

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc.

P.O. Box 10664

State College PA 16805

Editor (see page 8):

David C. Glick

May, 2015

Visit our web site: www.nittanymineral.org

May 20th meeting:

A Study of Ilmenites from Tanoma Kimberlite: an assessment of Diamond-Bearing Potential

by
Patrick Cassidy,
B.S. Geosciences, Penn State

Our May meeting will be held Wednesday the 20th in room 114 (large auditorium) of Earth & Engineering Sciences Building on the west side of the Penn State campus in State College, PA. Maps are available on our web site.

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

7:30 to 8:00 p.m.: announcements, questions, answers

about 8:00 p.m.: featured program

The event has free admission, free parking, free refreshments, and is open to all; parents/guardians must provide supervision of minors. Bring your friends and learn about a kimberlite just 60 miles from State College! [search mindat.org for "Tanoma"]

The Tanoma is a type II porphyritic kimberlite with megacrysts (1-10 cm) of phlogopite, Cr-diopside, garnet, ilmenite, olivine, and enstatite. The matrix is composed of serpentine, carbonate, and small phlogopite and Cr-diopside crystals. Emplacement temperatures of ~494°C and 514°C respectively were indicated by ~10 cm of coked coal adjacent to the dike and coke clasts within the kimberlite. Coal balls indicate the coal melted into a mesophase and deformed plastically. A 147 +/- 15 Ma [million years] age of emplacement is anticipated based on K-Ar dating on a nearby Masontown dike (Bikerman *et al.*, 1994).

The ilmenites are the magnesium rich variety, picroilmenite (7-11% MgO), with a Cr₂O₃ content ranging from 1.25 to 3.5%. Although they exhibit wider range in composition than those from other kimberlite localities, their compositions are compatible with ilmenite crystallizing in the diamond stability field. FeO varies sympathetically but not uniformly with TiO₂. An enrichment of iron and alumina towards the rims is interpreted as a late magmatic oxidation trend that would have been detrimental to the preservation of any diamonds.

Reference:

Bikerman, M., H. S. Prellwitz, and K. Bell, 1994.

Interpretation of New K-Ar Dates on Phlogopite from the Masontown, Pennsylvania, Kimberlite Dike. *Abst., Geol. Soc. Amer. Mtg., Binghamton*, v 26(3). p.7

20th Minerals Junior Education Day

by
David Glick, NMS President

We had another good Minerals Junior Education Day on April 11, our twentieth. **Central Pennsylvania Institute of Science and Technology** at Pleasant Gap, PA provides a great venue for the event.

We had nine stations (plus a sales booth):

Gold panning	Fossil shells
Bedrock geology of PA	Gemstones
Fluorescence	Meteorites
Fossil bones	Sphere making
Mineral cleavage & structure	(see photos on page 3).

As volunteers and station leaders, we had most of the "old guard," enthusiastic new volunteers, and members of Penn State's Geosciences Club, all of whose contributions were greatly appreciated. Thanks go to the members of **Bald Eagle Chapter of Gold Prospectors Ass'n of America**, whose names I don't have, and:

Gareth Mitchell	
Ellen Bingham	Stuart Bingham
Dr Charles E Miller Jr	John Dziak
Fred Marschak	Dr Russ Graham
Julianne Snider	John Simmons
Dr Peter Heaney	Sunny Lin
Elizabeth Meyer	Cecilia Cullen
Elizabeth Roddy	Elizabeth Andrews
Ty White	Raleigh Koeberle
Jim Garthe	Dr Andrew Sicree
James Sicree	Dr Duff Gold
Dr Bob Altamura	Kayla Kroczyński

Thanks for donations of samples this year and prior years, food for volunteers, help with publicity, and more go to: Barbara Sincak of Treasures of the Earth

Jody Zipperer & Pa Geological Survey

Ryan Gruhn, Central PA Mixed Martial Arts

Willard Truckenmiller

John 'Pen' Ambler	Ruth D. Park
Skip Colflesh	Scott Snavely
Bob Buckmoyer	Ryan O'Neal
Chick Fil A	Weis Markets
Giant	McDonald's

If I've missed your name, I apologize; we appreciated your help just as much!



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. We present brief summaries here in order to encourage readers to see the entire newsletters.

The **EFMLS Newsletter** is available through the link on our web site www.nittanymineral.org, or remind Dave Glick to bring a printed copy to a meeting for you to see. The May issue begins with the EFMLS Citation award for Carl Miller, past EFMLS President and long-time Insurance Coordinator. President Merrill Dickinson describes the work and long-distance communication that preceded the annual convention and show, and the good results at an excellent show. The proposal to change the terms of the President and Vice Presidents from one year to two was defeated. Tickets for the microscope drawing (article at right) are available for \$5. The Wildacres Workshop sessions are described and a registration form is provided. Competition results are listed, including Pennsylvanian Michael Kessler receiving the first place and trophy plaque for the Each One Teach One Award. The many bulletin and article winners in the Bulletin Editors' Contest are listed. "Decade Club" editors are listed, including this Bulletin's editor, David Glick.

The **AFMS Newsletter** is available by the same methods. The May issue begins with an article on two recently closed collecting sites, both in Pennsylvania. As reported earlier, these are the Rossville (malachite & azurite) and St. Clair (fern fossil / pyrophyllite) sites. Scott Peters of EFMLS is working on gaining access for organized, planned club trips to otherwise closed localities. President Marion Roberts asks everyone to help with Federation committees, and describes his trip from California to the EFMLS Convention in North Carolina. Illustrations are provided (in color on the web site version) of more prizes donated for the AFMS Endowment Fund drawing. "Staying Out of Trouble" provides a summary of methods to be followed by club officers in their duties and at board and annual meetings.

Please see the web sites for the complete Newsletters. There's a lot there!

- Editor

GIA MICROSCOPE DRAWING SUPPORTS WILDACRES ACTIVITIES

by Gerry Cox, Ways & Means Chairman

Reivan Zeleznik has generously donated a GIA Mark V Gemolite Stereoscopic zoom microscope (made by Bausch & Lomb) for a drawing to benefit the Eastern Federation of Lapidary and Mineralogical Societies' activities at Wildacres sessions. Although not new, the microscope is in good working shape with excellent optics. It can be used to view gemstones, mineral specimens and other small objects needing magnification.

The Ways and Means committee has mailed drawing tickets to all EFMLS clubs and additional tickets for the drawing will be available at both sessions at Wildacres in 2015. The drawing will take place during the August session at Wildacres, but the winner need not be present. Donations are \$5 per ticket.

Clubs or individuals wanting additional tickets should contact Gerry Cox, Chairman of the EFMLS Ways and Means Committee at <gerryannec@verizon.net> or send a self-addressed, stamped envelope to her at 2304 S. Rolfe Street, Arlington, VA 22202. All ticket stubs and checks should be received no later than August 15, 2015 so that all sold tickets can be included in the drawing. Checks should be made payable to "EFMLS".

Dave Glick will have the \$5 tickets at the May 20th NMS meeting. That's our last meeting before the deadline, so buy now! Or contact Dave soon (see p. 8).



ATTENDING THE MAY MEETING?

Donations of labeled **door prize specimens** are invited.

Your donated snacks and drinks will be welcomed.

Bring a friend!

MINERALS JUNIOR EDUCATION DAY

All photos captured from video taken by James Sicree.



Long-time event organizers Dr. Duff Gold and Dr. Andrew Sicree confer during a lull in the action.



Students saw optical effects of various alignments of inclusions in gemstones.



Students use calcite for hands-on learning about cleavage of minerals.



Gold panning by Bald Eagle Gold Prospectors Association is always a big attraction.



Ultraviolet fluorescence of mineral specimens is colorful and fascinating.



Dr. Russ Graham of Penn State's Earth & Mineral Sciences Museum explains different types of fossil preservation.



The sales tables had a variety of items.



TO THE WAY BACK MACHINE

by

Andy B. Celmer, EFMLS Historian

from

EFMLS Newsletter 52:7, May 2015



Hi boys and girls, it's time for another trip in the Way Back Machine, so secure your tray in the upright position, turn off your electronic devices; that means you Alec Baldwin! Bet you didn't know he is a fan of my work. Neither did I, until I read it here! We both learn something new today!

EFMLS Newsletter January 1964 Volume 2 Number 4 contains a paper dollar size announcement of the EFMLS Convention to be held June 25th through 28th in the Hotel Robert Treat in lovely Newark, New Jersey. The announcement also informs you of direct transportation to the New York World's Fair.

This is the 50th anniversary of the World's Fair and what a fair indeed! Of geologic note is the 12 story tall stainless steel Unisphere, a replica of our shrinking world. Unfortunately the Unisphere is destroyed in 1997 by a crashing spaceship as captured in the documentary "Men in Black." Dinoland is nine life sized replicas of dinosaurs presented by Sinclair Oil Corporation including their logo Brontosaurus, which is now identified as Apatosaurus, a Sauropod. This is also the heavy lift animal used by Fred Flintstone as a heavy animal operator in the quarry. Also the source meat for Bronto Burgers at the fast food joint Fred patronizes. A very versatile animal. Did I digress?

The dinosaurs are created by American sculpture of wild life, Louis Paul Jonas in Mahopac, New York employing the best available science for the recreations. Three years in the making, they are transported 125 miles down the Hudson River by barge. Can you name them? I can: Tyrannosaurus Rex, Apatosaurus, Triceratops, Stegosaurus, Corythosaurus, Ankylosaurus, Struthiomimus, Trachodon, and Ornitholestes. The Ornitholestes is stolen, maybe due to its modest 6.5 foot length, the others are still on display at various locations across the nation.

Meanwhile the same issue of the EFMLS newsletter contains another article by June Culp Zeitner "Our Public Image and Our Future." Therein she laments about the continuing legislative measures against our hobby. June notes that a single mine crushes more rock in a single year than all the nation's clubs combined. The mine is seen as contributing to the public good while we are not, because, "We have not worked to create a public image." She lists our

contributions to scientific discoveries, museums, universities and other public institutions. June states, "No other hobby encourages art, science, education, recreation, physical fitness, (and) rehabilitation." We have, however, failed to bring this message to the public. She relates that Al Keen, President of AFMS, has created a Public Relations Committee and suggests local clubs engage in active community relations. Brag about the good things we do at the local level, write articles, send them up the ladder for greater distribution. June closes with, "Our campaign is not only to win friends and influence people -- it is to strengthen our hobby and insure a vital future through a true Public Image."

EFMLS Newsletter November 1963, Volume 2, Number 3 contains the article, "The "Rockhound" Question." Editor Vernon Wertz notes a "large amount of comment" on whether the use of the term Rockhouser is appropriate. He states that he will lay the matter to rest, save for an editorial by Francis W Trapp, President of The Gem and Lapidary Society of Washington DC. He further states EFMLS official records and correspondence shall refrain from its use.

Francis (Bud), goes on to state that the term Rockhouser is inclusive of all aspects of our hobby and that another full coverage term does not exist. Bud suggests the term Rockhouser is no more derogatory than Doughboys, Yankee or Johnny Reb. He states in the April 1963 Lapidary Journal, Rockhound Buyers Guide, Bud counted 65 clubs with the term Rockhound in the club name. He intuits those 65 clubs may not be eager to change their club's name. Bud cites the November 1951 National Geographic Magazine article by Dr. George Switzer titled, "Rockhounds Uncover Earth's Mineral Beauty," wherein the author begins the article thusly, "Years ago when I first became a Rockhound..." Mr. Trapp concludes with the slogan of the forthcoming Eastern and American Federation Convention in 1967, "Washington DC -- Rockhound Heaven in '67, National Gem and Mineral Show." He thinks this is a much better slogan than, say, "Come all ye Mineral Collectors and Lapidarists to Washington DC in 1967."

Stick a fork in me Hon, I'm done! Tune in next month, same time, same station, for another thrilling adventure from yesteryear! Or Not!

MEANWHILE, ACROSS THE POND

by
Andy B. Celmer, EFMLS Historian
from
EFMLS Newsletter 52:6, April 2015

Mineral collecting in the colonies that would soon become these United States of America is getting off to a very slow start. There is no aristocratic leisure class to begin collections or fund the sciences. Now of course, we have a ruling class of wealthy individuals that dictate policy using the best politicians money can buy. But I digress. There are no scientific societies or literature about minerals and collecting. Finally, I don't know what the rest of the east coast has to offer, but Maryland minerals are not very impressive.

Individual collectors are scattered from Georgia to Maine but the dominant center of mineral collecting is Philadelphia's medical community. Medical people are trained in the use of minerals in their practice and natural history in general. While the collectors are becoming more sophisticated, the general public views the rockhounds as nuts, that's a legal term. An example is Thomas Cooper of Philadelphia who in 1811 is collecting along the Susquehanna River, when the local residents bring him up on a charge of lunacy. Be careful out there boys and girls!

Thomas Barton (1730-1780) is an Englishman, born in Ireland. He sails to Philadelphia to take the position of tutor at the Philadelphia Academy of Natural Science, later to become the University of Pennsylvania. He is deeply interested in science and mineralogy and builds a mineral collection, which is inherited by his son, Benjamin Smith Barton (1766-1815). Ben adds to the collection, which ends up at the Philadelphia Academy of Natural Science, where it still resides. Unfortunately the provenance of specific specimens cannot be assured.

Thomas Jefferson (1743-1826) attends William and Mary College at 16 and develops a keen interest in mathematics and natural science. He will become fluent in French, Greek, Latin, Spanish, Italian and Anglo-Saxon, primary author of the Declaration of Independence, third president of these United States and a fossil and mineral collector. He has a small museum at his home, Monticello, along with a number of mineralogical works in his library. He enjoys geological field work but only as it applies to practical manufacturing and considers the study of chemistry a waste of time. Tom objects to the uncertainty and utility of geology as a useful science. Did I mention he was a lawyer? And yet he includes mineralogy in the curriculum of the University of Virginia even though there are few proper study collections in the United States. Imagine taking a class in mineralogy without minerals to test and examine. I had plenty of minerals in my class and still had to repeat the course! I can't help thinking of the many things Jefferson and

I have in common. I am fluent in language, have a mineral collection and my house has a name, The Love Shack!

Charles Willson Peale (1741-1827) born in Maryland, "The Land of Pleasant Living," started out as a saddler but soon took up the study of portraiture. He serves in the Revolution and occasionally paints portraits and landscapes during the war, which will become historical treasures. He opens a museum of natural history in his house in Philadelphia, striving to bring to his museum the world in miniature that is purposeful and



coherent. The museum moves to the Old State House around 1810 where it continues to be popular with the public and persons of science. The "Long Room" is 100 feet in length filled with portraits, stuffed animals and cases of minerals. The 8,000 mineral and fossil specimens include Derbyshire minerals donated by Benjamin Franklin, minerals and ores from the Lewis and Clark Expedition donated by Thomas Jefferson, European minerals from Abbe Hauy, Maine minerals from William Maclure and thousands more. Eventually everyone in this country knew of this museum.

Adam Seybert (1773 – 1825) is the leading authority in mineralogy in Philadelphia with an extensive collection of American minerals. He stressed recording the locations of minerals, stating, "Experience has taught me the utility of the present record of localities, for the places whence the specimens were brought are soon forgotten and thus the utility of them in great measure is lost." I believe we have all learned that lesson the hard way, maybe that is the only way to learn that particular lesson. He sells his 2,000 specimen collection to the Philadelphia Academy of Natural Sciences, where they still reside. If you are paying attention, (who am I kidding?), you will recall it is now called the University of Pennsylvania.

George Gibbs (1776 – 1833), not to be confused with Barry, Robin and Maurice Gibb of the Bee Gees, is the wealthy son of a merchant. Born in Newport, Rhode Island, (all the ports in the U.S. are new ports), he travels to China and decides to return home by way of Europe. He meets Count Gregorii Razumovsky (1759 – 1837) of Russia, the good Count is headed back to Russia and does not want to take his extensive collection of Russian minerals with him. How many of you travel with your rock collection? As George Carlin said, "Your stuff wants to go on vacation too!" George Gibbs, not George Carlin (I wonder if they are related?), buys the Count's collection and because he still has money, he amasses 6,000 specimens. By this time he learns that the great collection of Jean Gigot d'Orcy (1733- 1793) is

for sale and (you guessed it!), he still isn't out of money! He now has an additional 4,000 excellent specimens and is introduced to a number of prominent collectors, through which he establishes lasting friendships and more specimens. Let us step back and take stock. George Gibb leaves for China in 1796, it is now 1805, George is still on the road and while he is not out of money, his acquisitions have become so large as to limit his movements. What's a rich guy to do? He has them crated up, goes back to Newport, Rhode Island, puts them in storage and goes back to Europe, 'cause he is not done shopping!

Benjamin Silliman, a professor at Yale, persuades George's sister to let him open a few crates and he likes what he sees! Upon his return, George agrees to put some of his



collection on display at Yale and despite the War of 1812 a 10,000 specimen collection opens at Yale. The George Gibb's collection is considered the best collection in the country. He sells his 20,000 specimen collection to Yale by and by and while the collection can still be viewed there, most individual specimens can no longer be identified.

Well that is more than enough for me. And to think when I started this article I didn't think I had much to say. So as Red Green says, "If the women don't find you handsome, they should at least find you handy!" This is Handy Andy B.

News from Penn State's Earth & Mineral Sciences Museum

The Museum is loaning 55 paintings to the Michener art Museum, a well-regarded museum outside Philadelphia (Doylestown). Their new curator's specialty is Industrial Art; she found out about the Steidle Collection through the book that the EMS Museum had published in 2009. The show, *Iron and Coal, Petroleum and Steel: Industrial Art from the Steidle Collection*, will run July 11 - October 25; see their web site, <http://www.michenermuseum.org/>

The Museum is seeking ways to show more paintings to the public; some were shown at the Palmer Museum of Art as part of their Marcellus Shale documentary project. They will continue to have small exhibits in the Earth & Mineral Sciences Library in Deike Building; one coming up will be on quarries.

Wildacres: Bring Out Your Creative Juices!

by Steve Weinberger
from

EFMLS Newsletter 52:7, May 2015

Driving down to Hickory, NC for the EFMLS Convention at the end of March brought us from the grip of winter at our home in Maryland to the promise of spring in North Carolina. The forsythia was in bloom as were daffodils and the trees were beginning to show their spring foliage.

All of that "new life" got our juices pumping for the return trip we'll be making to North Carolina later this month as well as the trip back down in August. We're of course talking about and looking forward to the EFMLS Workshops at Wildacres near Little Switzerland, NC. ...

We've not been to an August Wildacres session for many years now and are looking forward to the warmth and sunshine that August usually has to offer. Speaker-in-Residence is Denise Nelson, a GIA graduate, dermatologist and jewelry designer. She and husband Dennis are a delightful and knowledgeable couple who have traveled to Europe, South America and Africa plus many places in the United States, always learning more about the culture of the places visited as well as the geology, scenery, jewelry gems and minerals of these places. Denise delivers an outstanding talk...and will give us six of them during our week together.

Classes being offered are:

Faceting*	Gem Trees
Intarsia *	Roadside Geology
Polymer Clay*	Silversmithing
Soapstone Carving	Wildacres "Wild"

* All week class

Complete descriptions of the classes can be found on our website <efmls-wildacres.org>.

Tuition, which includes room and board, is \$390. That's quite a bargain for lodging in motel style rooms, three good meals per day, six talks by our guest speaker, and instruction given by excellent and experienced professionals and semi-professionals. In addition, all the fun of the auction, rocking chairs and canteen schmoozing, and much, much more makes an EFMLS Wildacres Workshop a "must do" experience. I hope to see you and your clubmates there. ✨

Geo-Sudoku

by David Glick

Vacation season is coming; perhaps you'll travel to a cavern and see this material making stalactites. This puzzle contains the letters DEINOPRST. 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.

					I	D	P
	R		P	S			E
N	P		D		R		S
		S	N		O		R
	D						
	N		R		S	T	O
I				N	D		
E			I	T			R
				D		E	

Classifieds

Ads may be submitted to the Editor (see p. 8)

FOR SALE: This sturdy, three-legged cast aluminum lapidary unit is made by Gemlap Equipment, model 5-A. Its tub is 4 inches deep, and will hold any grinding wheel or platen up to 2-inches thick and 10 inches in diameter. Its center ball bearing mounted spindle is 0.5 inches in diameter, with a 0.5-20 UNF fine thread (20 threads per inch.). It is driven from below by any conventional pulley system. Old but in excellent condition. \$25; proceeds go to NMS.

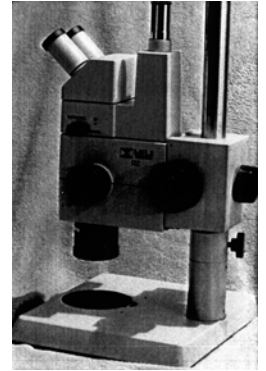


Contact Jim Garthe, jwg10@psu.edu, (814) 667-2409.

FOR SALE: Long-time Pennsylvania collector John 'Pen' Ambler in Hollidaysburg has books, specimens and more for sale. Pen reports: "I have some 10 – 15 cartons of books on minerals and mineral related subjects. My cataloged collection consist of upwards of 6,000 specimens some of which were the Ed Carper collection. The specimens are cabinet, small cabinet, hand-sized, miniature, thumbnail and micro minerals. Many of the minerals are PA and eastern U.S.; however, it is a varied collection. There are lapidary materials (slabs and some bulk); limited fossils; tumbled stones including PA amethyst; UV materials and equipment; supplies (boxes, etc.)." Please contact Pen by email: bridger@atlanticbb.net

FOR SALE: 2 Homemade Lapidary saws for sale - 14" and 18". Both come with working motors, arbor, belt, pulley, rock clamp/carriage, and a blade.

Both are mucked-out and ready to move. Both could use a little TLC. For more info contact Mike Zelazny at fabricatefilm@yahoo.com

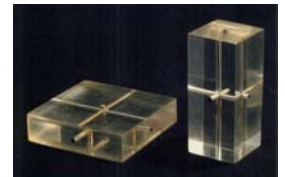


FOR SALE:
**Microscope & Accessories,
Mineral Specimens,
Crystal Models.**

Avid collector wants these to be purchased by someone who would appreciate them. Contact Frank & Gail Beall, 724-789-7290. See much more complete listing at

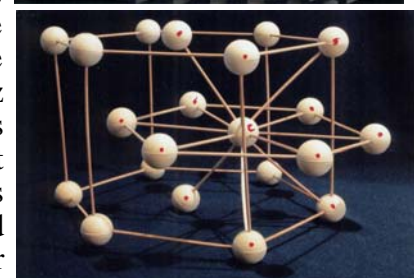
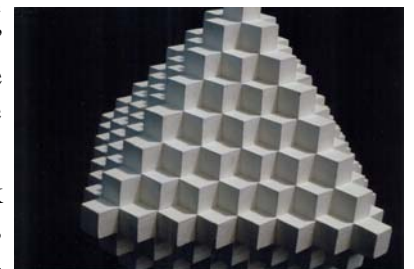
www.nittanymineral.org/beall.pdf

Crystal Models: Plexiglas, wood, cast acrylic, ball-and-stick, folded paper. These are excellent teaching materials for understanding basic crystallography. They would be very useful to a club, providing "hands-on" teaching materials to bring a difficult subject to understanding. The models were hand-made, taking much work to make accurate 3-dimensional representations of things illustrated in mineralogical books and articles. There is a lot to learn by having a model that you can hold in your hand - it's easier than trying to envision the structure from a drawing! These are invaluable to seeing relationships in crystals - especially those that exhibit more than one form simultaneously, as most crystals do. I have examples in my pyrite collection, for instance, which exhibit as many as 5 forms in one specimen! It would have been difficult to identify the forms



involved if I hadn't the paper "origami" models, showing the Miller indices on the faces, as a reference.

The ball-and-stick models reveal secrets, too. Why does a diamond cleave the way it does? Why are there "holes" in quartz that could contain ions to cause its different colors? Many things can be demonstrated with the molecular models.



Some Upcoming Shows and Meetings

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

See www.mineralevents.com for more.

May 16-17, 2015: World of Gems and Minerals Show, by Berks Mineralogical Soc. Leesport Farmer's Market, Route 61, Leesport, PA.

June 4 -6, 2015: Mineral & Fossil Yard Sale by Tom Smith, 10 Roger Ave., Shippensburg PA 17257

June 6, 2015: Spring Mineralfest, by Penna. Earth Sciences Ass'n. Macungie Memorial Park, Poplar St., Macungie PA. Sat. only, 8:30-3:00. www.mineralfest.com

Sept. 19-20, 2015: 50th Annual Gem, Mineral & jewelry Show by Central PA Rock & Mineral Club. Zembo Shrine, 3rd & Division Sts, Harrisburg PA Sat 10-6, Sun 10-5.

Sept. 26-27, 2015: Franklin-Sterling Hill Mineral, Gem & Jewelry Show, by FOMS & Franklin Mineral Museum. Franklin Borough School, 50 Washington Ave., Franklin NJ. Sat. 9-5, Sun. 10-4. <http://spmom3.wix.com/franklin-gem-mineral>

October 3, 2015: Autumn Mineralfest, by Penna. Earth Sciences Ass'n. Macungie Memorial Park, Poplar St., Macungie PA. Sat. only, 8:30-3:00. www.mineralfest.com

Oct. 25, 2015: South Penn Fall Rock Swap, by CPRMC & Franklin Cty RMC. South Mountain Fairground, 1.5 mi W of Arendtsville PA on Rt 234.

Geo-Sudoku Solution

S	E	T	O	N	R	I	D	P
D	R	I	P	S	T	O	N	E
N	P	O	D	E	I	R	T	S
T	I	S	N	D	O	E	P	R
O	D	R	T	P	E	S	I	N
P	N	E	R	I	S	T	O	D
I	O	P	E	R	N	D	S	T
E	S	D	I	T	P	N	R	O
R	T	N	S	O	D	P	E	I

INVITE A FRIEND TO JOIN THE SOCIETY

The Nittany Mineralogical Society prides itself on having among the finest line-up of speakers of any earth sciences club in the nation. Everyone is welcome at our meetings. 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). Those joining in March or later may request pro-rated dues. Your dues are used for programs and speakers, refreshments, educational activities, Bulletins, and mailing expenses. Please fill out a membership form (available at www.nittanymineral.org), make checks payable to "Nittany Mineralogical Society, Inc." and send them in as directed, or bring your dues to the next meeting.

We want to welcome you!

SOCIETY OFFICERS

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 e-mail preferred: eechler@comcast.net
 Junior Rockhounds: Dr. Andrew Sicree
 814-867-6263 (h) e-mail: sicree@verizon.net
 Membership Chair: David Glick (see above)
 Programs: Dr. Duff Gold 865-7261(o), 238-3377(h)
 e-mail: gold@ems.psu.edu
 Door Prizes: *volunteer needed!*
 Refreshments: *volunteer needed!*
 Facebook & Publicity: John Dziak: jjd264@psu.edu

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:

David Glick E-mail: xidg@verizon.net
 209 Spring Lea Dr. phone: (814) 237-1094 (h)
 State College, PA 16801-7226

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 name of photographer or artist.

Visit us at www.nittanymineral.org