

40th ANNUAL

*Franklin - Sterling*

GEM & MINERAL  
SHOW

Friday, Saturday & Sunday  
Sept. 27th, 28th & 29th, 1996

*Sponsored by*



FRANKLIN, NEW JERSEY  
*The Fluorescent Mineral Capital of the World*

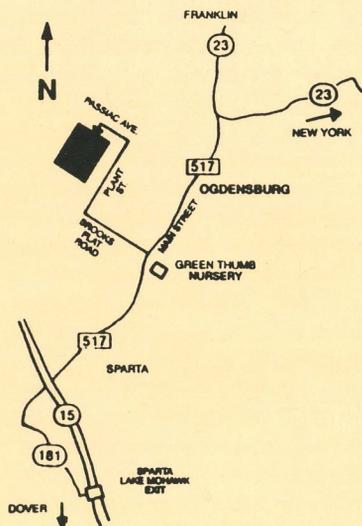
**STERLING HILL MINING MUSEUM**  
30 PLANT STREET  
OGDENSBURG, N.J. 07439

Welcome  
To  
**The Sterling Mine**  
In  
Ogdensburg, N.J.



**THE GATES ARE OPEN TO THE PUBLIC FOR A ONCE IN A LIFETIME, THRILLING OPPORTUNITY TO VISIT THE LAST OPERATING MINE IN NEW JERSEY! MANY ACTIVITIES ARE OFFERED SUCH AS A UNDERGROUND TOUR, SPECTACULAR FLUORESCENT MINERALS SHOWN IN PLACE, HISTORIC MINE BUILDINGS AND MUCH MORE!**

**VISIT OUR GIFT SHOP AND REFRESHMENT STAND. MODERN RESTROOM FACILITIES AND PARKING AVAILABLE. MOST AREAS ARE HANDICAP ACCESSIBLE. PICNIC AREAS ARE AVAILABLE.**



#### **ADMISSION**

|                     |      |
|---------------------|------|
| ADULT               | 8.00 |
| CHILDREN (UNDER 12) | 5.00 |
| SENIOR CITIZEN      | 7.00 |

#### **GROUP RATES**

For 10 or more, reservations are required for a \$1.00 discount per person  
School Groups: Call for information

#### **HOURS**

**OPEN 7 DAYS A WEEK**  
**10 A.M. TO 5 P.M.**  
**LAST TOUR AT 3:00 P.M.**

Jacket or Sweater Recommended  
Proper Footwear required

**For Information Call**  
**(201) 209-7212**

\*Tours at 1 P.M. & 3 P.M.  
or by appointment

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### **COLLECTING AVAILABLE**

**Last Sunday of each month thru November 10:00 am - 3:00 pm**

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# History of the Franklin Mine

by

John Leach Baum

The outcrop of the Franklin zinc-iron-manganese ore body was known from the earliest days because a portion of the deposit was exposed at the surface. Attempts to smelt the ore for iron in the local blast furnace used on the adjacent magnetite ore were futile. Early transfer of the property in order were King Charles II of England, to his brother James Duke of York, to Sir George Carteret, at inheritance tax sale to William Penn and eleven partners who founded an ownership association called the Board of Proprietors which subsequently sold to Anthony Sharp in 1750. In 1810 heir Edward Sharp sold to Dr Samuel Fowler and a partner (soon bought out) Franklin Mine Hill, site of the Franklin ore body. It was Dr. Sam who brought the property to the attention of science. His son, Colonel Samuel Fowler, acquired both the Franklin and Sterling properties to initiate the ultimate development of the deposits.

In 1810 the zinc content of zincite was published. The zinc minerals zincite, franklinite, and willemite being unique, many years of experimentation were to pass before their metal content could be recovered. Zinc oxide was the first product and the ancestral Zinc Company the first to manufacture ready-mixed paint. This was promoted as a superior replacement for poisonous lead-based paint which even today is an environmental hazard.

Due to unfortunate division of property titles based on poor understanding of the nature of the ores and their occurrence there were numerous mining companies working the Franklin outcrop. Legal challenges among the operators were so divisive that in 1897 all properties were combined and reorganization produced an increasingly successful venture under the title of the New Jersey Zinc Company. Additional favorable factors were the development of the ore at depth through the Parker shaft, invention of separation of the crushed ore into franklinite and willemite-zincite fractions and development of a mining method designed to effectuate total recovery of the ore reserves.

Efficient operation of the consolidated property required a new mill or concentrating plant, a revised mining method with relocated shafts and a new town complete with such services as would make Franklin a model mining community. To effect many of these improvements, Robert Catlin, a prominent mining engineer, was enticed to Franklin. He imported the finest mining talent, much of it from eastern Europe and Cornwall, England. As a result of the richness of the ore, nearly 20% zinc with substantial recovery of iron and manganese, and the dedication of management and workers, the venture was a complete success.

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Due to the orebody being essentially a steeply inclined slab, the mining method selected was calculated to allow the overhanging wallrock to subside under controlled conditions. Thus the orebody was divided into vertical segments across the width of the ore and then alternate segments were mined out from the bottom up. Each worked-out area or stope was filled with mill reject and remaining supporting slabs called pillars were mined downward in ten foot high slices, encouraging the overlying barren rock called the hanging wall to slump. Since much timber was used in pillar support while mining and a plank floor was laid just before the horizontal slice was advanced, collapse of the timber supports upon the floor allowed the overlying jumble of timber and planks and fill added from above to cushion the controlled subsidence of the hanging wall and provided a plank ceiling for the next slice to be mined below. In this manner essentially the entire ore body was recovered.

Concentration of the ore was important to enable a number of different products at the Palmerton, Pa. smelters, and all Franklin ore was so treated. The magnetic concentrate of franklinite was mixed with anthracite coal and roasted to recover much of the zinc as oxide and the residue was smelted to produce an iron-manganese alloy called spiegleisen, used in the manufacture of manganese steel. The willemite-zincite mill product was also mixed with anthracite coal and smelted in the absence of air to produce a zinc gas which condensed into zinc metal. A great pile of waste resulted.

Initially an ore body of limited value, Franklin's Mine Hill became a bonanza producing a half billion dollars worth of zinc over a period of 106 years. Obstacles to success were enormous but each was overcome by talented men who wrote nationally important mining law, developed markets for the first ready-mixed zinc oxide paint to replace lead paint, invented the zinc die casting business and created the alloys that made it possible, devised a mining method to recover all the Franklin ore body and perfected concentration and smelting of unique ores. Mining of the Franklin ore body was terminated on September 30, 1954.

In some respects, the history of the Franklin ores is the history of American mineralogy. Starting with the first described mineral for the United States, zincite, by Dr. Archibald Bruce in 1810, subsequently hundreds of species have been found here, many new to science and some unique to the locality. The science of mineralogy has benefitted immeasurably from the study of this great deposit. Concurrently with these studies and contributing to them, collecting mineral specimens continues. Closing of the mines has limited somewhat the availability of good specimens in quantity but collections become available with time and trophy specimens of rare or crystallized or spectacular fluorescent species bring ever higher prices.

The comprehensive list of minerals from the Franklin-Sterling Hill Area.

|                         |                    |                   |
|-------------------------|--------------------|-------------------|
| Acanthite               | Chalcopyrite       | Gageite-1Tc       |
| Actinolite              | Chamosite          | Gageite-2M        |
| Adamite                 | Charlesite         | Gahnite           |
| Adelite                 | Chloritoid         | Galena            |
| Aegirine                | Chlorophoenicite   | Ganomalite        |
| Akrochordite            | Chondrodite        | Ganophyllite      |
| Albite                  | Chrysocolla        | Genthelvite       |
| Allactite               | Cianciullite       | Gersdorffite      |
| Allanite-(Ce)           | Clinochlore        | Gerstmannite      |
| Alleghanyite            | Clinochrysolite    | Glaucocroite      |
| Almandine               | Clinoclase         | Gothite           |
| Analcime                | Clinohedrite       | Gold              |
| Anandite                | Clinohumite        | Goldmanite        |
| Anatase                 | Clinozoisite       | Graphite          |
| Andradite               | Clintonite         | Greenockite       |
| Anglesite               | Conichalcite       | Grossular         |
| Anhydrite               | Connellite         | Groutite          |
| Annabergite             | Copper             | Guerinite         |
| Anorthite               | Corundum           | Gypsum            |
| Anorthoclase            | Covellite          |                   |
| Antlerite               | Cryptomelane       | Haidingerite      |
| Aragonite               | Cummingtonite      | Halotrichite      |
| Arsenic                 | Cuprite            | Hancockite        |
| Arseniosiderite         | Cuprostibite       | Hardystonite      |
| Arsenopyrite            | Cuspidine          | Hastingsite       |
| Atacamite               |                    | Hauckite          |
| Augite                  | Datolite           | Hausmannite       |
| Aurichalcite            | Descloizite        | Hawleyite         |
| Aurorite                | Devilline          | Hedenbergite      |
| Austinite               | Digenite           | Hedyphane         |
| Azurite                 | Diopside           | Hematite          |
|                         | Djurleite          | Hemimorphite      |
| Bakerite                | Dolomite           | Hendricksite-1M   |
| Bannisterite            | Domeykite          | Hercynite         |
| Barite                  | Dravite            | Hetaerolite       |
| Barium-pharmacosiderite | Dufite             | Heulandite        |
| Barylite                | Dypingite          | Hexahydrate       |
| Barysilite              |                    | Hodgkinsonite     |
| Bassanite               | Edenite            | Holdenite         |
| Baumbauerite            | Epidote            | Hornblende        |
| Bementite               | Epsomite           | Huebnerite        |
| Berthierite             | Erythrite          | Humite            |
| Bianchite               | Esperite           | Hyalophane        |
| Biotite                 | Euchroite          | Hydrohetaerolite  |
| Birnessite              | Eveite             | Hydrotalcite      |
| Bornite                 |                    | Hydroxypophyllite |
| Bostwickite             | Fayalite           | Hydrozincite      |
| Brandtite               | Feitknechtite      |                   |
| Breithauptite           | Ferrimolybdite     | Illite            |
| Brochantite             | Ferristilpnomelane | Ilmenite          |
| Brookite                | Ferroactinolite    |                   |
| Brucite                 | Ferroaxinite       | Jacobsite         |
| Bultfonteinite          | Ferrostilpnomelane | Jarosewichite     |
| Bustamite               | Flinkite           | Jerrygibbsite     |
|                         | Fluckite           | Johannsenite      |
| Cahnite                 | Fluoborite         | Johnbaumite       |
| Calcite                 | Fluorapatite       | Junitoite         |
| Canavesite              | Fluorapophyllite   |                   |
| Carrollite              | Fluorite           | Kaolinite         |
| Caryophyllite           | Forsterite         | Kentrolite        |
| Celestine               | Fraipontite        | Kittatinnyite     |
| Celsian                 | Franklinfurnaceite | Koettigite        |
| Cerussite               | Franklinite        | Kolicite          |
| Chabazite               | Franklinphilite    | Kraisslite        |
| Chalcocite              | Friedelite         | Kutnahorite       |
| Chalcopyrite            |                    |                   |

|                            |                    |                 |
|----------------------------|--------------------|-----------------|
| Larsenite                  | Parabrandtite      | Spinel          |
| Laumontite                 | Pararammelsbergite | Starkeyite      |
| Lawsonbauerite             | Parasymplectite    | Sterlinghillite |
| Lead                       | Pargasite          | Stibnite        |
| Legrandite                 | Pectolite          | Stilbite        |
| Lennilenapeite             | Pennantite-1a      | Strontianite    |
| Leucophoenicite            | Petedunnite        | Sulfur          |
| Linarite                   | Pharmacolite       | Sussexite       |
| Liroconite                 | Pharmacosiderite   | Synadelphite    |
| Lizardite                  | Phlogopite-1M      |                 |
| Loellingite                | Picropharmacolite  | Talc            |
| Loseyite                   | Piemontite         | Tennantite      |
|                            | Pimelite           | Tephroite       |
| Magneshornblende           | Powellite          | Tetrahedrite    |
| Magnesioriebeckite         | Prehnite           | Thomsonite      |
| Magnesium-chlorophoenicite | Pumpellyite-(Mg)   | Thorite         |
| Magnetite                  | Pyrite             | Thortveitite    |
| Magnussonite               | Pyroaurite         | Tilasite        |
| Malachite                  | Pyrobelonite       | Tirodite        |
| Manganaxinite              | Pyrochroite        | Titanite        |
| Manganberzeliite           | Pyrophanite        | Todorokite      |
| Manganese-hoernesite       | Pyroxmangite       | Torreyite       |
| Manganhumite               | Pyrrhotite         | Tremolite       |
| Manganite                  |                    | Turneaureite    |
| Manganosite                | Quartz             |                 |
| Manganpyrosmalite          |                    | Uraninite       |
| Marcasite                  | Rammelsbergite     | Uranophane      |
| Margarite                  | Realgar            | Uranospinitite  |
| Margarosanite              | Retzian-(La)       | Uvite           |
| Marialite                  | Retzian-(Nd)       |                 |
| Marsturite                 | Rhodochrosite      | Vesuvianite     |
| Mcallisterite              | Rhodonite          | Villyaellenite  |
| Mcgovernite                | Richterite         |                 |
| Meionite                   | Roebbingite        | Walkkilldellite |
| Meta-ankoleite             | Romeite            | Wawayandaite    |
| Metalodevite               | Rosasite           | Wendwilsonite   |
| Metazeunerite              | Roweite            | Willemite       |
| Microcline                 | Rutile             | Wollastonite    |
| Mimetite                   |                    | Woodruffite     |
| Minehillite                | Safflorite         | Wulfenite       |
| Molybdenite-2H             | Samfowlerite       | Wurtzite        |
| Monohydrocalcite           | Sarkinite          |                 |
| Mooreite                   | Sauconite          | Xonotlite       |
| Muscovite-1M               | Schallerite        |                 |
|                            | Scheelite          | Yeatmanite      |
| Nasonite                   | Schorl             | Yukonite        |
| Natrolite                  | Sclarite           |                 |
| Nelenite                   | Scorodite          | Zinalsite       |
| Neotocite                  | Seligmannite       | Zincite         |
| Newberyite                 | Sepiolite          | Zinkenite       |
| Niahite                    | Serpierite         | Zircon          |
| Nickeline                  | Siderite           | Znucalite       |
| Nontronite                 | Sillimanite        |                 |
| Norbergite                 | Silver             |                 |
|                            | Sjögrenite         |                 |
| Ogdensburgite              | Skutterudite       |                 |
| Ojuelaite                  | Smithsonite        |                 |
| Oligoclase                 | Sonolite           |                 |
| Orthochrysotile            | Spangolite         |                 |
| Orthoclase                 | Spessartine        |                 |
| Orthoserpierite            | Sphalerite         |                 |
| Ortavite                   |                    |                 |

## The Franklin-Sterling Hill area Mineral Species List

Compiled from numerous sources by Pete J. Dunn of the Smithsonian Institution and John L. Baum, Curator of the Franklin Mineral Museum, following the nomenclature of the Glossary of Mineral Species (Fleischer, 1991). Procedures for adding species to this list are given in The Picking Table, 28. #1, pages 4-5 (1987).

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## Fluorescent Minerals of Franklin and Sterling Hill, N.J

A 1994 CHECK-LIST BASED ON OBSERVATIONS BY RICHARD C. BOSTWICK

*FL* = fluoresces; *PH* = phosphoresces; *SW* = shortwave ultraviolet radiation;

*LW* = longwave ultraviolet radiation

These descriptions are necessarily brief and hence simplistic. The ultraviolet wavelength (SW or LW) listed with a fluorescent response is the wavelength for which the response is stronger; many listed minerals fluoresce under both LW and SW. Unusual fluorescent responses are listed in parentheses. Fluorescent intensity and subtle differences in hue are not mentioned.

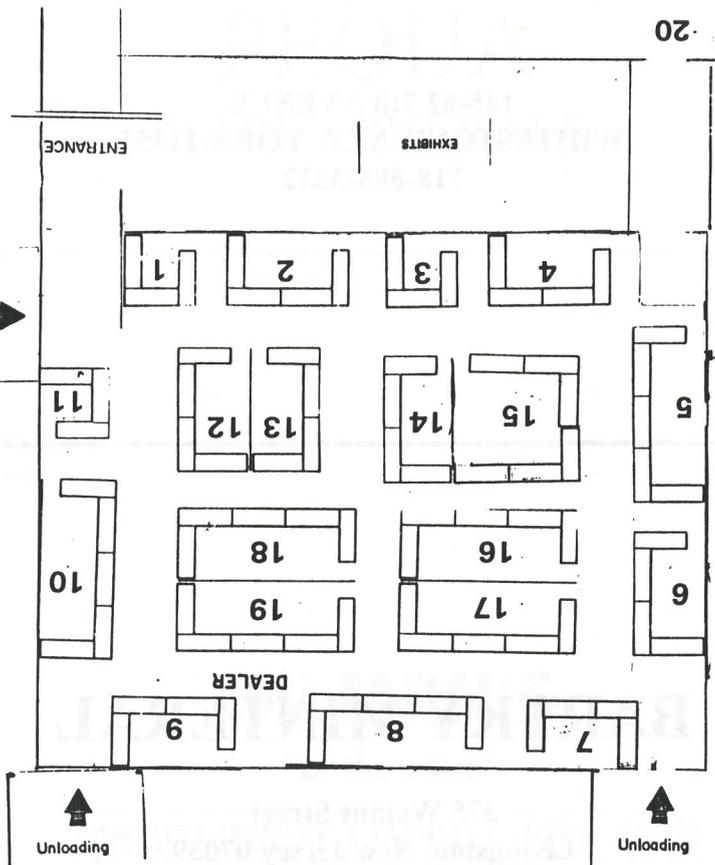
While mineral fluorescence is a powerful tool for rapid mineral identification, it should be used in conjunction with other identification techniques.

- Albite:** FL red SW  
**Aragonite:** FL,PH cream LW  
(FL green SW)  
**Barite:** FL cream SW  
(FL tan LW, green SW)  
**Barylite:** FL violet SW  
conspicuous under iron arc  
**Bassanite:** FL, PH violet SW  
**Bustamite:** FL red LW  
**Cahnite:** FL cream SW  
**Calcite:** FL red w/red-orange PH  
(FL pink, orange, cream, green,  
blue, yellow, violet etc.)  
**Canavassite:** FL,PH violet LW  
**Celestine:** FL cream LW  
(FL violet SW)  
**Cerussite:** LW yellow LW  
**Chabazite:** FL green SW  
**Charlesite:** FL pale blue SW, but  
coated with cream FL gypsum  
**Chondrodite:** FL yellow SW  
**Clinohedrite:** FL orange-yellow SW  
**Corundum:** FL deep-red LW  
**Cuspidine:** FL orange-yellow SW  
brief orange-red PH  
**Datolite:** FL cream SW  
**Diopside:** FL blue SW, cream LW  
**Dypingite:** FL,PH, blue SW, LW  
**Epsomite:** FL cream LW  
**Esperite:** FL lemon-Yellow SW  
**Fluorborite:** FL cream SW  
**Fluorapatite:** FL orange or blue SW (FL "peach")  
**Fluorapophyllite:** FL, PH white SW  
**Fluorite:** FL, PH blue-green SW,  
LW or FL violet LW  
**Guerinite:** FL white SW  
**Gypsum:** FL pale blue or cream SW  
**Hardystonite:** FL violet SW  
**Hedyhane:** FL cream or orange SW  
**Hemimorphite:** FL, PH white LW  
(FL green SW)  
**Hodgkinsonite:** FL deep red LW  
**Humite:** FL weak pale-yellow SW  
**Hyalophane:** FL red SW  
**Hydrocalcite:** FL cream LW  
**Hydroxapophyllite:** FL, PH weak white SW  
**Johnbaumite:** FL orange SW  
**Junitoite:** FL pale yellow LW  
**Magneso-hornblende:** FL greenish-blue SW  
**Manganaxinite:** FL red SW  
**Margarite:** FL blue SW  
**Margarosanite:** FL blue and red SW  
(FL orange LW)  
**Marialite:** FL yellow SW, pink LW  
**Mcallisterite:** FL cream SW  
**Meionite:** FL pinkish-red SW (FL pink,  
orange, yellow etc.)  
**Meta-ankoleite:** FL green SW  
**Metalodevite:** FL green SW  
**Microcline:** FL blue or red SW  
**Minehillite:** FL violet SW  
**Monohydrocalcite:** FL green SW  
**Nasonite:** FL pale Yellow SW  
**Newberryite:** FL cream SW  
**Norbergite:** FL yellow SW  
**Oyelite-like mineral:** FL violet and White LW  
**Pargasite:** FL greenish-blue SW  
**Pectolite:** FL, PH orange SW  
**Phlogopite:** FL yellow SW  
**Picroparmacolite:** FL white LW  
**Powellite:** FL yellow SW  
**Prehnite:** FL pinkish orange SW  
**Quartz:** yellow or green SW  
**Roebbingite:** FL red w/red-orange PH SW  
**Samfowlerite:** weak red SW  
**Smithsonite:** FL, PH white SW  
**Sphalerite:** FL, PH orange, blue, yellow-orange  
or orange-yellow LW, poor FL SW  
**\*Strontianite:** FL violet SW, LW  
**Svabite:** FL orange SW  
**Talc:** FL cream SW  
**Thomsonite:** FL cream SW  
**Tilasite:** FL yellow SW  
**Titanite:** FL yellow-orange SW  
**Tremolite:** FL blue SW (FL yellow LW)  
**Turneaureite:** FL orange SW  
**Uranospinite:** FL green SW  
**Uvite:** FL yellow SW  
**Willemite:** FL, PH green SW. Also FL, PH  
yellow, greenish-yellow, orange  
**Wollastonite:** FL, PH orange to yellow SW  
**Xonotlite:** FL violet SW  
**Zincite:** FL yellow SW  
**Zircon:** FL orange SW  
**Znucalite:** FL green SW
- Total = 81 FL species reported  
\*added to list

## Species unique to Franklin and Sterling Hill

Of the sixty-nine valid species described from Franklin or Sterling Hill for the first time and listed in this volume, thirty-five remain unique to these deposits: they have not been found elsewhere. This is a changeable list; some of these species will likely be found elsewhere in the future. Those minerals with essential combined Mn and Zn, and those minerals having these elements in combination with As and Si, will likely remain unique to Franklin or Sterling Hill for some time. These unique species represent approximately 10% of those found here, and approximately 1% of all known on earth.

- BOSTWICKITE**  
 $\text{CaMn}^{3+}_6\text{Si}_3\text{O}_{16}\cdot 7\text{H}_2\text{O}$
- CHARLESITE**  
 $\text{Ca}_6(\text{Al}, \text{Si})_2(\text{SO}_4)_2[\text{B}(\text{OH})_4](\text{OH})_{12}\cdot 26\text{H}_2\text{O}$
- CHLOROPHOENICITE**  
 $\text{Mn}_3\text{Zn}_2(\text{OH})_6[\text{As}_{0.5}\text{H}_{0.5}(\text{O}, \text{OH})_3]_2$
- CIANCIULLIITE**  
 $\text{Mn}(\text{Mg}, \text{Mn})_2\text{Zn}_2(\text{OH})_{10}\cdot 2\text{-}4\text{H}_2\text{O}$
- FRANKLINFURNACEITE**  
 $\text{Ca}_2\text{Fe}^{3+}\text{Mn}^{2+}_3\text{Mn}^{3+}\text{Zn}_2\text{Si}_2\text{O}_{10}(\text{OH})_8$
- FRANKLINPHILITE**  
 $\text{K}_4(\text{Mn}, \text{Mg}, \text{Zn}, \text{Fe})_{48}(\text{Si}, \text{Al})_{72}(\text{O}, \text{OH})_{216}\sim 6\text{H}_2\text{O}$
- GERSTMANNITE**  
 $(\text{Mg}, \text{Mn})_2\text{ZnSiO}_4(\text{OH})_2$
- HARDYSTONITE**  
 $\text{Ca}_2\text{ZnSi}_2\text{O}_7$
- HAUCKITE**  
 $(\text{Mn}, \text{Mg})_{24}\text{Zn}_{18}\text{Fe}^{3+}_3(\text{SO}_4)_4(\text{CO}_3)_2(\text{OH})_{81}$
- HENDRICKSITE**  
 $\text{K}(\text{Zn}, \text{Mg})_3\text{Si}_3\text{AlO}_{10}(\text{OH})_2$
- HODGKINSONITE**  
 $\text{Zn}_2\text{Mn}(\text{SiO}_4)(\text{OH})_2$
- HOLDENITE**  
 $(\text{Mn}, \text{Mg})_6\text{Zn}_3(\text{OH})_8(\text{AsO}_4)_2(\text{SiO}_4)$
- JAROSEWICHITE**  
 $\text{Mn}_2\text{Mn}^{3+}(\text{AsO}_4)(\text{OH})_6$
- JOHNBAUMITE**  
 $\text{Ca}_2(\text{AsO}_4)_3(\text{OH})$
- KITTATINNYITE**  
 $\text{Ca}_4\text{Mn}^{3+}_4\text{Mn}^{2+}_2\text{Si}_4\text{O}_{16}(\text{OH})_8\cdot 18\text{H}_2\text{O}$
- KOLICITE**  
 $\text{Mn}_7\text{Zn}_4(\text{AsO}_4)_7(\text{SiO}_4)_2(\text{OH})_8$
- KRAISSLITE**  
 $\text{Fe}^{3+}_2\text{Mg}_4\text{Mn}_{44}\text{Zn}_6(\text{AsO}_4)_6(\text{AsO}_3)_4(\text{SiO}_4)_{12}(\text{OH})_{36}$
- LAWSONBAUERITE**  
 $(\text{Mn}, \text{Mg})_7\text{Zn}_4(\text{SO}_4)_2(\text{OH})_{22}\cdot 8\text{H}_2\text{O}$
- LENNILENAPEITE**  
 $\text{K}_{6-7}(\text{Mg}, \text{Mn}, \text{Zn}, \text{Fe})_{48}(\text{Si}, \text{Al})_{72}(\text{O}, \text{OH})_{216}\cdot 16\text{H}_2\text{O}$
- MAGNESIUM-CHLOROPHOENICITE**  
 $(\text{Mg}, \text{Mn})_2\text{Zn}_2(\text{OH})_6[\text{As}_{0.5}\text{H}_{0.5}(\text{O}, \text{OH})_3]_2$
- MCGOVERNITE**  
 $(\text{Mn}, \text{Mg}, \text{Zn})_{273}\text{As}^{3+}_{12}\text{As}^{5+}_{12}\text{Si}_{-30}\text{Si}_{-42}\text{O}_{324}(\text{OH})_{252}$
- MINEHILLITE**  
 $\text{K}_2\text{Ca}_{28}\text{Zn}_3\text{Al}_4\text{Si}_{40}\text{O}_{112}(\text{OH})_{16}$
- MOOREITE**  
 $\text{Mg}_9\text{Mn}_2\text{Zn}_4(\text{SO}_4)_2(\text{OH})_{26}\cdot 8\text{H}_2\text{O}$
- NELENITE**  
 $\text{Mn}_{16}\text{Si}_{12}\text{O}_{30}(\text{OH})_{14}[\text{As}^{3+}_3\text{O}_6(\text{OH})_3]$
- PARABRANDTITE**  
 $\text{Ca}_2\text{Mg}(\text{AsO}_4)_2\cdot 2\text{H}_2\text{O}$
- PETEDUNNITE**  
 $\text{CaZnSi}_2\text{O}_6$
- RETZIAN-(La)**  
 $\text{Mn}_2\text{La}(\text{AsO}_4)(\text{OH})_4$
- RETZIAN-(Nd)**  
 $\text{Mn}_2\text{Nd}(\text{AsO}_4)(\text{OH})_4$
- SAMFOWLERITE**  
 $\text{Ca}_{14}\text{Mn}_3\text{Zn}_2(\text{Zn}, \text{Be})_2\text{Be}_6(\text{SiO}_4)_6(\text{Si}_2\text{O}_7)_4(\text{OH}, \text{F})_6$
- SCLARITE**  
 $(\text{Zn}, \text{Mg}, \text{Mn})_4\text{Zn}_3(\text{CO}_3)_2(\text{OH})_{10}$
- STERLINGHILLITE**  
 $\text{Mn}_3(\text{AsO}_4)_2\cdot 4\text{H}_2\text{O}$
- TORREYITE**  
 $(\text{Mg}, \text{Mn})_7\text{Zn}_4(\text{SO}_4)_2(\text{OH})_{22}\cdot 8\text{H}_2\text{O}$
- WALLKILDELLITE**  
 $\text{Ca}_4\text{Mn}^{2+}_6\text{As}^{5+}_4\text{O}_{16}(\text{OH})_8\cdot 18\text{H}_2\text{O}$
- WAWAYANDAITE**  
 $\text{Ca}_{12}\text{Mn}_4\text{B}_2\text{Be}_{18}\text{Si}_{12}\text{O}_{46}(\text{OH}, \text{Cl})_{30}$
- YEATMANITE**  
 $[\text{Mn}_5\text{Sb}_2][\text{Mn}_2\text{Zn}_8\text{Si}_4]\text{O}_{28}$



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Booth #1

# **DETRIN MINERALS**

**145-62 7th AVENUE  
WHITESTONE, NEW YORK 11357  
718-886-3232**

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Booth #2

# **BARTKY MINTERAL**

**375 Walnut Street  
Livingston, New Jersey 07039**

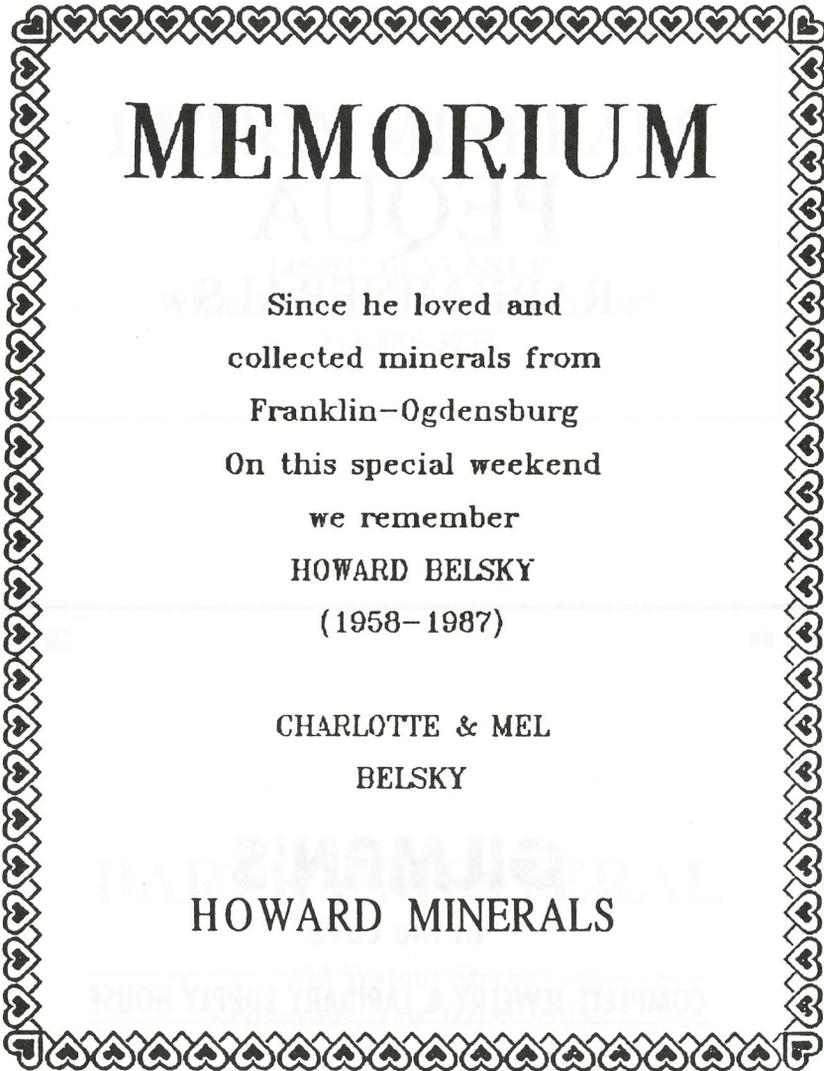
PEQUA  
RARE MINERALS

**GILMAN'S**  
*"at the cave"*

**COMPLETE JEWELRY & LAPIDARY SUPPLY HOUSE**

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Hellertown, PA 18055

Robert Gilman  
Beverly Rozewicz  
(610) 838-8767



# MEMORIUM

Since he loved and  
collected minerals from  
Franklin-Ogdensburg  
On this special weekend

we remember  
HOWARD BELSKY  
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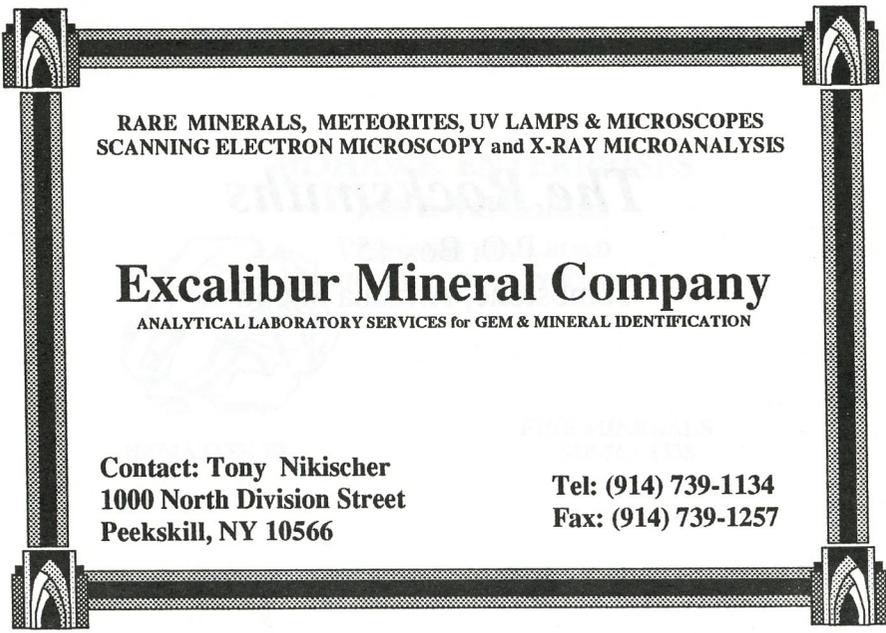
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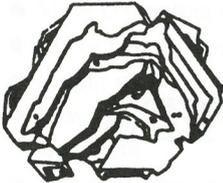
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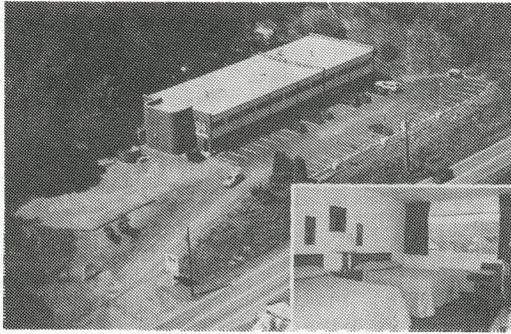
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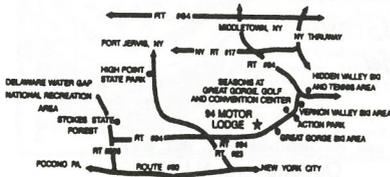


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Franklin, New Jersey



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BOX 146

FRANKLIN, N. J. 07416

The Franklin-Ogdensburg Mineralogical Society, Inc., is an organization established to provide programs designed to benefit the community, the collector and those interested in the minerals, mineralogy and geology of the Franklin-Ogdensburg area of New Jersey.

Our purpose is:-

1. To establish and maintain, in cooperation with other interested groups, a permanent Museum in Franklin, New Jersey, for the minerals of Franklin and Ogdensburg.
2. To develop new information on the minerals and mineralogy through cooperative programs with Universities and other scientific organizations and individuals.
3. To obtain and make available accurate up-to-date information on the minerals and mineralogy of the areas.
4. To facilitate collecting of the minerals while conserving material for future collectors.
5. To facilitate identification of the minerals.
6. To promote fellowship and the advancement of mineralogy and geology by providing meetings for the members of the Society.

If you are interested in these or related programs, you are invited to join with us. Our yearly activities consist of seven scheduled meetings and field trips, with special trips to Museums, Universities and other areas of special interest. Our publication "The Picking Table", which is issued twice yearly, in March and September, will advise you regarding the meeting and field trip dates and other activities of the Society.

**Dues are \$15 for individual memberships - \$20 for family memberships**

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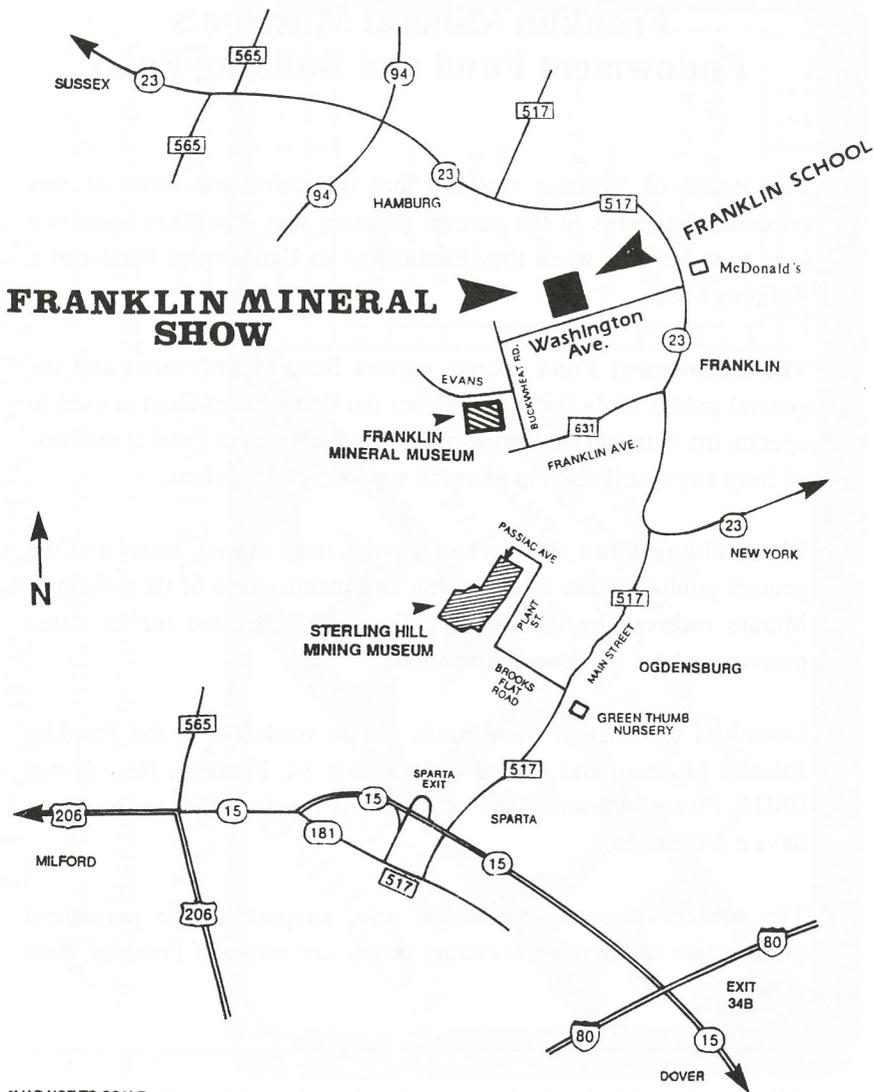
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## Franklin Mineral Museum's Endowment Fund and Building Fund

The Board of Trustees realized that the continued financial and educational success of the mineral museum was dependent upon two long term projects when they established an Endowment Fund and a Building Fund.

**The Endowment Fund** accepts monies from estates, trusts and the general public. Only the income from the Endowment Fund is used to operate the museum. The principal of the Endowment Fund is restructured from any distribution to museum support or expansions.

**The Building Fund** also accepts monies from estates, trusts and the general public for use in expansion and maintenance of its buildings. Monies received by the Building Fund are restructured for its stated purpose and not for general operations.

Donations to either of these funds can be made out to the Franklin Mineral Museum and mailed to P.O. Box 54, Franklin, New Jersey 07416. Please indicate which of the funds the donations is for if you have a preference.

The trustees sincerely appreciate your support of the permanent preservation of the mineral history of the zinc mines of Franklin, New Jersey.

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*All donations to the Endowment Fund and Building Fund are tax deductible.*

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**THE PLACE -** THE LYCEUM HALL, IMMACULATE CONCEPTION CHURCH, 75 CHURCH STREET, FRANKLIN, N. J. . ABOUT 3 MINUTES BY AUTO FROM THE FRANKLIN ELEMENTARY SCHOOL, THE SITE OF THE 40th ANNUAL FRANKLIN-STERLING GEM AND MINERAL SHOW.

**THE TIME -** SOCIAL HOUR BEGINS AT 6:30 p.m.; DINNER BEGINS AT 7:00 p.m.

**SPEAKER -** JOHN A. JASZCZAK - ASSISTANT PROFESSOR OF PHYSICS AND ADJUNCT CURATOR, SEAMAN MINERAL MUSEUM MICHIGAN TECHNOLOGICAL UNIVERSITY HOUGHTON, MICHIGAN.

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- (3). May consign items in museum shop.

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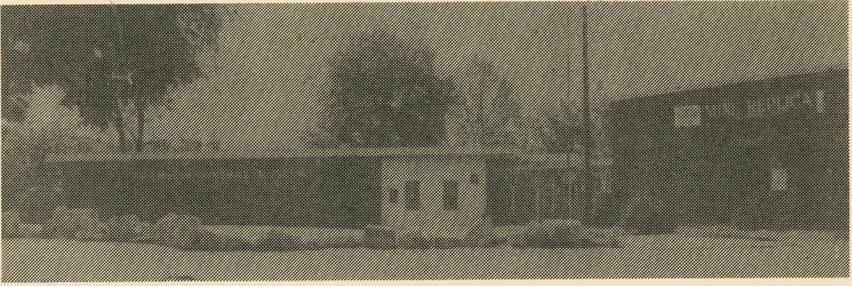
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