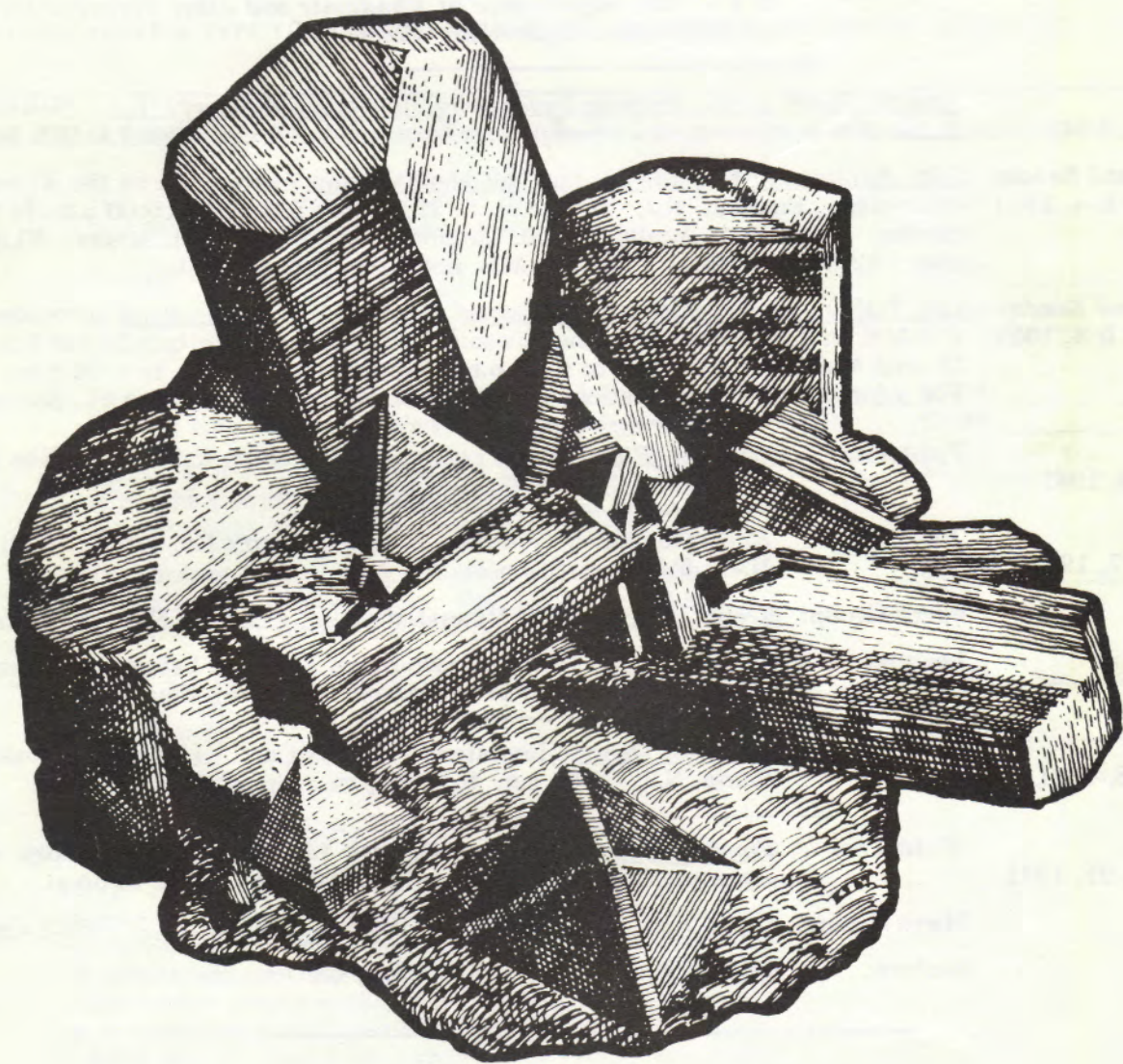


THE PICKING TABLE

JOURNAL OF THE FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY



Volume 22

September 1981

Number Two



Fall Program

FRANKLIN-OGDENSBURG MINERALOGICAL SOCIETY, INC.

1981

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 9:30 a.m. to noon in *Kraissl Hall* at the *Franklin Mineral Museum*. Afternoon lecture programs begin at 2:00 p.m. at the *Hardyston Twp. School*, Rt. 23, Franklin, N.J. - *Pre-meeting activities begin at 1:00 p.m.*

- Saturday**
September 19, 1981
- Field Trip: Trotter Mineral Dump; Main Street, Franklin, N.J. - 9:00 a.m. to noon.
Micro Group: Kraissl Hall; Franklin Mineral Museum, Franklin, N.J. - 9:30 a.m. to noon.
Lecture: Vandall T. King, Ward's Natural Science Establishment, Inc., Rochester, N.Y. - "*The Significance of Rhodonite and other Pyroxene-Like Minerals of the Franklin-Ogdensburg Mines.*"
-
- Saturday**
October 3, 1981
- Annual Dinner of the Franklin-Ogdensburg Mineralogical Society, Inc. - Newtonian Inn, Route 206-N, Newton, N.J. - Social Hour begins at 6:30 p.m. - See F.O.M.S. notes.
- Saturday and Sunday**
October 3 & 4, 1981
- 25th Anniversary Franklin-Sterling Hill Mineral Show - sponsored by the *Kiwanis Club of Franklin*, Franklin, N.J. - 9:00 a.m. to 7:00 p.m., Saturday; 10:00 a.m. to 5:00 p.m., Sunday - Admission: Adults - \$2.00, Children - \$1.00 (one day); Adults - \$3.00, Children - \$2:00 (two days). - See F.O.M.S. notes for further details.
- Saturday and Sunday**
October 3 & 4, 1981
- THE POND - The legendary Mineralogical Meet at the Franklin Pond - sponsored by the *F.O.M.S.* in cooperation with the *Kiwanis Club of Franklin* to benefit the *Franklin Mineral Museum* - 9:00 a.m. to 6:00 p.m., Saturday; 10:00 a.m. to 4:00 p.m., Sunday. For information and reservations contact: Mrs. Elna Hauck, 8 Rowe Pl., Bloomfield, N.J.
-
- Saturday**
October 10, 1981
- Field Trip: Trilobite Ridge - fossil collecting site; Simon Farm, Lime Kiln Road, Port Jervis, N.Y. - 9:00 a.m. to 3:00 p.m.
-
- Saturday**
October 17, 1981
- Field Trip: Rudeville Quarry (formerly Bodnar); Quarry Rd. (off Rt. 517), Franklin, N.J. - 9:00 a.m. to noon.
Micro Group: Kraissl Hall; Franklin Mineral Museum, Franklin, N.J. - 9:30 a.m. to noon.
Lecture: Charles B. Sclar, Dept. of Geological Sciences, Lehigh University, Bethlehem, Pa. - "*Origin of the Franklin-Ogdensburg Zinc Deposits.*"
-
- Sunday**
October 18, 1981
- Field Trip: Limecrest Quarry, Limestone Products Corp. of America, Limecrest Rd., Sparta, N.J. - 9:00 a.m. to 3:00 p.m. - Interclub outing.
-
- Saturday**
November 21, 1981
- Field Trip: Franklin Quarry (formerly Farber); Limestone Products Corp. of America, Cork Hill Rd., Franklin, N.J. - 9:00 a.m. to noon.
Micro Group: Kraissl Hall; Franklin Mineral Museum, Franklin, N.J. - 9:30 a.m. to noon.
Lecture: Neal A. Wintringham, "*Minerals of the Franklin Marble.*"
-

The Picking Table is published semi-annually by the Franklin-Ogdensburg Mineralogical Society, Inc., P.O. Box 146, Franklin, N.J. 07416, a non-profit organization. Editor Emeritus - Frank Z. Edwards; Editor - Bernard T. Kozykowski, 305 Avenue L, Matamoras, Pennsylvania 18336. All rights reserved. Subscription: \$7:00 per year which includes membership in the Society. Contributed articles and news items are welcome. Acceptance is subject to the approval of the Editor.

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<i>Program</i>	Joseph Cilen



F.O.M.S. NOTES

● We welcome you and look forward to your participating in our many activities during the Autumn months ahead.

Program chairman Joe Cilen has assembled an outstanding group of speakers. Each speaker is exceedingly knowledgeable and no single lecture program can be chosen over another, each will be as fastinating as it will be enlightening. Field trip chairman John Sebastian has arranged an equally ambitious schedule of collecting activities. Of particular note is the return of fossil collecting at "Trilobite Ridge" and mineral collecting at the "Rudeville Quarry." We also continue to offer micro-mineralogy study sessions in Kraissl Hall at the Franklin Mineral Museum.

Your attention is directed to the schedule of activities during the 25th Annual Franklin-Sterling Hill Mineral Show in early October. These events will be described in depth further on ●

WALL STREET JOURNAL

GW Natural Resources Group
GULF + WESTERN INDUSTRIES

memo

"The proposed sale is in keeping with G&W's previously stated policy of reallocating assets into operations offering the potential for higher returns," the company said. The sale is still subject to a number of conditions, including execution of a definitive agreement and approval by directors of both G&W and the new company. A closing date of Sept. 15 is expected.

G&W said that continuing operations of the natural resources group include chemicals, cement, coal, a joint venture with Union Miniere of Belgium in Jersey Miniere Zinc, which produces 90,000 tons of primary zinc a year at Clarksville, Tenn., and continuing exploration for precious metals.

G&W Agrees to Sell Some of the Assets Of New Jersey Zinc

By a WALL STREET JOURNAL Staff Reporter
NEW YORK—Gulf & Western Industries Inc. said its natural resources group signed a letter of intent to sell certain assets of New Jersey Zinc Co. to a group of private investors.

Gulf & Western didn't disclose the proposed terms of the transaction, but industry sources estimate the sale price at about \$50 million. The group of investors buying the assets includes William E. Flaherty, executive vice president of G&W's natural resources group, who will become president and chief executive officer of the new company.

The assets to be sold include a Palmerton, Pa., facility that produces zinc oxide, zinc dust, zinc powder and alloys; a Dupue, Ill., property and plant that produces zinc dust, and the Sterling Mine in Ogdensburg, N.J., that supplies ore to Palmerton.

G&W's combined sales of Palmerton for the year ended July 31, 1981, were \$25 million, or about 10 percent of the company's total sales.

G. & W. Group To Sell Zinc Unit

Gulf and Western Industries said that its natural resources group has agreed to sell certain assets of the New Jersey Zinc Co. to a group of private investors.

THE BUSINESS SCENE

Workers wait and see

has been that the move is probably for the better and they are waiting to see what happens. In addition to New Jersey's only underground mining operation in Ogdensburg, the sale includes the Palmerton, Pa., facility, which produces zinc oxide, zinc dust, powder and alloys; the property and plant in Dupue, Ill., which produces zinc dust. The Sterling Mine produces zinc ore to the Palmerton plant.

Natural Resources Group President of Communications Group said the sale has no connection with the layoff of 70 workers at the zinc operation last September. The time of the 42 percent reduction in the 165-persons work force is the County's ninth largest since 1970. Manager George Holm said the sale is being brought on by deteriorating conditions in the zinc industry. Production cut of 33 percent at the plant is expected to result in 33 worker cuts.

has been disclosed for the date of Sept. 15, is a definitive agreement and completion of the sale.

The Ogdensburg plant, where the zinc is produced, is in the United States.

GW Natural Resources Group
GULF + WESTERN INDUSTRIES

Natural Resources Group of Gulf & Western Industries Inc., headquartered in Nashville, Tenn., announced Tuesday its intention to sell certain assets of New Jersey Zinc Co. to a group of private investors. Gulf & Western has signed a letter of intent for the sale with a group of private investors that includes William E. Flaherty, executive vice president of the Natural Resources Group. Flaherty is to become president and chief executive officer of the new company.

co. manager Peter Kopas of New Jersey Zinc Co. said he and other personnel and officials have been told anything more about the sale. He said the reaction of persons in the industry is being watched.

News Release



"G+WNATURAL RESOURCES TO SELL
CERTAIN NEW JERSEY ZINC ASSETS"

"Nashville, TN, July 28 -- J.E. Poole, Group President and Chief Executive Officer of Gulf+Western Natural Resources Group has signed a letter of intent to sell certain assets of New Jersey Zinc to a group of private investors."

"The proposed sale is in keeping with G+W's previously stated policy of reallocating assets into operations offering the potential for higher returns."

"The sale will include: the Palmerton, Pennsylvania facility which produces zinc oxide, zinc dust, zinc powder and alloys; the property and plant in Depue, Illinois which produces zinc dust; and the Sterling mine in Ogdensburg, New Jersey which supplies ore to the Palmerton plant."

"It is the intention of the new company to retain present management and employees at these three locations, which account for about 790 of the Group's current 4260 employees. The combined sales of the Palmerton and Depue plants approximate \$125 million."

"Subject to a definitive agreement, approval of the respective boards of directors and completion of financing arrangements, a closing date of September 15, 1981 is expected."

"Continuing operations of the Natural Resources Group include chemicals, cement, coal, the joint venture with Union Miniere of Belgium in Jersey Miniere Zinc, which annually produces 90,000 tons of primary zinc at Clarksville, Tennessee, and the ongoing exploration for precious metals."

* * *

The news release was brief, six short paragraphs, and to the point; the homestead of The New Jersey Zinc Company was being sold. Gulf+Western Industries Natural Resources Group, after 15 years, was divesting itself of its zinc ore processing facilities in Depue, Illinois and Palmerton, Pennsylvania, along with the Sterling mine in Ogdensburg, New Jersey.

The move itself came as no surprise to the metals industry which has reportedly viewed the news as long overdue in light of a depressed domestic metals industry and G+W's apparent disenchantment with its limited success in the zinc industry. Locally, the move has generated mixed reactions, primarily on the positive side, despite the negative impact of the news of a major layoff at the Sterling mine last September.

Reportedly, the new investiture will be headed by William E. Flaherty, currently executive vice president of the G+WNatural Resources Group. With many details still being resolved, little specific information about the new company is available. It is obvious that the facilities will remain in operation. The Sterling mine reportedly has sufficient ore reserves to meet market demands for some time to come. Though the mine did experience a significant reduction in manpower last year, it is said that this has correspondingly reduced overhead while actually improving the rate of ore production.

We have been keenly aware of the significance of NJZ as a major contributor, not only to the zinc mining industry of this country, but, also to the scientific community as well. The roots of The New Jersey Zinc Company are as old as the zinc mining industry in the United States. This part of the metals industry was born in the workings of the Sterling mine over two centuries ago. Much of the history of the company has been recorded in previous issues of the *PT*. Part of that history is recorded in portions of the Moses Taylor biography which appears in this issue. Mineral science has evolved among nearly three hundred mineral species that have been encountered during mining operations at Sterling and the exhausted Franklin mine. No other place on Earth has offered more of an opportunity for advancement of the mineral sciences. Testimony to the importance of the Sterling operations to scientific community is the naming of a new mineral, sterlinghillite, in honor of the mine in which it is found. Further acknowledgement has been given by the recent naming of yet another new mineral, ogdensburgite, for the community in which the Sterling mine is located. This mineral too is presently found only at this mine. Hopefully, the Sterling mine will continue to play its dual role, in the mining industry and the scientific community, well into tomorrow.

On behalf of the officers and directors of the Franklin-Ogdensburg Mineralogical Society, Inc., we wish all parties to this new investiture every success in their new venture. Our thanks are extended to Mr. Gordon Smith, Vice President of Communications of Gulf+Western Industries Natural Resources Group for providing us with the news release quoted above and several of the news stories which proved very helpful.

The 25th ANNIVERSARY FRANKLIN-STERLING HILL MINERAL SHOW

SATURDAY October 3, 1981 - 9 A.M. to 7 P.M. · SUNDAY October 4, 1981 - 10 A.M. to 5 P.M.

This year marks the 25th Anniversary of the Franklin-Sterling Hill Mineral Show sponsored by the Kiwanis Club of Franklin. The theme of this year's show will be "The Minerals of Franklin and Sterling Hill" with exhibits of those minerals that have made the locality famous. On exhibit will be minerals named for the local area and those who have collected them. An entire weekend of activity includes:

21 DEALERS AT THE ARMORY

Rock Swap at *THE POND*
FRANKLIN MINERAL MUSEUM
The **BLACK LIGHT** Room
MINE REPLICA TOUR
Collecting on *THE BUCKWHEAT*
MINERAL EXHIBITS
Micromount DEMONSTRATIONS

LECTURES by:

Carl Francis - Harvard University
John L. Baum - NJZ Geologist (ret.)
Robert A. Svecz - NJZ Res. Geologist
FREE SHUTTLE BUS SERVICE
Gerstmann FRANKLIN MINERAL MUSEUM
TROTTER MINERAL DUMP (separate fee)
Annual F.O.M.S. DINNER (separate fee)

The POND

The *Rock Swap* at Franklin *POND* is back again this year, sponsored by the Franklin-Ogdensburg Mineralogical Society, Inc. in cooperation with the Kiwanis Club of Franklin and Boro of Franklin. Admission to the *POND* is free. Tailgaters will be required to pay a daily fee for selling and a lesser fee for swapping. The proceeds will benefit the Franklin Mineral Museum, Inc. Shuttle buses serving other show activities will also stop at the *POND*.

FEES: Selling @ \$15.00 per day or \$25.00 for both days. Swapping @ \$2.00 per day or \$3.00 for both days. Selling or swapping space is limited to the width of each automobile parking space. The purpose of the tailgating activities at the *POND* is to supplement the activities at the Armory for the benefit of the Franklin Mineral Museum, Inc. Regular mineral dealers (those with a history of dealing at this or other mineral shows) are encouraged to seek dealer space in the Armory thru the Kiwanis Club of Franklin. Consideration will be given to dealers who were unable to obtain space in the Armory, however, fee considerations will be twice the aforementioned rate. The *POND* is intended to satisfy the needs of the "tailgaters."

As members of the F.O.M.S. we ask you to donate two hours, or more if you wish, of your time to us as we supervise the activities at the *POND*. We need as many volunteers as we can get. Additional manpower may be required to aid the activities at the Armory, Franklin Mineral Museum and Buckwheat Dump.

FOR FURTHER INFORMATION: Write to - Mrs. Elna Hauck, 8 Rowe Place, Bloomfield, N.J. 07003

ANNUAL F.O.M.S. DINNER

This year's Dinner will be held at *Wilpert's Newtonian Inn*, Route 206N, Newton, N.J. Dinner tickets will be \$12.50 per person. The menu will be Fruit Cup, Soup, Salad, Prime Rib, Baked Potatoe, Vegetable, and Dessert. The Social Hour will begin at 6:30 P.M., hopefully, dinner will be served no earlier than 7:45 P.M. in order to permit those members and guests at the 25th Anniversary Franklin-Sterling Hill Mineral Show ample time to journey to the restaurant. Directions to the *Newtonian Inn*: Take Rt. 23 north from Franklin to Rt. 94 in Hamburg (traffic light), turn left onto Rt. 94 (south), stay on Rt. 94 to Rt. 206 which will be intersected north of Newton. Turn left onto Rt. 206 (caution: the intersection is hazardous), Proceed south toward Newton. The *Newtonian Inn* will be ahead between one and two miles on your left. For those of you who may be driving north on 206 from central New Jersey, look for the *Newtonian Inn* on your right shortly after you have passed through Newton.

Our guest speaker will be Dr. Carl Francis, Curator of the Geological Museum at Harvard University, Cambridge, Mass. The subject of his talk will be "The Minerals of Franklin and Sterling Hill - and - Harvard University."

We also remind you of the auction which is part of the evening's activities. This has become a very popular part of our annual dinner. Numerous specimens are auctioned off to benefit the Society. We are, of course, seeking donations to the cause. We have recieved word that many unique micro specimens of very old "franklin favorites" have been donated. Each year we see many desirable specimens change hands. So, join us for an evening of good cheer and friendly times.

MINERAL NOTES

A MINERAL NEW TO SCIENCE

Ogdensburgite

In the Spring 1981 issue of the Picking Table we were again fortunate to announce the discovery of a mineral, new to science, as being found at the Sterling Hill mine, Ogdensburg, New Jersey. We are very pleased to again announce the discovery of yet another mineral, new to science, also from the Sterling Hill mine. We quote from recent communication with Pete J. Dunn of the Department of Mineral Sciences, Smithsonian Institution, Washington, D.C. 20560.

“A mineral, new to science, has been found at the Sterling Hill mine, Ogdensburg, Sussex County, New Jersey. It is a calcium zinc ferric-iron arsenate. It is dark red in color and occurs a velvety coatings on ore in the presence of the secondary arsenates discovered in 1972-73, typically, koettigite and pharmacosiderite. The new mineral has been named ogdensburgite for the town in which the mine is located. Subsequent to its formal description expected in late 1981, further details will be presented on this species in the Picking Table.”

RESEARCH REPORTS

Sterlinghillite - $Mn_3(AsO_4)_2 \cdot 4H_2O$ *

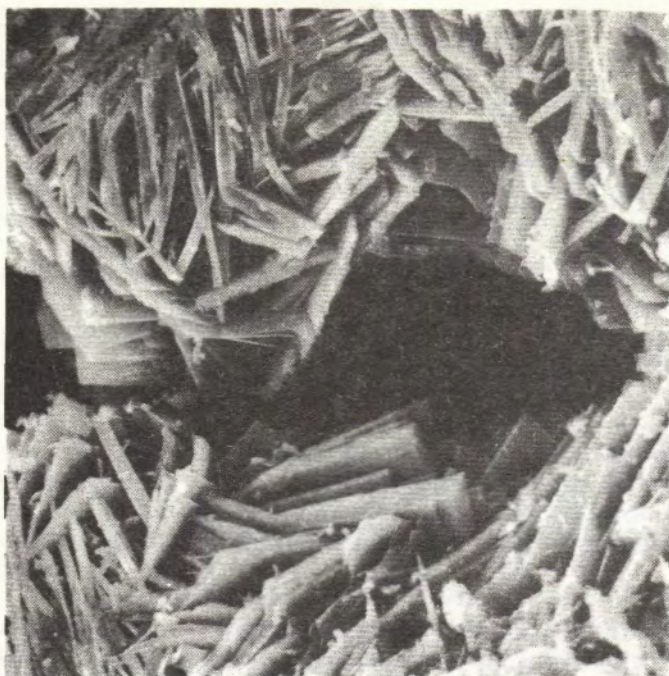
(Editor's note: In the Spring 1981 issue of the Picking Table we announced the discovery of a mineral new to science as being found at the Sterling Hill mine, Ogdensburg, New Jersey. It was named sterlinghillite for the locality at which it was found. The formal description of sterlinghillite has been published and the following abstract is quoted from the describing article entitled “Sterlinghillite, a new hydrated manganese arsenate mineral from Ogdensburg, New Jersey,” by Pete J. Dunn, which appeared in the American Mineralogist, Vol. 66, pp. 182-184, (1981).

Introduction

“This new mineral was called to my attention by Mr. Fred Parker of South River, New Jersey. It was found by a miner in the Sterling Hill mine and was reported to come from the 340 foot level of the mine. The new species and the name were approved by the Commission on New Minerals and Mineral Names, IMA, prior to publication. Type material is preserved at the Smithsonian Institution under catalog # NMNH 147269. The name is for the locality, one of the most remarkable mineral deposits on earth.”

Occurrence

“Sterlinghillite is from the Sterling Hill mine, Ogdensburg, Sussex County, New Jersey. Apart from its reported occurrence at the 340' level, no additional information is available on the geological setting. The only paragenetical information available is that observed on the one known specimen. Sterlinghillite occurs on seams in a franklinite-sphalerite ore which is in contact with a probable seam of loellingite and calcite. Sterlinghillite occurs in two habits on the type specimen; both habits are on seam surfaces. Sterlinghillite appears to be the last mineral to form. In one of these habits, sterlinghillite occurs as bundles of very soft pearly crystals which at first glance resemble some clusters of laumontite. These clusters are rather sparse on the specimen with a total weight of only several milligrams. No constancy of the divergent angle of the crystals in the clusters was observed. The second habit of sterlinghillite is that of tiny hemispherical clusters of platy crystals (Fig.1). The crystals have a distinctly platy morphology and appear to be randomly intergrown. The extremely small cluster size (0.1 mm) precluded the determination of some of the physical and optical properties. The paucity of paragenetical data precludes any definitive statement on the formation of sterlinghillite, but the oxidation of loellingite in the presence of manganese-bearing solutions provides a ready mechanism.”



Chemistry

“Analysis yields a ratio of M^{+2} cations: As of 3:2 and suggests that the formula of sterlinghillite is $Mn_2(AsO_4)_2 \cdot 4H_2O$. There is too little sterlinghillite for the direct or indirect determination of water and the water content must be inferred by difference. The absence of single-crystal data precludes the calculation of unit-cell contents and thus the given formula must be considered quite tentative.”

Fig. 1

Physical and Optical Properties

“Sterlinghillite occurs as white to light pink aggregates which have a white streak. The hardness is estimated as 3 (Mohs). There is one perfect cleavage, parallel to the direction of elongation of the lath-like crystals. The luster is silky on fracture and cleavage surfaces and dull to silky on external crystal faces. The density, measured with heavy-liquid techniques, is 2.95 g/cm^3 , but this measured value may be low due to the highly porous nature of the aggregate (Fig. 1). Sterlinghillite does not fluoresce in ultraviolet radiation and there is no phosphorescence. Optically, sterlinghillite is anisotropic with wavy but inclined extinction. The very poor quality of the crystals precluded some optical measurements. The refractive indices are $\alpha = 1.656$ and $\gamma = 1.671$ (both ± 0.003). All crystals showed wavy extinction.”

Talmessite - $Ca_2Mg(AsO_4)_2 \cdot 2H_2O$

(Editor's note: Recent research work suggests yet another mineral, new to the deposit, has been discovered at the Sterling Hill mine in Ogdensburg, New Jersey. The following article is offered by Mr. Fred J. Parker, 14 Lisa Drive-E8B, South River, N.J. 08882).

“The arsenate mineral Talmessite, $Ca_2Mg(AsO_4)_2 \cdot 2H_2O$, has been tentatively identified as a valid species new to the Sterling Hill deposit. The mineral occurs as colorless, glassy masses and elongated crystals associated with sheaves of orange sarkinite crystals and sphalerite. The minerals are from a single cavity of red willemite-franklinite-pink calcite ore. The presence of Talmessite was not unexpected since many of the arsenates in the red ore are rich in calcium and magnesium.”

“Identification of the species was made by X-ray powder diffraction. Careful comparison was made against both published X-ray data and data calculated by computer using lattice cell parameters of Bariand and Herpin (1960). The presence of AsO_4 was shown by infra-red spectrophotometry. Talmessite's similarity to Gaitite [$H_2Ca_2Zn(AsO_4)_2(OH)_2$] necessitates a chemical analysis before final confirmation is made.”

“Talmessite is a rare species previously identified from the Talmessi mine, Central Iran; the U.S.S.R. (unspecified location); and Bou Azzer, Morocco. Talmessite from the Sterling Mine appears to be rare, but the further examination of specimens from the red ore may turn up additional Talmessite.”

“Reference: Bariand, P., and Herpin, P., (1960), An arsenate of calcium and magnesium, isomorph of β - roselite, Bull. Soc. Fr. Min. et Crist., 83, 118.”

Akrochordite - $\text{Mn}_4\text{Mg}(\text{AsO}_4)_2(\text{OH})_4 \cdot 4\text{H}_2\text{O}$

A mineral, new to the locality, akrochordite, has been described in a paper entitled "Akrochordite, a second occurrence: Sterling Hill, New Jersey," which appeared in the *Mineralogical Magazine*, Vol. 44, pp. 235-236, (1981), by Pete J. Dunn, Dept. of Mineral Sciences, Smithsonian Institution, Washington, D.C. The following is quoted from that paper.

"Akrochordite was originally found in the 'Japan workings' of the Langban mine in Varmland, Sweden, and described by Flink (1922). Preliminary discussions of its chemistry were presented by Alstrom (1923), and the space group and lattice parameters given by Moore (1968). The Langban akrochordite occurs as spherical aggregates which have a wart-like appearance, from which the name was derived. These spherical aggregates resemble those of sarkinite from the same locality, but are considerably browner in colour and quite dull in surface lustre."

"A new find of akrochordite was discovered in the Sterling Hill mine in 1979. It was found in the 1220 undercut pillar, 30 feet below the 800 foot level. Approximately twenty specimens were recovered and, given the paucity of specimens of this species in systematic collections, this occurrence greatly increases the known quantity of specimens of this species. The Sterling Hill akrochordite occurs as flattened round patches on an altered surface of willemite-franklinite ore rich in carbonate. The associated minerals are sarkinite, chlorophoenicite, carbonates, and several unidentified compounds. The flattened patches of akrochordite have varying thicknesses and curved rising edges, suggesting that they might have developed spherical or semispherical aggregates if there was room for unrestricted growth. Because the akrochordite occurred in this fissures and seams, its growth was apparently limited to the flattened aggregates. There are insufficient samples and contact relationships to determine the sequence of formation of the species. The aggregates have a radial texture."

"The akrochordite was originally identified on the basis of X-ray powder diffraction and the data are in good agreement with that given by Moore (1968) for Langban akrochordite. The Sterling Hill material differs from the Langban material in two characteristics: in the previously mentioned flattened nature of the aggregates and in the aggregates having a decidedly coarser surface texture. Sterling Hill akrochordite is light brown with a density, measured with heavy liquid techniques, of 3.35 g cm^{-3} ."

"Sterling Hill akrochordite differs from the Langban material in the absence of appreciable magnesium. The only extant analysis of Langban akrochordite is the one by Flink (1922) which indicates that approximately one of the five M^{2+} cations in akrochordite is Mg and the other four are Mn. The chemical formula of akrochordite (Flink, 1922; Moore, 1968) is $\text{Mn}_4\text{Mg}(\text{AsO}_4)_2(\text{OH})_4 \cdot 4\text{H}_2\text{O}$ (Z=2). Because there was only one prior analysis of the Langban material, several additional Langban samples were included in this study, one of which is a metatype from Flink. The Mg content of these samples is close to that reported by Flink and close to the 6.08% MgO required for one atom of Mg per formula unit."

"The essential absence of Mg in the Sterling Hill akrochordite suggested the possibility of a manganese analogue of akrochordite with the possible formula $\text{Mn}_4\text{Mn}(\text{AsO}_4)_2(\text{OH})_4 \cdot 4\text{H}_2\text{O}$. Moore (1968) assigned the space group $P2_1/c$ to akrochordite. This requires equipoints of rank 4 and 2 which indicates that the Mg in Langban akrochordite may be ordered on a specific rank-2 site and, if so, the Sterling Hill material could be considered a new species, essentially the Mn_4Mn analog of akrochordite. However, there is not yet any crystal structure determination for akrochordite and the ordering of magnesium is speculative. If the Mg in the Swedish material is randomly substituting for Mn over the equipoints, then the Sterling Hill material would have no claim to species status. Accordingly, at this time, it is best to note the occurrence of an essentially Mg-free akrochordite and let the nomenclature decisions await a full crystal structure analysis."

Kraisslite - $\text{Fe}_2^{3+}\text{Mg}_4\text{Mn}_{44}\text{Zn}_6(\text{AsO}_3)_4(\text{AsO}_4)_6(\text{SiO}_4)_{12}(\text{OH})_{36}$
and

Mcgovernite - $(\text{Mn},\text{Mg},\text{Zn})_{22}(\text{AsO}_3)(\text{AsO}_4)_3(\text{SiO}_4)_3(\text{OH})_1$

A paper offering new chemical data on kraisslite and mcgovernite by Pete J. Dunn and Joseph A. Nelen, Dept. of Mineral Sciences, Smithsonian Institution, Washington, D.C. was published in the *American Mineralogist*, Vol. 65, pp. 957-960, (1980). The following abstract has been prepared from that paper.

"Kraisslite and mcgovernite are both very complex magnesium manganese zinc arsenosilicates which are known only from Sterling Hill, New Jersey. While obtaining chemical analyses of schallerite (another complex arsenosilicate composed of the same elements) for a separate study, we included samples of kraisslite and mcgovernite as control samples."

"Subsequent to its original description (Moore and Ito, 1978, ed.) kraisslite has been found in a number of different parageneses, indicating a broader range of associations than the original thin films and lenses. We briefly describe these parageneses for the analyzed samples, all from Sterling Hill, which remains the only locality for kraisslite."

"NMNH 144262. The sample consists of very thin foliae in fractures in willemite-franklinite ore which contains up to 10 percent holdenite by volume. Kraisslite occurs in contact with willemite and franklinite and also as sprays and warped foliae in massive holdenite. It was found between the 1200 and 1300 levels in the 1340 undercut pillar."

"NMNH 146199. The sample consists of randomly oriented "booklets" of kraisslite in contact with franklinite, calcite, primary and secondary willemite, and a highly zincian adelite (containing approximately 14 percent ZnO). It was found at the 800 level in the 1220 pillar."

"NMNH 143983. The sample consists of abundant irregular segregations of kraisslite in low-grade willemite-calcite-franklinite ore. The massive segregations of kraisslite are abundant in this material and locally comprise up to 20 percent of the ore. Kraisslite is in contact with all the minerals in this assemblage. The sample was found on the 700 level in the 1010 stope."

"The analytical data indicate a number of significant points concerning the chemical composition of kraisslite. The rather constant concentration of zinc near a value of 6 Zn per cell suggests that it may well be ordered in tetrahedral sites (zinc is in tetrahedral coordination in most of the secondary minerals of Franklin and Sterling Hill). Likewise, the nearly constant value of approximately 4Mg per cell suggests that Mg may be ordered relative to Mn."

"Of special interest is the presence of ferric iron in Kraisslite. We note that ferric iron is present in mcgovernite as well and is also found in dixenite, which Moore and Araki (1978) have noted as being related to kraisslite."

"Of paramount significance, however, is the fact that the As exists in two oxidation states. Our analytical work clearly demonstrates that the As exists in two oxidation states with $As^{3+} : As^{5+} = 3:4$. Other minerals with As in dual roles also exist at Sterling Hill; mcgovernite was the first arsenate-silicate to be described (Palache and Bauer, 1927), and synadelphite also occurs here (Moore and Ito, 1978) in contact with kraisslite."

"An idealized formula of $Fe_2^{3+}Mg_4Mn_{44}Zn_6(AsO_3)_4(AsO_4)_6(SiO_4)_{12}(OH)_{36}$ yields a calculated density of 3.918 g/cm³, in reasonable agreement with the observed value of 3.876 g/cm³, if we assume limited substitutions among Si and As^{5+} . This formula, however, must be considered tentative. Moore and Ito (1978) have noted streaks parallel to the c axis which suggest stacking faults in the structure. Hence, the crystal chemistry of kraisslite might be much more complex than indicated by our analytical study. We agree with Moore and Ito that no unambiguous chemical formula can be proposed for this complex mineral in the absence of a complete crystal structure determination."

"Mcgovernite was originally described by Palache and Bauer (1927). Its chemical constituents are the same as those of kraisslite but are present in different ratios. Of special interest is the presence of ferric iron in mcgovernite, in concentrations similar to those in kraisslite, but with less variance. We have calculated the ratio of $As^{3+} : As^{5+}$ for the microprobe analyses using the 3:7 ratio determined empirically by analysis, rather than the simpler 1:3 ratio suggested by the formula of Moore and Araki (1978)."

"As with kraisslite, the relative concentrations of Mg, Mn, and Zn suggest some ordering of these elements in the crystal structure. We offer no chemical formula for mcgovernite; calculation of cell contents yields results not in conformity with the space group requirements. The presence of over 1200 atoms in the unit cell, combined with the probability of complex substitutions such as are likely in kraisslite, precludes any simple formula."

Mooreite - $(Mg,Zn,Mn)_8(SO_4)(OH)_{14} \cdot 3H_2O$

A paper on the structure of mooreite by Roderick J. Hill, CSIRO Division of Mineral Chemistry, PO Box 124, Port Melbourne, Victoria, Australia 3207 may be reviewed in *Acta Cryst.*, B36, pp. 1304-1311, (1980). The paper is highly technical in nature and is mentioned here only as a point of reference.

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NO SHOWS

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NO CLASS

(Editor's note: A short while ago, Dr. Alfred Standfast, a longstanding member of our Society, from Binghamton, New York, communicated an accounting of an excursion, by a youngster to the seemingly tranquil hills of Sussex County. He calls it the)

...-OGDENSBURG SNAKE STORY: =>

"When I was a teenager, I was invited to go rattlesnake hunting one autumn with a small group of nature lovers. We drove in a Pierce Arrow limosine with Mr. Heide, the Chocolate King, and his chauffeur from Long Island. Our leader, Gillam was careful and knew all the tricks. We arrived in the Franklin Furnace area about noon and proceeded to search the hills East of Ogdensburg. About Four P.M. we reached the foot of a rocky ledge. From this spot on the mountain, we could see tall smoking stacks in the distance. "That's an iron and zinc mine," we were told. I was interested in natural science at the time, having been on a field trip to Great Notch, N.J. with my High School group. However, the afternoon was late and there wasn't time enough to go over and investigate the mine. Too bad, - think what the dumps looked like 62 years ago."

"The chief said, "Now don't anybody move, look carefully, and count how many snakes you see." We eventually counted over sixty coiled-up timber rattlers assembling to enter their winter quarters. We captured about half a dozen alive with forked stick or snare and lowered them into canvas bags to take home to the Bronx Zoo exhibits. Then we settled for picture taking in the lowering sunshine, each holding a rattler by the neck. A little grass was on the snake's lip and we attempted to remove it, but my pal Hammus anxiously said "Never mind the fuzz, dammit, take the picture quick!"

. in postscript he adds

"The chauffer was intent on taking a skin home and the next time he saw a rattler, he decided to kill it with a hammer. The snake won the contest and bit him on the wrist. Both survived, but it was a painful lesson."

signed A.L.S.

. we sincerely thank Dr. Standfast for this opportunity to expand our horizons ever so much. If we could only have been there with him, what a sight it might have been, it must have been something, at least aluring enough to keep one mischievous visitor returning for over sixty years.)

Moses Taylor

by John L. Baum

Franklin enthusiasts are familiar with the names of the Taylor Mine and Taylor Road. They are not so familiar with the origin of the names. Moses Taylor was born in New York City on January 11, 1806 and died there on May 23, 1882, leaving an estate of forty million dollars. His great grandfather also Moses Taylor arrived in New York from London in 1736, and in our records is the first of six with the same name, ours being the third. The first was a merchant and apparently was successful. His son, Moses, Jr., who was born in 1739 was a fitting successor and is said to have greatly increased the family fortune. When the British occupied New York, Moses, Jr. moved to the interior of New Jersey where his son Jacob was born. Following the British evacuation of New York, the family returned to the city, and in 1804 Jacob started business as a cabinet maker on Broad Street, becoming prominent in the social, political and financial spheres. The record states that Jacob was for several terms an Alderman for the Ninth and Fifteenth Wards in the days when a seat in that body was regarded as a high honor and a position to be sought after by men of character and intelligence. In later years Jacob became the confidential agent of John Jacob Astor in whose service he spent the rest of his life, and Astor took an interest in Jacob's son, our Moses Taylor, remaining for life his firm friend.

The young Moses Taylor attended school in the city. Living as he did nearly out of town, the student walked to the various schools he attended in the vicinity of Chambers and Church streets. He always walked, and rapidly, and maintained this habit nearly all his days, attributing his vigorous health to this habit. He was always on time, a good student, and diligent, but his interests lay outside preparation for the professions. He intended to be a commercial success, and as one account tells it, at the age of fifteen, he threw aside his books and, with the training afforded by a common school education, began his apprenticeship for a mercantile career.

Jacob Taylor obtained a position of clerk for his son Moses with one firm but the boy soon transferred to one of the most important trading companies of the time, G.G.&S. Howland, on South Street. Old prints show the brick four and five story buildings on one side of the cobble stone street, the wharfs and sailing ships on the other, the bowsprits extending out over the roadway. One can well imagine the horse drawn drays and hand carts rattling over the pavement, the squeals of the block and tackle loading and unloading the ships, the cry of the gulls and the shouts of the sailors. The firm was engaged in an extensive foreign commerce, its business relations extended to all parts of the world, and the head of the firm, Gardiner G. Howland, was always quick to perceive and ready to enter upon new fields of profitable enterprise. It was a good mercantile school, and there Moses Taylor remained ten years, laying deep and wide the foundations of his own success. His industry and intelligence soon attracted the attention of the Howlands, who noted the steady application of genuine ability he brought to the performance of his duties.

Contemporary accounts state that young Taylor was always zealous, active and vigilant, never asking relief from toil. His employers' interests were his interest, and he promoted them faithfully by all the means in his power. He passed rapidly step by step through the grades of the business, quickly grasping new details of the enterprise. In later years, individuals became specialists in the various aspects of commerce, and attended only to their particular fields, which makes it difficult for us to comprehend the amount and variety of labor which the young clerk then performed, covering all the details of a great business. The day was largely devoted to outdoor labor and the evening to recording what had been accomplished during the day and to the necessary preparations for the business of the next day. Throughout his stay with the Howlands, his pay as a clerk was small, and even in the last years of his service it did not exceed \$500 a year.

However, there were compensations. Despite the almost incessant demands upon his attention, the busy young clerk was able to test by practical operations, the thoroughness and value of his training. With the consent of his employers, he frequently made ventures on his own account. Relying entirely on his own judgement, he entrusted small consignments to the masters of his employers' vessels, and the proceeds under his instructions were invested in foreign products. These operations were conducted judiciously, and they afforded him the means with which afterward he began business for himself. At the end of his ten years' employment, he had a capital of \$15,000. It was the year 1832, he was 26 years old, and the world of commerce was waiting for this new businessman, who before he was through would have a controlling interest in the New Jersey Zinc operations.

Moses Taylor's store was opened at 55 South Street under the bowsprits of the sailing ships. Shortly he moved nearby to 44 South Street. He had the good will of his former employers, and one of their best accounts. His reputation was excellent and his credit unblemished. His contacts were broad through his former association with the Howlands, and from the first he was the New York representative of the largest firm of sugar merchants in Cuba. Indeed, Cuba became his main field of foreign commerce, but before he left the foreign trade his ships were also well known in India, China, the West Indies and South America.

That first year of independence had its ups and its downs. The young businessman married Catherine A. Wilson who was subsequently to bear him three daughters and two sons; she and the children all outlived him and shared in the distribution of the estate. Mrs. Taylor's father was the head of a firm specializing in bread for the shipping industry. The same year a cholera epidemic struck the city, panic ensued, the citizens fled to the country in droves, business faltered and the stockmarket slumped. The plague avoided the house on Morris Street and the store on South Street, and while many who remained in the city were despondent, Taylor kept his self control, patience and hopefulness.

At the end of three years, the business was making great gains. There were those who said unkindly that John Jacob Astor was supplying the means for the new venture. This was not the case but the opinion undoubtedly did much toward establishing Taylor's credit in the early stages of his business career, and he did in fact owe something to Astor's friendship when the next disaster struck in December 1835. The fire started in a small way as most fires do, but the weather was cold, there was a wind, and before the conflagration was over, many buildings were destroyed, among them 44 South Street. Taylor was able to save only his record books; all else was lost, Taylor imagined, and thinking himself a ruined man, after a night of great toil and excitement, he went home.

The next day he opened an office in the basement of his home and soon after obtained temporary quarters in Broad Street. On the very next day after the fire while the ruins of his store were still smouldering, he arranged with his landlord for the rebuilding of the structure, and it was the first to rise from the ruins. He subsequently bought the property. The insurance on his store provided a greater sum than anticipated, and the fire caused deficiencies within the city's commerce that the young merchant was given to remedy through his import business.

The years following, there was a great rage of speculation, the price of sugar soared, and Taylor's profits were very large. From this time on his ventures were nearly always successful. He had an astonishing ability to grasp a business problem as if by intuition and his mind worked like a flash on all such subjects. During business hours he was all business and he had no time for politics. He bought his family a place at the shore, but he seldom used it as he could not abide being away from his real interests. He paid for his securities in cash and the financial panics of 1837 and 1857 left him unscathed when hundreds of other businesses were wiped out.

Moses Taylor always kept his account at the City Bank, and for a number of years he served as a director. In 1855 he became president of the City Bank and held that position until his death. His mercantile business was turned over to a son-in-law, Percy R. Pyne, who was connected with him forty-five years, a son joined the firm, and the other son lived abroad. We have mentioned Taylor's dedication to business. It was reported that even at the opera he would often leave his box to talk business with any friend he happened to see in the audience. He built a home at 122 Fifth Avenue, attended church regularly, and was a member of and a frequent visitor to, the Union Club. He owned a building on Fifth Avenue, and others on Wall, Broad, South and other downtown streets.

Taylor's controlling interest at Franklin was a logical step in his policy of helping to promote the Nation's interests. One of these ventures was backing Cyrus Field and the Atlantic cable, and he served as treasurer of the company throughout its period of failure and near-collapse until success was won. He was chairman of the banking association which raised \$200,000,000 to enable the government in 1861 to carry on the Civil War. He became well acquainted with Lincoln, as well as with the Secretary of the Treasury, and the finance committees of both houses of Congress, but refused to become Secretary of the Treasury in 1864. He often said that if the Government paper was not good his own property was worthless. In the panic of 1857, the Delaware, Lackawanna and Western Railroad was in severe trouble. Taylor bought a majority interest. His attention had been called to the almost undisturbed wealth of coal in the Scranton area of Pennsylvania, and he was aware of the importance of connecting the region with New York by railroad. While he was not the founder of either the railroad or the Scranton based Lackawanna Iron and Coal Company, he aided and supported both.

On May 27, 1867 Moses Taylor acquired the mining rights to the franklinite in the south half of Franklin's Mine Hill. Shuster has recorded how he sued the New Jersey Zinc Company for removing his franklinite in the process of mining zinc ore, asking for a restraining order and an accounting. He was able to make the distinction because Col. Sam Fowler had separated the titles to these products on this tract. The case went from court to court until Taylor, well on his way to winning a final accounting and settlement, got the Zinc Company to agree to a consolidation of interests. The joint venture was reorganized in 1880 under the name of the New Jersey Zinc and Iron Company, and controlled not only the south half of Mine Hill, but also land north of the Hamburg Road, now called High Street, being the old Hamburg Mine, and the northern part of the Sterling mine. Moses Taylor enjoyed his joint venture a scant two years.

We have mentioned how Taylor bought control of the D.L.&W. Railroad in 1857, which he did for \$5 a share. Within seven years the shares had recovered to \$240 a share. He did not sell his shares but encouraged the development of the railroad, putting in his own president in 1869. When a railroad reached Franklin, N.J. in 1870, Taylor took notice. A group of local business men incorporated the Franklin Iron Company in 1871 as a result of the arrival of the railroad. By the time the furnace was in blast, a second railroad came to town and the infant industry was well connected. Moses Taylor and his interests set to work, and in short order the first railroad was incorporated into the D.L.&W., and the Iron Company had a new president, Moses Taylor. In these matters he was aided in no small way by a financial panic in 1873. He always maintained a strong cash position, his bank was seemingly immune to disaster so well did he guide his policies, and when an ill wind blew, it only served to forward Taylor's fortunes.

We cannot leave such an interesting business man without wondering how his story ended. On the death of Joseph Scranton in 1872, Taylor became president of the Lackawanna Iron and Coal Company, and he controlled the Manhattan Gas Light Company, the stocks of which he picked up when the company was in trouble, and reversing the company's downward course, he made a large fortune. Extensive profits came from his purchase of the stock of the Central Railroad of Georgia and from some of his railroad enterprises in Texas. He would not invest in the railroad interests of Commodore Vanderbilt who banked with Taylor, but loaned him large sums without other security than his name. Taylor refused to aid in some of the Commodore's operations because he disapproved of them. They thought highly of each other, but it was said that the two financiers were too much alike to cooperate and that each was accustomed to being absolute master of his fortunes.

Moses Taylor spent the last two years of his life knowing that he had diabetes. A stroke may have precipitated the discovery, but he recovered sufficiently to be able to attend regularly to business until within eight months of his death which he faced with patience and calm remarkable in a man accustomed to an active and energetic business life. His sole ambition had been to be successful in business affairs, whether his or the Nation's, not in a miserly way but as the result of honorable business industry. Death came at 6:15 A.M. on Tuesday, May 23, 1882.

The Taylors and their kin are still with us. Moses Taylor's son-in-law Percy R. Pyne helped run the business, and Percy's son, also Percy, married Maud Howland, of the family which gave young Taylor his start. The descendants are numerous. On May 23, 1976, the N.Y. Times carried the engagement announcement of Maud Howland Pyne, great-great-great granddaughter of Moses Taylor. Her fiance was the son of the chairman of the board of Allied Chemical. It's nice to know that the guiding spirit of Moses Taylor is still on the job.



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(Photo courtesy of Kiwanis Club of Franklin)

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