

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc., meeting in State College, Pennsylvania
Contact information on back page

October, 2019

Visit our web site: www.nittanymineral.org

Editor (see back page):

David C. Glick

NATIONAL FOSSIL DAY™

October 16th meeting:

Fossils in Central Pennsylvania and the World –

What they are and how we use them

**by
Paul D. Zell**

Our October meeting is planned for Wednesday the 16th in room 114 (the large auditorium) Earth & Engineering Sciences Building on the west side of the Penn State campus in State College, PA. Maps are available on our web site.

*6:45 to 7:45 p.m.: Social hour, refreshments
in the lobby*

*7:45 to 8:00 p.m.: Annual meeting & election; door prizes
about 8:00 p.m.: featured program*

*The event has free admission, free parking, and free refreshments, and is open to all; **parents/guardians must provide supervision of minors.** Bring your friends and share an interesting evening!* -Editor

October 16 is National Fossil Day™ in 2019! This month's talk will discuss what fossils are, where they are found (especially locally), and their scientific and economic value.

Geologists use fossils in a wide variety of ways; for relative age determination of rocks, correlation of strata, their thermal history, strain deformation, depositional environment, and even to understand whether or not strata have been overturned. The types and distribution of fossils in various localities allow for the reconstruction of paleogeographic maps, environments, ocean circulation patterns, and relationship of past tectonic terranes. Fossils are essential for understanding the evolutionary relationships of different taxonomic groups and provide a compliment to studies of DNA in living organisms. Fossils help us understand the earth's history, its changing climates, orbital fluctuations, and even the length of a day. For most us, however, fossils are a fascinating part of nature to learn about and enjoy.

ATTENDING THE OCTOBER MEETING?

Donations of **a few high quality, labeled door prize specimens** are invited.

Your donated snacks will be welcomed.

Bring a friend!

MEMBERSHIP RENEWAL TIME!

Members: If we have not received your membership renewal, a dues form has been mailed with this printed Bulletin or linked (on our web site) with your e-mailed Bulletin announcement. Your renewal will be welcomed! Please mail it or bring it to the meeting; **October is the end of our membership year**, so this will be your last printed Bulletin until we receive your dues. Thank you!

OFFICIAL NOTICE:

Annual Meeting on October 16th Elections and Bylaws Vote SEE PAGE 2

Earth Science Week! October 13 - 19, 2019

see <https://www.earthsciweek.org/about-esw>

National Fossil Day! October 16, 2019

For more on National Fossil Day, see page 6 and <https://www.nps.gov/subjects/fossilday/index.htm>



We'll have door prize and giveaway fossils at the October meeting. Shown here are several brachiopod fossils stacked together in the rock, from Juniata County, PA.

Official Notice: Annual Meeting on October 16 Elections and Bylaws Vote

by David Glick, NMS President

The October 16th meeting starting promptly at 7:45 p.m. will be the **Annual Meeting of the Corporation**, and will include election of officers. In accordance with our bylaws (available on the web site), the Board of Directors, acting as the Nominating Committee, has set its recommended slate of officers. Volunteers and nominations were invited, but none were received, so the slate is the incumbent officers, who have all agreed to stand for election again:

President - David Glick
Vice President - Robert Altamura
Secretary - John Dziak
Treasurer - Stuart Bingham

The Board truly needs **additional volunteers** to get involved with running the Society, providing **new energy and fresh thinking** and some new names on future ballots. In many cases it would be useful to have newcomers spend some time on committees and attending Board meetings before stepping into elected office. **All members: please consider volunteering!**

The agenda will also include a vote on a change to wording in **Bylaws Article 10** (MEETINGS) section 10.3. That section begins: "Other Business at Regular Meetings: Members have the right to add an item to the agenda of the next Regular Meeting by submitting it in writing or by e-mail to the President at least three weeks prior to that meeting." The remaining (second) sentence reads: "Decisions involving dissolution of the Corporation, financial commitments over \$500., actions outside the objectives and purposes of the Corporation as stated in the Articles of Incorporation or these Bylaws, shall require a mail ballot of all eligible members."

The Board proposes that the second sentence be changed to: "If such submissions involve dissolution of the Corporation, financial commitments over \$500., or actions outside the objectives and purposes of the Corporation as stated in the Articles of Incorporation or these Bylaws, then a two-thirds majority of all eligible members by mail ballot shall be required for passage."

The rationale is that (1) the Board now manages much more money than 12 years ago when this wording was approved, and as prices increase and possible projects cover a broader range, commitments over \$500 could become frequent; (2) Although these restrictions were probably intended to apply only to decisions proposed by regular members (per wording earlier in that section), an interpretation imposing the restrictions on Board decisions might be possible, and requiring a membership vote may prevent timely action by the Board; and (3) the preferred method for any action is for the Board to vote and execute it, per their charge "It shall be the duty of the Board to conduct the business of the Corporation..." in Article 6.2, thus, a high bar is appropriate for any other method of conducting business. *

Geo-Sudoku

by David Glick

In my search for nine-letter words related to this month's topic, I came across the West Virginia state fossil, a giant sloth whose name is from the Greek for 'giant claw' (this is a clue to at least part of the word). This puzzle contains the letters AEGLMNOXY; one row or column spells that name. It's not otherwise in this issue. 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.

	X		L	G	A			N
			M	O				
					Y	O	L	
		L					G	
	A			X			E	M
	M			Y	L			
X	Y			M				L
		G	A		O	N		X
	L				X		A	G

FEDERATION NEWS

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 Federations and our Society strongly encourage all members to read the monthly Federation Newsletters, available on their web sites**, which are linked from our web site, www.nittanymineral.org. We present brief summaries here in order to encourage readers to see the entire newsletters. There's a lot there!

The EFMLS Newsletter is now being distributed electronically; a link is available on our web site www.nittanymineral.org. The October issue announces the 2020 EFMLS Convention in Hickory, NC March 27-29, 2020; a brief schedule is included. The safety articles cover staying hydrated, and being carefule even though we're wearing safety gear. The featured club is Kanawha Rock & Gem Club in Charleston, West Virginia; they've taken 8 trips so far this year, and their many activities are described. The Newsletter will now include a "Federation Eternal" column memorializing members of EFMLS clubs who pass away.

EFMLS leaders want **you** - the club member - to see the **Newsletter**. Please see it at <https://efmls.org/newsletter> (linked from the NMS home page).

The **AFMS Newsletter** October issue is not yet on their web site.

-Editor

FIELD TRIPPING

Several NMS members collected at National Limestone’s Middleburg and Mount Pleasant Mills quarries on October 5. The trip was organized by North Jersey Mineralogical Society, who also invited Nittany Mineralogical Society, Delaware Mineralogical Society, and Friends of Mineralogy - Pennsylvania Chapter. NMS Field Trip Chair Dale Kephart set up our participation, and Mike Dunton (member of both NMS and North Jersey clubs) served as our liaison and on-site trip leader. Our thanks go to them, to the North Jersey club for their generosity, and to all who arranged for and facilitated this cooperation.

A chilly early morning gave way to a beautiful day. Collecting started in the morning at Middleburg, then moved to Mount Pleasant Mills after lunch..



Collecting at Middleburg. *Mike Dunton photos*



Gastropod from the ridge / wavellite collecting area at Mount Pleasant Mills. *Mike Dunton specimen & photo*



Coral fossil from lower quarry area at Mount Pleasant Mills. *Dave Shapiro specimen & photo*

READING A LOT INTO GEOLOGY

By Wayne Mills, Member, OMS
from

Ore-Cutts, Orcutt Mineral Society Newsletter,
Santa Maria, California
Volume LII, Issue 6, June 2018

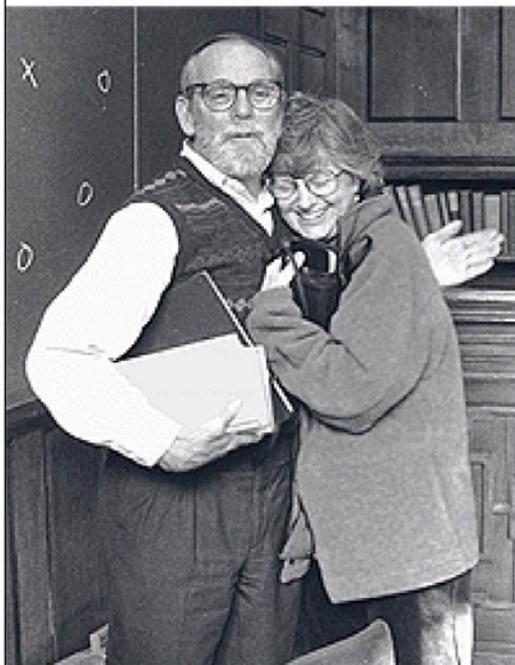
Honorable Mention, Written Feature,
AFMS 2019 Bulletin Editors' Contest

I had the great privilege of spending a night with my "Brother in Rocks", Jim Mills and his wife, Beth Meyers, during the recent Paso Robles Show where Jim and I were the "Rock Docs". Saturday evening, after the show, Beth and Jim hosted a small party for some of the dealers and club members, and the food was great! Their 80 acre Creston Ranch is an idyllic setting, and it was great to see their place again after 18 years (as Beth pointed out). After the other guests left, Jim and I talked about geology and some of our favorite authors on the subject. I was surprised to hear that we shared at least a couple of favorite authors.

John McPhee was one of them. His *Basin and Range, Assembling California* and *Coming into the Country* are amazing, entertaining and very readable works on Geology, Tectonics and Alaska, but McPhee is such a talented author that he can make any subject fascinating. How about Oranges? How about Monopoly? How about the Merchant Marine?

Another author whom we have both read is **Bill Bryson**. (*Adventures of the Thunderbolt Kid* and *A Walk in the Woods*). What I learned from Jim, is that Bill also spent three years of his life researching and writing a compendium of knowledge about outer space, inner space, the atom, geology, chemistry and archaeology, and the way our knowledge developed in these and other areas. The work is called *The History of Nearly Everything*.

McPhee wins Pulitzer for Annals...



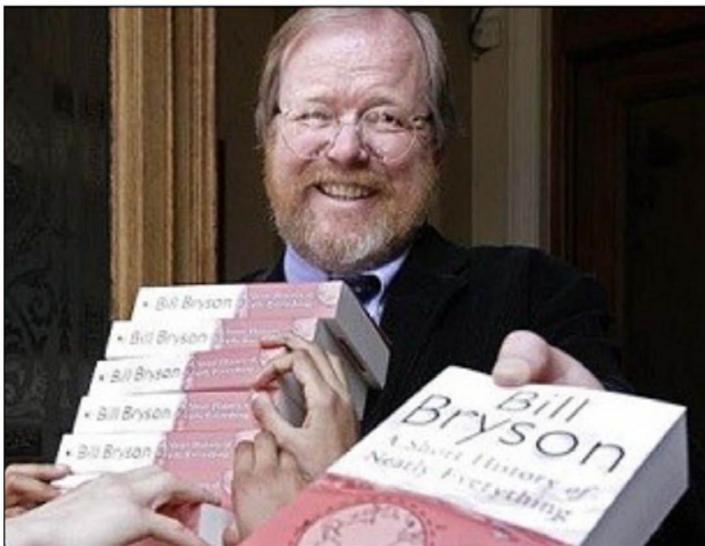
John McPhee and his wife Yolanda
(photo by Laura Eichhorn '02 for the
Daily Princetonian)

One example of from the book illustrates **how amateurs have made great discoveries that have greatly increased our knowledge of the world we live in.** "In 1812, at Lyme Regis on the Dorset Coast, an extraordinary child named Mary Anning—aged eleven, twelve or thirteen, depending on whose account you read—found a strange, fossilized sea monster, seventeen feet long, and now known as the ichthyosaurus, embedded in the steep and dangerous cliffs along the Dorset Coast."

"It was the start of a remarkable career. Anning would spend the next thirty five years gathering fossils which she sold to visitors. (She is commonly held to be the source of the famous tongue twister "She sells sea shells on the seashore.") She would also find the first plesiosaurus, another marine monster, and one of the first pterodactyls. Though none of these was technically a dinosaur, that wasn't terribly relevant at the time since nobody then knew what a dinosaur was. It was enough to realize that the world once held creatures strikingly unlike anything we might now find."

"It wasn't simply that Anning was good at spotting fossils—though she was unrivaled at that—but that she could extract them with the greatest of delicacy and without damage. If you ever have a chance to visit the hall of ancient marine reptiles at the natural History Museum in London, I urge you to take it, for there is no other way to appreciate the scale and beauty of what this young woman achieved working virtually unaided with the most basic tools in nearly impossible conditions."

Bryson's lucid explanations of complex scientific issues are very helpful. On the chance that we are not alone in the universe he says: "Space, let me repeat is enormous. The average distance between stars out there is 20 million miles. Even



Bill Bryson, Author

at speeds approaching those of light, these are fantastically challenging distances for any traveling individual. Of course, it is possible that alien beings travel billions of miles to amuse themselves by planting crop circles in Wiltshire or frightening the daylight out of some poor guy in a pick-up truck on a lonely road in Arizona (they must have teenagers, after all), but it does seem unlikely... We may be only one of millions of advanced civilizations (*in the universe—ed.*). Unfortunately, space being spacious, the average distance between any two of these civilizations is reckoned to be at least two hundred-light years (*and theoretically, you can't travel as fast as light can—ed.*) which is a great deal more than merely saying it makes it sound. It means for a start that even if these beings know we are here and are somehow able to see us in their telescopes, they're watching light that left Earth two hundred years ago. So they're not seeing you and me. They're watching the French Revolution and Thomas Jefferson and people in silk stockings and powdered wigs..."

On the Atom: "At sea level, at a temperature of 32 degrees Fahrenheit, once cubic centimeter of air (that is, about the size of a sugar cube) will contain 4.5 billion billion molecules. And they are in every single cubic centimeter around you...Atoms, in short, are very abundant. They are also fantastically durable. Because they are so long-lived, Atoms really get around. Every atom you possess has almost certainly passed through several stars ("we are stardust" from "Woodstock"

by Crosby, Stills and Nash—ed.) and been part of millions of organisms on its way to becoming you. We are each so atomically numerous and so vigorously recycled at death that a significant number of our atoms—up to a billion for each of us, it has been suggested—probably once belonged to Shakespeare..."

On life: "Whatever prompted life to begin, it happened just once. That is the most extraordinary fact in Biology, perhaps the most extraordinary thing we know. Everything that has ever lived, plant and animal, dates its beginnings from the same primordial twitch. At some time in the unimaginably distant past, some little bag of chemicals fidgeted to life...it cleaved itself and produced an heir. A tiny bundle of genetic material passed from one entity to another, and ah never stopped moving since. It was the moment of creation for us all. Biologists sometimes call it the Big Birth.

The book discusses many scientists and inventors who have contributed to the successes and failures of our civilization. One of the worst of these was Thomas Midgley Jr. who, in 1921, while working for General Motors Research Corporation in Dayton, Ohio, discovered that **tetraethyl lead** reduced engine knock. Shortly thereafter leaded gas was widely used in gasoline. The dangers of lead were already known in the 1920's, but it was not until 1986 (after the passage of the Clean Air Act in 1970) that the use of lead in gasoline was banned in the U.S. Midgley also created a gas in 1929 that was stable, non-flammable, noncorrosive and safe to breathe. This was in response to problems with refrigerators that had been using dangerous gases that in one instance exploded and killed more than 100 people. So Midgley created **chlorofluorocarbons (CFC's)** which, a half century later, were discovered to be devouring the stratospheric ozone layer that protects the Earth from harmful ultraviolet radiation. Midgley also invented the device that led to his untimely death in 1944 so he was spared the knowledge of how harmful his inventions were to mankind. ❄

Tenth Anniversary of National Fossil Day™

from <https://www.nps.gov/subjects/fossilday/index.htm>

The National Park Service and the American Geosciences Institute host the annual National Fossil Day celebration during Earth Science Week in October. National Fossil Day is a celebration organized to promote public awareness and stewardship of fossils, as well as to foster a greater appreciation of their scientific and educational value.

Fossils of the 2019 National Fossil Day Artwork

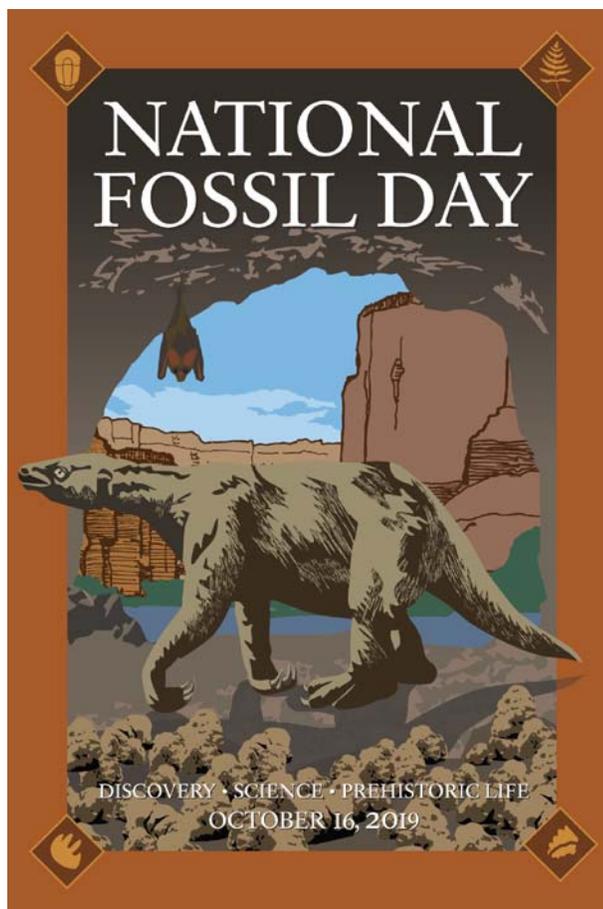
Grand Canyon National Park: 100

Years of Fossil Discovery

<https://www.nps.gov/articles/fossils-of-the-2019-national-fossil-day-artwork.htm>

The majesty of the Grand Canyon has long inspired adventurers, artists, scientists, and other visitors. The 2019 logo artwork honors the 100th anniversary of the establishment of the Grand Canyon National Park, which occurred on February 26th, 1919 by President Woodrow Wilson. The Grand Canyon also inspired previous presidents such as Benjamin Harrison and Theodore Roosevelt, both of whom worked to preserve this land during their administrations.

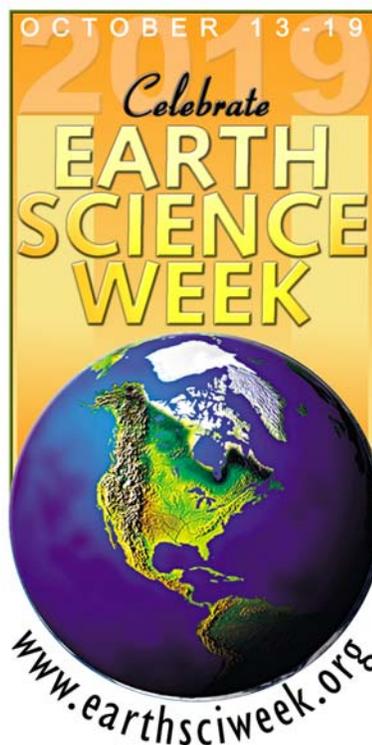
Over millions of years, the Colorado River and its tributaries have carved the canyon, cutting through geologic layers revealing the pages of deep time. Many of these layers hold rich fossil records. The majority of the fossil-bearing rocks of the Grand Canyon represent the Paleozoic Era. The oldest of these fossils are approximately 540 million years in age (Cambrian Period). The youngest Paleozoic fossils are 260 million years in age (Permian Period). Paleozoic fossils from the Grand Canyon include some of the oldest evidence of invertebrate animals, ancient plants, early reptiles, and ancient fish. The border corners of the 2019 National Fossil Day artwork shows some notable



Paleozoic fossils from Grand Canyon National Park: a trilobite from the Cambrian Bright Angel Shale; a fern from the Hermit Formation; a footprint of *Chelichnus*, a mammal-like reptile from the Coconino Sandstone; and the large tooth of *Megactenopetalus*, a shark from the Kaibab Limestone.

Though there is a rich fossil history from the Paleozoic Era at the Grand Canyon, some of the most well-studied fossils from this National Park come from the end of the Cenozoic Era (66 million years to today). These fossils are from the late Pleistocene Epoch (40 thousand to 10 thousand years ago) and show evidence of a different Grand Canyon than what we see today. Fossils of Pleistocene plants and animals

have been found in caves and crevices sites along the full length of the Grand Canyon. One of the best Pleistocene cave sites in the Grand Canyon, **Rampart Cave**, is the focus of the 2019 National Fossil Day Artwork.



Friends of Mineralogy - Pennsylvania Chapter
SYMPOSIUM ON PENNSYLVANIA
MINING AND MINERALOGY

Mineral Collecting Enthusiasts Meet and Learn

Symposium November 2, 2019
Field Trip November 3

Franklin and Marshall College, Lancaster, PA
 Please Register in Advance

The Friends of Mineralogy - Pennsylvania Chapter will hold their 2019 Symposium and field trip on the first weekend in November. Mineral collectors in attendance on Saturday will check in at the Hackman Physical Sciences Building at Franklin & Marshall College, Lancaster, PA. Activities, including several talks by experts on minerals, geology and mining in Pennsylvania and beyond, are planned for that building and the adjacent Life Sciences and Philosophy Building. On Sunday, a field trip for those registered for the symposium will provide an opportunity for mineral collecting at H&K Group's Penn/MD Materials Quarry in Lancaster County.

The program planned for the symposium includes the presentations listed in the flyer below.

All interested mineral collectors are invited to register and attend. As usual, select mineral dealers will be present, and there will be a silent auction, give-away table, refreshments, and plenty of opportunities for visiting with fellow enthusiasts.

Lunch is available at restaurants within walking distance. Arrangements are still being made, so please see the web site <http://www.rasloto.com/FM/> for any updates, details, and the registration form.

The mineral collecting field trip on Sunday, 9:00 a.m. - noon, is planned for H&K Group's Penn/MD Materials Quarry near Peach Bottom, PA, where a variety of minerals may be available. Details will be given at the symposium. The trip is open only to symposium registrants. Safety equipment will be required.

Dates: Saturday & Sunday, November 2-3, 2019
 Location: Saturday, Nov. 2: Hackman Physical Sciences Bld. & LSP Bld., F&M College, Lancaster, PA
 Sunday, Nov. 3: collecting trip, H&K Group's Penn/MD Materials Quarry, Peach Bottom, PA

Registration: \$25/person for non-members,
 \$15/person for current FM-Pa members;
 free for students with student ID.

Please register in advance; a form is available on the web site.

Professional Geologists: lecture attendance qualifies for Professional Development Hours toward license renewal.

Web Site: <http://www.rasloto.com/FM/>

Contact: Joe Marchesani

e-mail: jmarch06@comcast.net



SYMPOSIUM & FIELD TRIP
Friends of Mineralogy - PA Chapter November 2-3, 2019 Lancaster, PA
 Hackman Physical Sciences Building (parking lot off Harrisburg Pike), Franklin & Marshall College

Symposium for mineral enthusiasts on **Saturday Nov. 2** Doors open 8:30 a.m.; Symposium 9:00 - 4:00
 Sales by Select Dealers – Silent Auction – Give-away Table – Meet Fellow Collectors

Experts will speak on the theme: **Pennsylvania Mining and Mineralogy**

Peter Heaney, PhD Penn State	Bill Stephens, PG Stephens Environmental	Karenne Snow, BA Philadelphia	Ron Sloto, PG West Chester University	Ryan Mathur, PhD Juniata College
Making the Case for Celestine as the Pennsylvania State Mineral	Amethyst Occurrences in Southeastern PA - Classic Locales and Recent Discoveries	Mineralogical Society Minerals and their Type Localities	Minerals of the Penn/MD Materials Quarry, Fulton Township, Lancaster County, Pennsylvania	U-Pb Dating of Calcite Veins from Rocks in Pennsylvania; Implications of these Ages

Registration (form on web site): Current members \$ 15.00/person Non-members \$ 25.00 Students with student ID free
 Professional Geologists: lecture attendance qualifies for Professional Development Hours toward license renewal

Field Trip Penn/MD Materials Q., Peach Bottom PA **Sunday Nov. 3** Open only to symposium registrants.

Visit our web site for details, registration form, changes and updates: www.rasloto.com/FM

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.

October 26, 2019: Ultravioletation: Fluorescent Minerals Show, by R&MC of Lower Bucks County PA. First United Methodist Church, 840 Trenton Rd., Fairless Hills PA 19030. Sat. only, 9-4. <https://sites.google.com/view/lowerbucksparocks/shows>

October 26, 2019: South Penn Fall Rock and Mineral SWAP & Sale: South Mountain Fairgrounds, 1.5 miles West of Arendtsville, PA. Sat. only, 8-3.

October 27, 2019: Gem, Mineral & Jewelry Show by Gem, Lapidary & Mineral Society of DC. Woman's Club of Bethesda, 5500 Sonoma Rd., Bethesda MD 20817 (Corner Sonoma & Old Georgetown Rds; free parking). Sunday only, 12-6. Timothyemorgan@mac.com, 301-325-3171

Nov. 2-3, 2019: FM-Pa Symposium & Field Trip; see p. 7. Saturday Symposium at Franklin & Marshall College, Lancaster, PA. Sunday Field Trip for Symposium registrants only. Please register in advance. <http://www.rasloto.com/FM/>

Nov. 2-3, 2019: Gemarama 2019, by Tuscarora Lapidary Society. Hall D Greater Philadelphia Expo Center, 100 Station Ave., Oaks PA 19456. Sat. 10-6, Sun. 10-5. <http://www.lapidary.org>

NMS BOARD MEETING NOTICE

NMS members are invited to attend Board of Directors meetings, which are generally held at 7:00 p.m. about two weeks prior to the general monthly meeting, although we do not meet every month. **The next date is Tuesday, November 5.** Members who would like to attend should contact president David Glick to verify time and place; those who would like to have their discussion item placed on the agenda should contact him at least one week in advance of the meeting.

Geo-Sudoku Solution

O	X	E	L	G	A	Y	M	N
L	N	Y	M	O	E	G	X	A
A	G	M	X	N	Y	O	L	E
E	O	L	N	A	M	X	G	Y
Y	A	N	O	X	G	L	E	M
G	M	X	E	Y	L	A	N	O
X	Y	A	G	M	N	E	O	L
M	E	G	A	L	O	N	Y	X
N	L	O	Y	E	X	M	A	G

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!

CONTACT INFORMATION

mailing address:

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c/o S. Bingham, Treasurer
145 Goddard Cir.
Penna. Furnace PA 16865

SOCIETY OFFICERS

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e-mail: xidg@verizon.net

Dr. Bob Altamura (Vice-President) 814-234-5011 (h)
e-mail: raltamura@comcast.net

John Dziak (Secretary) e-mail: jjd264@psu.edu
Stuart Bingham (Treasurer)
e-mail: sebing145@comcast.net

OTHER CONTACTS

Field Trips: Dale Kephart

e-mail: beckdale2@comcast.net

Junior Rockhounds: Dr. Andrew Sicree

814-867-6263 (h) e-mail: aas132@psu.edu

Membership Chair: David Glick (see above)

Programs: Dr. Duff Gold 865-7261(o), 238-3377(h)
e-mail: gold@ems.psu.edu

Door Prizes: Dr. Bob Altamura (see above)

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. Photographs or graphics are encouraged, but 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