in a vug. The wait until we arrived home seemed interminable! As soon as we got into the house, I was on my way downstairs to set up my microscope and the small Yost trimmer. Carefully, I presented the ore to the blades of the trimmer and skillfully opened up the vug. With success in that venture, it was on to the scope for viewing.

Serendipity! Malachite, for sure, and some lovely blue crystals which were not quite the right color or crystal shape for azurite. Is that metallic material pyrite? Or could it be what I think it is? GOLD!!! It has been reported as being found in chalcocite at Sterling Hill.

We made a special trip to see Jack Baum, Curator of the Franklin Mineral Museum. He was interested but non-committal. Anyone who knows Jack will appreciate his tongue-in-cheek advice: "Put this material aside and if it doesn't tarnish in 10 years, it's gold." Subsequently, we came up with a malleable flake and also a wire of the material to confirm it as gold. Back at the scope again, the blue crystals were getting all the attention. When Mrs. Alice Kraissl saw them, her immediate reaction was "linarite".

After breaking the chunk of vuggy chalcocite ore into several 1" pieces, we were happy

***Figure 1.* Cubic crystal of gold, maximum face dimension 0.5mm. Dr. Alfred Standfast photomicrograph.**

to share them with the Russ DeRoo Micro Study Group, of which we were members. Bob Fitton, another member, came up with a tiny cube of gold in his piece within a short time.

During one of the subsequent micro sessions, Bob Fitton was sitting opposite us and we were discussing the beauty of this gold crystal. He looked across at us and said "I feel I should give this back to you". Both Joe and I responded quickly, "No! We appreciate the fact that you gave us an opportunity to view it. We are most happy you found it."

Dick Bostwick was delighted when he heard of the good fortune with the specimen. He was unable, however, to supply another piece. *(Editor's Note: Dick says the location in the mine from which the specimen came is unknown* *to him. He had the specimen presented to him in the Sterling Mine locker room several years earlier by another miner, who said "I hear you like rocks. Why don't you take this? It's been cluttering up my locker too long"... or words to that effect. Dick recalls that he sold the specimen for $2 or less.)*

We must point out that this piece of vuggy chalcocite was very light in weight (heavier pieces did not produce any crystals or gold). Careful breaking of this small piece has yielded the following minerals: anglesite, aurichalcite, brochantite, cerussite, covellite, devilline, galena, gold, gypsum, linarite, and malachite. Thomas A. Peters, Curator, Paterson Museum, was instrumental in identifying and confirming some of the species. We are grateful for all the help we have received. For us, this little piece of ore has been "Bonanza" and "Eldorado" all rolled into one!

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# Mineral Notes

## Research Reports

### THE LEAD SILICATES FROM FRANKLIN

*An article entitled "The lead silicates from Franklin, New Jersey: occurrence and composition", written by Pete J. Dunn, Department of Mineral Sciences, Smithsonian Institution, Washington, DC 20560, appeared in the Mineralogical Magazine, December 1985, Vol.49, pp.721-727. The following is an abstract of that article.*

At the end of the 19th century a remarkable suite of minerals was found on the Parker dump, near the Parker shaft of the Franklin Mine. This suite included unknown minerals which were eventually described as new species. Among these were lead silicates: roeblingite (Penfield & Foote, 1897), nasonite and hancockite (Penfield & Warren, 1899), and margarosanite (Ford & Bradley, 1916). Barysilite, already known from Langban, was also found here by Shannon and Berman (1926), as was ganomalite (Dunn, 1979). Two other lead silicates were described from Franklin. Esperite, originally described as *calcium larsenite* by Palache *et al.* (1928), and was redefined and renamed by Moore & Ribbe (1965). Larsenite was described by Palache *et al.*(1928). Both esperite and larsenite have been included with the other lead silicate minerals from Franklin in previous discussions (Palache, 1935) but their paragenesis is markedly different. Simple lead silicates do not occur at Franklin. All are compound silicates of Pb with Ca, Mn, or Zn.

#### History and occurrence

The Franklin Mine was mined-out and flooded in 1954; thus, examination of the geologic relations of the occurrences of the lead silicates was not possible. Recourse was made to mine maps and interviews with former employees of the New Jersey Zinc Company who examined these occurrences. Most notable among these was John L. Baum, retired resident geologist for the Franklin Mine.

The lead silicates occurred in two separate and distinctly different parageneses. One containing esperite, hereafter called the *esperite assemblage*, was apparently not localized. Esperite was found throughout the northern end of the orebody. Esperite and larsenite were originally encountered on the 400 foot level, approximately 1080 feet north of the north side of the Palmer Shaft pillar. Esperite was subsequently found on the 1100 foot level in the area of the Palmer shaft pillar and at other places in the northern end of the orebody, but larsenite was not recorded from additional locations.

The other lead silicate minerals all came from a quite restricted occurrence in the Franklin Mine, referred to herein as the *restricted assemblage*. The lead silicates (ganomalite, margarosanite, barysilite, nasonite, hancockite, and roeblingite) were all found in samples first encountered in the early 1890s. They were not again encountered until the mid-1950s when, as part of the closing down of the Franklin Mine, support pillars which had remained in place above the Palmer Shaft (to prevent caving-in and to give support) were removed. At this time, geologists and miners recognized the very uncommon samples they were mining were markedly similar to those encountered at the end of the last century. Examinations of mine maps showed that these support pillars enclosed two large vertical stopes which had been mined by hand in the early 1890s, when these minerals were first found. At the time of the initial discovery, ore was being removed from many parts of the Franklin Mine through the Parker shaft, and thus the fact that the occurrence was localized was not known at that time. Examination of mine maps has failed to spot any other occurrence of these minerals. The *restricted assemblage* was found between the 786 and 900 foot levels, and within 300 feet north and south of the 00 N/S coordinate of the mine. The lead silicate minerals of the *restricted assemblage* occurred within calcium silicate units and not, as a rule, with the ore units. These lead-bearing calcium silicate units were in a zone approximately 8-10 feet in thickness which was, at its closest, roughly 10 feet from the hanging wall contact with the Franklin Marble. Nicholas

***Table 1.*** **The lead silicate minerals found at Franklin, New Jersey.**

| | |
|---|---|
| BARYSILITE | $Pb_8Mn(Si_2O_7)_3$ |
| ESPERITE | $Ca_3PbZn_4(SiO_4)_4$ |
| GANOMALITE | $Pb_9Ca_5MnSi_9O_{33}$ |
| HANCOCKITE | $PbCa(Al,Fe^{3+})_3(SiO_4)_3(OH)$ |
| LARSENITE | $PbZnSiO_4$ |
| MARGAROSANITE | $Pb(Ca,Mn)_2Si_3O_9$ |
| NASONITE | $Pb_6Ca_4Si_6O_{21}Cl_2$ |
| ROEBLINGITE | $Pb_2Ca_6(SO_4)_2(OH)_2(H_2O)_4[Mn(Si_3O_9)_2]$ |

Trofimuk, the miner who recovered much of this material in the early 1950s, indicated the lead silicate minerals were present in many parts of the Palmer shaft support pillar, but varied in relative abundance.

## Experimental methods

The samples studied were verified by X-ray powder diffraction methods, and were analyzed using an ARL-SEMQ electron microprobe. Some qualification is needed for statements of relative abundance of the various species. The studied samples were collected non-systematically by miners over at least 60 years. Because two of the lead silicates, margarosanite and esperite, are vividly fluorescent in ultraviolet radiation, they were likely 'overcollected' relative to other less appealing assemblages. This study, therefore, attempts to draw scientific information from samples collected unsystematically.

## The *esperite assemblage*

*Esperite* was originally described by Palache *et al.* (1928) as a Ca-Pb-Zn silicate which was then tentatively assumed to be related to larsenite, $PbZnSiO_4$, and was named *calcium larsenite*. When Moore & Ribbe (1965) restudied the material they found it to be a tecto-zincosilicate. They renamed it esperite in honor of Esper S. Larsen, Jr. The sample they studied had a Ca:Pb ratio of nearly 3 to 1 compared to the original Palache sample which yielded a 2.35 to 1 ratio. The analytical data of the current study indicate the chemical composition of esperite varies principally in the Ca:Pb ratio. The average of ten microprobe analyses yields a formula which agrees closely with the formula $Ca_3PbZn_4(SiO_4)_4$ which was proposed by Moore & Ribbe (1965).

Esperite is moderately widespread at Franklin. It usually occurs as massive, very fine-grained aggregrates with a dull to slightly greasy luster and a slightly conchoidal fracture. It may be interlayered with willemite but most consist of highly irregular, somewhat nodular aggregrates (up to 9 cm), associated with willemite, franklinite, and frequently with hardystonite. Esperite is strongly fluorescent (greenish yellow) in shortwave ultraviolet radiation, except where it is in direct contact with franklinite; fluorescence is diminished at such contacts. Esperite assemblages are generally low in calcite. Franklinite, if present, is usually rimmed with willemite.

The most common and texturally interesting of the associated minerals is hardystonite, $Ca_2ZnSi_2O_7$, a member of the high-temperature melilite group. Although hardystonite occurs without esperite in many parts of the Franklin orebody, the northern end of the mine, where esperite occurred, contained much hardystonite in intimate association with esperite. Hodgkinsonite, $MnZn_2SiO_4(OH)_2$, occurs with esperite also. It frequently forms an interface between hardystonite and esperite. Where hodgkinsonite is present between these species, it is crystallographically parallel to the fibrosity of the esperite aggregrates, as evidenced by thin-section examination.

*Hardystonite.* Although not a lead silicate mineral *per se*, hardystonite has been studied little since its original description by Wolff (1899), and the subsequent crystal structure determinations by Warren & Trautz (1930) and Louisnathan (1969). Hardystonite was locally abundant in the Franklin Mine, occurring between calcite-bearing willemite/franklinite ore and non-calcite-bearing ore, in addition to other assemblages. Microprobe analyses indicate hardystonite is relatively invariant in composition. Small amounts of Al, Mg, and Mn apparently substitute for Zn. The lead content, although low, is somewhat persistent; no samples studied were Pb-free. The cathodoluminescence of these hardystonite samples was proportional in intensity to the amount of Pb present.

*Larsenite.* It is among the rarest of the lead silicates from Franklin; it was noted *in situ* only once and may have come from a very restricted assemblage. It is found as prismatic, equant 1-3 mm crystals in seams, in willemite/franklinite ore, which is in contact with esperite and hardystonite. Calcite, if present, is quite minor. Larsenite is clearly secondary and is associated with secondary willemite, clinohedrite, and hodgkinsonite. Microprobe analyses of larsenite conform closely to the theoretical composition.

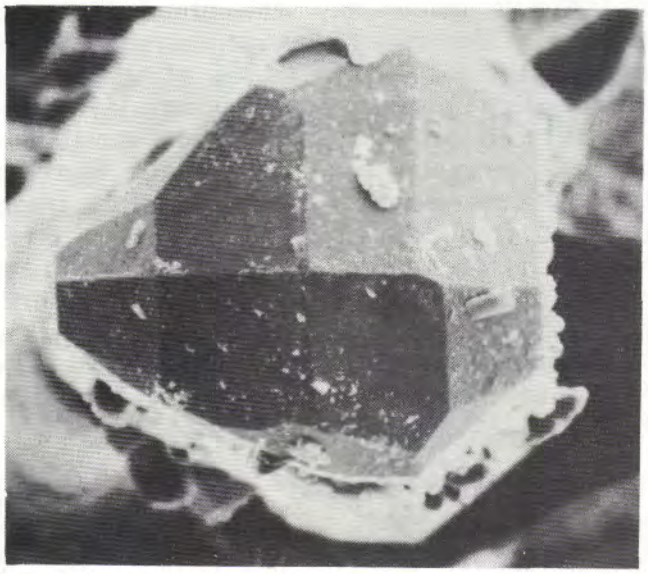

***Figure 1.*** **Larsenite (termination of a prism), Franklin, N.J. Shown at 800x.**

*Unnamed species.* At the contact between esperite and hardystonite, where esperite replaces hardystonite in an irregular 'feather'-like intergrowth, there occur abundant microcrystals of clinohedrite and willemite, and an unknown phase in small crystals, which are uniform in composition from crystal to crystal, and have a very strong, bright blue cathodoluminescence. These grains have the chemical composition: $SiO_2$ 27.3, MgO 5.9, CaO 14.0, MnO 0.9, ZnO 26.1, PbO 25.5, sum = 99.7 wt.%. Preliminary attempts to calculate this analysis as a magnesian esperite yielded unsatisfactory results. The presence of substantial Mg, which is not found in amounts greater than 1.0 wt.% in these esperite analyses, coupled with the bright blue cathodoluminescence, suggests that this is likely to be a new species, albeit one which cannot be characterized because of its minute grain size and the paucity of material. The rational formula, once calculated, can be stated ideally as: $Pb_2Zn_5Ca_4Mg_2Si_7O_{27}$. Another unknown phase was noted within esperite by Ito (1968) and this material was a Ca-Zn silicate, which occurred in thin seams, 1-5 μm in width, lining fractures in esperite. None was observed in the current study.

## The *restricted assemblage*

The other lead silicate minerals, unlike the esperite assemblage, occurred in a very limited area (the Palmer shaft pillar area). Their spatial distribution within that area remains largely unknown. For discussion purposes the restricted assemblage can be divided into two parts:

A *margarosanite* assemblage consisting of margarosanite, barysilite, ganomalite, and nasonite, together with other non-Pb bearing phases. All the Pb-bearing phases in this assemblage are anhydrous; the dominant associated phases contain hydroxyl.

A *roeblingite* assemblage consisting of roeblingite and hancockite together with numerous other phases, some of which are highly hydrated phases such as charlesite (Dunn *et al.*,1983) and ganophyllite (Dunn *et al.*, 1983).

## The margarosanite assemblage

*Margarosanite* and nasonite are the two most common lead silicates in this assemblage. Margarosanite is associated with most of the accessory calcium silicate phases, including andradite, manganaxinite, prehnite, rhodonite, johannsenite, and a large number of other species including, in part, bustamite, vesuvianite, barite, grossular, willemite, and microcline. Margarosanite occurs in a variety of textures, most samples consist of thin, whispy aggregates. Most commonly associated minerals are prehnite, microcline (non-plumbian), and manganaxinite. Margarosanite is also intimately associated with minehillite (Dunn *et al.*, 1984), and is found in apparent chemical equilibrium with more phases than other lead silicates, except nasonite. The chemical composition of margarosanite is fairly constant wherever found.

*Barysilite.* It is less common than nasonite or margarosanite. It occurs as platy, subparallel crystals in lamellar aggregates. It is a late-stage mineral in part, but also forms coarse-grained assemblages with some of the calcium silicate

***Figure 2.*** **Barysilite, Franklin, N.J. Late stage growth in a vug shown at 2250x.**

minerals at Franklin, including andradite, manganaxinite, nasonite, rhodonite, and others. As a late-stage mineral, it frequently occurs as a crack-filler in fractured silicates, johannsenite being a notable example. Barysilite is also the dominant phase in a coarse-grained willemite-andradite-barysilite breccia, and is found in thin seams and on slickensides. Aside from very limited associations with hancockite and margarosanite, barysilite occurs consistently with only one of the lead silicates, nasonite. Microprobe analyses indicate the composition of barysilite to be remarkably uniform.

*Ganomalite.* This rare mineral was first reported from Franklin by Dunn (1979). It occurs as euhedral crystals within coarsely crystallized clinohedrite, which fills vugs in willemite-franklinite-andradite ore. In this assemblage, ganomalite co-exists with nasonite, a species with which ganomalite was formerly thought to be isostructural. Because these two minerals are in contact, in euhedral crystals in apparent chemical equilibrium, and because microprobe analyses of ganomalite from Franklin and Jacobsberg in Sweden showed that all samples had consistent amounts of Mn, Dunn *et al.,* (1985) showed that ganomalite has essential Mn, and has space group *P*3, with $a$=9.82 and $c$=10.13A. The revised formula is shown in Table I.

*Nasonite.* This is the only halogen-bearing lead silicate at Franklin. Its chlorine content is relatively invariant and its chemical composition is very close to the theoretical composition, as evidenced by microprobe analyses. Nasonite appears with more species than any other lead silicate from Franklin. Nasonite occurs with mostly high-temperature phases and is usually the last-formed mineral in such assemblages; for example, it occurs as interstitial fillings in radial johannsenite.

**The *roeblingite assemblage***

The second of the restricted assemblages is one which is notable for the presence of a number of phases with (OH) and $H_2O$, brecciated and vuggy textures, and containing roeblingite and hancockite as the lead silicate minerals.

*Roeblingite.* This mineral was redefined by Dunn *et al.,* (1982) on the basis of analyses of material from Franklin and Langban, Sweden. Braithwaite (1985) has shown that roeblingite contains appreciable amounts of $H_2O$, and that not all H is present as hydroxyl. This supports the structural formula for roeblingite (Moore & Shen, 1984). At Franklin, roeblingite occurs as porcelaneous, massive, very fine-grained, irregular, 1-15 cm aggregates of lenticular or roughly spherical shape. It is found with willemite as vein-fillings. The more common spherical aggregates are frequently enclosed in a fine-grained and altered mixture of prehnite and hancockite, with minor andradite and franklinite, and sparse xonotlite. Some assemblages, with small (2-10 mm) roeblingite segregations are associated with manganaxinite, barite, and other species. The rarest of the roeblingite assemblages is that associated with charlesite and ganophyllite (Dunn *et al.,* 1983).

*Hancockite.* This is a Pb-bearing member of the epidote group, in which half of the Ca is replaced by Pb and Sr. Some $Mn^{3+}$ apparently substitues for Al and $Fe^{3+}$ in small amounts. Hancockite occurs in massive samples, admixed with andradite, franklinite, and minor manganaxinite. These samples are several kilograms in mass, brick-red in color, and extremely inhomogeneous at the microprobe level. Hancockite also forms in vuggy recrystallized aggregates, intimately associated with clinohedrite, roeblingite, manganaxinite, and prehnite, with minor amounts of willemite, clinohedrite, barite, franklinite, and hendricksite, the preponderance of studied material is of this nature.

***Figure 3.* Hancockite, Franklin, N.J. Shown at 135x.**

*(Editor's Note: Figures 1 through 3 were not part of the original article. The author has consented to have these photomicrographs, taken from authoritative sources, used to supplement the abstract for the benefit of the collector community.)*

* * * * * * * *

## ORE FLUID MIGRATION

*A paper entitled, "Ore fluid migration around the Sterling Hill ore body", was presented by Patricia Buis, Department of Geology and Planetary Sciences, University of Pittsburgh, Pittsburgh, PA, at the 21st Annual Meeting of the Northeastern Section, The Geological Society of America, March 12-14, 1986, at the Concord Resort Hotel, Klamesha Lake, New York. The following is the author's abstract of that paper.*

The Sterling Hill ore body of Ogdensburg, New Jersey, is a Mn-Zn-Fe deposit surrounded by the pure, coarse-grained Franklin Marble. An analysis of the marble through atomic absorption spectroscopy and X-ray diffraction has revealed high Mn and Fe concentrations (1% - 2%) in the first fifty feet out from the ore body. These concentrations drop abruptly when distance from the ore is increased past one hundred feet, correlating with the marble's luminescence, known to be Mn-activated, and restricted to an area immediately adjacent to the ore. An ore fluid migration pattern for the Sterling Hill deposit is indicated from the data, with a zone of solubility for the Mn and Fe around the primary deposit existing at the time of ore genesis.

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## MINOR ELEMENT DISPERSION PATTERNS

*Patricia Buis, Michael Bikerman, and Gary A. Cook, Department of Geological and Planetary Sciences, University of Pittsburgh, Pittsburgh, PA 15260, presented an article entitled, "Minor element dispersion patterns around a Zn-Mn-Fe ore deposit: potential use in ore exploration", at the 99th annual meeting and exposition, Geological Society of America, November 10-13, 1986, San Antonio Convention Center, San Antonio, Texas. The following is the authors' abstract of that paper.*

The dispersion of some elements associated with the Zn-Mn-Fe ore body of Sterling Hill, Ogdensburg, New Jersey, has been examined in the Franklin Marble country rock to develop an ore exploration model useful for location of similar type deposits. Chemical analyses by atomic absorption for selected trace and minor elements with suspected ore affiliations (Mn,Fe,Zn,Mg,Cd, and Pb) (Metsger, et al., 1953) were made. X-ray diffraction analyses of the minerals found in the Franklin Marble were also run and correlated to the chemistry. As a corollary to this study, the fluorescence displayed by the marble around the ore was examined in a semi-quantitative technique (spectro-fluorometry) in order to evaluate the potential of fluorescence as an ore-prospecting tool, since the fluorescence is known to be controlled by Mn and Pb, with Fe acting as a quenching agent.

Trends in the distribution of the elements in the study indicate that Mn in carbonates could prove to be the most beneficial in the location of more Mn-Fe-Zn silicate-oxide ores. The red-orange colored carbonate fluorescence can serve as a rapid means of identifying anomalous Mn carbonates in the field.

* * * * * * * * * *

## PYROPHANITE

*The following is an abstract of the article entitled, "Pyrophanite $MnTiO_3$ from Sterling Hill, New Jersey." The authors are James R. Craig, Daniel J. Sandhaus and Russell E. Guy, Department of Geological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061. The article appeared in the Canadian Mineralogist, Vol.23, pp.491-494 (1985)*

### Mode of Occurrence and Physical Properties

Pyrophanite $MnTiO_3$, the manganese analogue of ilmenite, has been observed in ore samples from Sterling Hill. It was found in the footwall contact of the east limb of the orebody, approximately 10 meters above the 500 level. The samples were collected at about the 1000 N co-ordinate in October 1980. Megascopically, the samples consist of course-grained (1-2 cm) brown to greenish grey manganiferous augite with scattered rounded to euhedral grains of dark green gahnite and irregular patches of biotite and white calcite. The original specimens were cut to prepare polished sections of gahnite as part of another study. The cut and polished sections reveal that the gahnite grains are commonly sheathed by a narrow irregular rim of zincian biotite that appears to be a reaction product. The pyrophanite occurs disseminated within the pyroxene and within the white fluorescent Mn-calcite as anhedral to subhedral grains or aggregrates up to 2 mm across. Most are less than 0.5 mm in maximum dimension. The pyrophanite grains appear to have formed at the same time as the enclosing minerals. Subsequent to our discovery, Valentino (1983) found pyrophanite lamellae oriented on the (111) plane of magnetite that defines an exsolution texture with franklinite at Sterling Hill.

Electron-microprobe analyses were performed on pyrophanite along with the coexisting gahnite, pyroxene, and Zn-biotite. The average composition of pyrophanite is equivalent to a formula of $(Mn_{0.938}Fe_{0.055}Zn_{0.030})(Ti_{0.980})O_3$. No evidence of compositonal zoning was observed. The coexisting manganiferous pyroxene approaches bustamite in composition. The gahnite is compositionally similar to that found elsewhere except for a slightly higher-than-normal manganese content.

**Origin of Pyrophanite**

Pyrophanite has been reported from only a few geological settings: peralkaline rhyolites from Mont-Dore, France (Brousse & Maury 1976), nepheline syenite pegmatites from Baikalia, USSR (Portnov 1965) and the Oslo area, Norway (Neumann & Bergstøl 1964); and from Mn-rich hydrothermal veins in hornfels from Bohemia (Žák 1971). The host rocks in the Sterling Hill deposit have been interpreted in recent years as a Zn-Fe-Mn-bearing dolomite bed that was decarbonated when metamorphosed to sillimanite grade (Callahan 1966, Metsger *et al.*1969, Frondel & Baum 1974). Squiller & Sclar (1980) reached a similar conclusion. They proposed that the peak temperature of metamorphism was in the range 700-800°C at pressures of at least 3 kbar. They further noted that composition of the oxide phases would be dependent upon variations in the proportion of metallic elements and local differences in the fugacity of oxygen. Haggerty (1976) reported that at high values of $f(O_2)$ and at high temperatures, $Mn^{3+}$ can be stabilized in the spinel structure, whereas at lower values of $f(O_2)$ and with a dominance of $Mn^{2+}$, the rhombohedral [*i.e.*,pyrophanite] structure is decidedly preferred. The pyrophanite in this study, with its mode of occurrence, appears to be a product of a high-grade metamorphism. The traces of pyrophanite may well have formed in areas of slightly lower-than-average $f(O_2)$, as suggested above, but there is insufficient information to permit further speculation.

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| PALACHE, Charles: *The Minerals of Franklin and Sterling Hill, Sussex County, New Jersey,* Professional Paper No. 180. Soft back edition, the Society's 1974 reprint | $10.00 |
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# In Memoria

***Some of the giants among us have fallen. As we read the tributes which follow, each of us must answer the question for himself "Can we pick up where they have left and continue the tradition of leadership, service, and generosity which they exemplify in the collector community?" We all know they expect us to do nothing less than they have done. Ed.***

## ALICE L. KRAISSL (1905-1986)

Those of us who were privileged to know Alice Kraissl will remember her always. The Franklin Mineral Museum and the Franklin-Ogdensburg Mineralogical Society owe much to her enlightened and enthusiastic participation. A native New Jerseyan, Alice L. Plenty was born May 6, 1905, at Hackensack. She first studied mineralogy at Barnard College and it was there at Columbia University that she and Frederick Kraissl, Jr. began their life-long partnership. Married in 1925, they went on to share engineering and mineralogical interests. Together they founded the Kraissl Company, Inc., producers of a wide range of hydraulic equipment, and as engineers both were involved in the designing aspects as Kraissl Associates.

Alice has supported the Franklin Mineral Museum from its inception. The Plenty Collection was established and donated to memorialize her parents. A diversified array of cabochons, first shown in the Franklin Mineral Show of 1965, displays her own artistic skill and "the relative merits of Franklin/Sterling Hill material as a cutting medium". Alice served as secretary of the Board of Trustees and as Associate Curator of the museum. In 1976 Kraissl Hall was dedicated, donated by Fred and Alice.

Micro-mineralogy was of special interest to Alice, as was mineral photography. She was the gracious, generous and knowledgeable hostess of a micro-mount group that met at the Kraissl office in Hackensack, and served as a senior judge at Eastern Federation shows, as well as Consulting Editor for Rocks and Minerals magazine.

Alice was Secretary of F.O.M.S. from 1966 to 1968. She served two terms as President of F.O.M.S., 1970-71. She was a member of the Trustees for the Society from 1972-82.

In the American Mineralogist for Sept.-Oct. 1978, Paul B. Moore and Jun Ito described kraisslite, a new platy arsenosilicate from Sterling Hill. Its name honors the Kraissls for their "pivotal role in the mineralogy of Franklin and Ogdensburg".

With all of her other attributes, Alice was a devoted wife, mother of two daughters, grandmother, and great-grandmother.

Alice completed her life's work September 16, 1986. All who enjoy Franklin mineralogy are greatly indebted to her.

Wilfred R. Welsh
President, Franklin Mineral Museum

## ALICE KRAISSL: a remembrance

My acquaintance with Alice Kraissl was a limited one, bereft of many of the experiences and memories that the members of the collector community have and cherish. Accordingly, I wish to write of her support of the science of Franklin and Sterling Hill, and my involvement.

One of the more difficult things a scientist has to do is to attempt explanations of the "dull" or "dry" side of esoteric investigations. The route to discovery or insight is paved with dark, non-illuminated passages; the scientist must go down each and every path to discover what is there or, too often, what is not. Alice understood the need for pure research, the need to check every possibility, to look everywhere, even if, as in so many cases, the result was a sort of "negative" knowledge...a finding of what was not extant. The collector community derives some pleasure and understanding from the discoveries, but there are very few who understand the need for and support for basic research...that which may have no "show-and-tell" ending. The collectors interested in such efforts, and supporting them, are few and far between; Alice was one of these: one of the best.

Science is a lonely profession: success is infrequent; failures are common; frustrations are many. Persons who understand this are few; Alice was such a person. No matter what aspect of Franklin's mineralogy was being investigated, her enthusiasm was the same: undaunted....upbeat....strong....and consistent. Furthermore, she understood the real value of such investigation, and had a true empathy for those who undertook such studies.

Alice understood that science costs money, and that the species aspect of mineralogy in which she was interested would be too far down on any funding lists to obtain meaningful support. Accordingly, she was generous in support of Franklin mineral research activities...viewing them as a "planting of seeds", and providing me with help and inspiration. One of her final acts was to ensure that the first distribution from her mineral collection was to science.

Aside from her interest in and support of science, she was a collector who, together with her husband, Dr. Frederick Kraissl, made many contributions to the local mineralculture, as noted by Mr. Welsh. Additionally, together they set a high standard for personal behavior. My remembrance of Alice will have many components...a friend, an enthusiastic benefactress, a woman of high integrity, a clear thinker, a decisive person of piercing wisdom, and more...much more.

Beyond these personal memories, I consider myself fortunate to have known her. The collector community in general has few who give more than they keep, and very few who keep an unblinking eye on the future, assiduously striving to keep doors open for others. She was one of these. We are fortunate to have walked and talked with her.

Dr. Pete J. Dunn
Smithsonian Institution

## FREDERICK KRAISSL, JR. (1899-1986)

Frederick Kraissl, Jr. was born in New York City on July 7, 1899 and received his Bachelor of Science degree in chemistry in 1921 from Polytechnic Institute of Brooklyn. While an undergraduate he was in the Army as Polytech became a preliminary training corps location. His Master's degree was obtained at Columbia

***Figure 1.*** **Fred and Alice Kraissl in 1979. Photograph by Ernest A. Duck.**

in 1922 and he undertook further graduate studies in chemical engineering with especial reference to manufactured glass. During summers he worked for the Corning Glass Works where his father was his immediate superior, and so great was his respect for his father that he retained the Junior in his name to the end of his days.

Fred met Alice L. Plenty of Hackensack, New Jersey while she was studying for the Bachelor's degree at Barnard. She assisted him in some of his graduate work and they were married in 1925. They were blessed with two daughters, five grandchildren and a number of great-grandchildren. The industrial company they founded together in 1926, the Kraissl Company, has been most successful and continues under the able management of the younger generation.

Besides their home in River Edge, which was built for Fred and Alice while they were on their honeymoon and which they occupied all their lives, they had a summer home on Long Island's North Shore. Fred, at one time, was Commodore of the local Power Squadron there. During World War II he was a lieutenant colonel in the Chemical Warfare Service. His consulting firm of Kraissl Associates held numerous patents licensed for manufacture by the Kraissl Company.

Fred's interest in mineralogy, spurred by mineralogy courses at college and aided by the keenest research instincts and natural leadership talents, resulted in executive positions wherever he joined mineral societies. Alice was beside him always to aid in the tasks into which his boundless energy and tireless enthusiasm led him. He served as President and Trustee of the Franklin-Ogdensburg Mineralogical Society, Trustee and President of the Franklin Mineral Museum (for which his dedication was endless), President and Trustee of the North Jersey Mineralogical Society, and President of the Eastern Federation of Mineralogical Societies. Fred's photographs of delicate crystal formations were widely shown. His studies of mineral fluorescence were, likewise, recorded on film. Put together with appropriate commentary, these became a slide lecture which he prepared for the Franklin Mineral Museum.

Perhaps one high point in Fred's career was his attainment of the Doctor of Philosophy degree. The studies and laboratory work, in considerable part sponsored by the Corning Glass Works, had been done at Columbia, but writing of the thesis was to take place half a century later, refined by a lifetime of observation and engineering experience. Titled "A Study of the Mechanics of Colors in Gems and Minerals", the paper incorporated the tremendous gains in the science since Fred's college days, and portions of it were published in 1981. In this work, as in all else, Alice encouraged and supported him. His passing, on November 30, 1986, so soon after that of Alice, bears additional testimony to the closeness of this remarkable couple.

John L. Baum
Curator, Franklin Mineral Museum

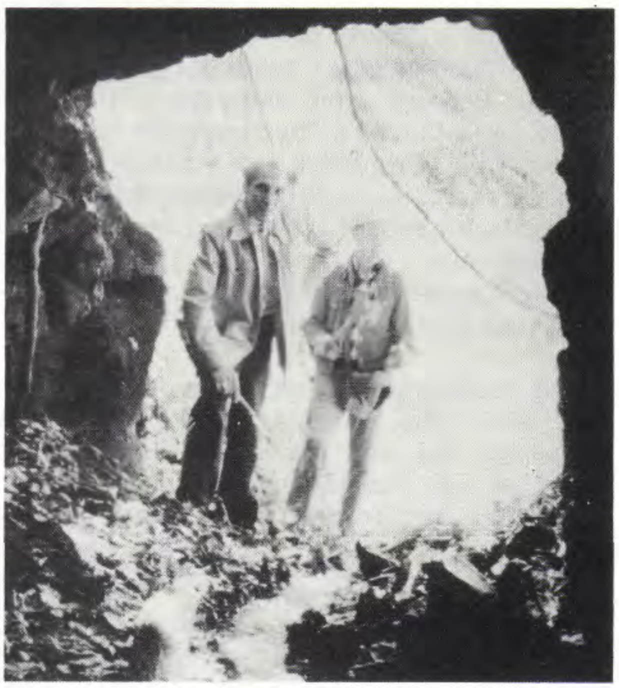

***Figure 2.*** **John Sebastian *(left)* and John Magner peer into the Adit, Tar Hill, Old Andover Iron Mines, spring 1980. Photograph by Bernard T. Kozykowski.**

## JOHN E. SEBASTIAN (1915-1986)

John E. Sebastian, Jr., son of Hungarian immigrants, was born in Franklin, New Jersey on March 13, 1915. John, pursuing the work his father had done before him, went to work in the Franklin Mine in the mid-1930s. Work in the mine was no easy task. John was "Raise Man", drilling and blasting in the most difficult of circumstances. Unlike lesser men, who would do no more, John was also a member of the company's mine rescue team. Except for a tour of duty with the Armed Forces during World War II, John remained in Franklin until the late 1940s when he moved to Kenvil to take a more secure position than mining afforded.

John retained his ties to his home town and former co-workers as well as to mineral collecting, and was attracted by the mineral shows that followed the closing of the mine. Recalling his experiences below ground and recognizing the uniqueness of the Franklin Mine's minerals, John began his efforts to help commemorate this rare and noteworthy heritage. His first efforts were within the F.O.M.S., encouraging support for the establishment of the Franklin Mineral Museum. He became a founding member of the Museum's Board of Trustees and an avid mineral collector.

It was shortly thereafter, about the time that John first assumed responsibility for the F.O.M.S. field trip program, that we first met. Although he was an active officer of the Society, being president in 1968-69, it was during the field trips that most of us came to know John. In my case it was during a rainy Saturday morning at the Old Andover Iron Mines some twenty years ago.

John became a personal friend of such professionals as Clifford Frondel and Arthur Montgomery, among others. He dedicated his greatest efforts, however, to providing the hobbyist with the opportunity to satisfy his curiosity through collecting. In so doing, he often denied himself the same opportunity to collect because he devoted his time to supervising the field trips and insuring that safety procedures were followed. In addition to this, he contributed considerable time to the politics of acquiring and maintaining productive collecting sites.

Through his efforts the field trips were well organized and injury free. John was instrumental in seeing that Limecrest Quarry was opened again, not just to F.O.M.S. but to other groups as well. Later, by citing the incident-free gatherings of over 600 collectors at Limecrest, he was instrumental in regaining access to the Farber Quarry for field trips. The nearly forgotten Rudeville Quarries serve as an example of John's enthusiastic endeavors to locate new and productive collecting sites for F.O.M.S.

John E. Sebastian passed away on October 11, 1986. He will be missed by all of us, particularly by his wife, Betty, and his two daughters. John will be remembered as a man of courage and foresight, as a man who gave freely of his time and of himself, and as a man who spoke out for those things that gave purpose and meaning to life.

Bernard T. Kozykowski
Past President, F.O.M.S.

# while in Franklin

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Admission: $2.00 for adults; $1.00 for students (first through twelfth grades); free admission for children (kindergarteners and younger).

Admission charges entitles one either to the guided tour of the museum, including the mineral collection, fluorescent exhibit, and mine replica, or to the Buckwheat Dump, where the daily collecting limit per person is 20 pounds. Those wishing to tour the museum and collect on the Buckwheat Dump must pay a separate admission for each.

For further information contact the manager, Stephen Sanford, at the telephone number shown above. After hours, call (201) 398-7303.

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Don't miss the Stephens Collection (Franklin memorabilia), which is located in a special room on the second floor of the library. Jack Baum supplies the following information about Fred Stephens and the collection: "Fred Stephens was born in Franklin around the turn of the century and at last report was living in Florida. He was raised in Franklin but following college worked elsewhere. As a keen and literate observer, he has recorded his memories of Franklin aided by a vast quantity of memorabilia which he has acquired over the years. The manuscript of his unpublished work on the area together with source materials is preserved in the Stephens Collection in a dedicated room in the Franklin Library. One may obtain the key to this room at the desk on the first floor during regular library hours. There are no borrowing privileges."

It is necessary to sign in and sign out when viewing the Stephens Collection. Should you need photocopies of anything while you are in Franklin, the library has photocopy machines available.

# SPRING PROGRAM FOR 1987

**Regular Society activities consist of field trips, micro-mineralogy study sessions, and lecture programs. Field trips vary as to time and location according to schedule. Morning micro-mineralogy study sessions take place from 10:00 a.m. to noon in Kraissl Hall at the Franklin Mineral Museum. Afternoon lecture programs begin at 2:00 p.m. at the Hardyston Township School, Route 23, Franklin, New Jersey. Pre-meeting activities begin at 1:00 p.m. - Lectures open to public.**

| | | |
|---|---|---|
| Saturday<br>March 21, 1987 | Program: | A Franklin Update (General Participation)<br>Mini-Auction (Seller receives 80%, FOMS 20%)<br>Make this a success. Bring good material for the auction. |
| | Field Trip: | Mineral Exchange Program - **SWAP & SELL** - FOMS members only.<br>Hardyston Township School, 10:00 a.m. to 2:00 p.m. |
| | Micro-Group: | **SWAP & SELL** at Hardyston Township School - 10:00 a.m. to noon.<br>Micro-Group sessions return to Kraissl Hall next month. |
| Saturday<br>April 18, 1987 | Program: | "The Sterling Mine" by Mr. Robert W. Metsger, New Jersey Zinc Company, Superintendent of the Sterling Mine. |
| | Field Trip: | Old Andover Iron Mine, Limecrest Road, Andover, N.J.<br>9:00 a.m. to noon. |
| | Micro-Group: | Kraissl Hall, Franklin Mineral Museum, Franklin, N.J.<br>10:00 a.m. to 12:00 noon. |
| Saturday<br>May 16, 1987 | Program: | "A look at Franklin micros found in the Pinch Collection"<br>by Omer S. Dean. |
| | Field Trip: | The Buckwheat Dump, Evans Street, Franklin, N.J.<br>10:00 a.m. to noon. |
| | Micro-Group: | Kraissl Hall, Franklin Mineral Museum, Franklin, N.J.<br>10:00 a.m. to 12:00 noon. |
| Sunday<br>May 17, 1987 | Field Trip: | Limecrest Quarry,<br>Limecrest Products Corporation of America,<br>Limecrest Road, Sparta, New Jersey<br>9:00 a.m. to 3:00 p.m. This is an Interclub Outing. |
| Saturday<br>June 20, 1987 | Program: | "Important Franklin species: their occurrence and paragenesis in other parts of the world" by Dr. William A. Henderson, columnist for the Mineralogical Record, and researcher for American Cyanamid. |
| | Field Trip: | Franklin Quarry (Formerly, Farber Quarry)<br>Limecrest Products Corporation of America,<br>Cork Hill Road, Franklin, N.J. 9:00 a.m. to noon. |
| | Micro-Group: | Kraissl Hall, Franklin Mineral Museum, Franklin, N.J.<br>10:00 a.m. to 12:00 noon. |

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