

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc.

P.O. Box 10664

State College PA 16805

August, 2008

www.ems.psu.edu/nms/

Editor: David C. Glick (see p. 8)

August 20th meeting:

Show and Tell

Program by the Members

Our August meeting will be held Wednesday the 20th at 7:30 p.m., in the room 114 auditorium of Earth & Engineering Sciences Building on the west side of the Penn State campus in State College, PA.

6:30 to 7:30 p.m.: Social hour, refreshments in the lobby

7:30 to 8:00 p.m.: announcements; door prize drawings

about 8:00 p.m.: Show and Tell program

The event has free admission, free parking, free door prize drawings and free refreshments, and is open to all – please come and share an enjoyable evening! -- Editor

Our grand **door prize** giveaways will continue at this meeting; several new ones acquired at our Show will be among the choices. Other door prize donations for this meeting are also welcomed.

The program topic will be **Show and Tell** by the Members, for the Members. This is a great chance to bring in lapidary work, new specimens, books, photos, equipment, projects in progress, interesting contrasts and comparisons, **anything** representing some area of interest in our hobby, and share it with others. You can speak about it as informally or formally as you'd like. Stories on their own are fine, too. We've had many fun and interesting reports in the past, and look forward to more this time around. -- Editor

ATTENDING THE AUGUST MEETING?

This event is free and open to all - bring a friend!

Donations of door prize specimens are invited.

Your additional snacks will be welcomed.

NMS Fall Schedule

Watch this Bulletin and the web site for any updates.

Sept. 17: Paul Zell, Geoscience Instructor at Penn State Altoona, will speak on "The last 600 million years of central Pennsylvania history, or Why do we have all these sandstones and mud rocks?"

Oct. 15: Bob Altamura

Nov. 19: Ted Daeschler of The Academy of Natural Sciences, Philadelphia

Dec. 17: Holiday Social and Sale

Junior Rockhounds: schedule and location to be announced. *

Come to the Annual Picnic!

Members should have received a mailed invitation to the NMS picnic (afternoon, August 23). Please respond to the invitation if you will attend. Non-members who would like to attend are also welcome; please contact John Passaneau (see p. 8). We have lots of fun and it's an opportunity to see John's mineral collection. -- Editor

Activities for NMS

by David Glick

The Board of Directors welcomes comments on activities, consistent with our educational and scientific non-profit purposes, which the NMS might consider undertaking. What would result in more members attending or being actively involved with projects and activities? Any of the Board members (see page 8) would like to hear from the members.

Election Candidates and Committee Volunteers

by David Glick

Elections are coming up at our corporation's Annual Meeting on October 15; nominations or volunteers for office are requested no later than the September 17th meeting. NMS is also seeking volunteers to engage in publicity and public relations, Junior Rockhounds activities, organizing refreshments for meetings, and more. Please contact Dave Glick or another Board member (page 8) if you'd like to volunteer.

FIELD TRIPS COMING

Those on the field trip notification list have received notice of an Oak Hall trip in August. Other trips are in the planning stages. Members can be added to the list by contacting Field Trip Chair Ed Echler, <eechler@comcast.net>. -- Editor

Bus Trip to Franklin Show?

by Dr. Andrew Sicree

Are you interested in taking a bus or van trip to the Franklin, New Jersey, Show on Saturday, September 27? In addition to that indoor-and-outdoor show, there are possibilities for collecting at Sterling Hill (for a fee), attending Sterling Hill's mineral garage sale, and taking the Sterling Hill underground mine tour.

Projected round trip transportation cost is on the order of \$35.00, admissions and fees not included. Contact Andrew Sicree <sicree@verizon.net> now to express your interest and find out more. *

Minerals at Spring Creek Day?

Clearwater Conservancy will hold its annual Spring Creek Day Family Festival on Sunday, September 28th, with many other nature, outdoors and environmental groups participating. It will be held at Millbrook Marsh Nature Center in the State College area. The Conservancy has asked whether NMS or its members would want to display minerals and/or have an interactive program on minerals or geology. Opening geodes was mentioned as one possibility. Please contact Dave Glick (see page 8) as soon as possible if you would be interested in participating. For background information, see their 2007 program at www.clearwaterconservancy.org/springcreekday.htm

NEWS FROM THE FEDERATIONS

Nittany Mineralogical Society, Inc., is a member of EFMLS, the Eastern Federation of Mineralogical and Lapidary Societies, and therefore an affiliate of AFMS, the American Federation of Mineralogical Societies.

The EFMLS Newsletter is available through the link on our web site www.ems.psu.edu/nms/ or remind Dave Glick to bring a printed copy to a meeting for you to see.

The EFMLS August issue is not yet available.

The AFMS Newsletter is available by the same methods. In the June/July issue, a newly received prize for the AFMS Endowment drawing is pictured in color (in the online version). It is a 14k gold wire-wrapped free-form Royal Lavender charoite pendant.

Plans and committees are reviewed, including applications to have the Federation represented on Bureau of Land Management Resource Advisory Councils in various regions in the western U.S. Bob Carlson reviews plans for the Federation's American Lands Access Association to increase its activities, making members aware of pending legislation which would limit access to public lands.

Please see the web sites for the rest of these articles and many others in both Newsletters. There's a lot there! - *Editor*

Natural Gas from Marcellus Shale covered in PA Geology Magazine

by David Glick

The anticipated natural gas boom in Pennsylvania has brought geology into the news in recent months. The Spring 2008 issue of Pennsylvania Geology magazine includes a timely article by John Harper on the Marcellus Shale, the expected source of the gas. The issue is available on the Pennsylvania Geological Survey's web site, accessible through the "PA Geology online" link on the left sidebar of the NMS web site, or directly at www.dcnr.state.pa.us/topogeo/pub/pageolmag/pageolonline.aspx

Nittany Show Wrap-Up

President's message from Dave Glick

We held our third annual Nittany Gem and Mineral Show on June 28-29, 2008. After some scrambling when the rented tables didn't arrive as expected, things went rather smoothly. That's a credit to the volunteers, several of whom put in long days on Friday (for set-up), Saturday and Sunday

I'm pleased with the results of the Show, even though some of the numbers aren't as good as the previous year's. I'm pleased because of several factors that were working against us. We didn't really get started until March because of the NMS Board being occupied with the big job of applying for 501(c)(3) tax-exempt status in January, then changing the Show Chair and the location. Gasoline prices were at an all-time high, \$3.99 per gallon in State College. Those who know about shows say that changing the venue can cause a loss in attendance of as much as 40%.

With that background in mind, I'm pleased to report that our attendance was the same as the previous year, around 515. We spent somewhat more on advertising; this year we added paid advertisements in the Altoona, Lewistown, Williamsport and Lock Haven newspapers. Our income was down because we reduced the dealers' table fees by 10%, to encourage participation after our late start. Member participation in the consignment table was down, and revenues from the silent auction were down because the auctioneer (me) was busy with other duties. Nevertheless, we came out ahead by about \$1,300. We know several places to improve - making more use of free advertising, getting a few more dealers, and preparing and staffing for the silent auction - so I think we can anticipate better income next year. In terms of showing our Society and the aspects of our hobby to the public, I think that this show, like our previous ones, was quite successful. Some photos are shown on the next page.

None of it would have happened without our volunteers. John Passaneau, Bob Altamura, Brett Altamura, Tim Holtz, Willard Truckenmiller, Mike and Sandy Sheasley, Ellen Bingham, and Andrew Sicree were there most or all of the time for three long days. Sue Smith helped with set-up, Shirley Fonda helped with consignment table, and Forest "Ben" Benford provided fresh muscle when it was needed for packing up. Rosita Pisarchick made the drive from Brockway to teach a jewelry class, even though we ended up with no students for her. We also benefitted from the arrangements that Bernie Pisarchick had made in his two years of directing the show, so we didn't have to "re-invent the wheel." The energetic members of the Bald Eagle Chapter of Gold Prospectors Association of America provided an added attraction with their gold panning demonstrations and information, and we appreciate that they pitched in and helped with our mini-mine as well. If I have forgotten anyone, please know that every contribution of materials, displays, time, and effort was greatly appreciated.

Our dealers were also very cooperative, contributing door prizes and putting up with tables which were somewhat different than promised. Every one was personally very kind to me as a first-time show chairman, even though there were some things that could have done better, and I appreciate their understanding.

We will need some more volunteers next year, so that we can spread out the work and give all the volunteers more time to enjoy the show. Just two or three hours to give someone else a break would be very helpful, so we will be making an effort to recruit more helpers next year. Plans for the 2009 show have begun. ❄



Joe Dague's mineral specimens provide material for discussion.
A. Sicree photo



Customers check out a vendor's specimens.
A. Sicree photo



Bob Altamura demonstrates grinding and polishing of cabochons.
A. Sicree photo



Brett Altamura demonstrates and operates the mini-mine.
A. Sicree photo



GPAA members discuss and demonstrate gold panning, adding another aspect to the show.
A. Sicree photo

POPULAR MINERALOGY

Mineralogy and earth science for the amateur mineralogist and serious collector - #15

Diseases of Minerals

by Andrew A. Sicree

Can a mineral get sick?

Almost every mineral collector or geologist has experienced it: metastability. Fresh out of the mine, that newly-collected pyrite looks bright and shiny – as good as gold. But take it home, put it in a cardboard box in the garage, and check on it again in six months and you can see why it's called "Fool's Gold" – the pyrite has become dull, crumbly, and covered with a fine powder. Leave it in place longer and a stain develops on the cardboard below the specimen. Open the box and you notice a distinct sulfurous odor. What's happening? Why is the pyrite falling apart? Pyrite is just one of many minerals that can be described as "metastable."

Metastability is the condition in which a mineral is unchanging (that is, "stable") with respect to small "disturbances" but is capable of reacting and releasing energy if "disturbed" to a great enough degree. In other words, the mineral wants to be some other mineral, but needs a small push to get there. The "disturbances" that can undo a metastable mineral can be temperature changes, increases in humidity, exposure to light, growth of bacteria, or even just the passage of time.

Diamonds aren't forever

The classic case of a metastable mineral is diamond. Diamond, a mineral composed only of carbon, is stable *where it is formed*. Diamond forms at high temperatures and terrific pressures deep within the Earth's mantle. But diamond isn't the only pure carbon mineral. Graphite is also pure carbon. The major difference between the two minerals is that diamond is cubic carbon while graphite belongs to the hexagonal crystal system. You can change graphite into diamond by putting it in a huge press and subjecting it to high enough temperatures and pressures. But, if you then lower the temperature and pressure slowly enough, the diamond you have just made will revert back to graphite. The change from diamond to graphite is known as a phase change. At room temperature and normal atmospheric pressure, graphite, not diamond, is the stable form for pure carbon. Diamond is metastable under these conditions. Given enough time (a billion years or so) the diamond in an engagement ring will revert back to graphite. You can greatly speed up the rate of the phase change by heating up the diamond – not an

experiment I recommend. "A diamond is forever," says the DeBeers ad campaign, but it just ain't so. Sorry, guys and gals!

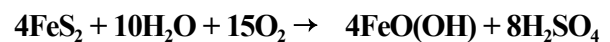
Glaciers are metastable, too

Ice, of course, is also metastable on the Earth's surface. Heat up a glacier and it melts. One may note that it is possible that glacier-covered planet could exist where ice is stable rather than metastable because it is always too cold to melt the ice. This emphasizes the point that metastability depends upon the local conditions. A mineral that is stable deep in the Earth's mantle may be metastable on the Earth's surface and vice versa (graphite is stable on the surface but would be metastable in the mantle).

The real question to ask about a metastable mineral is not "why is it decomposing?" but rather "why hasn't it decomposed already?" Those pyrite crystals have been underground, exposed to water for millennia, and they wait until you take them home and put them in your nice dry garage before they fall apart?

Pyrite "disease"

Even when stored in a dry mineral cabinet, some specimens of pyrite develop what is loosely called "pyrite disease." The decomposition of pyrite is hard to predict, but some pyrite crystals become dull and powdery, emit a sulfurous odor, and will stain cardboard and corrode nearby metals. Certainly, pyrite is metastable at room temperatures in the presence of oxygen and moisture. One way to write the reaction for the decomposition of pyrite is:



In this reaction pyrite, FeS_2 , is altered to goethite, FeO(OH) , and sulfuric acid, H_2SO_4 , is released. The crumbly, powdery appearance is due to the alteration of pyrite to goethite and the sulfurous, acrid smell is due the production of sulfuric acid. This acid escapes from the mineral and attacks nearby cardboard, paper, and metal. Note that water, H_2O , and oxygen, O_2 , are required for the reaction to proceed. The question arises: "If pyrite is metastable, then why doesn't all pyrite decompose rapidly?"

When a pyrite crystal is unearthed, it is exposed to oxygen and moisture. Even the small amount of water available in

mostly dry air is sufficient to allow pyrite disease to proceed. Higher humidity air helps to decompose pyrite more readily. Some pyrite specimens are more susceptible than others to decomposition due to naturally-occurring flaws in the crystal lattice. Bacteria can also play an important role. Some bacteria make their living, so to speak, on the energy they get from the oxidation of pyrite. As the bacteria multiply, they will accelerate the decomposition of the pyrite.

Underground, in its host rock, pyrite is in a different environment. Even though the pyrite is exposed to water, the groundwater doesn't have much oxygen in it. Pyrite is stable when oxygen is unavailable, rather than metastable. The conditions under which pyrite is stable are found in what geochemists call the "reduced zone." This is the region underground where there is very little free oxygen. [By free oxygen, we mean oxygen present as a gas or dissolved in water – oxygen atoms can still be present if they are bound up in minerals such as calcite, $\text{Ca}(\text{CO}_3)$, or quartz, SiO_2 , etc.] When groundwater that carries dissolved oxygen penetrates to rocks containing pyrite, the water and oxygen will oxidize the pyrite to an iron oxide mineral such as hematite, Fe_2O_3 , or goethite, $\text{FeO}(\text{OH})$. The zone of rocks affected by oxygen-rich groundwater is referred to as the "oxidized zone." Pyrite is stable in the reduced zone and metastable (or unstable) in the oxidized zone.

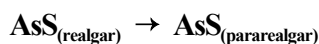
Realgar dies under the lights

The metastability of realgar presents a preservation headache for the mineralogist. Upon exposure to light (for a matter of days or months) bright-red realgar crystals will alter to an orangish-yellow powder. The traditional explanation for this decomposition was that realgar (which is arsenic sulfide, AsS) was changing to a mixture of orpiment (As_2S_3) and arsenolite (As_2O_3). Note that any such reaction would require the addition of oxygen and (presumably) the evolution of sulfur dioxide gas:



This equation implies that realgar could be preserved by placing it in an oxygen-free environment in a sealed glass ampoule.

But more recent investigations have shown that the photodecomposition of realgar does not produce orpiment. Careful experiments have shown that upon exposure to light in the 500 to 670 nm range, realgar alters to the mineral pararealgar. Pararealgar is the dimorph of realgar, which means that it has the same chemical composition: arsenic sulfide (AsS). Note that this reaction does not involve oxygen:



This equation implies that placing realgar in an oxygen-free environment in a sealed glass ampoule will do no good. If light hits the realgar, it will decompose. Thus, realgar is metastable with respect to pararealgar – all it takes is light to make the change.

Interestingly, light under 500 nm or over 670 nm does not alter realgar. Thus, purple and ultraviolet light will not cause photo-decomposition, nor will red or infrared light.

Summary

Metastability is a relative term – it depends upon the environment of a mineral. If a mineral is exposed into conditions where it is unstable (that is, where it would react to produce other minerals and release energy) but doesn't react promptly, then we say that the mineral is metastable. A metastable mineral will begin to react if it is given a small "push" in the form of a temperature increase, exposure to light, contamination with bacteria, exposure to oxygen, etc.

Ref.: Douglass, D. L., Shing, C., Wang, G., 1992, "Light induced alteration of realgar to pararealgar," *American Mineralogist*, v. 77, pp. 1266-1274.

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The Meaning of Metamict

The principal characteristic of a crystal is *order*. A crystal's atoms are arranged in a regular three-dimensional pattern called a *crystal lattice*. It is possible, however, to destroy this ordered arrangement of atoms.

Naturally-occurring radiation, particularly *alpha particles*, will knock atoms out of their proper places within the crystal lattice. Alpha particles are hefty, consisting of two protons and two neutrons (the same as the nuclei of helium), so when they hit a crystal at high speeds they cause a fair amount of damage.

Knocked about by alpha radiation, the atoms that make up a crystal are still in the crystal, but their order has been destroyed. This process is called *metamictization* or *metamiction* and a crystal subjected to it is said to be *metamict*. The term *amorphous* is a general term for a mineral without crystallographic order (i.e., without any interior order); *metamict* is applied to minerals that originally had order, but lost it due to bombardment by radioactivity.

Metamictization lowers a mineral's hardness, density, and index of refraction. It often changes the mineral's color, too. Metamict minerals are often brown, tan, or greenish. The external form of the crystal (its crystal faces and habit) may be

preserved even though, on an atomic level, the crystal has become completely disordered.

Minerals that contain uranium or thorium – elements that are always radioactive – are subject to metamictization. In these cases, internal bombardment occurs as uranium or thorium atoms within the crystal decay and release alpha particles. Minerals that do not contain radioactive elements, but occur in deposits that contain uranium or thorium, can also become metamict by external radioactive bombardment.

Zircon ($ZrSiO_4$) is an example of a mineral that is often found in metamict form. Zircon does not contain uranium or thorium, but it is susceptible to metamictization when bombarded by alpha particles from nearby radioactive minerals. Not all zircon is metamict, however. The terms *low zircon* and *high zircon* are used to differentiate, respectively, zircon metamict and non-metamict zircons. Other minerals that are often found to be metamict include *titanite* ($CaTiSiO_5$) and *ekanite* ($ThCa_2Si_8O_{20}$).

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The Simple Flame Test

The widespread use of x-ray diffraction and electronic elemental analytical equipment may lead one to believe that you can't do mineralogy without a lot of very expensive equipment. But famous mineralogists such as James Dwight Dana did their work long before the days in which fancy XRF (x-ray fluorescence) units became available. They used their eyes, noses, and some simple apparatus to conduct tests and make observations about minerals.

One simple test that you can easily do at home is the flame test. Essentially, the flame test involves holding a small sample of a mineral in a flame and observing any colors produced. The color produced can be related to the composition of the mineral. For instance, in the flame, copper minerals will produce blue or green colors.

Classically, flame tests involve use of an alcohol lamp, a blowpipe, and a platinum loop to hold the mineral sample. This equipment can be purchased from some mineralogical supply houses, but you can do a simple version of the flame test using cheaply-acquired common equipment.

To get started performing simple flame tests all you need are some sets of cheap tweezers, a dropper bottle of 10% hydrochloric acid, some small plastic pans, and a propane torch. You can use your rock hammer to crush small samples of minerals to be tested.

Begin by selecting a mineral that you know will produce a strongly-colored flame. A sample of malachite or azurite, or strontianite or celestine, will work well for practice and for demonstrations. After you have practiced with a known mineral, you can attempt flame tests with unknowns.

Ignite your propane torch and set it upright in the center of a sturdy table where it cannot be knocked over. Adjust the flame to obtain a one- to two-inch long cone of flame. If the flame is highly colored, chances are good that the flame is too long or that the nozzle is contaminated – you may need to buy a new nozzle.

Crush a pea-sized piece of the mineral into a pile of small chips and powder. Then put the powder in a plastic pan. Put a drop of the acid solution in the pan as well next to the pile of powder. Use a clean tweezers to pick up a small chip of mineral, dip it in the acid, and then rub the dampened mineral in the mineral's powder. Note any reactions (carbonate minerals will fizz, for example).

Now insert the tweezers tips into the flame of the propane torch. You will have to move the tips into the center of the flame (experiment to find the best spot). The flame will be colored briefly (for a few seconds at most) so note the color. Don't leave the tweezers in the flame too long or they will begin to conduct heat back to your fingers. After using the tweezers clean them using a small of acid, and rinse them well with water.

This method is not quite the same as the method used when you employ a proper platinum wire loop to hold the tested mineral. Platinum will not react with the acid and the flame. Cheap tweezers will corrode at the tips after use. Cleaning them will help prolong their usefulness.

Minerals such as barite, malachite, azurite, celestine, and strontianite can all be used in flame tests. For instance, strontianite contains strontium, which gives a crimson color in the flame. The flame test can be used to differentiate strontianite from calcite (both of which will "fizz" in contact with acid. You can find tables of elements and their flame test colors in many mineralogy texts.

Another good candidate for flame test demos is the salt substitute sold in your local grocery store. Salt substitutes contain potassium chloride (sylvite) rather than sodium chloride (halite). The substitutes taste the same but are purchased by health-conscious shoppers because they contain no sodium. Salt substitutes provide a cheap way to demonstrate the lavender color of a potassium-tinged flame. Note that sodium produces a strong yellow flame – so strong that when it is present it tends to over-power any other colors produced by other elements. You can test salt substitutes for the presence of sodium: if you see the lavender flame, there is very little to no sodium present.

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Crystal Matrix Crossword

Africa & Minerals

ACROSS

- 1 green uranium mineral
- 10 ugly African ungulates
- 14 corundum
- 15 mine entrance
- 16 let it be
- 17 Asian god
- 18 Tsumeb copper carbonates
- 19 manganese
- 20 former Pakistani ruler
- 21 year (ab)
- 22 six
- 23 lanthanum
- 25 African tree
- 29 hit the ___ on the head
- 31 absolute (ab)
- 33 the air around us (ab)
- 34 tool for trimming logs
- 35 do it to a bug
- 36 first mother
- 37 ___ be or not ___ be
- 38 to God
- 39 the loneliest number
- 40 12 inches (ab)
- 41 cathode ray tube (ab)
- 42 the one after
- 44 goes with aah
- 45 low woodwind
- 47 near the surface
- 48 billions and billions
- 49 where Tsumeb is
- 51 anno Domini
- 52 Underwriters Labs (ab)
- 53 a short view
- 55 Biblical man
- 56 mister
- 57 lead carbonates
- 62 legal decree
- 64 smallest bit of chemical
- 65 elevation (ab)
- 66 small 3-masted ship
- 67 rough file
- 68 Bogart's place in a mineral-rich nation

DOWN

- 1 what every crystal needs
- 2 Arabic east of Africa
- 3 rapid eye motion
- 4 nation west of Africa
- 5 ___ yi yi yi
- 6 opposite of yeah
- 7 opposite of busily
- 8 where diamonds can be

- 9 and more
- 10 ground fault interrupt
- 11 made from nitrates
- 12 United Arab Emirates
- 13 Science Technology Soc
- 18 African nation
- 22 ___ a ___
- 24 American lawyers
- 26 hole in the rock
- 27 amplitude modulation
- 28 land of diamonds
- 30 much ___ about nothing
- 32 another rock
- 35 collect the whole ___
- 36 Tolkien's walking tree
- 38 German three
- 39 cuprite, hematite, etc.
- 40 low cloud
- 41 islands east of Africa
- 43 gov't enviros
- 44 petroleum
- 46 barium
- 48 west African nation
- 50 St. Teresa of _____
- 54 Indian tribe
- 56 millisecond
- 57 four-wheeled vehicle
- 58 est. time of arrival

- 59 type of referee
- 60 1/60 of a minute
- 61 ___ Gardner
- 63 son of
- 66 extra large

SOLUTION TO MAY PUZZLE:

A Variety of Minerals

C	A	S	S	I	T	E	R	I	T	E		R	D	A
R	E	A	C	T		Y	O		O	R		I	N	D
A	R	C	H		G	E	O	L	O	G	I	C	A	L
N	O		I	M	A		F	A				H		
D		A	S		B	B		P	Y	R	I	T	I	C
A	D	I	T		B	U	G		B		P	E	A	R
L	A	M		O	R	D	E	R		I	S	R		Y
L	G		P	R	O		O		C	O	O		A	S
I		C	U	E		A	D	O	R	N		D	O	T
T	E	A	M		M	E	R	A		C	O	L	A	
E	L	B	A	I	T	E		E	T		H	E	L	
			I			A	S		O	U	I		S	L
C	O	N	C	R	E	T	I	O	N		S	E	M	I
A	R	E		E	W		A	V		R	E	P	U	N
T	O	T			V	E	R	M	I	C	U	L	I	T

Some Upcoming SHOWS AND MEETINGS

Our web site <http://www.ems.psu.edu/nms/>
has links to more complete lists and details on
mineral shows and meetings around the country.

Aug. 15-17: Gem Miner's Jubilee, Lebanon, PA; Mid-Atlantic Gem & Mineral Association; Lebanon Expo Center, Rt. 72 and Rocherty Rd., Lebanon, PA. Gems, jewelry, minerals, beads; contact MAGMA, (301) 565-0487. Adults \$6, children under 12 free. Fri. 10-6, Sat. 10-6, Sun. 10-4.. www.gem-show.com

Sept. 13-14: Gem, Mineral & Jewelry Show by Central Pennsylvania Rock & Mineral Club; Eagle View Middle School, 6746 Carlisle Pike, Mechanicsburg, PA. Educational displays and talks, Cub and Girl Scout activity pins and badges. Adults \$5, children 12 and under free; Sat. 10-6, Sun. 10-5. www.rockandmineral.org

Sept. 24 - 28, 2008: AFMS and South Central Federation Convention and Show, Humble, TX. Show on Fri-Sun. www.amfed.org/show2008.htm

Sept 27-28: Franklin-Sterling Hill Mineral, Gem, and Jewelry Show, by FOMS and the Franklin Mineral Museum, at Franklin Borough School on Washington Avenue.

Oct. 4, 2008: Autumn Mineralfest by Pennsylvania Earth Science Association, Macungie Memorial Park, Macungie, PA. Sat. only, 8-3. www.mineralfest.com

Oct. 11-12 Kit-Han-Ne Rock & Gem Club Show, West Franklin Firehall, corner of Cherry and Linton St., Worthington, PA. Six vendors, silent auction, displays, Gem Mine for young and old, Plinko for kids. Sat. 10-6, Sun. 10-5. www.facetersco-op.com/zabinski/gemshow.htm

Oct 25: South Penn Rock Swap, by CPRMC and Franklin County RMC, South Mountain Fairgrounds, 1.5 miles west of Arendtsville, PA on Rt 234. Sat. only, 8-3.

Oct 25: "Ultraviolation 2008" Fluorescent mineral show, by Rock & Mineral Club of Lower Bucks County, PA; First United Methodist Church, 840 Trenton Rd, Fairless Hills, PA; Sat. only, 9-4.

Nov. 1 - 2, 2008: Gemarama, by Tuscarora Lapidary Society. The School at Church Farm, Exton, PA. North side of Bus. Rte. 30, off Rte. 202, 0.5 mile west of Frazer. "Gemstones of South America" theme; dealers, finished jewelry, cut and uncut stones, fossils, beads, tools, demonstrations, jewelry artistry, exhibits, children's activities, door prizes. Sat. 10-6, Sun. 10-5 www.lapidary.org *

INVITE A FRIEND TO JOIN THE SOCIETY

The Nittany Mineralogical Society prides itself on having the finest line-up of speakers of any earth sciences club in the nation. If you'd like to be part of our Society, dues are \$20 (regular member), \$7 (student rate), \$15 (seniors), \$30 (family of two or more members, names listed). Your dues are used for programs and speakers, refreshments, educational activities, Bulletins, and mailing expenses. Please fill out a membership form, make checks payable to "Nittany Mineralogical Society, Inc." and send them to

Nittany Mineralogical Society, Inc.

P.O. Box 10664

State College, PA 16805

or bring your dues to the next meeting.

We want to welcome you!

For sale / trade: Equipment & Materials

For sale: Very nice rock and mineral collection along with four display cases. Call Dale at 717-252-1363.

Mineral Business and personal collection for sale (hundreds of specimens plus supplies and equipment included). Call Terry at 570-672-2325 Mon. - Sat. 9:00 a.m. - 11:00 p.m. If I'm not there, leave a message.

For sale: Very large collection of gemstone material, prefer to sell as one lot; including much jade in various types & colors; mostly rough, plus some slabs; some fine Coober Pedy opal. Also equipment and jewelry making supplies from jewelry studio and production shop. Contact Daniel G. Reinhold in Mill Hall, PA; phone 570 748-3201 after lunch every day, or e-mail: dreinhold@suscom.net *

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Publicity: Volunteers needed

The Bulletin Editor will welcome your submissions of articles, photos, drawings, cartoons, etc., on minerals, fossils, collecting, lapidary, and club activity topics of interest to the members. Please contact:

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Newsletter submissions are appreciated by the first Wednesday of the month. If you include photographs or graphics, please do not embed them in word processor files; send them as separate graphics files (TIF, or good to highest quality JPEG files, about 1050 pixels wide, are preferred). Please provide captions and the name of the photographer or artist.