THE PICKING TABLE

FRANKLIN OGDENSBURG MINERALOGICAL SOCIETY, INC.

P.O. BOX 146
FRANKLIN, N. J., 07416

VOLUME VII FEBRUARY 1966 NUMBER 1

CLUB PROGRAM - SPRING 1966

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

*Sunday, March 20th	Field trip 9:00 A.M. to Noon - Buckwheat Dump, Franklin, N. J. Meeting - 2:30 P.M. Speaker - Mr. Alexander F. Knoll on "Mineral Identification for Amateurs."
*Saturday, April 16th	Joint meeting and field trip with the New Jersey Audubon Society. Speaker - Mr. Kemble Widmer.
Saturday, May 21st	Field trip 9:00 A.M. to Noon - Open Cuts, Sterling Hill Mine, Ogdensburg, N. J. Meeting 2:30 P.M. Speaker - Mr. John L. Baum "A Photographic Tour of the Sterling Hill Mine"
Saturday, June 18th	Field Trip 9:00 A.M. to Noon - to be announced. Meeting 2:30 P.M. Speakers - Mr. Perry Armagnac and Mr. Gardiner E. Gregory. - "A History of Franklin Mining" (a new film)
Fall Program	Fields trips and meetings will be held on Saturday - September 17th Saturday - October 15th Sunday - November 20th

Special Events

May 14th/15th - First Show of the year - "The Wonderful World of Rocks" - 2nd Annual Mineral Show of the Matawan Mineralogical Society, Matawan Regional High School, Atlantic Avenue, Matawan, N.J.

June 4th ?? Fifth Annual Swap Session - 9:00 A.M. to 9:00 P.M., Munson Field, Franklin, N. J.

June 30th/July 2nd - Annual Show of the Eastern Federation - Bell Auditorium, Augusta, Ga.

*Franklin Mineral Museum will be open to the public on these two days 9 A.M. to 5 P.M.

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

F.O.M.S. OFFICERS FOR THE YEAR 1966

President	Dr. Harry E. Montero
Vice President	John Sebastian
Treasurer	Julian M. Butler
Corresponding Secretary	Henry M. Althoen
Recording Secretary	Alice L. Kraissl

TRUSTEES

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F.O.M.S. Notes

This year the F.O.M.S. has a new set of officers. But, while the administration is new, the faces are familiar. All officers have already served the Club well in the past and there is no question as to their ability for the future. But they do offer diversity - our President, Dr. Montero, is a chess master as well as a mineral and fossil collector. Our Secretary, Henry Althoen, will double as President of the New Jersey Audubon Society. Our Vice President, John Sebastian will continue to watch over us as chief Safety Officer. Alice Kraissl, a lady of many talents, as Recording Secretary, keeps our Executive Board meetings reasonably quiet and well behaved. And Jack Butler, the Treasurer, will continue to be the backbone of the Society and earn and preserve the funds to keep us going. Jack continually amazes me; if I had any money, he sure would be my business manager.

Arrangements for our Spring program are still incomplete; complete details will be given in our monthly mailings. However, please make a note of our calendar dates and that all meetings will be held at the Hardyston School. Mark June 4th with a question mark. Details for the Swap Session have not been worked out yet. More of this event later.

There has been no change in our dues, which remain $2.00 per year. Dues for 1966 are now payable. Please use the form on our back page for easy remittance and treat yourself to a book.

Franklin Mineral Museum

Visitors to the Franklin Mineral Museum, which was officially opened on October 9th, 1965, have been greatly impressed by the varied exhibits. On display are Franklin-Ogdensburg mineral specimens, old photos, mining equipment, historical items plus a fine fluorescent exhibit and the life size replica of a typical zinc mine shaft and operation. Visitors' reactions have been highly favorable and good attendance is expected when the museum reopens in the Spring.

The Franklin Mineral Museum, Evans Street, Franklin, will be open to the public as follows:

Up to May 1st - Closed except to group visits made by specific appointment (Write to: Franklin Mineral Museum, Inc. Box 76, Franklin, N. J. 07416)

May 1st/31st - Open Saturdays 10:00 A.M. to 5:00 P.M.
Open Sundays 1:00 P.M. to 5:00 P.M.

June 1st/Sept. 14th - Open daily, Tuesday through Saturday, 10:00 A.M. to 5:00 P.M.
Open Sundays 1:00 PM to 5:00 P.M.
Closed on Mondays.

Sept. 15/Dec. 1st - Open Saturdays 10:00 A.M. to 5:00 P.M.
Open Sundays 1:00 P.M. to 5:00 P.M.

Admission Rates - Adults $1.00 - School age children $.50
no charge for under school age children.

Mr. John L. Baum has been appointed Curator of the Franklin Mineral Museum. It is his intention to change the mineral displays frequently so that there will always be something new for the visitor to see. Your visit is highly recommended.

The Geological Society of New Jersey

I have just joined the Geological Society of New Jersey. If I had previously known of this organization, I would have joined sooner. Unfortunately, this fine group has not been publicized and is unknown to many prespective members. For instance, all of us in the F.O.M.S., all of whom are eligible and all of whom would personally benefit from membership in this group.

The Geological Society of New Jersey is jointly sponsored by the New Jersey State Museum and the New Jersey Geological Survey. The Society normally meets on the third Tuesday of every month from October through April inclusive (except December) at 8:00 P.M. in the Auditorium of the New Jersey State Museum, Trenton, N. J. Speakers are able and qualified lecturers knowledgeable in some particular field of geology.

Personally, I will not be able to attend many of any of these lectures. However, I feel that the literature provided by the Society is worth more than the very nominal dues of $2.00 per year. As a paid up 1966 member I have received an excellent 24 page report which compares "The Unusual Mineral Deposits at Langban, Sweden with those at Franklin, N. J. " by John H. Vreeland, Assistant Geologist, New Jersey Geological Survey. Also, Kemble Widmer's (State Geologist) 26 page report on "Geology in New Jersey", and other material.

Often membership is given a summary of a lecture plus a bibliography of additional reading. Titles of some of these lectures still available include

"Fossils and How to Find Them"
"Gems - Real and Synthetic"
"The Meteorite Search"
"The Appalachian Revolution"
"Extraterrestrial Mineralogy"

Finally, a newsletter listing members' activities, new publications, lectures, other geological subject matter and items of general interest is sporadically distributed.

The Geological Society of New Jersey aims to arouse interest in and to promote knowledge of geology, particularly of New Jersey. The dues are very reasonable, the benefits to any collector are great. (Out of state residents welcome). For a membership blank write to the Secretary, Geological Society of New Jersey, New Jersey State Museum, P.O. Box 1868, Trenton, N.J. 08625.

The United States National Museum (Smithsonian Institute)

Whenever I am in Washington and have some time to spare, I head for the Gems and Minerals Hall in the Museum of Natural History of the Smithsonian Institute. For magnificent specimens, beautifully displayed, this exhibit rates No. 1 in the country and rightfully so, for it is part of the United States National Museum.

The public display is only part of our national collection of gems, minerals and meteorites. These collections, among the finest in the world, are maintained by the Department of Mineral Science as reference sources for scientific study and research.

Despite the value of the public display of gems and minerals, the Department of Mineral Sciences operates under a very low budget, which is solely used for administrative purposes. It is generally not known that specimen procurement depends totally upon donations; no funds are budgeted for this purpose. Up to now, this has not hampered the Department unduly. Careful and judicious use of the funds left by Messrs. Roebling and Canfield have served to build up the national collections. But now the Department has a problem.

The U. S. National Museum has an option to purchase the collection of the late Nobel Prize Winner, Professor Dr. Carl Bosch. This important collection numbers about 30,000 specimens including 579 meteorites. It is particularly strong in classics from Central Europe, rare reference specimens and historical items. Much of this material is no longer available today. Failure to exercise the option could lead to private sale and possible dispersement of the collection, a loss to all of us.

The Bosch collection is important and belongs in our National Museum. But the Department of Mineral Sciences lacks the funds to conclude the purchase. Never before has the Department of Mineral Science needed or requested assistance but it does need funds and is asking now for contributions to the "CARL BOSCH COLLECTION FUND." Send your contribution (any amount welcome and tax deductible) to Mr. Paul Desautels, Department of Mineral Sciences, U. S. National Museum of Natural History, Washington, D. C. The last cash donation the Department received was in 1926 from Mr. Canfield's estate. Forty years later, we mineral collectors can contribute to the expansion of our national collections by sending Paul Desautels a check promptly.

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In this issue I find myself, through some coincidence, acting as special advocate for a State Bureau and a National Department. This is quite unusual and most irregular. But, in our scheme of things, these agencies receive very little of the state or national budget dollar. The department head must be part magician to stretch the dollars available yet this is never reflected in the quality of services rendered. Contact with the personnel is always pleasant and helpful. Both agencies regularly provide pleasure and assistance to the public, business and industry and it is always taken for granted. So, although no one in either body has complained or even specifically requested help, I feel that the very knowledge of their problems calls for a voluntary response in kind. And since I believe many others feel as I do, I do plead their cause knowing full well that as citizens and collectors we will all benefit in the end.

It also seems to me that someone is missing a bet on the purchase of the Bosch collection. This could prove to be the best public relations buy of the century, This collection will be bought by the Smithsonian; they just can't afford to pass it up. If some individual or business firm bought and presented the collection to the Museum, it could and would be called the "So and So Collection". Thus, for as long as we have a National Museum, this would be an honored name. For the price, and tax deductible at that, this would buy a form of honored immortality. Any one interested? Call or write Paul Desautels. But the chances are against a single buyer, so it is up to us collectors to show our personal appreciation for the good work being done on our behalf by contributing directly ourselves.

The New Jersey Zinc Company

On January 26th, 1966, stockholders of the New Jersey Zinc Company voted to merge with Gulf & Western Industries, Inc. Under the terms of the merger, Gulf & Western Industries, Inc. will be the surviving corporation. The operations, related assets and liabilities, acquired from the New Jersey Zinc Company will be transferred to a new Delaware subsidiary with the same name, which will continue to operate as a separate division under the supervision of the presently responsible officers and personnel.

In a notice to stockholders, dated December 27th, 1965, the Zinc Company gave its reason for the proposed merger as follows: "The Zinc Company as an integrated producer of zinc metal and related products has found its earnings necessarily closely related to the price of slab zinc on the world market. (over)

The management has recognized for some time the desirability of greater diversification in its operations. The proposed merger with G & W will give Zinc Company stockholders an interest in a much broader range of activities including the field of automotive parts, thereby limiting primary dependence on the price of a single basic industrial material which has been subject to wide fluctuation."

A history of the New Jersey Zinc Company is also provided in this report. I quote "The New Jersey Zinc Company was incorporated under the laws of New Jersey in 1880 as The New Jersey Zinc and Iron Company to acquire interests in certain mining properties in the Franklin-Ogdensburg, New Jersey area and the business and properties of New Jersey Zinc Company organized in 1852, which had in turn acquired the business and properties of The Sussex Zinc and Copper Mining and Manufacturing Company, organized in 1848. The Company's name was changed to The New Jersey Zinc Company in 1897, when it acquired the stock and specified properties of a number of other corporations engaged in the mining and manufacturing of zinc and related products.

Zinc Company's primary business is that of an integrated producer of a full line of zinc products. It mines and mills zinc ores to produce zinc concentrates. From the ores and concentrates produced by it and purchased from other sources it manufactures slab zinc, zinc alloys, rolled zinc and alloys, zinc dust and zinc pigments. From its mines or as by products of its zinc manufacturing operations the Company produces lead concentrates, iron-copper-silver ores, limestone, ferro-manganese products (spiegeleisen), cadmium and sulphuric acid. It also manufactures titanium dioxide pigments, metal powders and anhydrous ammonia.

At manufacturing plants at Palmerton, Pa. and Depue, Ill. zinc concentrates are smelted in vertical retorts to produce zinc metal, which is cast as standard grades or is further processed in refining columns to produce grades of higher purity, primarily Special High Grade.

The principal uses of the standard grades are for the galvanizing of steel products and the production of brass. Most of the Special High Grade is used for zinc die casting alloys, made either by the Company for sales under its Zanak trademark or by the die casting industry. The Company also manufactures strips and plates of rolled zinc or rolled zinc alloy (sold by the Company under the trademark Zilloy) and zinc dust for use in the manufacture of zinc enriched paints.

Zinc oxide pigments, produced both direct from concentrates and from zinc metal, are sold primarily to the paint and rubber industry and in lesser amounts to producers of linoleum, ceramics, plastics and pharmaceuticals.

Spiegeleisen and other low carbon ferro-manganese alloys derived from Sterling mine ores are sold to steel plants and iron foundries for purification purposes or to increase the manganese content of steel or iron. Cadmium residues recovered in treating zinc ores are processed at the Palmerton plant to produce cadmium metal, which is sold primarily for use in the electro-plating industry. The facilities at the Palmerton plant for roasting sulphide ores provide for the recovery of the sulphur to produce sulphuric acid, which is sold for industrial use within economic shipping range of the plant. The Company also produces metal powders of brass, bronze, copper, nickel-silver and zinc, used for the production of small metal parts or as a pigment.

"The Company ranks among the first four domestic producers of slab zinc and supplied in 1964 something more than 12% of the estimated zinc metal consumption in the United States. It is the largest domestic producer of zinc pigments, accounting for approximately 33% of 1964 shipments of lead free zinc oxide."

In the description of the mining properties owned by The New Jersey Zinc Company, the following was said about the Sterling Hill Mine: "The Sterling mine was first worked prior to 1852, but current operation dates from 1912. The ore deposit is in steeply dipping and complexly folded limestone. It has been developed from the surface outcrop through a vertical range of 2500 feet. The ore is complex, involving the minerals franklinite, willemite and zincite. The mining methods methods are horizontal cut and fill for the stopes, and square sets for the pillar recovery. Both systems are followed by filling of the excavated openings with gravel fill. Production at Sterling approximates 1,000 tons of crude ore per day. This ore cannot be concentrated by usual methods and it is crushed and ground to size and shipped to the Company's Palmerton smelter for concentration there in Waelz kilns. The Sterling ore body has been largely delimited as to tonnage and grade and at December 1st, 1965 was estimated to contain 4,750,000 tons of proven ore, averaging 20.1% zinc."

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Analysis by Electron Beams

"A new analyzer that can work from only one cubic micron of material represents one of the most comprehensive systems for the quantitative and qualitative analysis of solids yet developed. Distribution maps of the elements present can be seen either as electron images or X ray images by means of a double system of electronic and mechanical scanning and the complete assessment of a given sample can be obtained in a few minutes to a high degree of accuracy. Original development work was done in France and the instrument is marketed in England under the name Electronic Microprobe Analyzer.

An electron beam impinges on the specimen and four spectrometers arranged in pairs on either side of the electron column analyze the resulting X ray spectrum. The intensities of the lines are then compared with those from specimens of pure elements - each spectrometer covers a given range of wave lengths and several elements can often be analyzed simultaneously. When a distribution map is required, the sample is scanned electronically and mechanically in six seconds and the electron image obtained by mapping the current absorbed - very small variations in atomic number can be observed. The X ray image is very clear, and is brought about by a quick displacement of the beam in conjunction with a displacement of the sample at right angles to the line of scanning. It is possible either to observe the resultant image on a picture storage tube or to photograph the image for a permanent record."

From DISCOVERY - June 1965, page 48.

Esperite

In The Picking Table of February 1965, Volume VI, No. 1, appeared an abstract of new data on Esperite (formerly Calcium Larsenite). The complete paper by Paul B. Moore and Paul B. Ribbe has now been published in the American Mineralogist, Volume 50, Number 9, September 1965, pages 1170-1178.

Franklinite

A paper entitled "Exsolution in Franklinite" by Clifford Frondel and Cornelius Klein, Jr., was printed in the American Mineralogist, Volume 50, No. 10, October 1965, pages 1670-1680. Abstract follows:

"Metallographic, x-ray diffraction and electron micro-probe observations have been made on exsolution growths of hetaerolite, gahnite and hematite in analyzed specimens of franklinite from Franklin and Sterling Hill, N. J. The hetaerolite exsolution when referred to the equilibrium diagram of Mason (1947) for the system Fe_3O_4 - $ZnFe_2O_4$ indicates a minimum temperature of formation of 650° - 700°C for the initial homogeneous phase."

Feitknechtite/Hydrohausmannite

A new mineral for Sterling Hill is announced in a paper by Owen Bricker, published in the American Mineralogist, volume 50, number 9, September 1965, pages 1293-1354, entitled "Some Stability Relations in the System $Mn-O_2$ - H_2O at 25° and One Atmosphere Total Pressure." Abstract follows:

"Stability relations in the system $Mn-O_2-H_2O$ were investigated at 25°C and one atmosphere total pressure. Seven compounds, $Mn(OH)_2$, Mn_3O_4, γ-Mn_2O_3, γ-MnOOH, δ-MnO_2, γ-MnO_2, and hydromausmannite were synthesized under controlled conditions of Eh and pH. Hydrohausmannite was found to be a mixture of Mn_3O_4 and/or γ-Mn_2O_3 and β-MnOOH rather than a single phase. The name feitknechtite is proposed for naturally occuring β-MnOOH. Free energy of formation data were obtained for the first six compounds listed. They are respectively: - 147.14 kcal., -306.2 kcal., -132.2 kcal., -133.3 kcal., -108.3 kcal, and -109.1 kcal. Eh-pH diagrams were constructed to show stability relations among the phases in the system $Mn-O_2-H_2O$. Good correspondence was found between stability relations observed in the laboratcry and those observed in natural occurrences of manganese oxides. A model is described for the supergene oxidation of rhodochrosite."

Johannsenite/Hortonolite

From the American Mineralogist, volume 50, numbers 5-6, May-June 1965, pages 780-2 - a paper by Dr. Clifford Frondel entitled "Johannsenite and Manganoan Hortonolite From Franklin, N.J. "

Johannsenite - "The occurrence of johannsenite, $CaMn(SiO_3)_2$, at Franklin as "minute brown crystals embedded in bustamite was noted by Schaller (1938). In 1952, johannsenite was found abundantly on the 900 level during the removal of pillar 910 adjacent to the Palmer shaft. It occurred as V shaped divergent fibrous aggregates up to 2 cm. in length. The color usually ranged from colorless or white to pale brown; rarely bluish green, or the terminal portions of the fibers graded from pale brownish into greenish shades. The johannsenite occured chiefly with massive granular nasonite and calcite that filled the interstices of a breccia composed of finegrained masses of andradite and fragments made up of manganophyllite with smaller amounts of calcite, franklinite, axinite, hancockite and willemite. The manganophyllite aggregates generally have a reaction rim of fine grained andradite a millimeter or so in thickness. Neither bustamite or rhodonite is immediately associated, but bustamite occurred abundantly as coarse crystals in nearby parts of the orebody. Chemically, the virtually colorless johannsenite analyzed lacks iron and has a much higher manganese content than the material of Schaller. An effort to obtain single crystal x-ray photographs from the microscopically subparallel groups of fibers was not successful; the fiber elongation is the c-axis and the identity period is approximately 5.3Å. Schiavinato (1953) obtained a 9.81, b 9.02, c 5.26Å, β105° on chemically similar material from Monte Civillino, Italy. The x-ray powder d-spacings are close to those reported by Hutoon (1956) for material from Broken Hill, New South Wales."

Manganoan-Hortonolite - "This is the first recorded occurrence of a member of the olivine group at Franklin that is close in composition to the forsterite-fayalite series. Magnesian and ferroan varieties of tephroite, the manganese member of this group, are well known both from Franklin and Sterling Hill (Palache, 1937; Hurlbut, 1961). The present specimen, found on the picking table in 1952, shows rounded single-crystals of hortonolite up to 6 cm. long associated with calcite, magnetite and a small amount of pyrrhotite. The mineral is greenish black in color, with a strong vitreous to resinous luster. Cleavage is not well developed. It is virtually identical in composition with the original hortonolite described from the magnetite deposit at Monroe, Orange County, N. Y. Yoder and Sahama (1957) give d(130)=2.803Å for the Monroe material. Several non-type specimens of the Monroe hortonolite here examined had somewhat variable values of d(130) and of the indices of refraction. These values in general were higher than those of the Franklin material."

Pyroaurite

Another new mineral has been verified for Sterling Hill - pyroaurite in minute butterscotch colored hexagonal crystals associated with micro crystals of mooreite on ore from the 2350 ft. level.

Pyroaurite (Hey 11.13.8; Dana 6153-7th ed.) is a member of the hydrotalcite family with a formular of $3[Mg_6 Fe_2 CO_3(OH)_{16} \cdot 4H_2O]$ sometimes with some Mn . Physical data as per Dana - Hardness 2-1/2, gravity 2.12 ± 0.02, luster waxy to vitreous, pearly. Cleavage on (0001) perfect; laminae flexible but not elstic; crushes to a talclike powder. Color yellowish or brownish white; also green or colorless. Transparant. Hexagonal system; habit tabular (0001) with lateral faces striated and indistinct; also thick tabular (0001) with (0015) alone or with (2025).

Margarosanite

"Additional notes on margarosanite," by F.P. Glasser and L.S. Dent Glasser, American Mineralogist, May June 1964, volume 49, pages 781-2. Abstract:

A unit cell for margarosanite in essential agreement with Armstrong's has been determined on material from Franklin Furnace: a 6.75, b 6.77, c 9.64Å, α 88°30′, β110°35′ , γ102°0 . The structure is probably similar to that of synthetic $Ca_2BaSi_3O_9$. Data shows the existence of a series of metasilicates of large divalent cations containing X_3O_9 rings.

Hydrozincite

"The crystal structure of hydrozincite, $Zn_5(OH)_6(CO_3)_2$" by S. Ghose. Acta Crst., volume 17, 1964, pages 1051-7.
Min. Abst., Sept. 1965, Volume 17, pages 256-7. Abstract:

Hydrozincite (from Goodsprings, Nevada), is monoclinic C2/m with a 13.62, b 6.30, c 5.42Å, β95°50′, Z = 2. The structure contains zinc in both octahedral and tetrahedral coordination, in the ration 3:2. The octahedral zinc atoms form part of a C6 type sheet with holes, which are distributed on a rectangular 6.3 x 5.4Å net. Zinc atoms in tetrahedral coordination occur above and below these holes. The complex sheets parallel to (100) are held together by CO_3 groups occuring normal to the sheets. The average tetrahedral Zn-O distance is 1.95Å and the average octahedral Zn-O distance is 2.10Å. The OH:CO_3 ratio is variable in natural and synthetic specimens; missing CO_3 groups being associated with disorder.

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Picking Table Index

One of our members, Mr. Robert H. Stephens, has taken the time and trouble to prepare an Index of articles published in the first six volumes of THE PICKING TABLE. Since this would be useful to all our members a copy is attached hereto. Our thanks to Mr. Stephens.

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Pyroaurite was originally found at Langban, Sweden, intergrown with calcite as a low temperature hydrothermal vein mineral. The material from this locality was later shown to be an intimate mixture of pyroaurite and sjogrenite; the two minerals often occur together in parallel growths. Since then it has been found in a number of other localities. It has been observed as an alteration product of brucite.

Scheelite

In the last issue of The Picking Table, August 1965, volume VI, number 2, I described the scheelite found at Franklin. I must make a correction in the fluorescent description. The original material found by Dick Bostwick fluoresces a dull yellow under short wave; the scheelite I have found on the Buckwheat Dump fluoresces light blue short wave. Either response is possible; the response actually received is determined by the relative amounts of molybdenum and tungsten present in the specimen.

Uraninite

Considerable excitement was recently caused by the find of a single specimen of uraninite in Sterling Hill ore from the 700 ft. level. The uraninite is in the form of a lonely cubic crystal, about 1/2" per face, in calcite, associated with franklinite and willemite. When washing the specimen, Charley Keys noticed the light radiation halo and investigated further. The specimen is on display in his shop on Route #46 - The Crystal Gems Company, Little Falls, N.J.

Barylite

"Crystal Structure of Barylite, $BaBe_2Si_2O_7$." by K. K. Abrashev and N.V. Belov. Dokl. Acad. Sc. U.S.S.R.,
Earth Sc. Sect., 1964, vol. 144, 137-139. Min. Abstracts, Sept. 1965, Vo. 17, No. 3, page 257. Abstract:

Space group C_2^9 = Pn2,9 was adopted; cell parameters are a 9.8, b 11.65 c 4.63Å; Z=4. The Si tetrahedra are connected in Si_2O_7 groups which extend along b. The Be atoms lie in oxygen tetrahedra, which run along 2, axes parallel to c. Each repeat distance contains 2 tetrahedra, the gross formula of these chains being $[Be_2O_6] = [BeO_3]_{oo}$. The Si_2O_7 groups normal to the $[BeO3]_{oo}$ chains with the latter form a framework having large holes, each of which is surrounded by 12 tetrahedra. These holes resemble those of sodalite but are smaller. The holes form a pseudo-body-centered array, and the cell contains 4. Large B ions accompany the O in hexagonal two-layer packing. The coordination polyhedra around the Ba are hexagonal cube-octahedra; the coordination number is 12, and these polyhedra form columns along the c axis.

(N.F.) not from Franklin (N.F.?) Possibility of occurence.

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MEMBERSHIP RENEWAL

I would like to renew my membership in the Franklin-Ogdensburg Mineralogical Society for the year 1966. Dues of $2.00 attached.

Name (Mr. Mrs. Miss) ______________________________

Address ______________________________ Zip Code ________

Telephone Number ________ ______________________________

(Please show your name and mailing address exactly as you wish it to appear on our mailing list.)

- -

LITERATURE ORDER

Will you please send me the following literature:

Jones -	Nature's Hidden Rainbows- Fluorescent Minerals of Franklin, N.J.	_____copies @ $2.95 =
Pearl -	Gems, Minerals, Crystals and Ore (The Collector's Encyclopedia)	_____copies @ $6.95 =
Sinkankas-	Mineralogy for Amateurs	_____copies & $12.50 =
Widmer -	Geology and Geography of New Jersey	_____copies @ $3.95 =

Total (check enclosed) ______________

- -

APPLICATION FOR MEMBERSHIP

I am interested in the Franklin-Ogdensburg Mineralogical Society and would like to apply for admission as a member. $2.00 in payment of 1966 dues, and registration fee of $1.00 is enclosed.

Name (Mr. Mrs. or Miss) ______________________________

Address ______________________________ Zip Code ________

Telephone Number ________ ______________________________

(Please give us your name and mailing address exactly as you wish it to appear on our mailing list.)

Return to:
FRANKLIN OGDENSBURG MINERALOGICAL SOCIETY, INC.
P.O. BOX 146, FRANKLIN, NEW JERSEY, 07416.

THOMAS S. WARREN
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5114 WALNUT GROVE AVE.
SAN GABRIEL, CALIF.