

OKENITE - A NEW MINERAL FOR PENNSYLVANIA

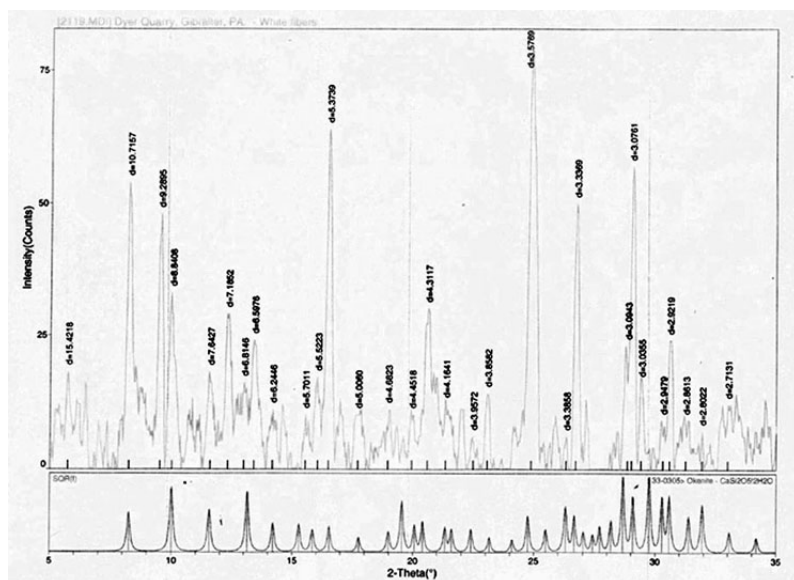
Pennsylvania has a new mineral species! Okenite ($\text{CaSi}_2\text{O}_5 \cdot 2\text{H}_2\text{O}$) has been verified from the Dyer quarry in Gibraltar, Berks County, Pa. The okenite was collected on a cold and rainy day in January 2010 by Skip Colflesh and Scott Snively.

Skip described the okenite as a “white fuzz” that was found alone and also was associated with chabazite. The okenite filled veins and formed lenses in the host diabase. The “fuzzy” material was pure okenite while the more compact material was a mixture of okenite and another mineral.

The white mineral was confirmed as okenite by Dr. Lance Kearnes of James Madison University.



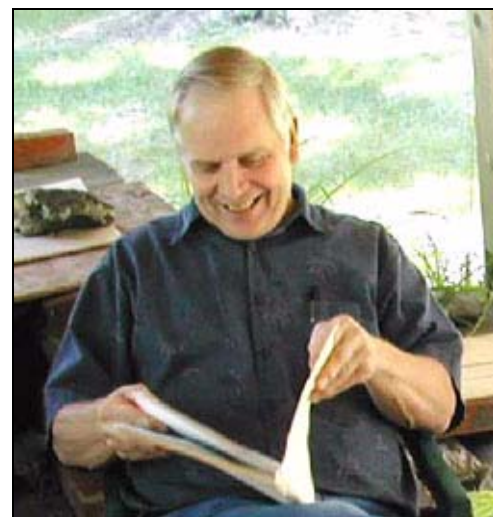
TOP: Scanning electron microscope image of okenite from the Dyer quarry, Gibraltar, Berks County, Pennsylvania. Image provided by Lance Kearnes, provided by Skip Colflesh.



LEFT: X-ray diffraction pattern of okenite from the Dyer quarry, Gibraltar, Berks County, Pennsylvania. Courtesy of Lance Kearnes and Skip Colflesh.

PRESIDENT'S MESSAGE

Spring 2011



Happy New Year! I beat some of the cold weather this January visiting Key West, but now it's back to the dead of winter for February! Last year's Symposium was great and I trust that both members and guests enjoyed themselves, as well! Those who attended the Cornwall field trip also were treated to a new location to collect specimens. Many fine specimens were found. We had close to 60 in attendance, so the chapter just about broke even on the Symposium costs. I want to thank all who supported the event with their donations and attendance this past November. I must apologize to the attendees for the speaker who did not show. He suffered some medical problems, ending up in the ER. He was not able to contact us. Things like this happen from time to time, and no one has control over such misfortunes.

I also want to thank those new members who joined at the Symposium. Thank you to those who paid their 2011 dues! Seniors 65 and over and students pay \$15 Under 65-pay \$20. If you have not paid, please do so. This will be the last Newsletter you receive if you have not paid your current dues.

Dues payments may be sent to FMPPA, Box 158, Friedensburg, PA 17933. Make checks payable to the Friends of Mineralogy PA Chapter. Thank you for all your support!

Speaking on the issue of support, I find that as time goes by, we lose Board Members, Officers, and others for all manner of reasons -work, life changes, medical problems, etc. This has a snowball effect on everyone in the organization! I've served on the Board, as President and as Treasurer. Over the years, I have put together many Symposiums with the help of the Board and have "MC'd" many more... and I've enjoyed it! There are many reasons for this. I guess the main reason are the great people I've met and the doors it has opened for myself as well as for FMPPA! We need help to continue the Chapter for the benefit of the membership - I need Symposium help - I need Board Members! Some who have helped hold this Chapter together with me over the years, have faced the life changing reasons I spoke of earlier, and can no

longer help out. How long will I, or can I, continue to serve the chapter without more support from you, our membership?

The Board plans all the activities and carries them out. Those of you at the 2010 Symposium may have missed seeing some of these fine, hard-working, dedicated folks - I know I missed them!

The board meets only once (or twice) a year in formal session; otherwise, almost all contact is by phone or email to plan our events and resolve any issues.

The bottom line is that the chapter is not, nor has it ever been, a one or two-man show. We need interested members to step up to the plate and help out. Without it, the Chapter's future is in jeopardy.

If you have interest in getting more involved and bringing new ideas and energy to the Chapter, I'd like to hear from you. I turned 65 myself this month - As the saying goes: "If I had known I'd live so long- I would have treated myself better!"

Our events list has been copied from information we received from other Clubs. The Rochester Mineralogical Symposium is in April - see the events listing for more details. Mark your calendars accordingly. Come out and enjoy these events!

Arnold Mogel

IMPORTANT NOTICE: E-Mail UPDATE NEEDED!

The National chapter has adopted a new policy for distributing their National Newsletter. Members can access and read it via E-MAIL ONLY! Thus, if National doesn't have your email address, you are out of the loop!

The FMPA Board had voted NOT to give our E-mail list to the National or anyone else. We use our emails for local FMPA business only! I, for one, feel it is National's responsibility to get their newsletter out to all of the members (email or no email). This means that our local chapter will be absorbing the cost of getting the National Newsletter out to those who do not have email. Some members have submitted their email addresses to National on their own. By keeping your email address confined to a few selected individuals of our local Chapter, FMPA feels that we are protecting our members from receiving spam and email from unwanted sources.

Here's how it will work: The National Newsletter will be emailed to a designated FMPA chapter member. It will then be distributed to each of our FMPA members. Last year, there were no National Newsletters because National had lost their newsletter editor. It is my understanding that this problem has recently been resolved.

If you receive a paper copy of either the Chapter or National Newsletter, it means we do not have your correct email on file. If you would take a minute to update your email address with us, it would not only save mailing and copying costs, but it would help save a lot of labor for me.

One advantage to email is that you'll receive the Newsletters in color (both the FMPA and the National). The printed paper version is in black and white.

Please print :

Name : _____

E-Mail Address : _____

Email to Piocche@Verizon.net

Or Mail to FM PA Chapter

Box 158

Friedensburg, PA 17933

Thanks,

ARNOLD

TRACE ELEMENT CONTENT OF MAGNETITE AND CLINOCHLORE FROM THE PENN/MD MATERIALS QUARRY, LANCASTER COUNTY, PENNSYLVANIA

By Ronald A. Sloto and Michael Degnan

The Penn/MD Materials quarry is located on the Mason-Dixon line near Peach Bottom, Lancaster County, Pennsylvania. The quarry, owned by Haines-Kibblehouse, Inc., produces aggregate from ultramafic rocks of the Baltimore Mafic Complex, known locally as the State Line Serpentinite. The ultramafic rock is composed primarily of serpentinite with lesser pyroxenite. The serpentinite varies considerably in mineralogy, color, and texture due to recrystallization and alteration. The most abundant minerals are serpentine and magnetite. The ultramafic rocks of the region host numerous chromite deposits.

Specimens of magnetite and clinochlore were collected by the senior author from the Penn/MD Materials quarry during the Friends of Mineralogy Pennsylvania Chapter 2009 Symposium field trip on November 8, 2009.

Selected specimens were analyzed for trace element content by the junior author at West Chester University using an Innov-X Avenger (TM) handheld X-ray fluorescence (XRF) spectrometer. The portable XRF spectrometer employs a silver-anode, 10–40keV (kilo-electron volt), 5–50 mA (milliampere) X-ray tube as an excitation source and a silicon PIN diode detector. It provides analytical results for 23 elements in less than one minute. Data are displayed on a screen on the instrument as well as stored for later uploading to a computer.

The magnetite was present as a 1-cm wide vein in serpentinite (fig. 1). It was a lustrous black color. Results of the XRF analysis (table 1) indicate that the magnetite is enriched in sulphur (3,275 ppm), cobalt (2,820 ppm), nickel (1,570 ppm), chromium (308 ppm), gold (40 ppm), and silver (31 ppm) as compared to the average crustal abundance. The average gold concentration of the magnetite is equal to 1.28 ounces per ton, and the average silver concentration is equal to 0.99 ounces per ton. Antimony, arsenic, bromine,

cadmium, molybdenum, rubidium, tin, zinc, and zirconium were detected in concentrations less than 30 ppm. Bismuth, chlorine, copper, iodine, lead, mercury, potassium, phosphorous, and selenium were not detected.



Figure 1. Magnetite in serpentinite from the Penn/MD Materials quarry, Lancaster County, Pennsylvania. Specimen is 8 cm long.

The clinochlore was present as 1.5-cm laminae in serpentinite (fig. 2). Results of the XRF analysis (table 2) indicate that the clinochlore is enriched in nickel (1,441 ppm), sulphur (919 ppm), cobalt (675 ppm), and chromium (641 ppm) as compared to the average crustal abundance. Arsenic, bromine, copper, gold, iodine, mercury, molybdenum, strontium, zinc, and zirconium were detected in concentrations less than 20 ppm. Antimony, bismuth, cadmium, chlorine, lead, phosphorous, selenium, silver, and tin were not detected.

The authors thank West Chester University for use of their XRF.

Table 1. Selected trace elements in magnetite from the Penn/MD materials quarry in Lancaster County, Pennsylvania. Analysis by X-ray fluorescence spectrometry.

Element	Average concentration (parts per million)
Barium	47
Calcium	72,749
Chromium	308
Cobalt	2,820
Gold	40
Iron	>120,000
Manganese	891
Nickel	1,570
Silver	31
Strontium	75
Sulfur	3,275
Titanium	594

Table 2. Selected trace elements in clinochlore from the Penn/MD materials quarry in Lancaster County, Pennsylvania. Analysis by X-ray fluorescence spectrometry.

Element	Average concentration (parts per million)
Barium	48
Calcium	634
Chromium	641
Cobalt	675
Iron	55,407
Manganese	3,010
Nickel	1,441
Potassium	6,790
Rubidium	51
Sulfur	919
Titanium	434



Figure 2. Clinochlore from the Penn/MD Materials quarry, Lancaster County, Pennsylvania. Arrow points to clinochlore crystal. Specimen is 11 cm long.

UPCOMING EVENTS

March 5-6 Newark, DE - Delaware Mineralogical Society Annual Gem, Mineral & Fossil show - Newark, DE. More info at: <http://www.delminsociety.net/marchshow2011.htm> Saturday 10-6 Sunday 11-5.

March 12 Levittown, PA - The Rock & Mineral Club of Lower Bucks County, PA Mineral, Fossil and 35th Annual Micromount Show. Faith Reformed Church, Levittown Parkway and Sexton Lane, just south of Mill Creek Parkway. Saturday 10-3.

March 12-13 Wayne, NJ - The 22nd Annual North Jersey Gem and Mineral Show (formerly the Clifton Show). The Benway School, 970 Rt. US 202 (Black Oak Ridge Road) Wayne, NJ 07470. This is our 2nd year at this location. Our show website: www.nojms.webs.com. Saturday 10-5, Sunday 10-5.

March 19-20 Gaithersburg, MD - 47th Annual Gem, Mineral & Fossil Show sponsored by the Gem, Lapidary & Mineral Society of Montgomery Co., MD. Montgomery Co. Fairgrounds, 16 Chestnut St.

March 26-27 Sayre, PA - 42nd Annual Gem & Mineral Show sponsored by the Che-Hanna Rock & Mineral Club. Athens Township Volunteer Fire Hall.

March 26-27 Chambersburg, PA - 33rd Annual Gem-Mineral & Jewelry Show sponsored by the Franklin County Rock and Mineral Club. Shalom Christian Academy.

April 1-3 Elkridge, MD - Annual Atlantic Micromounters Conference sponsored by the Micromineralogists of the National Capital Area. MHA Conference Center. Registration: email S. Weinberger cscrystals2@verizon.net

April 2-3 Plymouth Meeting, PA - Mineral Treasures and Fossil Fair - 2011 Annual Show and Sale, The Philadelphia Mineralogical Society and the Delaware Valley Paleontological Society present a Joint show and sale at the Lulu Temple, 5140 Butler Pike, Plymouth Meeting, PA., Saturday, 10-5., Sunday, 10-4. Fossils, Minerals, Gems, Speakers, and Exhibits. Learning activities include a Fossil Dig and a Kid's Mineral Corner. Also, Food, Door Prizes, and Scouting Merit Badge. Adults, \$5.00; Children \$1.00. Uniformed Scouts are free. Information: Show Chair at 609-953-1987

April 14-17 Rochester, NY - 38th Rochester Mineralogical Symposium Contact contractrms@hotmail.com or 315-682-0387, Early registration deadline March 15, 2011

May 14-15 Leesport, PA - 43rd Annual World of Gems and Minerals presented by Berks Mineralogical Society Leesport Farmers Market, Banquet Hall, Rt 61 Leesport, Pa. Saturday 10-5, Sunday 10-4. Saturday only for Tailgater Section. Email: brwoodpile@yahoo.com

June 4 Macungie, PA - Spring Mineralfest mineral, fossil, and gem show sponsored by the Pennsylvania Earth Sciences Association, Saturday 8:30 - 3:00 at Macungie Memorial Park, Macungie, Pennsylvania (an INDOOR show, held rain or shine).

Friends of Mineralogy Pennsylvania Chapter Directory of Officers**OFFICERS**

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Members can find Board
contact information in the
Newsletter which they
receive directly.

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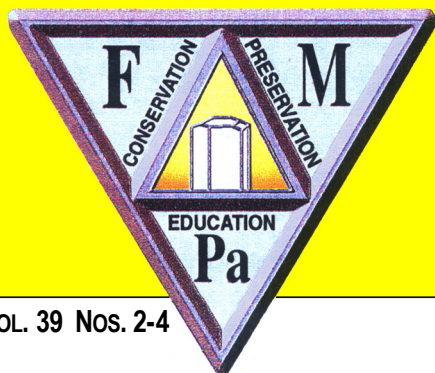
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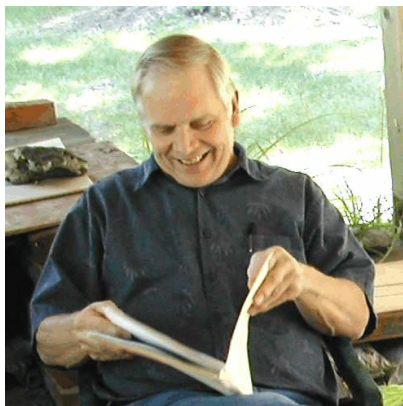
Pennsylvania Chapter

NEWSLETTER

VOL. 39 Nos. 2-4

WINTER 2011

President's Message



The field trip to Cornwall was an enjoyable outing for all who attended the event! It was a beautiful fall day. Many members found good examples of Cornwall garnets, along with many other great specimens.

The current state of the Pennsylvania Chapter looks much stronger than it did this past summer. What this means is that **we will not be shutting down** but going forward with the Chapter! We now have a new Newsletter Editor, Dave Glick. Dave will be the editor starting with this issue and it is my hope that we can get back to four quality issues a year.

Several members also stepped forward to help with the 2012 Symposium - so I have reserved facilities for the 2012 Symposium at Franklin and Marshall College - in Lancaster, PA - for Saturday, November 3, 2012. Mark your calendars for this event! Mark them also for Sunday, November 4, 2012 - for a field trip following the Symposium.

Again, I am hoping we can offer this event to members in good standing at no cost to them. Non-members would be charged an entrance fee for this event.

Several members also said they'd help with field trips. I'm hoping we can land at least three: One for the spring and again in the summer and of course one with the Symposium.

I'll be in touch with members who volunteered to help out and organize the upcoming events for 2012. We will meet after the holidays - sometime in the January - February time frame.

DUES are due:

\$15.00 for Seniors (62 and over) - also \$15.00 for students

\$20.00 for regular members

Dues may be sent to:

Friends of Mineralogy PA Chapter Inc.

P.O. Box 158

Friedensburg, PA 17933-0158

Speaking of money, please get your dues in as soon as possible - I'm hoping to increase membership in the next year, both through the field trips and the Symposium. This would help us meet current expenses. If that doesn't happen, I'll be asking the Board to consider a dues increase for 2013. This isn't something we like to do, but with growing insurance costs, general operating expenses, National dues, combined with a decreasing membership base, we would be left with limited options.

Enjoy this newsletter - and don't hesitate to send your suggestions and/ thanks to Dave Glick!

I might also suggest spending some time on the Chapter's web site. There's a wealth of information. There are some downloads you can have - thanks to Ron Sloto's hard work as the Web Master.

I have also obtained, from F&M College, three polarizing microscopes. I wish to thank the college for this donation to the FM Chapter. One scope is for reflective light/ or polished sections, and the other two are for thin section work. Two are on loan to members as I write this. The third is waiting to be loaned out. It is for thin sections.

If you have an interest in doing Optical Mineralogy in thin section, please contact me. I'll be happy to help get the scope to you. Depending on future demand, please understand that the scopes may only be loaned for a specified amount of time.

ENJOY THE HOLIDAYS!

Arnold Mogel
FM PA, Chapter President

IN THIS ISSUE

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SAVE THE DATE

**FM-PA FALL SYMPOSIUM
and FIELD TRIP
NOVEMBER 3 - 4, 2012
Franklin & Marshall College
Lancaster, PA**

METAL DEPOSITS IN THE NEWARK BASIN,

PENNSYLVANIA, PART 3

By Ronald A. Sloto

Selected Mineral Occurrences in the Kibblehouse Quarry Area, Montgomery County

Several copper mines and occurrences are in the vicinity of the Kibblehouse quarry (table 5, fig. 6). Copper mines and occurrences include Kober's mine, Karl's mine, Young's mine, the Hendricks Station occurrence, and the Sumneytown occurrences. Kober's mine, Karl's mine, and Young's mine are in shattered rock along the crest of a fold that becomes a fault farther to the east. The primary copper minerals are chalcopyrite and bornite and their alteration products malachite and azurite.

Table 5. Mines, prospects, and mineral occurrences in the vicinity of the Kibblehouse Quarry. Locations are shown on figure 6.

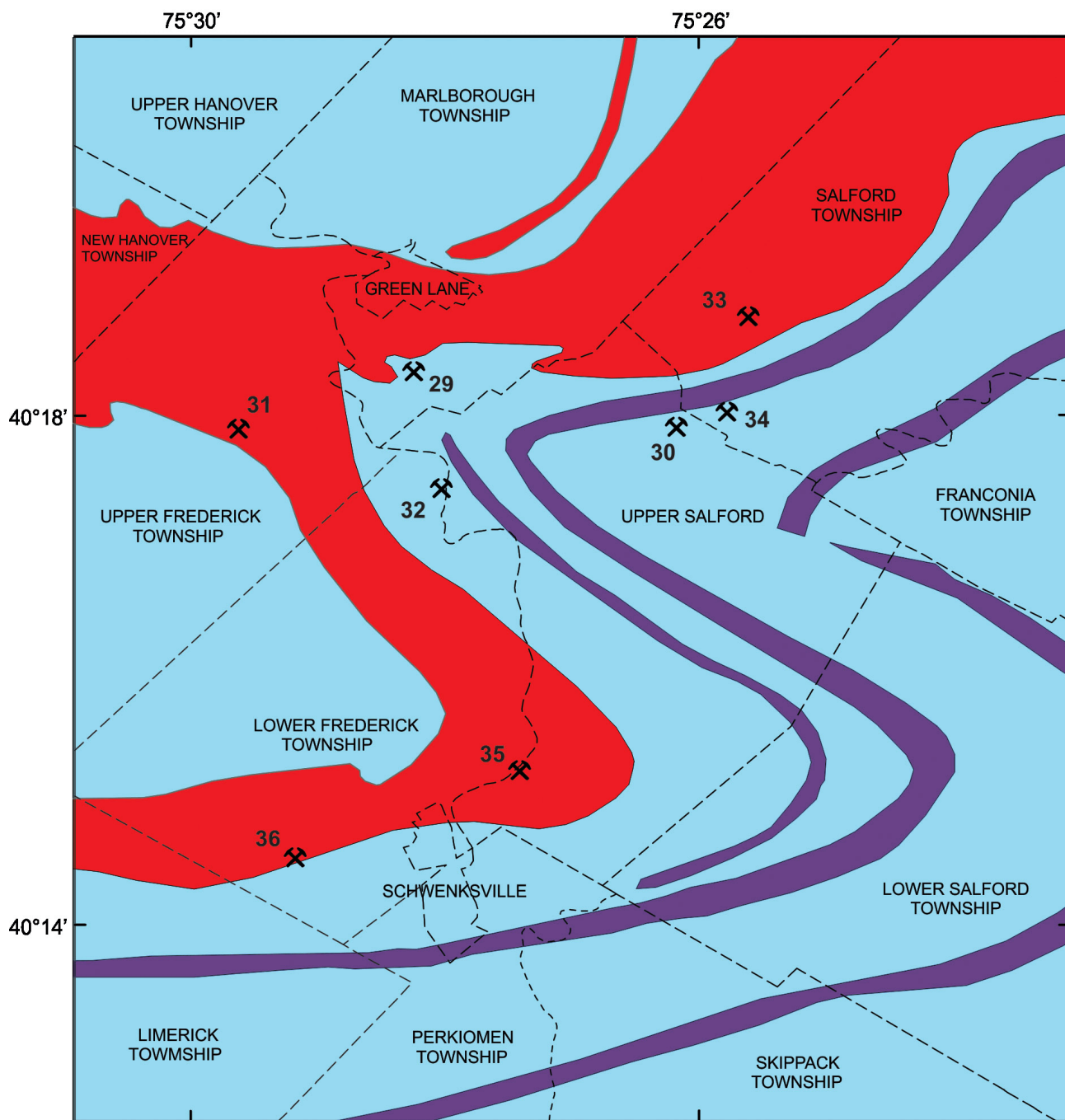
Map number	Name	Type of locality	Type of deposit	Primary metals
29	Kibblehouse quarry	occurrence	hornfels	Cu
30	Kober's mine	mine	hornfels/fault zone	Cu, Pb
31	Karl's mine	mine	vein/hornfels	Cu
32	Young's mine	mine	hornfels	Cu
33	Sumneytown occurrences	occurrence	hornfels	Cu
34	Hendricks Station occurrences	occurrence	hornfels	Cu
35	Schwenksville occurrences	occurrence	hornfels	Cu
36	Old Perkiomen mine	mine	hornfels	Cu

Kibblehouse Quarry One of the best exposures of hornfels mineralization is the active Kibblehouse quarry (fig. 6). It is considered a hornfels copper deposit by Robinson and Sears (1988, p. 273). The Kibblehouse quarry is in Brunswick Group shale, which has been baked to a hornfels. It is about 1,100 ft south of diabase. A great deal of attention has been focused on the minerals occurring in the hornfels. A list of selected minerals found at the Kibblehouse quarry is given in table 6. A more complete list is found in Geyer and others (1976, p. 189-192). Analyses of material from the Kibblehouse quarry for Cu, Co, and As by Smith and others (1988, p. 326-327) gave the following results:

- (1) 1.1 pounds showing visible cobaltite: 0.04 percent Cu, 490 parts per million Co, and 740 parts per million As
- (2) 6.8 pounds showing trace Cu (chalcopyrite, chrysocolla, and malachite): 1.29 percent Cu, 45 parts per million Co, and 70 parts per million As
- (3) 4 pounds from pyrite vein: 0.04 percent Cu, 105 parts per million Co, and 1,100 parts per million As

Kober's mine Kober's mine (also known as the Upper Salford mine) is a hornfels copper deposit. Wherry (1908a, p. 728, location 15) gives the location as 0.75 mi northeast of Woxall. Several conflicting accounts of this mine exist. Kober's mine was located on the farm of Abraham Kober. Lyman (1898, p. 419, location Ddi) lists four shafts or pits:

- (1) a 40-foot deep shaft,
- (2) a 24-foot deep shaft 12 yards northeast of the first,
- (3) a 50-foot deep shaft 12 yard southwest of the first intersecting a vein 2 feet wide, and
- (4) a pit 9 feet deep 100 yards south of the first with traces of malachite.



Geology from Miles and Whitfield (2001)

EXPLANATION

- Diabase
- Brunswick Group
- Lockatong Formation

✂ ²⁰ Location of mine, prospect, or mineral occurrence and identification number

Figure 6. Mines, prospects and mineral occurrences in the vicinity of the Kibblehouse quarry, Montgomery County, Pennsylvania. Mine names are given in table 5.

These shafts were sunk about 1875 (Wherry, 1908a, p. 734). An account by Carter (1884, p. 12) relates that ore was first discovered on the surface in a small outcrop and development began in 1878. At a depth of 15 feet, a vein 8 in thick was discovered. The farm was then leased to Samuel Milligan who continued development and reached a vein 3 ft thick. Milligan mined 4 tons of copper ore, but thereafter ore was not encountered in paying quantities, and mining ended in 1880. Minerals reported from the Kober mine include copper minerals azurite (Wheatley, 1882, p. 36), chalcopryite, bornite, native copper (Carter, 1884, p. 12), malachite, pyrite (Lyman, 1898, p. 419), and chrysocolla; zeolite minerals stilbite and natrolite (Benge and Wherry, 1906, p. 110); and lead minerals galena and pyromorphite (Eyerma, 1911, p. 19).

Table 6. Selected minerals reported from the Kibblehouse quarry

Mineral	Chemical formula ¹	Notes ²
Arsenic minerals		
allockasite	(Co,Fe)AsS	Smith (1987, p. 20-21) identified allockasite intergrown with cobaltite and associated with sphalerite, cobaltite, and arsenopyrite in calcite veins cutting hornfels; glaucodot of Geyer, Smith, and Barnes (1976)
arsenopyrite	FeAsS	found with traces of brown sphalerite; associated with cobaltite and allockasite (Montgomery, 1974, p. 4)
cobaltite	(Ni,Co,Fe)AsS ⁽³⁾	common, abundant; bright silvery octahedrons in green-gray hornfels, larger crystals up to 1/4 inch in calcite veins with sooty rims of gersdorffite (Smith, 1987, p. 91-93)
erythrite	CO ₃ (AsO ₄)·8H ₂ O	pink coatings with cobaltite
gersdorffite	NiAsS	gray metallic with cobaltite; Smith (1987, p. 20-21) found it associated with cobaltite
safflorite	(Co,Fe,Ni)As ₂ ⁽³⁾	identified by Speer and others (1978, p. 131-132)
Boron minerals		
datolite	CaBSiO ₄ (OH)	very pale green with glassy lustre; in half inch wide vein-like areas cross-cutting hornfels; associated with calcite and galena; also associated with calcite, axinite-(Fe), cobaltite, erythrite, and prehnite (Montgomery, 1973a, p. 8)
axinite-(Fe)	Ca ₂ Fe ²⁺ Al ₂ BO(OH)(Si ₂ O ₇) ₂	in calcite veins with cobaltite; associated with calcite, axinite-(Fe), cobaltite, erythrite, and prehnite (Montgomery, 1968 p. 9 and 1973a, p. 8)
Copper minerals		
azurite	Cu ₃ ²⁺ (CO ₃) ₂ (OH) ₂	bright blue spots
chalcopryite	CuFeS ₂	small brassy grains; some crystals
chrysocolla	(Cu,Al) ₂ H ₂ Si ₂ O ₅ (OH) ₄ ·nH ₂ O	small blue-green masses
copper (native)	Cu	uncommon; in small sheets and masses in and on hornfels (Montgomery, 1973b, p. 4)
malachite	Cu ₂ ²⁺ (CO ₃)(OH) ₂	small needles and coatings
Other metal minerals		
galena	PbS	small cubes 1-2 mm across associated with datolite (Montgomery, 1973a, p. 8)
magnetite	Fe ²⁺ Fe ₂ ³⁺ O ₄	massive
pyrite	FeS ₂	microcrystals on natrolite and chabazite
sphalerite	ZnS	tiny brown-red cleavages associated with arsenopyrite
titanite	CaTiOSiO ₄	

1 From Back and Mandarino (2008).

2 Description from Geyer and others (1976, p. 189-192) unless otherwise noted.

3 Based on chemical analysis presented by Speer and others (1978, p. 131-132).

Karl's mine (A. Charles copper mine of Lyman, 1898, p. 418, location Ddb). Karl's mine is a hornfels copper deposit. Wherry (1908a, p. 734, location 16) gives the location as 0.5 mi northwest of Woxall. The mine was operated as an open cut 20 yards long by 4 yards wide dug horizontally into a hillside in 1885 and 1889 (Lyman, 1898, p. 418). It intersected a 7-in. wide vertical vein of quartz and clay in a dark, reddish gray, calcareous, very hard shale. Lyman (1898, p. 418, location Ddd) also reports an unsuccessful "hole" with "copper traces" dug by A. Charles 1/8 mi east of Karl's mine. Minerals reported from Karl's mine include malachite, chalcopyrite, hematite (Lyman, 1898, p. 418-419), chalcocite (Benge and Wherry, 1907, p. 42), and stilbite (Benge and Wherry, 1908, p. 108).

Young's mine Young's mine is a hornfels copper deposit on the west side of Perkiomen Creek mined by a stock company around 1901 or 1903 (Rose, 1970, p. 12). Wherry (1908a, p. 728, location 18) gives the location as 3/8 mi north of Hendricks. A 150-foot deep shaft was sunk on thin hydrothermal copper veins (Heyl, 1980, p. 31). Benge and Wherry (1906, p. 110) reported possible gold and copper minerals bornite, chalcopyrite, chrysocolla, cuprite, malachite, and pyrite.

Sumneytown occurrences Two copper occurrences east of Sumneytown are listed as roadside exposures of malachite. At the occurrence 1 mi east of Sumneytown, Lyman (1898, p. 419, location Ddl) described "copper traces in 1/2 foot of dark reddish- and greenish-gray very hard shales." At the occurrence 1.5 mi east of Sumneytown, Lyman (1898, p. 419, location Dde) described "malachite traces in a foot of dark reddish-gray hard shales, and in 1/2 foot of the same, the two layers separated by unexposed layers."

Hendricks Station occurrences The Hendricks Station occurrences are a hornfels copper deposit in and above a railroad cut 0.5 mi north of Hendricks. They are the two localities described by Lyman (1898, p. 419, locations Ddo and Ddr) as "on the Perkiomen Railroad halfway between Hendricks' and Kratz stations; malachite traces and pyrites specks [SIC] in 6 inches of grayish-green, rather soft shales" and "on the Perkiomen railroad 200 yards north of Ddo; and apparently the same bed, traces of malachite." Wherry (1908a, p. 734-35) noted several parallel faults present at this locality. Benge and Wherry (1906, p. 42 and 110) also reported the occurrence of bornite and chalcopyrite.

Schwenksville occurrences Lyman (1898, p. 418) reported three occurrences of copper minerals east of Schwenksville. Lyman (1898, p. 418, location Ddh) described one as on the "east bank of the Perkiomen, opposite Schwenksville; malachite specks in 1.5 feet of reddish-gray hard shale." Lyman (1898, p. 418, location Dda and Ddb) described the other two occurrences as on the "roadside, 1/8 mile east of Schwenksville, and east of the Perkiomen; malachite traces in 4-foot exposure of greenish- and reddish-gray hard shales with white specks. A hole formerly dug on each side of the road, both on the same bed, but with more malachite traces on the north side."

Old Perkiomen mine The Old Perkiomen mine (also known as the Schwenksville prospect) is on a hill north of Mine Run east of Schwenksville. Early prospecting for copper ore began about 1717. A company to mine copper was first organized in 1722 but was unsuccessful. Further development took place beginning in 1740 by Christopher Geist, a German mining engineer. He drove a tunnel 2,000 ft from the Perkiomen Creek to connect with three shafts and a drainage tunnel on Mine Run. The mined ore was shipped to England. Mining ceased about 1770 (Wherry, 1908b, p. 312-313). Minerals reported from this mine include bornite, chrysocolla, fluorite, malachite (Benge and Wherry, 1906, p. 110), cuprite (Wherry, 1908a, p. 733), and chalcopyrite (Rose, 1970, p. 12).

Selected Mineral Occurrences in the Reading Area, Berks County

Mines, prospects, and mineral occurrences in the Reading area (fig. 7) are listed in table 7.

Jacksonwald Exposures of the Jacksonwald basalt along Antietam Creek 1 mi south of Jacksonwald have produced prehnite, datolite, heulandite, and chabazite in amygdaloidal cavities in basalt (Gordon, 1922, p. 155). (SEE Wherry, 1910, p. 12, 24)

Stonersville occurrence (Rose, 1970, p. 2, location 11) Spencer (1908, p. 42) reported that "specimens [of magnetite] have been plowed up in the fields near Spring Creek, between the northern arm [of the diabase] and Stonersville."

Snydersville occurrence (Rose, 1970, p. 2, location 12) Eyerman (1889, p. 45) reported that malachite was found "at Snydersville."

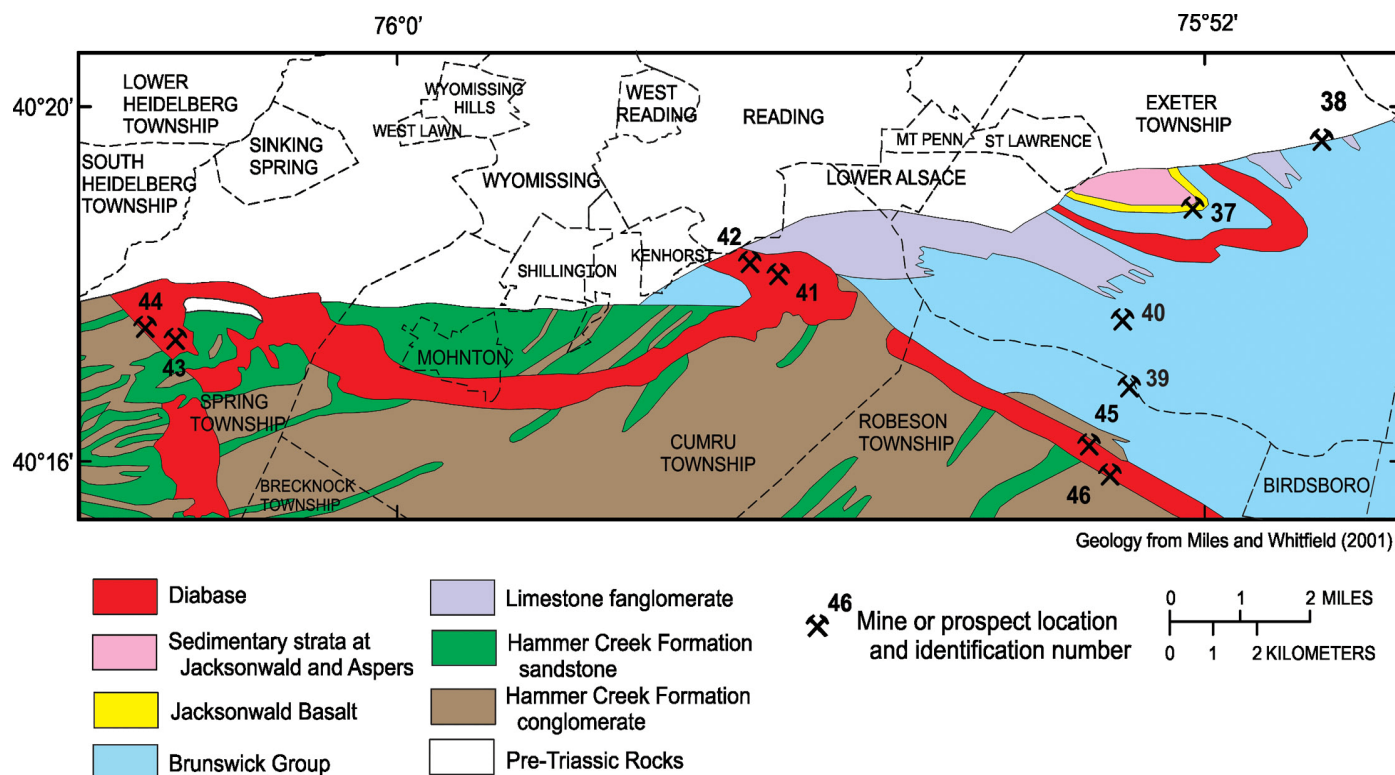


Figure 7. Mines, prospects and mineral occurrences in the Reading area, Berks and Chester Counties. Mine names are given in table 7.

Table 7. Mines, prospects, and mineral occurrences in Reading area, Berks County. Locations are shown on figure 7.

Map number	Name	Type of locality	Type of deposit	Primary metals
37	Jacksonwald occurrence	occurrence	diabase host/vein	B
38	Stonersville occurrence	prospect	skarn	Fe
39	Snydersville occurrence	occurrence	hornfels	Cu
40	Esterly mine	mine	skarn	Fe
41	Fritz Island mine	mine	skarn	Fe, Cu, Pb, Zn, Sb
42	Raudenbush mine	mine	skarn	Fe
43	Wheatfield mine	mine	skarn	Fe, Cu
44	Ruth mine	mine	skarn	Fe
45	Dyer quarry (Gickerville)	occurrence	diabase host/vein	Cu, As, Co
46	Trap Rock quarry	occurrence	diabase host/vein	Cu

Esterly mine The Esterly mine was 2 mi south of Jacksonwald on the W. Esterly farm. A small deposit of magnetite was worked by an inclined slope 125 ft deep and a shaft 150 ft deep (Spencer, 1908, p. 41-43). Estimated production was 4,000-5,000 tons of ore (Rose, 1970, p. 10).

Fritz Island mine The Fritz Island mine was called the Island mine by Rogers (1858, p. 716). The mine was on the north end of Fritz Island in the Schuylkill River 2 mi south of Reading. The mine was worked for iron ore by an open pit and two inclined slopes; one was 231 ft deep and one was 122 ft deep by 1883. Average daily production in 1883 was 25-30 tons (D'Inwilliers, 1883, p. 334-342). Total production was 250,000 tons of ore (Rose, 1970, p. 10). An

extensive list of minerals reported from the Fritz Island mine includes pyrite (Rogers, 1858, p. 716), magnetite, stibnite, chalcopryite, malachite, azurite, apophyllite, chabazite, thompsonite, mesolite, gismondine (Genth, 1875), hematite, galena, bornite, chalcopryite, chalcocite, datolite, and stilbite (D'Invilliers, 1883).

Raudenbush mine The Raudenbush mine was worked for iron ore by a 280-ft inclined slope and several shallow shafts, one of them 50 ft deep (D'Invilliers, 1883, p. 342-343). Rogers (1858, p. 716-717) estimated production at 5,000 tons per year. Total production was less than 150,000 tons of ore (Rose, 1970, p. 10). The ore was magnetite that replaced limestone at the base of a diabase hill just south of Angelica Creek. Other minerals reported from the Raudenbush mine are stilbite and pyrrhotite (D'Invilliers, 1883, p. 400).

Wheatfield mine The Wheatfield mine was named from the discovery of iron ore in William Fisher's wheat field about 1851 (D'Invilliers, 1883, p. 344-350). The mine was worked by open pits and inclined slopes. D'Invilliers (1883, p. 348) estimated production at 300,000 tons by 1883. It was last worked in 1906 (Spencer, 1908, p. 29-36). Minerals reported from the Wheatfield mine include pyrrhotite (D'Invilliers, 1883, p. 400), magnetite, stilbite (Genth, 1875), hematite, and pyrite, (Lapham and Geyer 1959, p. 21).

Ruth mine The Ruth mine (called the Henry Ruth mine by Rogers (1858, p. 717) was an open cut mined for magnetite that replaced limestone. Iron ore was mined from about 1847 to 1863, at which time the deposit was deemed exhausted. D'Invilliers (1883, p. 350-352) believed the ore vein to be an extension of the veins at the nearby Wheatfield mine and estimated total production of about 10,000 tons.

Dyer quarry The John T. Dyer quarry (Gickerville quarry of Gordon, 1922, p. 158) in diabase is worked for crushed stone. It is on Indian Corn Creek 0.75 mile southwest of Gickerville, now known as Gibraltar. Minerals reported from the Dyer quarry include prehnite, apophyllite, stilbite, epidemine, heulandite, chabazite, laumontite, natrolite, melaconite, arsenopyrite, erythrite, chrysocolla (Gordon, 1922, p. 158), bornite, chalcopryite, cobaltite, hematite, magnetite (Geyer and others, 1976, p. 39-40), cobaltite, sphalerite, possible loellingite, and pyrite (Smith, 1987, p. 53, 92).

Trap Rock quarry Diabase quarries at Trap Rock, on Hay Creek about 1 mi south of Birdsboro, are called "Birdsboro" by Gordon (1922, p. 158). Minerals reported by Gordon (1922, p. 158) are prehnite, apophyllite, stilbite, chabazite, laumontite, natrolite, scolecite, and thompsonite.

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"All About Mining" Class for Teachers

From Peter J. Modreski,
President, FM Colorado Chapter

Dear friends and colleagues,

Those of you receiving this email are not on the "educators" portion of my mailing list, but I would like to share information about a worthwhile class for teachers, in hope that you may share it in turn with teachers whom you know.

"All About Mining - A Total Concept of the Mining Industry" is a unique, 4-week, 6-credit recertification class for teachers conducted through the Colorado School of Mines Continuing Education/Teacher Enhancement program. Now in its 44th year, the class is sponsored by the Colorado Mining Association Education Foundation. Its purpose is to show educators, via hands-on practical experience, the importance of mining and related mineral industries to Colorado, the U.S., and the world. Teachers from any grade level and any subject area, science or not, can take the course. It is a mixture of classroom sessions and field trips, including a three-day trip to western Colorado, with visits to such sites as underground and open pit coal mines, a power plant, the Cripple Creek & Victor gold mine, the Henderson molybdenum mine, a steel mill, a gypsum mine and sheetrock plant, and more. I myself help lead one of the field trips and give one or two of the lecture presentations for this class. Over the years I have met many teachers who have taken the course (over 1400 have done so), and everyone who has, counts it as one of the most unforgettable experiences of their lives. The tuition fee is \$250, which covers tuition-credit costs, but a greater amount in trip and class-related expenses is covered by the sponsoring organizations. Some scholarship assistance is available and can be applied for to defray expenses for participants who live beyond daily commuting distance to the CSM campus; teachers from any part of Colorado and from anywhere in the U.S. are encouraged to apply to attend the class (past attendees have come from all corners of the U.S., including Alaska). The CSM-Continuing Education registration page for the class is at <http://te.csmospace.com/register.php?c=48> with more information posted at <http://www.allaboutmining.org/Register.htm>



The 2012 class will run from June 11 through July 6. I am attaching one photo [above] from a past session of the class (2007) participants with an ore-hauling truck at the Cripple Creek and Victor (Cresson) gold mine.

In the past few years, sign-ups for this course have been slow in coming, and the number of registrants has not filled the class to capacity. Please if you can, help us insure that the class continues into the future by spreading awareness of it by passing this information on to any teachers you may know. Thank you!

FM - Pennsylvania Chapter 2012 DUES REMINDER: please pay now

\$15.00 for Seniors (62 and over)

\$15.00 for students

\$20.00 for regular members

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Invite a friend to join! Application forms are available under "Join FM" at <http://www.rasloto.com/FM/>

Recently in PA Geology Magazine

The Pennsylvania Geologic Survey's magazine, *Pennsylvania Geology*, went online-only in 2009 and is available as a PDF from their web site at

www.dcnr.state.pa.us/topogeo/index.aspx

Two issues in volume 41 have been posted for 2011.

The Spring issue includes the first message from George Love, who had recently become State Geologist after several years as Assistant Bureau Director. Articles include "Rethinking the Hydrologic Cycle" by Stuart O. Reese, with various examples from Pennsylvania watersheds and recent history. "The New 1:100,000-Scale Map of Pennsylvania Glacial Features" by Duane Brown includes several of his hand-drawn maps which were incorporated into the publication. John H. Barnes provides "An Update on Laboratory Equipment" at the Survey, including a cathodoluminescence detector for the scanning electron microscope, a stereoscopic microscope, polarizing microscope, reflected-light microscopes with photometers for interpreting degree of maturity of organic sediments, and a new X-ray diffractometer to replace the unit acquired in 1957. "Another Milestone for the Pennsylvania Geological Survey" by Leonard J. Lentz summarizes the history of the four Surveys on the occasion of the 175th anniversary of their inception. Recent Survey publications, most of which are available online, are described. It is announced that the "brick and mortar" Pennsylvania State Bookstore has closed; publications sold by the Survey may now be ordered online from pabookstore.com. "Just click on 'PA State Publications' on the left navigation bar, and then click 'Conservation and Natural Resources.' "

The Summer issue begins with "Marcellus Musings" by State Geologist George Love and an illustrated "Happy 150th Birthday to the McClintock #1, the World's Oldest Producing Oil Well," by John A. Harper. In "An Electrifying Experience," John H. Barnes described the analysis of a rock sample from Susquehanna County; shown by X-ray diffraction to be composed of the high-temperature minerals mullite and cordierite, likely formed when a downed live electric line heated the local shale at its point of contact. The question "but are they minerals?" if produced by human-generated electricity is addressed. Recent publications are noted, including the Directory of the Non-Fuel Mineral Producers in Pennsylvania, Folds of Pennsylvania - GIS Data and Map, and Geochemical Analyses of Selected Lithologies from Geologic Units in Central, North-Central and Southeastern Pennsylvania, all available from the Survey web site. The 2011 Field Conference of Pennsylvania Geologists (which included one trip to the Gates kimberlite intrusion) is briefly reviewed. With the retirement of librarian Richard B. Keene, revised hours for the Bureau library are announced. Anne B. Lutz, geologist and editor, has retired, but will edit *Pennsylvania Geology* magazine as a volunteer. - Editor

New Editor's Message

Articles and Photos Wanted

by David Glick

Putting first things first, as the new editor I would welcome your submission of materials related to Pennsylvania mineralogy for this newsletter: articles, long or short; announcements from FM-PA committees; photographs of specimens, field localities, collections, etc.; reports about books or articles published about PA minerals or by PA authors, or actual book reviews; or other items within the mineralogy and mineral collecting areas of interest. Photographs should be of good resolution without much JPEG compression, so that they will look good in print.

I plan to produce four issues each year; your material is needed to make sure they have some substance. If you know people who have interesting material, please encourage them to submit it. **Please provide materials for the next issue by March 1, 2012.** Thank you!

Feel free to contact me (xidg@verizon.net, or 814-237-1094 days and evenings, or 209 Spring Lea Dr., State College PA 16801) to provide material or discuss any of this.

By way of introduction, I've been collecting minerals, particularly from Pennsylvania, for longer than I can remember, although not with the dedication of some, as it is not my only hobby. My childhood interest led to a bachelor's degree in geology, a master's in coal petrology and subsequent employment with the Penn State Coal Sample Bank and Database through 1999. I've also been involved with editing and printing small newsletters since high school over 35 years ago, most notably the quarterly newsletter of The Society for Organic Petrology from 2002-2006 and the monthly Nittany Mineralogical Society Bulletin from 2000 to the present.

I want to thank Ron Sloto for having such a good article ready to go as the centerpiece of this issue, and Arnie Mogel for extensive discussions and assistance. I am grateful for the work and good examples of David Saja, my predecessor as editor; Ron Sloto, who produced this year's first issue; and of course Jay Lininger and Juliet Reed before them.

DONATIONS WELCOMED

The PA Chapter is a 501(c)(3) nonprofit organization; donations are gratefully accepted and may be deducted from your federal income tax. Donations of any size help to offset the general operating costs of the Society, helping to keep dues low.

Photo Gallery



Quartz and Dolomite, Oak Hall Quarry, near Boalsburg, Centre County, Pennsylvania. The quartz crystal is 2 cm across. Andrew Sicree specimen, collected 2011; John Passaneau photo.

John Passaneau of State College continues to develop his capabilities for specimen photography at various magnifications. John writes:

The photograph above was made by combining 24 exposures, each taken at a different focal distance to cover the whole depth of the specimen. They were processed in Zerene Stacker (for details see <http://www.zerene.com/cms/stacker>), which extracts the parts of each photograph that are in focus and assembles the sharp zones together to make a single photographic file that has outstanding depth of focus. Adobe Photoshop was used to add the finishing touches. The camera used was a Canon 40D, with a 100mm macro lens.

More of John's mineral photographs may be seen on his web sites. Most of those at <http://www.personal.psu.edu/jxp16/> were taken using the stacking technique; most of those at

http://www.flickr.com/photos/john_rocks/sets/ were not. The Penn State Earth & Mineral Sciences Museum is currently displaying some of his best photographic prints in the ground floor hallway of Deike Building (University Park, PA). John has also produced a series of posters (2008-2012) for the Nittany Mineralogical Society.

FM on the WWW

Please explore the FM-PA web site at
www.rasloto.com/FM/

National News

National FM newsletters, links to other chapters, and much more can be found on their web site:

www.friendsofmineralogy.org

UPCOMING EVENTS

Jan. 28, 2012: Rutgers Geology Museum Open House. Scott Hall (Room 123 & others), 43 College Ave., New Brunswick, NJ 08901. Four talks, mineral sale, mineral ID, make & take stations for kids (all ages), hands-on activity stations for kids (ages 8 and up). Free. Sat. 9-4.
<http://geologymuseum.rutgers.edu/downloads/2012-open-house.pdf>

Feb. 18, 2012: Jewelry, Mineral & Fossil Show by Southern Maryland Rock & Mineral Club. The Show Place Arena, 14900 Pennsylvania Ave., Upper Marlboro MD 20772. Sat. 10-5. <http://www.smrnc.org/2012-rock-show.html>

March 3-4, 2012: Gem, Mineral & Fossil Show by Delaware Mineralogical Society. Delaware Technical and Community College, 400 Stanton-Christiana Rd. (at Churchmans Road), Newark, DE 19713
<http://www.delminsociety.net/>

March 10-11, 2012: North Jersey Gem and Mineral Show by The North Jersey Mineralogical Society. Pope John Paul II Center, 775 Valley Rd., Clifton. Sat & Sun 10-5.
<http://nojms.webs.com/annualspringshow.htm>
<http://nojms.webs.com/2012springflyer.jpg>

March 17-18, 2012: Gem, Mineral & Fossil Show by the Gem, Lapidary & Mineral Society of Montgomery Co., MD. Montgomery Co. Fairgrounds, 16 Chestnut St., Gaithersburg, MD. Sat 10-6, Sun 11-5.
<http://www.glmsmc.com/show.shtml>

March 24-25, 2012: Annual Gem & Mineral Show by Che-Hanna Rock & Mineral Club. Athens Twp. Volunteer Fire Hall, 211 Herrick Ave., Sayre PA. Sat 9-5, Sun 10-5.
<http://www.chehannarocks.com/show.html>

March 24-25, 2012: Gem, Mineral & Jewelry Show by Franklin County PA Rock & Mineral Club. NEW LOCATION: Hamilton Heights Elementary School, 1589 Johnson Rd., Chambersburg. Sat. 10-5, Sun. 10-4.

March 31 & April 1, 2012: Mineral Treasures and Fossil Fair by Phila. Mineral Society & Delaware Valley Paleontology Society. LuLu Temple, 5140 Butler Pike, Plymouth Meeting, PA. Sat. & Sun. 10-4.

April 19-22, 2012: Rochester Mineralogical Symposium. Rochester, NY. www.rasny.org/MineralSymp.htm

April 28-29 2012: New Jersey Earth Science Ass'n Gem & Mineral Show by FOMS, NJESA & Sterling Hill Mining Museum. Franklin Borough School, 50 Washington Av., Franklin, NJ.

May 12, 2012: South Penn Rock Swap - SPRING SWAP by Franklin County & Central PA Rock and Mineral Clubs. South Mountain Fairgrounds, 1.5 miles West of Arendtsville, PA on Route 234. Sat only, 8 a.m. to 3 p.m.

May 19-20, 2012: "World of Gems and Minerals" by Berks Mineralogical Society. Rt 61, 7 miles South of I-78, Leesport Farmers Market, Leesport PA. Sat 10-5, Sun 10-4.

June 2, 2012: Spring Mineralfest by Pennsylvania Earth Sciences Association. Macungie Memorial Park, Macungie, PA. Saturday only 8:30 - 3:00. www.mineralfest.com

Sept 15-16, 2012, Eastern Federation of Mineralogical and Lapidary Societies Convention, and Central Pennsylvania Rock and Mineral Club Annual Show, Harrisburg

October 27, 2012: South Penn Rock Swap - AUTUMN SWAP by Franklin County & Central PA Rock and Mineral Clubs. South Mountain Fairgrounds, 1.5 miles west of Arendtsville, PA on Route 234. Sat only, 8 a.m. to 3 p.m.

Nov 3-4, 2012: FM-PA Symposium & Field Trip, Franklin & Marshall College, Lancaster, PA. *

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