

# **“MINERALS, MUSEUMS, & MORE”**

**FRIENDS OF MINERALOGY—PA CHAPTER, INC.**

**SYMPOSIUM — 1980**

**West Chester State College**

**West Chester, PA**

**October 31, November 1, 2**

## PROGRAM

### Friday Evening, October 31, 1980

Socialize, swap, refreshments

- 8:00 p.m. "What's New in Pennsylvania"  
Byron Brookmyer—FM Pa. President — mineral collector  
Martin L. Anné—FM Pa. President — mineral collector

### Saturday, November 1, 1980

- 7:00 a.m.—  
8:00 a.m. Registration  
8:20 a.m. Welcome—West Chester State College—FM Symposium  
8:30 a.m. Dr. A. E. Foote — mineral dealer  
Robert Middleton — curator, Academy of Natural Sciences of Philadelphia, Pennsylvania  
9:00 a.m. Obscure Pa. Mineral Locations  
Jay Lininger — author, Cornwall Program — mineral collector  
9:45 a.m. Break — Refreshments  
10:30 a.m. Dillsburg Iron Mines  
Jeri L. Jones — member M.S.P. — Pa. Academy of Science  
11:15 a.m. Lunch  
1:00 p.m. Pa. Surprises  
Martin Anné — Past President F.M. — mineral collector  
1:45 p.m. Gold in Pa. (Where to find it etc . . . )  
Donald Schmerling — FM Pa. Past President — mineral collector  
2:15 p.m. Break — refreshments  
2:45 p.m. New Mineral Hall — Carnegie Institute  
Delbert Oswald — President FM — Curator, Carnegie Institute  
3:30 p.m. Mineral Auction  
7:00 p.m. Banquet  
Paul E. Desautels — Curator, Smithsonian Institute

### Sunday, November 2, 1980

Field Trips

*The following is an untitled and unpublished paper, which was loaned for our use in preparing the program for the 1980 Symposium.*

By Samuel G. Gordon

Associate Curator, Department of Mineralogy  
Academy of Natural Sciences of Philadelphia

It is always an inspiration to read of the lives of the pioneers, their struggles and conquer of the unknown. The story of the first figures in American geology, mineralogy, and crystallography is a remarkable one, and should be known to all students of the subjects.

Late in the fall of 1803, before the sun had even risen over the cluster of buildings which was then New Haven, a young man climbed into a waiting stagecoach. Benjamin Silliman had just been appointed to the new chair of Chemistry and Natural History of Yale College, and in preparation was "resorting to Philadelphia which presented more advantages in science than any other place in our country.

### ADAM SEYBERT, FIRST AMERICAN MINERALOGIST

On arriving in Philadelphia he engaged lodgings at Mrs. Smith's, whose house, occupying the triangle at Dock and Walnut Streets, was frequented by Connecticut members of Congress. Silliman had brought with him, in a small candle box, the entire mineral collection of Yale College—a lot of unlabeled stones. Box under arm, he trudged past the markets of High Street, to the shop of Adam Seybert, Chemist and Mineralogist, at 168 North Second Street.

"It is difficult in New England to have such common minerals as feldspar and hornblende identified" he explained.

Adam Seybert, America's first mineralogist, was then busily engaged on a catalogue of the minerals of the United States, specimens of which were added to his already extensive mineral collection begun while a student at the Ecole des Mines in Paris.

In 1808 he wrote "*A catalogue of some American Minerals which are found in different parts of the United States.*" In this paper he described forty minerals from his own collection.

Elected to Congress in 1800, Seybert became one of its most prominent members, constantly advocating a strong navy, and freedom of the seas. In 1818 he prepared a remarkable volume entitled "*Statistical Annals of the United States of America.*"

When the Academy of Natural Sciences was founded in 1812, its first acquisition was the collection of minerals of Adam Seybert. The 1825 specimens are preserved in the original cabinet, arranged according to Cleaveland's Mineralogy. It is perhaps the oldest collection of minerals extant in this country.

### WILLIAM MACLURE, FIRST AMERICAN GEOLOGIST

William Maclure, born in Ayr, Scotland, in 1763, was a wealthy merchant, with a passionate devotion to the then new science of geology. In 1803 he was appointed a commissioner to settle the claims of American citizens for damages done during the French Revolution. He



traversed Europe from the Baltic to the Mediterranean and from Scotland to Bohemia in search of geological specimens which he sent to his adopted country.

Upon his return to America he began the enormous task of a geological survey of the then United States. Hammer in hand, and collecting bag on his shoulder, he set out into a wilderness, in much of which only Daniel Boone had preceded him, suffering hunger, thirst, fatigue, and exposure. In 1809 the results of his labor, a geological map of the country between the Atlantic and the Mississippi, and from the St. Lawrence River to the Gulf of Mexico, was published. He then continued his geological travels (1816-1817) to the West Indies, visiting twenty islands of the Antilles in the Caribbean from the Barbadoes to St. Thomas.

In 1819 Maclure went to France and to southern Spain, from which he wrote: "I have been much disappointed in being prevented from executing my mineralogical excursions in Spain, by the bands of powerful robbers that have long infested the astonishingly extended surface of uncultivated and inhospitable wilds in this naturally delightful country. Not that I require the money worth the robbing to supply me with all that I need—for the regimen which I have adopted for the promotion of my health demands nothing but water and a very small quantity of the most common food—but these barbarians have adopted the Algerian system of taking you as a slave, to the mountains, where they extract a ransom of as many thousand dollars as they conceive the property you possess will enable you to pay."

Maclure succeeded Troost as president of the Academy, and its early success, (he donated more than 5000 volumes to the library, subsidized publication of the journal of the Academy, and contributed materially to the building fund) was in large measure due to his patronage.

### **GERALD TROOST, FIRST AMERICAN CRYSTALLOGRAPHER**

Gerald Troost (born in Bois-le-Duc, Holland, March 15, 1776) was elected first President of the Academy. While a protegee of Louis Bonaparte, then King of Holland, Troost had made a mineral collection for that monarch. He had studied in Paris under the distinguished Abbé Rene-Just Haüy, father of the science of crystallography: for the kind Abbé had recently announced that every mineral had a characteristic crystal form, and that substances differing in chemical composition cannot occur in the same form!

The King of Holland appointed Troost a member of an expedition to Java. The ship was captured by a French privateer, and he was taken prisoner to Dunkirk. Upon release, he resumed his journey, and got as far as Philadelphia, where news came that Java had passed into British possession.

To the new Academy of Natural Sciences of Philadelphia, Troost, now an American citizen, presented some crystals that he had grown, and delivered a course of lectures on mineralogy, illustrated with specimens from the Seybert collection. He had brought with him the goniometer (angle-measurer) invented by Wollaston of London, and the early Journal of the Academy was ornamented by skillfully made crystal drawings of apatite and zircon, and by lists of angles to show the mathematical precision to which the science of mineralogy had advanced.

### **1812: THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA IS BORN**

On the evening of the last day of the week, near the close of January, a few kindred spirits interested in Natural History, met to discuss the formation of a society devoted to its study. The place was a quaint apothecary shop at the northwest corner of Second and High Streets. In a little room in the rear, odorous with emanations of camphor, rhubarb, and musk, were gathered John Speakman, the proprietor, Jacob Gilliams, a dentist, John Shinn, Jr., a chemist, Nicholas J. Parmantier, a native of France, who manufactured cordials, Dr. Gerard Troost, a Hollander,

and Dr. Camillus M. Mann, an Irish refugee. It was decided to formally launch the society on March 21, 1812.

In anticipation of this, John Speakman—for the sum of \$750—purchased the cabinet of minerals of Adam Seybert. The collection was formally placed in possession of the Academy on August 15, and shares of stock of \$20 were issued to reimburse Speakman: shareholders were to enjoy privileges at elections denied to other members.

The Seybert collection of minerals, Troost's crystals, and a variety of birds, shells, insects, and plants presented by members of the Academy, as well as donations of books, were assembled in a little room on the east side of Second Street then No. 121, near Race Street.

That the Academy lived thru the war of 1812-1815 was due to the debt it had occurred in acquiring the Seybert collection, liquidation of which bound the pioneer naturalists together, and to William Maclure, its first patron.

The mineral collections were extraordinarily enriched by the travels of Thomas Bellerby Wilson (born in Philadelphia, January 17, 1807). While his primary devotion was geology, collections of books, birds, insects, and fossils vastly enhanced those natural history departments. He made his first geological tour in 1828, by horseback, to the coal regions of Pennsylvania. Trips to Europe followed: in 1831, France, Switzerland, England, and Ireland; in 1842, England, France, Switzerland, and Italy; in 1844 and 1851, England. More than 1700 beautiful mineral specimens from Cornwall and Cumberland in England, from Saxony, Bohemia, Transylvania, and Hungary resulted from these travels.

### THE FREE NATURAL HISTORY MUSEUM OF 1828

Thus was laid broadly and deeply the foundations of the Academy: for the acquirement and increase of knowledge through research and exploration, and the diffusion and simplification of knowledge through its museum, library, publications, and public lectures.

In 1828 the Academy moved into its first building, a Swedenborgian church at the southwest corner of Twelfth and George (Sansom) Streets, which was purchased for \$4300. It is interesting to peep into the museum of that day, opened free to the public in 1828. The lower floor of the single salon was occupied by the library, which served as a meeting room. The museum was an eight-foot wide gallery which was illuminated by a dome and six side windows. The specimens were exhibited in very orderly fashion in wall cases around the gallery, and in a series of horizontal glass cases against the gallery railing which cost \$304, a sum given by fourteen members who subscribed from \$5 to \$70.

### PENNSYLVANIA MINERALS

It was not very long before it was discovered that a wealth of minerals lay at the back door of Philadelphia! In April of 1812, the Academy members, then but few in number, made their first excursion to the lead mine on the Perkiomen operated by Samuel Wetherill. "*An account of the minerals at present known to exist in the vicinity of Philadelphia*" by Isaac Lea, appeared in the journal of 1818. In search of interesting minerals—and they were well rewarded. George W. Carpenter and George Spackman took a trip, on horseback, through Chester County and Delaware. Samuel George Morton studied exhaustively the minerals of Vanartsdalen's lime quarry near Feasterville, in Bucks County.

The new zinc mines at Franklin Furnace and Sterling Hill, in Sussex County, northern New Jersey, attracted Lardner Vanuxem and William H. Keating. A new mineral which they discovered there was named Jeffersonite in honor of President Thomas Jefferson, whose scientific enthusiasm was well known.

The golden age of mineralogists, however, was the middle of the last century, for



Pennsylvania, particularly within 50 miles of Philadelphia, was a scene of considerable mining activity. Iron was mined from innumerable pits, as well as at Cornwall in Lebanon County, and the French Creek region of Chester County; nickel near Gap in Lancaster County, and chromite farther south in the oxbow of the Octoraro Creek. Lead and zinc were produced just south of Phoenixville (Wheatley mines), while copper occurred in stains sufficient to encourage profitless prospecting.

Serpentine was quarried extensively south of West Chester for the green fronts of residences and public edifices; marble at Marble Hall; granite gneisses near Chester and Swarthmore. Pits for corundum, mica, and feldspar dotted the landscape of Delaware and Chester Counties. Amethysts were plowed up in Aston and Upper Providence townships of Delaware County and on many farms in Chester County. Extraordinary crystals from Shaw and Esry's quarry in Chester are on exhibit in the Academy. Aquamarine and golden beryl, in fine crystals were found in quarries near Leiperville and Swarthmore, sometimes associated with large, perfect garnet crystals, and prisms of black tourmaline. To complete this mineralogical paradise, small amounts of gold were panned from the Delaware River at Bridesburg, and isolated by chemists of the local mint from the brick clays beneath Philadelphia.

## THE WILLIAM S. VAUX COLLECTION

Under this stimulus William S. Vaux made his extraordinary collection of minerals. He collected minerals as object d'art of nature. Like John Ruskin in England, whose *Ethics in the Dust* was provoking interest in crystallography, he gathered only the finest crystals which the earth produced: those with perfection of form, exquisite color, and inherent beauty. Into his own collection he absorbed that of Francis Markoe, Jr., who had himself obtained the best specimens from the collection of Henry Stephen Fox, onetime Minister of Great Britain. While J. A. Clay was in England in 1847, he was commissioned to gather choice specimens, particularly from the dwindling mines of Cornwall and Cumberland. Mineral collecting was still fashionable in Europe, and the famous auction sales of Heuland in London were well attended and fine specimens brought high prices.

In 1875, William S. Vaux himself made a noteworthy tour of Europe, visiting London, Copenhagen, St. Petersburg, Moscow, Dresden, Teplitz, Freiberg, Innesbruch, Bologna, Florence, Rome, and Vienna in search of minerals.

The occasion of the Centennial in 1876 was a great mineralogical event. One Emilo Escobar brought up from Chile a collection of rich silver minerals, huge ruby-red crystals of prostite—"ruby-silver" from the mines of Chanarcillo. His collection was supplemented by copper minerals sent by Domeyko, mineralogist of Chile. Dr. A. E. Foote exhibited remarkable amazonstone crystals from near Pikes Peak. The best specimens passed into the Vaux collection. The Centennial wound up with a banquet (in the present Race Street hall of the Academy) to Dom Pedro, Emperor of Brazil, also an enthusiastic collector of minerals.

The more than 4000 mineral specimens gathered by William S. Vaux were bequeathed to the Academy in 1882, and form the nucleus of the collection (increased by its curators) in Mineral Hall.

The great naturalist, Joseph Leidy, was attracted to the gem minerals, not only in their natural crystal form, but cut into faceted stones. He visited, with Hamlin, the famous tourmaline mines of Maine. He wrote much on minerals, and his collection of fine crystals and gems, and a collection of models of famous diamonds are also to be seen in the Gem Hall.

In 1921, a series of mineralogical expeditions were begun, with objectives the minerals of the Andes of Ecuador, Peru, Bolivia, and Chile. In 1923, the fiords back of Cape Farewell, in southern Greenland were explored. The success of these expeditions warranted further work in

the Andes (Bolivia and Chile) in 1925 and 1929; the last expedition was across Africa in 1930. Ten new minerals were discovered, and the collections were enormously enriched.

Today a new generation of collectors, all members of the Philadelphia Mineralogical Society meet at the Academy monthly to exhibit their finds. Old mine dumps are turned over with youthful enthusiasm, quarrying operations are carefully watched, even old mine tunnels are being penetrated with interesting results. Where their predecessors were limited by horseback travel, those amateurs can cover great distances by auto. The science advances.

As they go into the meeting room, they pass an antique cabinet of 28 drawers. It contains, arranged in its original form and order with its original catalog, the collection of Adam Seybert, America's first mineralogist.

# PENNSYLVANIA MINERAL LIST

ACANTHITE  
ACTINOLITE  
ALBITE  
ALLANITE  
ALLOCLASITE  
ALLOPHANE  
ALMANDINE  
ALUNITE  
ALUNOGEN  
ANALCIME  
ANATASE  
ANCYLITE  
ANDALUSITE\*\*  
ANDERSONITE  
ANDESINE  
ANDRADITE  
ANGLESITE  
ANHYDRITE  
ANKERITE\*\*  
ANORTHITE  
ANTHOPHYLLITE  
ANTIGORITE  
APOPHYLLITE  
ARAGONITE  
ARSENOLITE\*  
ARSENOPYRITE  
ARTINITE  
AUGITE  
AURICHALCITE  
AUTUNITE  
AZURITE  
"BABINGTONITE"  
BARARITE\*  
BARITE  
BASTNAESITE  
BERAUNITE  
BERNDTITE\*  
BERTRANDITE\*\*  
BERYL  
BETA-URANOPHANE  
BIANCHITE  
BILLIETITE  
BIOTITE  
BISMUTH\*\*  
BISMUTHINITE  
BISMUTITE  
BOEHMITE  
BOLTWOODITE  
BORNITE  
BOUSSINGAULTITE\*  
BROCHANTITE  
BROOKITE  
BRUCITE  
BYTOWNITE  
CACOXENITE  
CALCITE  
CANCERITE  
CARBONATE-  
FLUORAPATITE  
CARNOTITE  
CASSITERITE\*  
CELESTINE  
CERUSSITE  
CHABAZITE  
CHALCANTHITE  
CHALCOCITE  
CHALCOPHYLLITE  
CHALCOPYRITE  
CHAMOSITE  
CHERVETITE  
CHEVKINITE  
CHLORITOID  
CHONDRODITE  
CHROMITE  
CHRYSOCOLLA  
CHRYSOTILE  
CLAUSTHALITE  
CLINOCHLORE  
CLINOHUMITE

CLINOZOISITE  
COBALTITE  
COFFINITE  
CONICALCITE  
COPIAPITE  
COPPER  
CORDIERITE  
CORKITE  
CORNUBITE  
CORRENSITE\*\*  
CORUNDUM  
COVELLITE  
CRANDALLITE  
CRYPTOHALITE\*  
CRYPTOMELANE  
CUPRITE  
DATOLITE  
DESAUTELSITE  
DESCLOIZITE  
DIASPORE  
DICKITE  
DIGENITE  
DIOPSIDE  
DJURLEITE  
DOLOMITE  
DOWNEYITE\*  
DRAVITE  
DUMORTIERITE  
ENARGITE  
ENSTATITE  
EPIDOTE  
EPSOMITE  
ERYTHRITE  
FAYALITE  
FERRIMOLYBDITE  
FERROAXINITE  
FERROCOLUMBITE  
FLUORAPATITE  
FLUORITE  
FORSTERITE  
FOURMARIERITE  
FRANCEVILLITE  
GAHNITE  
GALENA  
GERSDORFFITE  
GIBBSITE  
GISMONDINE  
GLAUCONITE  
GOETHITE  
GOLD  
GOSLARITE  
GRAPHITE  
GREENOCKITE  
GROSSULAR  
GYPSUM  
HALITE  
HALLOYSITE  
HALOTRICHITE  
HARMOTOME  
HEAZLEWOODITE  
HEDENBERGITE  
HEMATITE  
HEMIMORPHITE  
HERZENBERGITE\*  
HEULANDITE  
HEXAHYDRITE  
HINSDALITE  
HORNBLende  
HUNTITE  
HYALOPHANE  
HYDROMAGNESITE  
HYDROXYL-APATITE  
HYDROZINCITE  
HYPERSTHENE  
IDAITE  
"ILLITE"  
ILMENITE  
ILVAITE  
JAROSITE

JORDANITE  
KAOLINITE  
KASOLITE  
KIESERITE  
KYANITE  
LABRADORITE  
LANGITE  
LANGFORDITE  
LANTHANITE  
LAUMONTITE  
LEPIDOCROCITE  
LIEBIGITE  
LINARITE  
LIZARDITE  
MACKINAWITE  
MAGNESIOCHROMITE  
MAGNESITE  
MAGNETITE  
MALACHITE  
MANGANAXINITE  
MARCASITE  
MARGARITE  
MARIALITE  
MASCAGNITE\*  
MATULAITE  
MAUCHERITE\*\*  
MEIONITE  
MELANTERITE  
MESOLITE  
META-AUTUNITE  
METANOVAKEKITE  
METATORBERNITE  
METATYUYAMUNITE  
META-URANOCIRCITE  
METAZEUNERITE  
MICROCLINE  
MILLERITE  
MIMETITE  
MOLYBDENITE  
MOLYBDENITE-3R  
MONAZITE  
MONTMORILLONITE  
MORENOSITE  
MOTTRAMITE  
MULLITE\*  
MUSCOVITE  
NATROLITE  
NEPHELINE  
NESQUEHONITE  
NONTRONITE  
NSUTITE  
OLIGOCLEASE  
OLIVENITE  
OPAL  
ORPIMENT\*  
ORTHOCLEASE  
OTTEMANNITE\*  
PALYGORSKITE  
PARAGONITE  
PECTOLITE  
PENTLANDITE  
PHILLIPSITE  
PHLOGOPITE  
PHOSPHURANYLITE  
PICKERINGITE  
PICROMERITE\*  
PIEMONITE  
PIGEONITE  
PLUMBOJAROSITE  
POSNJAKITE  
POTASH ALUM  
POWELLITE  
PREHNITE  
PSEUDOMALACHITE  
PUMPELLYITE  
PYRITE  
PYROAURITE  
PYROLUSITE  
PYROMORPHITE

PYROPE  
PYROPHYLLITE  
PYRRHOTITE  
QUARTZ  
REALGAR\*  
RENARDITE  
RETGERSITE  
RIEBECKITE  
ROCKBRIDGEITE  
"ROSASITE-(MG)"  
ROZENITE  
RUTILE  
SAFFLORITE  
"SAFFLORITE-(FE)"  
SALAMMONIAC\*  
SAUCONITE  
SCHEELITE  
SCHORL  
SCHROECKINGERITE  
SELENIUM\*  
SEPIOLITE  
SERPIERITE  
SIDERITE  
SILLIMANITE  
SILVER  
SKLODOWSKITE  
SKUTTERUDITE  
SMITHSONITE  
SPESSARTINE  
SPHALERITE  
SPINEL  
STARKEYITE  
STAUROLITE  
STELLERITE  
STILBITE  
STILPNOMELANE  
STRENGITE  
STRONTIANITE  
SULFUR  
SUSANNITE  
SYNGENITE\*  
TALC  
TENNANTITE  
TETRAHEDRITE  
THAUMASITE  
THENARDITE\*  
THOMSONITE  
THORIANITE  
THORITE  
THOROGUMMITE  
TITANITE  
TOCHILINITE  
TORBERNITE  
TREMOLITE  
TSCHERMIGITE\*  
TURQUOISE  
TYROLITE  
TYUYAMUNITE  
URANINITE  
URANOPHANE  
URANOSPINITE  
UVAROVITE  
VANADINITE  
VANDENDRIESSCHEITE  
VARISCITE  
VERMICULITE  
VESUVIANITE  
VIOLARITE  
VIVIANITE  
VOLTAITE\*  
WAVELLITE  
WEEKSITE  
WOLLASTONITE  
WOLSENDORFITE  
WULFENITE  
WURTZITE  
ZARATITE  
ZIRCON  
ZOISITE

\*Mine Fire Minerals

\*\*NEW SINCE LAST PUBLISHED LIST