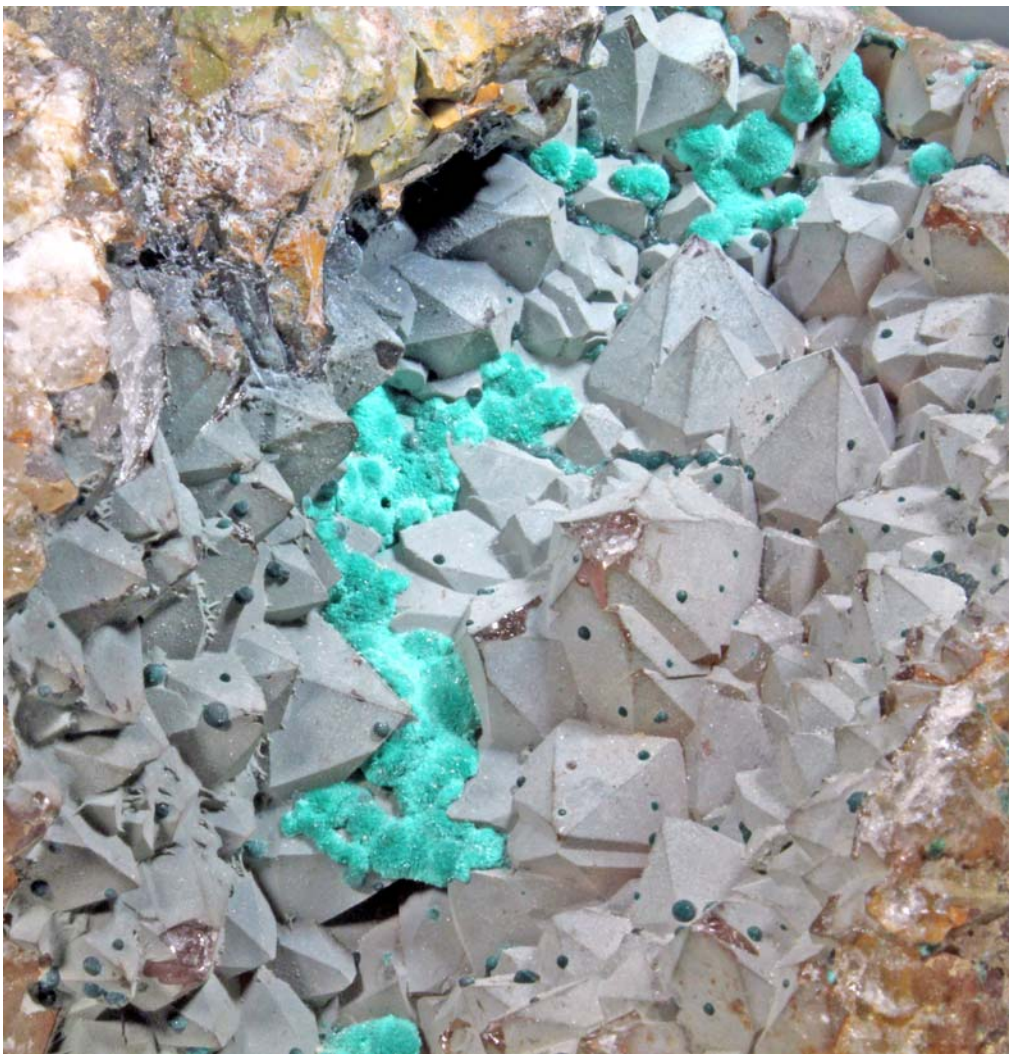
Friends of Mineralogy
Pennsylvania Chapter

Fall Symposium

Pennsylvania Mining and Mineralogy

November 3 & 4, 2018

Presented at
Franklin and Marshall College, Lancaster, Pennsylvania



Quartz and malachite from the Perkiomen mine, Montgomery County.
Charles Wheatley collection at Union College. Ron Sloto photograph; see page 6.

Friends of Mineralogy

Dedicated to the advancement of serious interest in minerals and related activities

We are collectors, professionals, and curators who share a love of mineral specimens and the desire to promote understanding and appreciation of mineralogy.

FM's objectives are to promote, support, protect and expand the collection of mineral specimens and to further the recognition of the scientific, economic and aesthetic value of minerals and collecting mineral specimens.

National FM newsletters, links to other chapters, and much more can be found on their web site: **www.friendsofmineralogy.org**

Friends of Mineralogy - Pennsylvania Chapter

provides:

- the benefits of membership in the national organization
- an annual Symposium in November
- field trips
- quarterly illustrated Newsletter
- an extensive WWW site with news, downloadable books, and more

Membership application forms are available on our web site

Please explore the FM-PA web site at

www.rasloto.com/FM/

Pennsylvania Mining and Mineralogy

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SCHEDULE of EVENTS

Saturday, November 3:	**SYMPOSIUM**	**page**
8:30 to 9:00 a.m.	Registration	
9:00 to 9:15 a.m.	Opening Remarks	
9:15 to 10:00 a.m.	**Stan Mertzman, PhD, Franklin & Marshall College** **What a Spring for Volcano Lovers: Fascinating Activity at Kilauea Volcano in Hawaii**	**5**
10:00 to 10:15 a.m.	**FM-Pa Members: Chapter Membership Meeting**	
	also	
10:00 to 10:45 a.m.	BREAK- Check out the silent auction and visit the dealers.	
10:45 to 11:30 a.m.	**Ronald A. Sloto, PG, West Chester University** **The Perkiomen-Ecton Lead-Copper Mines, Audubon, Montgomery County, Pennsylvania**	**6**
11:30 a.m. to 1:00 p.m.	LUNCH BREAK - lunch on your own (local map on back cover) Silent auction continues until 1:15 - Room 119 open during lunch	
1:15 p.m.	Silent Auction ends	
1:30 to 2:15 p.m.	**Maria Luisa Crawford, PhD, Bryn Mawr College** **The Vaux Collection at Bryn Mawr College**	**9**
2:15 to 3:00 p.m.	**James Van Fleet, Bucknell University** **Fluorescent Minerals of Pennsylvania**	**10**
3:00 to 3:15 p.m.	BREAK	
3:15 to 4:00 p.m.	**Bill Stephens, PG, Stephens Environmental** **The Hogg Mine 2018 Machine Dig**	**12**
4:00 to 4:10 p.m.	Field Trip Instructions	
4:10 to 4:30 p.m.	Distribution of Prof. Development Hours certificates to PGs	
4:30 p.m.	Chapter Board of Directors meeting	
Sunday, November 4: ***Daylight Saving Time Ends***	**FIELD TRIP to Peach Bottom, Lancaster County** **For Symposium Registrants Only** ***See maps inside back cover***	**14**
9:00 a.m. to 1:00 p.m.	Meet by 9:00 a.m. H&K Group Penn/MD Quarry, 303 Quarry Rd., Peach Bottom, PA 17563. The quarry is located off of US Rte. 222 just north of the Maryland state line.	

NOTES

What a Spring for Volcano Lovers: Fascinating Activity at Kilauea Volcano in Hawaii

Dr. Stan Mertzman
Franklin & Marshall College
Department of Earth and Environment

The Pu'u O'o parasitic volcano, on the NE flank of the main Kilauea shield volcano with its summit caldera, has been erupting continuously since 1983. Naturally this activity has fluctuated quite dramatically over those 25 years. In May 2018 volcanic activity associated with Kilauea Volcano reached a new crescendo. Various volcanic activities coupled with frequent shallow seismic activity extended simultaneously from the summit caldera through the Pu'u O'o vent through the feature known as the East Rift Zone (ERZ). A number of fissures opened within the ERZ extending nearly 12 miles downhill from Pu'u O'o. A number of rather short-lived en echelon fissure eruptions occurred, with Fissure 8 becoming the dominant point source for lava extrusion. Lava reached the Pacific Ocean, destroying hundreds of homes along its path, while adding hundreds of acres of new real estate to the Island of Hawaii. Activity at Fissure 8 ended in early August. Lava chemistry from this 2018 activity, when compared with data from lavas back to 1955, provides an interesting view into the subvolcanic plumbing system that feeds magma into Kilauea Volcano.

Biography

Dr. Stan Mertzman is the Earl D. Stage and Mary E. Stage Professor of Geosciences at Franklin and Marshall College.

The Perkiomen-Ecton Lead-Copper Mines, Audubon, Montgomery County, Pennsylvania

Ronald A. Sloto, P.G.
West Chester University

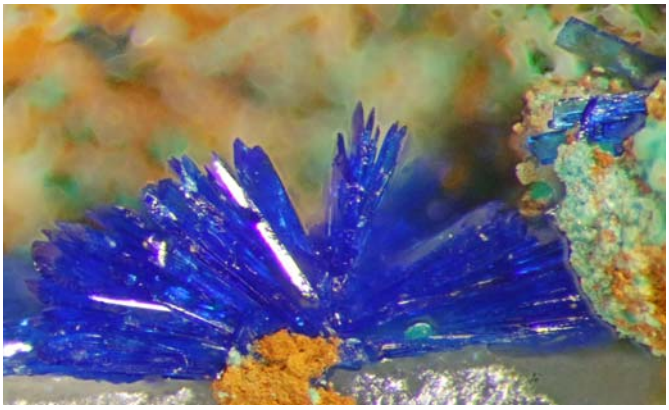
The Perkiomen mines include four main shafts on or near the Mill Grove estate in Audubon: the Ecton mine, the Perkiomen mine (also known as the new Perkiomen Mine), the Perkiomen mine whim shaft, and the Wetherill mine (also known as the old Perkiomen or United mine). The Wetherill mine was the original lead mine on the Mill Grove estate, and all mining prior to 1830 was done at the Wetherill mine. The precise date that lead ore was discovered on the Mill Grove property has not been firmly established. Several versions of the ore discovery exist. In 1847, the Ecton Consolidated Mining Company was organized to mine coper ore, and, in 1848, the Perkiomen Mining Association was formed. These companies merged into the Perkiomen Consolidated Mining Company in 1851. Mining by the Perkiomen Consolidated Mining Company lasted only until 1854.

Prior to 1851, the mines were worked for galena and other lead ores. As greater depth was reached, copper ores predominated. The principal ore was chalcopyrite, with some malachite and minor lead and zinc ores. Mineralized veins occur as open-space fillings in high-angle faults or steeply-dipping fractures in the sedimentary rocks of the Stockton Formation. The vein deposits appear to be associated with the transport of moderate-temperature brines from within the basin and adjacent basement rocks to shallow sites of mineral precipitation. Preexisting fractures and faults were important in localizing vein development. Based on fluid inclusions, the sphalerites from the Perkiomen mines appear to have formed about 163 million years ago, which is approximately in the mid-Jurassic. The Perkiomen-Ecton mines have been prolific mineral producers with 61 species being reported. Except for a few species, most of these occur as coatings and small to microcrystals.

Biography

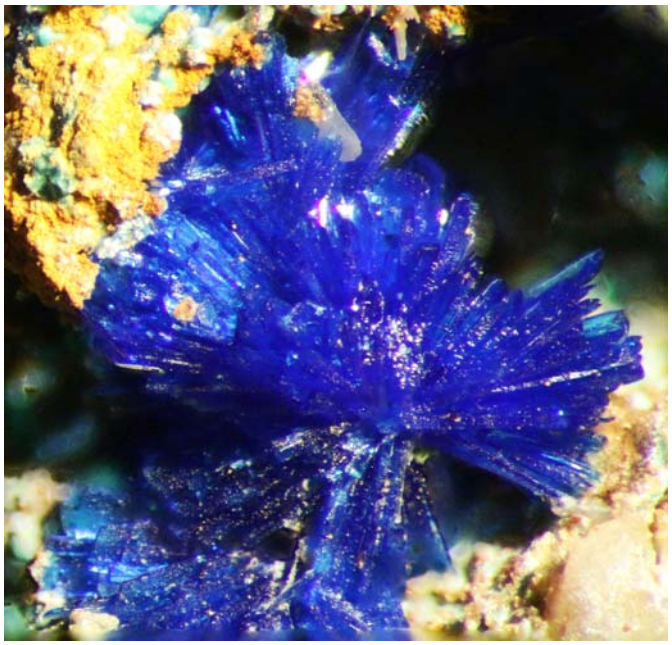
Ron Sloto is on the research faculty of West Chester University, and he is the curator for the mineral collection at the University. He conducts research on the chemical composition of minerals of southeastern Pennsylvania. Ron Sloto retired from the U.S. Geological Survey in January 2015 after a 41-year career that included publication of over 80 reports, journal articles, and abstracts. The HYSEP hydrograph-separation computer program he developed is in worldwide use. Ron has been a mineral collector since the age of 5 and also has a keen interest in history. He has published books on the mining history and mineralogy of Chester County (“The Mines and Minerals of Chester County, Pennsylvania”) and Berks County (“The Mines and Minerals of Berks County, Pennsylvania”). He is currently working on a similar effort on Montgomery County mining history and mineralogy. He is a frequent contributor to the Friends of Mineralogy Pennsylvania Chapter and National newsletters.

This page: Ron Sloto photographs.

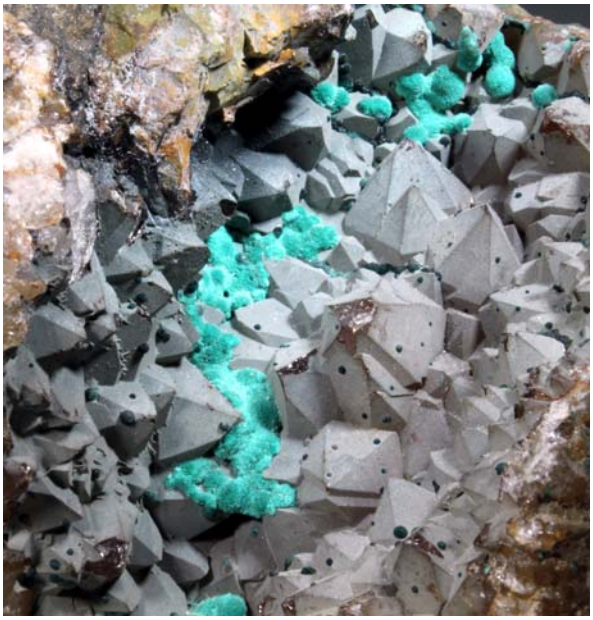


Linarite from the Ecton mine 80-foot stope. Ron Sloto collection.

Pyromorphite from the Ecton mine. Steve Carter collection.

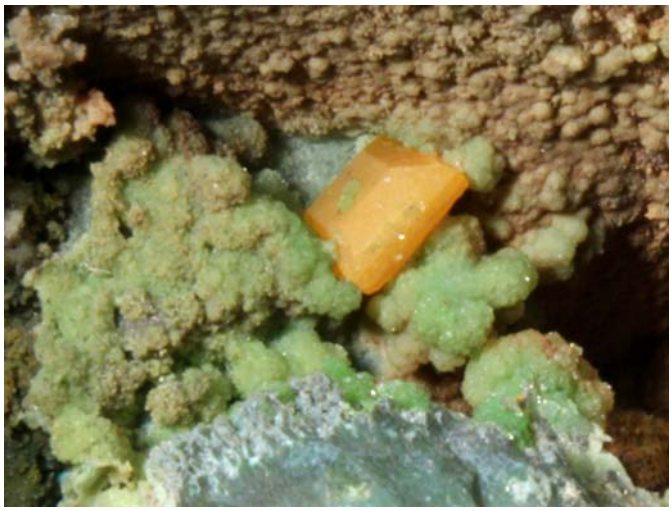


Linarite from the Ecton mine 80-foot stope. Ron Sloto collection.



Quartz and malachite from the Perkiomen mine. Charles Wheatley collection at Union College.

Chalcocite from the Ecton mine. Ron Kendig collection.



Wulfenite from the Perkiomen mine. Charles Wheatley collection at Union College.

NOTES

The Vaux Collection at Bryn Mawr College

Maria Luisa Crawford, PhD
Bryn Mawr College

When the Geology Department was started by Florence Bascom in 1895 there was no collection of minerals and rocks. Throughout her time at Bryn Mawr College, until 1928 she worked to build up the collections. The Theodore Rand collection of about 20,000 rock and mineral samples was a gift in 1904. Her successors continued the work so now there are more than 70,000 samples of minerals and rocks. George Vaux Jr. was a lawyer and also a mineral and rock collector. His interest in minerals was so great that people sent him specimens from all over the world. The minerals vauxite, paravauxite and metavauxite from Bolivia were named in his honor. In 1985 the college bought the Vaux property across the street from the College and moved the mineral collection to the Science building, where it is still located. The collection has about 10,000 specimens of some 800 minerals. Great numbers of duplicates were collected to show crystallographic forms. Particularly striking are French Creek and Delaware County minerals, as well as many others. Many have been and will be on display in the display cabinets along the corridors in the Chemistry/Geology/Physics halls of the Science Building, when the renovations of that part of the building, currently under work, are completed. This will hopefully be at the start of the 2019-2020 academic year.

Fluorescent Minerals of Pennsylvania

James Van Fleet
Bucknell University

Fluorescence in mineral specimens is a phenomenon that is often overlooked by mineralogists, and even by field collectors and hobbyists. Mineral luminescence is sometimes useful in identification, and in prospecting, but its primary interest is the simple beauty and wonder of mineral specimens that respond to light in an unusual and unexpected way.

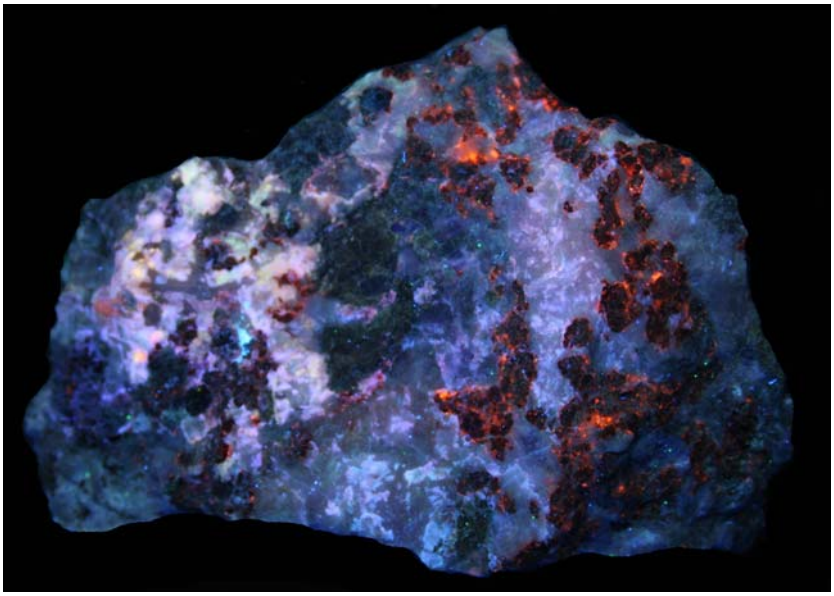
Mineral collectors whose interests extend to the larger tri-state area will be familiar with the famous fluorescent minerals of Franklin, New Jersey, and even Balmat, New York. While the state of Pennsylvania does not boast a specific location comparable to these, it does host a large number of fluorescent mineral species, in a wide variety of geologic settings.

While mineral genesis, chemistry, or even a comprehensive review of mineral localities is beyond the scope of my presentation, I will provide a photographic review of luminescent mineral species from Pennsylvania, and specifically specimens that fluoresce under short wave or long wave ultraviolet light. I will also introduce a new tool for detecting mineral fluorescence, which has proven to be especially effective at highlighting fluorescent minerals of Pennsylvania.

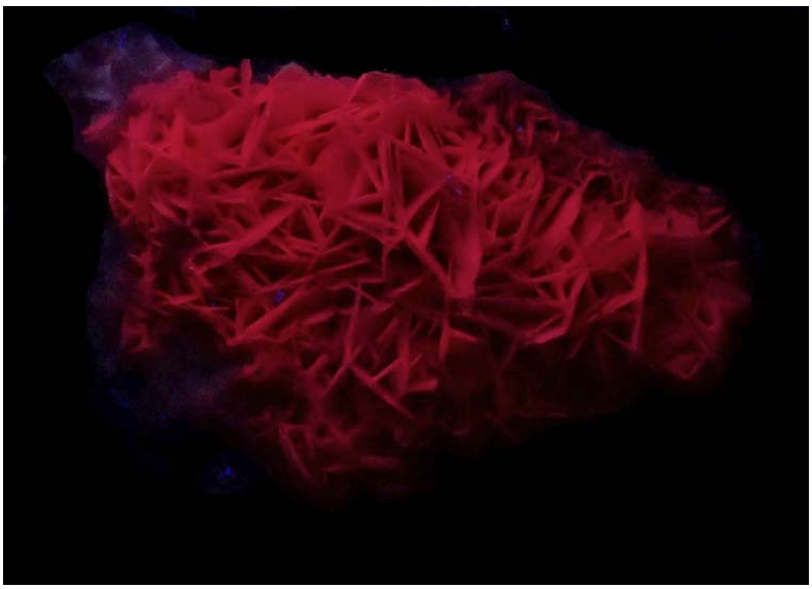
Biography

James Van Fleet is a Research Services Librarian at Bucknell University, specializing in science and engineering resources. His background in geology and mineralogy consists of some undergraduate courses taken at Rutgers University, and hands-on training in the use of powder X-ray diffraction for mineral identification. His expertise in fluorescent minerals comes from extensive collecting and dealing in the minerals of Franklin, New Jersey. The bane of professional science, James is an enthusiastic amateur and guilty of serial volunteerism.

Strontianite with calcite under short-wave ultraviolet light, National Limestone Quarry, Mount Pleasant Mills, Pennsylvania.



Sphalerite under long-wave ultraviolet light, Eastern Industries Quarry, Winfield, Union County, Pennsylvania



Calcite “paper spathe” under short-wave ultraviolet light, Highway Materials Quarry/ Corson’s Quarry, Perkiomenville, Pennsylvania

The Hogg Mine 2018 Machine Dig

Bill Stephens, PG
Stephens Environmental

The Hogg Mine (a.k.a. The Hogg Estate, the Oxford Mine, Mineral Processing Mine, Foley Mine) is located approximately 1.2 miles south of Smith's Cross Roads south of the Town of Lagrange in Troop County Georgia. The Hogg Mine has been commercially mined for Beryl and co-produced Kaolin, Quartz (silica), and scrap mica as by-products since WWII. Records of commercial production, and when production began, are sketchy and conflicting, but interest in the rose quartz and deep blue aquamarine produced at this mine began at least as early as the 1950's. Gem production at this mine occurred both during later commercial operations and intervening collector driven mining. The mine has an elongate lensoidal quartz core containing world class cabochon grade star and facet grade rose quartz as well as less common cabochon and even facet grade aquamarine. The mine is also famous for large well-formed beryl crystals. Chris Painter acquired the lease from a new property owner several years ago and operates the mine for collecting. Chris has a "machine dig" once a year (invitation only) late in the summer followed by a "Dig after the Machine Dig" on the Saturday following the machine dig which is open to the public for a fee ($35/per person). The mine is generally open every other Saturday during most of the year. This is the story of the Mine, the Man and the Machine Dig.

Biography

Bill Stephens is a licensed professional geologist and owner of Stephens Environmental Consulting, Inc. Mr. Stephens holds a Bachelor of Science and a Master of Science, both in Geology, from the University of Pittsburgh. Mr. Stephens has owned and operated a private environmental consulting and civil design firm for over 20 years. Mr. Stephens has been collecting since the age of 12, and is a member of the FoM-PA Chapter Board of Directors.