

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc.

P.O. Box 10664

State College PA 16805

January, 2009

www.ems.psu.edu/nms/

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

January 21st meeting:

15 years of NMS and Weird and Wonderful Properties of Minerals

by
Dr. Andrew Sicree

Our January meeting will be held Wednesday the 21st 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. Maps are available through our web site.

*6:30 to 7:30 p.m.: Social hour, refreshments in the lobby
7:30 to 7:45 p.m.: announcements; door prize drawings
about 7:45 p.m.: 15 minutes on 15 years of NMS
about 8:00 p.m.: featured program*

*The event has free admission, free parking, free door prize drawings and free refreshments, and is open to all. **Properties of minerals may be of interest to older children too! Everyone is welcome to come and hear our program, and share an enjoyable evening!** - - Editor*

Dr. Andrew Sicree, editor of Popular Mineralogy newsletter, presents a program on the "Weird and Wonderful Properties of Minerals"...

Mineralogy is a field arising from the intersection of geology, chemistry, and physics. Minerals offer a fascinating view into the world of science and some minerals have unusual properties.

Dr. Sicree will demonstrate some unusual properties of minerals including tenebrescence, fluorescence, flexibility, magnetism, and expandability. He will also explain, for the amateur mineral collector, the science behind these and other properties. This evening's program features "hands-on" demonstrations with audience participation.

Dr. Sicree has been an invited demonstrator at the Denver Gem & Mineral Show for the past three Septembers, and he has even appeared on TV in Denver. He is the author of the mineral properties demonstration notes that appear on the website of the Minerals Information Institute (MII). For thirteen years he was the curator and director of the Earth & Mineral Sciences Museum at Penn State University. Currently, he teaches geology at Penn State Altoona, and chemistry and physics at Grace Prep High School in State College. H

Junior Rockhounds Meetings start Jan. 29: Basic Minerals for Juniors

Junior Rockhounds meetings with hands-on, fun and educational activities will continue in room 117 EES Building, 7:00 p.m. on the last Thursday of the month this winter and spring: Jan. 29, Feb. 26, Mar. 26, Apr. 30, and May 28. This series will be on Basic Minerals for Juniors, with specific topics to be announced. Check the web site for any updates, or call Dr. Andrew Sicree at 814-867-6263. - Ed.

Winter Weather and Meeting Cancellation Policy H H

In case we experience active winter weather on a meeting date, you may wonder if the meeting has been cancelled. Our policy is to cancel the meeting only if evening classes at Penn State have been cancelled. That cancellation is publicized in the usual radio and television service announcements.

Penn State reports that WPSU-FM and Penn State Live <<http://live.psu.edu/>> are "the official sources for weather-related delay or cancellation advisories at Penn State's University Park campus." - Editor

Minerals Junior Education Day Set for Saturday, March 28

by David Glick

Our annual event for children and their parents is set for March 28th. We need volunteers for a successful event! Ideas for an interesting station concerning some aspect of minerals or earth science and accompanying giveaway specimen (350 to 400 needed) are also welcome. We do have a stock of material for the sales table, but donations of more identified specimens will be welcomed as well. Please contact Dave Glick (se p. 8). H

REGULAR MEETING SCHEDULE SET

Jan. 21: 15 Years of NMS, and Properties of Minerals
Feb. 18: The Marcellus Shale and its potential as a significant natural gas source
Mar. 18: Geode Night
April 15 and May 20: topics to be announced

We have no meetings in June or July, but please volunteer for, and attend, our Nittany Gem & Mineral Show, June 27-28.

Please invite your friends to our events and meetings, and remind them that they can find up-to-date information at our web site: www.ems.psu.edu/nms/ - Editor

Our meetings are free and open to all - bring a friend!
Donations of snacks or door prize specimens are invited.

Nittany Gem & Mineral Show

June 27 - 28, 2009

by David Glick, Show Chair

Please tell your friends about our club's show, and keep the date open. We'll be back at Mt. Nittany Middle School this year (site of the 2006 and 2007 shows). More information is coming soon; we hope to have over a dozen vendors and all of our usual talks, kids' activities, silent auctions, food, displays, a Pennsylvania mineral specimen contest, door prizes, etc. -
Editor

OTHER SHOWS AND EVENTS

GEOLOGY MUSEUM

Rutgers, The State University of New Jersey

New Brunswick, New Jersey
presents the forty-first annual

OPEN HOUSE

Saturday, January 31, 2009

9:00 a.m. to 4:00 p.m.

PRESENTATIONS 123 Scott Hall

MAMMOTH GENOMICS **10:00 a.m.**

Dr. Stephan Schuster
Department of Biochemistry and Molecular Biology
Pennsylvania State University, University Park, PA

DINOSAURS OF ANTARCTICA **11:00 a.m.**

Dr. William Hammer
Department of Geology, Augustana College, Rock Island, IL

DRILLING THE CRETACEOUS / PALEOGENE EXTINCTIONS IN NEW JERSEY **2:00 p.m.**

Dr. Kenneth G. Miller and Dr. Richard K. Olsson
Dept. of Earth & Planetary Sciences, Rutgers, Piscataway, NJ

EVOLUTION AND GEOLOGIC TIME:

The Unity of Life **3:00 p.m.**

Dr. Marie-Pierre Aubry
Dept. of Earth & Planetary Sciences, Rutgers, Piscataway, NJ

Rock & Mineral Identification **202 Geological Hall** **MINERAL SALE **135 Scott Hall****

Information:

William Selden, Collections Manager at (732) 932-7243
rwselden@rci.rutgers.edu

The entrance to the Museum quadrangle is the iron gate on the corner of George and Somerset Street in New Brunswick, N.J.

ALL EVENTS FREE NO REGISTRATION

Educators who attend Museum presentations can receive credit toward their professional development requirements. The Geology Museum is registered as a Provider with the NJ Department of Education.

See <http://geology.rutgers.edu/pdf/OpenHouse2009.pdf>

Delaware

Earth Science, Gem and Mineral Show

March 7 and 8, 2009

from their press release

The **Delaware Mineralogical Society, Inc.** will hold its 46th Annual Earth Science, Gem and Mineral Show at Delaware Technical and Community College, at I-95 Exit 4B, Churchmans Road (Rt. 58) Newark (Stanton), DE 19713. Hours Saturday are 10:00 a.m. to 6:00 p.m. and Sunday 11:00 a.m. till 5:00 p.m. The show features educational exhibits of mineral, lapidary and fossil specimens, displays from regional and university museums, an expanded roster of fine dealers of minerals, fossils, gems, jewelry and lapidary supplies, door prizes, demonstrations of gem cutting and polishing and a children's table, where youngsters may purchase inexpensive mineral and fossil specimens. Admission is \$5.00, \$4.00 for seniors, \$3.00 for youngsters between 12 and 16, and free for children under 12 accompanied by an adult. The Delaware Mineralogical Society is a non-profit organization, affiliated with the Eastern Federation of Mineral Societies, and dedicated to learning and teaching about the earth sciences, rocks, minerals, fossils and the lapidary arts. Membership is open to all who are interested in these areas. Info and coupons at www.delminsociety.net or contact gene@fossilnut.com.

Philadelphia Mineral Treasures And Fossil Fair

29th Annual Show and Sale

from their show flyer

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 19462
Just 2 miles from the Norristown exit of the PA Turnpike!

Saturday, April 4, 10:00 a.m. - 5:00 p.m.

Sunday, April 5, 10:00 a.m. - 4:00 p.m.

Admission - Adults \$5.00 - Kids under 12 \$1.00
Uniformed Scouts Free.

Fossils, Minerals, Gems, and Jewelry for sale.

Fossil and Mineral Exhibits and Demonstrations.

Learning activities including a free Fossil Dig for children and a kid's corner with free mineral specimens and scouting merit badge information.

Food, Beverages, and Door Prizes!

Map, directions and more are available by using the 'Mineral Show' button at pms.moonfruit.com

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.

In the January issue, **Wildacres Workshop** dates for both 2009 sessions are noted; Spring will be April 17-23 and Fall will be September 7 - 13. Descriptions of classes for both sessions, and a registration form, are provided. Classes listed for spring are: faceting, lost wax casting methods, glass engraving and etching; silversmithing (basic and intermediate classes), cabochons (basic and intermediate classes), Wildacres "Wild" (hiking), micromounting, wirewrapped jewelry (basic and intermediate), bead weaving (off loom), Picasso jewelry (wire and beads), metal clay magic (bronze and silver), and setting natural stones in precious metal clay.

Further information about the new insurance situation is presented; newsletter copies must be deposited with EFMLS to provide evidence of which club activities are official and therefore covered by the insurance. Entries for the bulletin and website contests are invited. Submissions for Club Rockhound of the Year are also encouraged, as none have been received recently.

The **AFMS Newsletter** is available by the same methods. Contents of the December/ January issue were noted in this column last month.

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

NMS snapshots from the last five years



Silent Auction at our most recent Symposium, June 2004, on Minerals of Pennsylvania. *A. Sicree photo*



Last month's 2008 Holiday Social and Sale *J. Passaneau photo*



Minerals Junior Education Day 2008 *R. Altamura photo*



Our first Nittany Gem and Mineral Show, June 2006, at Mt. Nittany Middle School. *R. Altamura photo*

Popular Mineralogy

Interesting mineralogy and earth science for the amateur mineralogist and serious collector - #20

Dangerous Geology: Who Put the Quick in Quicksand?

by Andrew A. Sicree

Can quicksands kill?

In the final scene of many an old time movie, the bad guy met his end slowly sinking into quicksand along the bank of a jungle stream. After a minute or two, nothing remained of the villain but his hat, floating on the now-placid surface of the quicksand. Quicksand makes for Hollywood classics, but does it make scientific sense that a quicksand could kill a man?

The “quick” in quicksand implies “living” or “lively” (from the Anglo-Saxon *cwic*, “living”)—akin to the use of the term “quicksilver” for mercury. A quicksand is a “lively sand”—an apt name for a sand that moves and swallows up unfortunate bad guys.

Without a doubt, quicksands exist in many parts of the world. Reportedly, they are found in environments as disparate as Morecambe Bay, England; coastal regions of New Jersey, North Carolina, and Florida; the Lençóis Maranhenses of Maranhão, in northeast Brazil; in the Sahara Desert in the Qattara Depression in Egypt; and near Qom in Iran.

The critical question is whether or not one of these quicksands could entrap a man and suffocate or drown him. Experts point out that any mixture of sand and water would have a density greater than that of the human body; thus a human being should be able to float on top of a quicksand. This is, however, only part of the story.

Sand and quicksand

Normal sand is mostly composed of well-rounded grains of quartz transported and sorted by the action of water and wind. Beach sands, for instance, are deposited by wave action and blowing winds, while wind alone forms desert sand dunes. How does a natural bed of sand become a quicksand?

In a well-packed pile of quartz sand, gaps between the rounded sand grains make up about 25 to 30 percent of the total volume. These voids are filled with air or water. But not all sand grains are spherical, and elongate or irregular sand grains make loose packing possible. In loosely-packed sand, voids make up between 30 and 70 percent of the volume. A loosely-packed sand is metastable—it looks firm,

but readily collapses and compacts to a stable, more densely packed bed. Pressure, vibration, or upwelling water serves to overcome the friction between grains and the sand re-sorts itself in a more stable configuration. Studying quicksands in recent years, scientists discovered that not all quicksands are identical.

Fluidized beds

The classical explanation of quicksand is that it is a “fluidized bed.” In a fluidized bed, the grains are partially supported by the pressure of the surrounding fluid. A flow of water upwelling through a bed of sand serves to create a quicksand because the water is effectively “floating” the sand enough that the entire bed of sand behaves like a fluid. Anyone walking onto such a sand would rapidly sink down into the quicksand just as though they had walked into the surface of a pond.

Quicksands created by upwelling water occur in many places where there are natural springs. This can be along riverbanks, at the bases of alluvial fans (fan-shaped masses of sand and gravel carried down from the mountains by erosion), or on beaches exposed at low tide. The latter can be particularly treacherous because someone trapped in a beach quicksand might be drowned by the incoming tide before being freed.

Civil engineers watch for “quick-conditions” during construction of buildings, dams, and bridges because upwelling waters can fluidize any soil (not only sands) and cause catastrophic failures of structures built on them. You would never, of course, construct a building on a quicksand deliberately, but a soil or sand that appears firm today might, given sufficient rainfall, become “quick.” At that point, some stimulus such as a minor earthquake tremor might cause the underlying sediments to liquefy and undermine the foundations of your building.

The destruction of Port Royal

In the 1600’s the town of Port Royal, Jamaica, was “sin city,” home to buccaneers, cutthroats, slave traders, and prostitutes. Port Royal sat perched upon a spit of sand on the edge of the Caribbean Sea near Kingston, Jamaica. An earthquake struck on June 7th, 1692 at 11:43 a.m. (we know

the exact time from a watch that was recovered from the destroyed city afterward). The city's buildings didn't collapse; they *sank* into the sand, and about 3000 people, half of the city's residents, perished. It was as though the Earth "swallowed them up." Survivors claimed the wrath of God was visited upon the city for its sinful ways. Certainly it must have seemed that way to those lucky enough to live through the disaster.

The 1692 earthquake served as the stimulus for the liquefaction of the sand upon which the town was built. Normally, at Port Royal the water table was only a few feet below the surface. Perhaps the spring of 1692 was wetter than usual and the water table had risen. The shaking of the ground during the earthquake caused the sand to become "quick" and the resulting quicksand swallowed whole streets of buildings. At the same time, the ground surface dropped downward (due to compaction and seaward slumping) and most of the town was submerged. Tsunamis that hit the town after the earthquake did nothing to improve the situation. Today, the town lies at least 25 feet (8 m) below average sea level.

The semi-rigid trap

Quicksands are common in the Lençóis Maranhenses of Maranhão, in northeast Brazil. Here, sand dunes intermingle with rainwater-filled lagoons. As these lagoons dry up, a soft crust of brown or green algae and cyanobacteria remains, covering pits of water-saturated quicksand. People who have stood on the crust of these quicksands liken the experience to standing on a waterbed. As long as the crust remains intact, the quicksand bed quivers and vibrates underfoot. If you break through the crust (which is easy to do), you'll quickly sink to the bottom of the sand pit. Upon being disturbed, the quicksand "collapses" to a much firmer sand in which the shear strength increases with depth. In other words, the deeper your legs are stuck in the sand, the harder it gets to pull them out. Most of these pits are only about a meter (3 feet) deep, so they don't present an immediate threat to life, but it can be challenging to extricate oneself from them. By laying sheets of plywood on the surface, researchers found they were able to walk across these pits without perturbing the quicksands.

In other parts of the world, such as Iran and Egypt, salt rather than bacteria and algae appears to play a role in holding the quicksand in a metastable condition.

These semi-rigid trap-type quicksands differ from the fluidized bed-type of quicksand in two important ways. First, the semi-rigid traps have stationary water – there is no continuous up flow of spring water. Second, the semi-rigid traps change drastically after they have been disturbed: they switch from a fluid state to an almost solid state.

Death of the bad guy

While it is true that you should be able to float on (and presumably swim out of) a fluidized bed-type of quicksand, the semi-rigid trap-type quicksands present a different challenge. When you walk onto one of these quicksands, you rapidly sink into the sand. Upon being disturbed, the morass changes from a quicksand to a tightly compacted, almost solid, mass, effectively "cementing" you in place. The force required to pull your legs out of the compacted sand can be much greater than that which a single man can exert. If you don't have friends nearby with a rope to pull you out, you'll have to slowly wiggle about and dig to free your legs. If you have the misfortune to fall into a quicksand that is deeper than your height, you might not live to write home about the experience.

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*Dr. Andrew A. Sicree is a professional mineralogist and geochemist residing in Boalsburg, PA. This **Popular Mineralogy** newsletter supplement may not be copied in part or full without express permission of Andrew Sicree. **Popular Mineralogy** newsletter supplements are available on a subscription basis to help mineral clubs produce better newsletters. Write to Andrew A. Sicree, Ph.D., P. O. Box 10664, State College PA 16805, or call (814) 867-6263 or email sicree@verizon.net for more information.*

How to Escape from Quicksand

The danger of quicksand is perhaps more present in the imagination than in reality. Most of the quicksand pits in Brazil extend only about three feet downward, so they are unlikely to prove fatal to the entrapped explorer. Quicksand deaths are more likely to occur in quicksands located out on tidal flats. Tourists exploring the sea floor at low tide have sometimes become mired – not much fun when the tide is rising. An alert buddy with a rope to lasso you makes escaping from quicksand much more likely, but what can you do without a rope?

When in quicksand country, carry a long sturdy pole. Walking across boards or large logs placed on top of a quicksand bog greatly decreases your chances of breaking through the matted upper surface, and logs, poles, or boards give you something to hang onto if you do start to sink.

If you start to sink, jettison your backpack or any other heavy cargo you're carrying. The density of quicksand exceeds that of water so you are more buoyant on quicksand than in water. An unladen person will float on the surface of a quicksand.

The key problem is that, once you've started to sink, it is difficult to extract your legs from the morass. Thrashing about doesn't improve matters. Lay on your back with your arms spread to stop sinking.

If you're carrying a pole or board, try to slide it under your hips. Using the pole to support your hips, slowly work your legs upward. Patiently working your legs back and forth can loosen the sand around your legs and allow you to slowly pull yourself out.

Once you are on top of the quicksand, try to "swim" toward more solid ground. Move slowly. If possible, your buddy can toss you a rope or extend a tree branch to you. Once you are out, use a pole to try to retrieve your pack.

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Geo-Jokes:

The Cannibal Restaurant

Upon entering a restaurant, a cannibal sits down in a booth and is given a menu. He reads:

- Boiled Biologist \$ 6.95
- Creamed Chemist \$ 4.95
- Fried Physicist \$ 9.95
- Minced Mathematician \$ 12.95
- Grilled Geologist \$ 29.95

He beckons for the waiter and queries him, "Why are these Grilled Geologists so much more expensive than the other scientists? Are they out of season?"

The waiter replies, "Naw, they're still in season, but have you ever tried to clean one?"

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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

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or bring your dues to the next meeting.
We want to welcome you!

Geo-Sudoku

by David Glick,
adapted from pdtreasures.com

This puzzle contains the letters AEILNSTVY, and one row or column spells out the name of a silver gold telluride mineral. Each block of 9 squares, each row, and each column must contain each of the nine letters exactly once. The solution is on page 8.

E	V	A	L					
N		S				T		A
V			T	I		N	L	
	T			L		Y	A	
		V			E	A	S	E
		I	A	N		V		T

This puzzle contains the letters ACDIKNQSU; don't get sucked in too deep! Each block of 9 squares, each row, and each column must contain each of the nine letters exactly once. The solution is on page 8.

			D	U				Q
		K						U
		D				A	N	I
I				S				
	Q			C				U
		C			Q	I	A	
N	C		Q					
	D		A				S	
A	U		K			C		

Crystal Matrix Crossword

Dangerous Sands

ACROSS

- 1 kills movie villains
- 10 spaces between sand grains
- 14 what a raw diamond is
- 15 goddess of the Earth
- 16 Spanish water
- 17 on the menu
- 18 sinking into quicksand
- 19 cobalt
- 20 barrel (ab)
- 21 Technical Sergeant (ab)
- 22 iron
- 23 Unitarian Universalist
- 25 to pull from quicksand
- 29 burns hydrogen
- 31 Infernal tax guys
- 33 needs a scratch
- 34 charged atom
- 35 horizontal mine entrance
- 36 horror story writer
- 37 lane (ab)
- 38 feet per second
- 39 left on top of quicksand
- 40 chops trees down
- 41 long-tailed rodent
- 42 survived a flood
- 44 living
- 45 having ___ you see not
- 47 favorite of Athena
- 48 forms some quicksands
- 49 aluminum sulfate mineral
- 51 nickel
- 52 Triassic (ab)
- 53 aluminum
- 55 ___ Pits trap animals
- 56 opposite of hi
- 57 zeolite named for Pauling
- 62 not below surface
- 64 length times width
- 65 Rhodochrosite town
- 66 more than one uterus
- 67 neat as a pin
- 68 volcanic clay traps cars

DOWN

- 1 mercury
- 2 do ___ others
- 3 water mineral
- 4 to hinder, to slow down
- 5 Cretaceous/Tertiary line
- 6 long ___
- 7 nautical (ab)
- 8 disturbed sand becomes
- 9 not happy at all
- 10 toothy fish
- 11 stir up quicksand

1	2	3	4	5		6	7	8	9		10	11	12	13
14						15					16			
17						18								
19			20				21							
		22			23	24		25			26		27	28
29	30				31		32				33			
34				35						36				
37			38					39					40	
		41					42	43				44		
45	46						47				48			
49						50		51			52			
						53	54		55					56
57	58			59		60			61			62	63	
64						65					66			
67						68								

- 12 bad joke
- 13 to bow in the middle
- 18 needed for quicksand
- 22 blows air
- 24 man's n ame
- 26 violent activity
- 27 cubic centimeter
- 28 shaking makes it fluid
- 30 a force - 2000 pounds
- 32 founder of stratigraphy
- 35 to the point
- 36 said with disdain
- 38 how one sinks in sand
- 39 salt mineral in quicksand
- 40 to be sick
- 41 needed from quicksand
- 43 to possess
- 44 a sand ___; body of sand
- 46 Spanish I
- 48 layered
- 50 rare bird
- 54 related to lakes
- 56 girls' name
- 57 to touch lightly
- 58 man's name "lion"

- 59 to go horizontal
- 60 to catch
- 61 tit for ___
- 63 in Vietnam
- 66 United Nations

LAST MONTH'S SOLUTION:

Radio-Min

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

Jan. 25, 2009: MSNEPA Annual Mineral Auction, Mineralogical Soc. Of NE PA. Sunday at 1:00 p.m., Moosic Presbyterian Church, Moosic, PA

Jan. 31, 2009: Rutgers Geology Museum Open House. Free. Presentations, rock & mineral ID, mineral sale. Sat. 9-4. See p. 2 and <http://geology.rutgers.edu/pdf/OpenHouse2009.pdf>

March 7 - 8, 2009: Earth Science, Gem and Mineral Show, by Delaware Mineralogical Soc. Delaware Technical and Community College, at I-95 Exit 4B, Churchmans Road (Rt. 58) Newark (Stanton), DE 19713. Sat. 10:00 - 6:00, Sun. 11:00 - 5:00.

March 28 - 29, 2009: Che-Hanna Rock & Mineral Show, Che-Hanna Rock & Mineral Club. Athens Township Volunteer Fire Hall, 211 Herrick Ave., Sayre, PA.

May 2 - 3, 2009: Treasures of the Earth Show & Sale, by Mineralogical Society of NE Pa. Oblates of St. Joseph, Pittston, PA.

May 16 - 17, 2009: World of Gems & Minerals, by Berks Mineralogical Society. Leesport Farmers Market Banquet Hall, Rt. 61, Leesport, PA.

April 4 - 5, 2009: Philadelphia Mineral Treasures and Fossil Fair, by Phila. Mineralogical Soc. and Delaware Valley Paleontological Soc. LuLu Temple, 5140 Butler Pike, Plymouth Meeting, PA 19462 Sat. 10 - 5, Sun. 10 - 4.

May 20 - 25, 2009: Inter-regional Rockhound Rendezvous (by NFMS and CFMS), to Davis Creek. Lassen Creek, California, for obsidian. Information coming soon to www.cfmsinc.org

June 6, 2009: Spring Mineralfest, by Penna. Earth Sciences Ass'n., Macungie Memorial Park, 8 miles SW of Allentown in Macungie, PA. Sat. only, 8:30 - 3:00. www.mineralfest.com

June 27 - 28, 2009: 4th Annual Nittany Gem & Mineral Show, Mt. Nittany Middle School, SE side of State College, PA. See page 2.

July 30 - Aug. 2, 2009: AFMS and Northwest Federation conventions, Billings, MT

Oct. 3, 2009: Autumn Mineralfest, Penna. Earth Sciences Ass'n., Macungie Memorial Park, 8 miles SW of Allentown in Macungie, PA. Sat. only, 8:30 - 3:00. [Www.mineralfest.com](http://www.mineralfest.com)

Oct. 17 - 18, 2009: EFMLS Convention, and Annual Gem & Mineral Show sponsored by the Bristol Gem & Mineral Club. Beals Community Center, Bristol, CT

Geo-Sudoku solutions from page 2

E	V	A	L	Y	T	S	I	N
T	I	Y	N	S	A	E	V	L
N	L	S	I	E	V	T	Y	A
V	A	E	T	I	Y	N	L	S
I	T	N	E	L	S	Y	A	V
S	Y	L	V	A	N	I	T	E
L	N	V	Y	T	E	A	S	I
Y	S	I	A	N	L	V	E	T
A	E	T	S	V	I	L	N	Y

C	A	N	D	U	I	S	K	Q
Q	I	K	S	A	N	D	C	U
U	S	D	C	Q	K	A	N	I
I	K	U	N	S	A	Q	D	C
S	Q	A	I	C	D	N	U	K
D	N	C	U	K	Q	I	A	S
N	C	S	Q	D	U	K	I	A
K	D	Q	A	I	C	U	S	N
A	U	I	K	N	S	C	Q	D

For sale / trade: Equipment & Materials

Large mineral collection for sale. Will sell all or part. Also for sale **four** glass front and top **display cases**.

2 are: 72" L x 19 1/2" W x 40" H

2 are: 72" L x 19 1/2" W x 36" H

Call 570-672-2325. If I'm not in, leave a message.

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

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 H

SOCIETY OFFICERS

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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.