Nittany Mineralogical Society Bulletin

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

April, 2024 **Visit our web site: www.nittanymineral.org** *Editor (see back page): David C. Glick*

April 17th meeting:
IN PERSON at BOAL HALL

A Geologist's Trip to Antarctica

by Dr. Charles E. Miller, Jr.

Our April meeting will be held Wednesday the 17th in Boal Hall (Boalsburg Fire Hall), 113 East Pine St., Boalsburg, PA 16827. Maps can be found on our web site.

7:00 to 7:45 p.m.: Social "hour." We will serve some refreshments - snacks and beverages - or feel free to bring your own non-alcoholic beverage.
7:45 to 8:00 p.m.: Announcements, door prizes.
about 8:00 p.m.: featured program

The event has free admission and free parking (lot just east of Fire Hall along East Pine St.), and is open to all; ***parents/guardians must provide supervision of minors.***
Bring your friends and share an interesting evening.
We expect to record the presentation for our web site.

This month's talk focuses on the Falkland Islands, South Georgia Island, and Antarctica. The Falklands are probably best known for the 1982 Falklands War between Argentina and Great Britain. South Georgia Island is less familiar to many but is integral to this talk. It is the graveyard of most icebergs from Antarctica's northwest quadrant and is a major factor in the 1914-1917 Imperial Transantarctic Expedition.


C. Miller photo

Antarctica is a polar desert, receiving less than 10 inches of precipitation a year. Despite aridity, a continental glacier covers about 98 percent of the surface. This freezing began approximately 36 million years ago. In places, the ice is 10,000 feet thick, depressing the crust more than half-a-mile, with some areas now below sea level.

See the complete article on pages 4-6.

ATTENDING THE APRIL MEETING?
Donations of **one or two high quality, labeled door prize specimens** are invited.
Larger quantities can go in a giveaway box.
Bring a friend!

NMS to participate April 27 at Rhoneymeade Arbor Day Festival

"Rhoneymeade: where art and nature meet" is an arboretum and sculpture garden featuring 150 acres of fields and trees, many outdoor sculptures, and pre-1853 farmhouse. It's at 177 Rimmey Road, Centre Hall PA, between Lower Brush Valley Road and Rt 45, 4.3 miles east of Boalsburg.

Their Arbor Day Festival is mostly about trees, but also art, and subjects related to nature: birds, bees, gardening, native plants, and - our part - geology. NMS's Bob Altamura and Dave Glick will have a table to inform attendees about our club's interests and activities, and discuss local geology. Festival admission is free; feel free to drop by, or volunteer to help staff our table for a little while (contact Dave Glick, se p. 8). See page 3 and (link also on our web page) https://www.rhoneymeade.org /events/arbor-day-celebration *-Editor*

THANK YOU to *ALL* of those involved with Minerals Junior Education Day

NMS held our 26th annual Minerals Junior Education Day on March 23, thanks to organizer Frank Kowalczyk. We had ten stations for the kids to visit, a booklet and specimens to take home, and a sales table; 119 young students and many, many parents came through and had a good time. We sincerely thank everyone involved! Many of our station organizers donated the giveaways for their stations, for which we are very grateful. Topics and organizers of the ten stations were:


Dr. Sicree's copper station. *D. Glick photo*

Lapidary - Bob Altamura
Iron Ores - Paul Fagley
Gold Panning - GPAA
Copper - Andrew Sicree
Fossils - Charles Miller Jr
Fluorescence- Stuart Bingham
Radioactivity - Andrew Sicree
Native Americans Used Rocks - Barry Scheetz
Polishing Rock Faces - Jim Garthe
Caves & Karst - Lincoln Caverns

Other donors of giveaway and sale specimens included: Luke Laubscher (Creekside Rock & Gem, Bellefonte), Shirley Fonda, Frank Lotito, Barbara Sincak, Steve & Jackie Sywenski, Duff Gold, and Bob Carnein.

NMS web site migration to start April 15

Our web site host has announced that our site will be migrated to a different server starting around April 15. It's possible that there will be an interruption in access to the site. *-Editor*

2024 EFMLS Wildacres Workshop

from https://efmls.org/wildacres/

The EFMLS Wildacres Workshop will be held May 13-19 at its cool mountain-top setting near Little Switzerland in North Carolina. Offered at the sessions are classes in various facets of the earth sciences. Indulge your passion for minerals, gems, jewelry, and craft.

Very recently, registration was not full. The registration form is on the EFMLS web site. -Editor

2024 EFMLS Convention & Hotel Information

from EFMLS News Volume 71, No. 3, March 2024

The 2024 EFMLS Convention is scheduled for Saturday, June 8, at the Sterling Hill Mining Museum, Ogdensburg, New Jersey, just down the road from Franklin. Rooms are available at a group discount rate about 30 minutes away at:

The Quality Inn
1691 Route 46
West Ledgewood, NJ 07853
Direct phone 973-347-5100

Please use ID code YDW35Q to get group rate of $129 +tax, breakfast included. Check in Friday 6/7/24, meeting on 6/8/24 at the Sterling Hill Mine, check out on 6/9/24. See also https://www.sterlinghillminingmuseum.org/

Northern Alleghenies Geological Society

NAGS Dinner at the Outcrop, New Paris Quarry

from
https://www.facebook.com/people/Northern-Alleghenies-Geological-Society/100069113495667/

After an extended hiatus, we are back with quality geologic programs for the community. We are excited to announce the 2024 Dinner at the Outcrop event. The event will be held at the New Paris quarry in Bedford County on Sunday, June 9th. In addition to networking and dinner, the event will include discussions on the stratigraphy of the quarry, minerals and fossils, geochemistry of the ash layers interbedded in the limestone, and collecting samples.

Let us know if you are interested or have any questions.

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. We encourage our readers to read their monthly newsletters, which are linked from our web site, <http://www.nittanymineral.org>.

The **Eastern Federation's** April Newsletter leads with the sad news that Larry Huffman, long-time Federation leader and First VP (in line to be become President this year) has passed away. Cheryl Neary provides an informative memorial article. Current President Bill Stephens reviews progress over his terms, projects in progress, clubs joining or rejoining EFMLS, use of social media, and connecting clubs with knowledgeable speakers for their programs. 2024 Convention information (see article at left) and Registration Form are provided. Likewise, 2024 Wildacres Workshop (May 13-19) Registration Form (spaces still available!), class schedule, and other information is provided.

In the **AFMS** April Newsletter, President Roger Burford discusses the very restrictive proposal for a new National Monument in the Deming, New Mexico, area (covering a variety of mineral collecting sites). The newsletter continues providing information on the May 24-26 convention in Ventura, CA; see updates at <www.2024cfms-afms.com>. Club traditions, Rockhounds of the Year, and an article on an interesting glacial erratic boulder in Michigan are presented.

AFMS has a new web site at <www.amfed.org>. That's still the same site URL, but **all** pages have new addresses. "There is a page on the new site that has a cross-reference for many of the common page links from the Old Website to the New Website. Here is that link: <https://www.amfed.org/Old-New-Xref>" *-Editor*

New Tom's Online Report

from Mineralogical Record magazine

Mineralogical Record's Tom Moore periodically posts an article on mineral specimens available on the market, with some great photographs. The latest, #69 in the series, has just been posted:
https://mineralogicalrecord.com/wp-content/uploads/2024/04/Toms-Online-Report-69.pdf

-Editor

Rhoneymeade Arboretum and Sculpture Garden
Saturday - April 27th: Arbor Day Celebration

from https://www.rhoneymeade.org//events/arbor-day-celebration

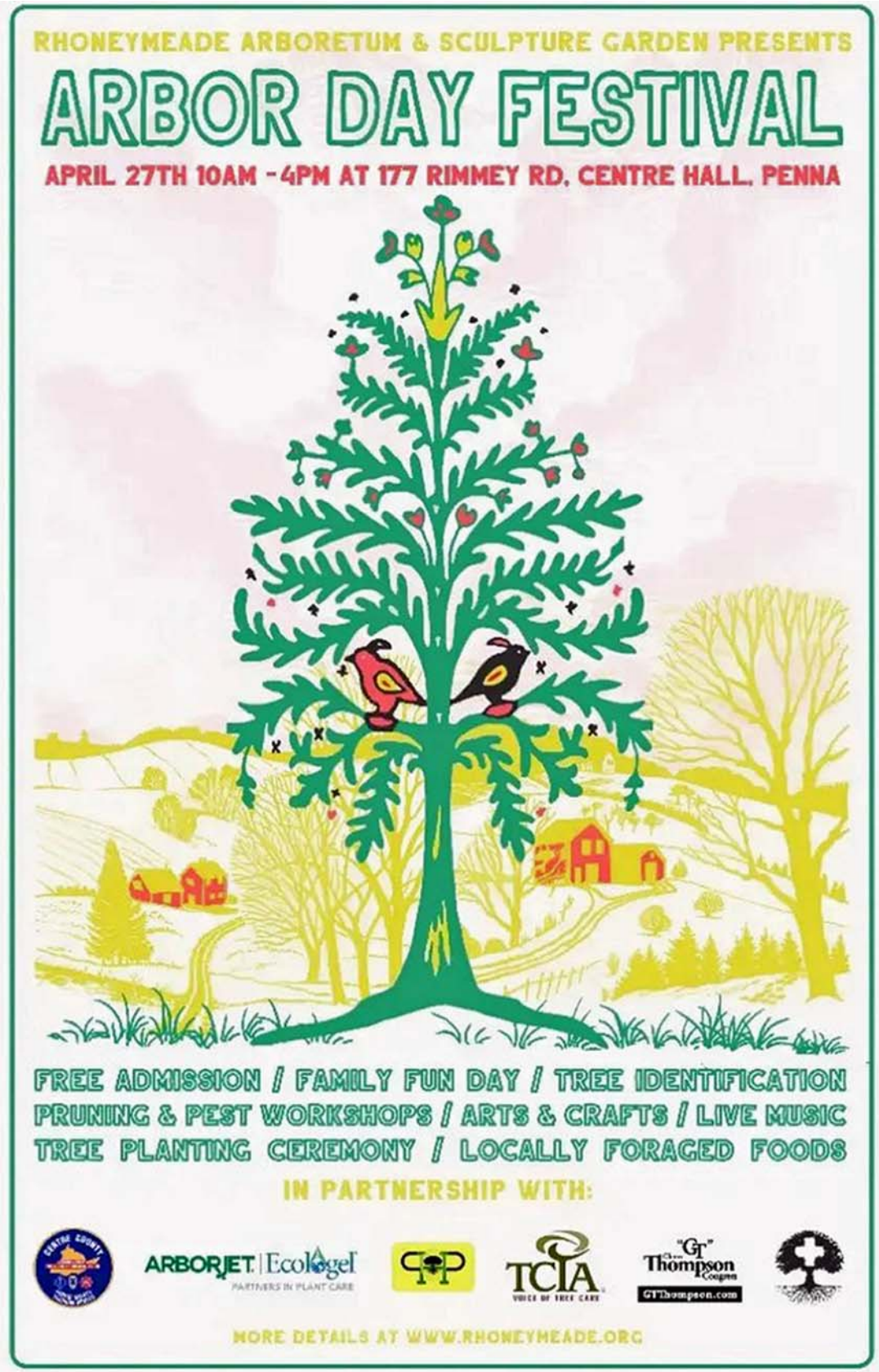
Arbor Day Festival Celebrates Community and Nature with Family-Friendly Activities

See page 1 for NMS participation

Join us on Saturday, April 27th, for a day filled with fun and educational activities at the Arbor Day Festival. The event will feature live music, food vendors, chainsaw art demonstrations, and interactive booths, plus free tree giveaway.

Master Gardeners, along with Penn State's Shrooms and Blooms Club, will offer tree planting tips and educate on wildflowers. The local Boy Scouts will lead tree identification walks, and utility line clearance experts will be on hand to demonstrate safe practices. The festival aims to celebrate nature and promote environmental awareness in our community.

Food and drinks are available as well as a make your own pizza, cooked in our outdoor brick & wood-fired pizza oven.



A Geologist's Trip to Antarctica

by Dr. Charles E. Miller, Jr.

This month's talk focuses on the Falkland Islands (red arrow, Figure 1), South Georgia Island (black arrow, Figure 1), and Antarctica. The Falklands are probably best known for the 1982 Falklands War between Argentina and Great Britain. South Georgia Island is less familiar to many but is integral to this talk. It is the graveyard of most icebergs from Antarctica's northwest quadrant and is a major factor in the 1914-1917 Imperial Transantarctic Expedition. *Unless stated otherwise, images in this article are the author's.*

Figure 1: Modified map of the Antarctic region.
(Free use, Nations Online Project)

Antarctica is a polar desert, receiving less than 10 inches of precipitation a year. Despite aridity, a continental glacier covers about 98 percent of the surface. This freezing began approximately 36 million years ago. In places, the ice is 10,000 feet thick, depressing the crust more than half-a-mile, with some areas now below sea level. Some other prominent physical features include the Transantarctic Mountains (green arrow, Figure 1), Mt. Erebus (yellow arrow, Figure 1), the Antarctic Peninsula (black dashed arrow, Figure 1), and the Drake Passage (light-blue arrow, Figure 1).

Antarctica's most conspicuous physical feature is its continental glacier, or ice sheet. Glaciers begin with snow, later compressed into ice. That ice advances and recedes. When glaciers reach a coastline, they may calve to form irregularly shaped icebergs, or extend as ice shelves out over the ocean. Ice shelves can be over 1000 feet thick. As ice shelves break up, huge tabular icebergs form. Some are rectangular, to which news writers put a spin as if they are "out-of-this-world." One tabular iceberg is A23a (this talk), the world's largest iceberg. It is four times the size of New York City. Because of its immensity, A23a generates its own microclimate. A tabular iceberg eventually breaks up, with waves eroding those pieces into irregular shapes. Ergo, an irregularly shaped iceberg does not mean it directly calved off a glacier at the shoreline.

Most icebergs are white on the outside and bluish internally (Figure 2). Some, rare icebergs are green (Figure 3) and others are striped. Whatever their appearance, icebergs are distinguished from sea ice. Because icebergs form from glaciers, they usually display original snow layers, even hundreds of them. In contradistinction, sea ice usually forms and melts each year. Less common is sea ice retaining the previous year's freeze.

The few land exposures in Antarctica provide insights into its geology. One example is coal in the Transantarctic Mountains (Figure 1). Other exposures, such as at the Antarctic Peninsula (black dashed arrow, Figure 1), yield dinosaur bones. These observations reflect past global warming - climate change. It is this reason that some people are deniers of present-day global warming. They argue we are in a recurring climate-change cycle. It has happened in the past and nothing more. A 2011 Scientific American article, "The Last Great Global Warming," describes the

Figure 2: Iceberg showing white surface and blue interior.

Figure 3: A rare, green iceberg.

Between South America and Antarctica is the Drake Passage (light-blue arrow, Figure 1), formed when the two continents separated 49-17 million years ago. As the passage opened, the Antarctic Circumpolar Current flowed unimpeded around the continent, helping to keep Antarctica cold. This current is the strongest in the world. Constriction in the passage increases its velocity, mixing it with warmer Atlantic and Pacific water. Along with prevailing winds, this combination makes a "perfect storm." The Drake Passage is notorious for having some of the most treacherous seas in the world. Waves 40+ feet high are common. During the Imperial Transantarctic Expedition, Shackleton described 90-foot waves.

This discussion of the Antarctic area would be remiss if it did not mention early expeditions of Amundsen, Scott, and Shackleton. Imagine trekking 1600 miles to be first to the South Pole, only to learn Amundsen had beaten your team (Scott's) by 33 days. Scott's expedition ended in the death of all five members on their return. Shackleton led the Imperial Transantarctic Expedition. Its objective was to be the first to cross Antarctica. It failed in that goal, but all explorers survived. The New York Times best-selling book "Endurance" describes this ordeal, including a 36-hour, 22-mile, never-before-done desperation trek across mountainous, crevasse-strewn South Georgia Island. It is a gripping account of the expedition and is highly recommended.

heating rate 56 million years ago. This time experienced the fastest rate of rising temperatures known in geologic history. **Present-day global warming is 10 times faster!** Think of the "hockey-stick" shaped graph.

Mt. Erebus (yellow arrow, Figure 1) is an active volcano in Antarctica. It is a stratovolcano, of alternating ash and lava layers. Stratovolcanoes are those typically shown on calendars, and Mt. St. Helens, Mt. Fuji, and Mt. Kilimanjaro are other examples. Mt. Erebus is one of few volcanoes with a permanent lava lake. It is an intraplate hotspot related to crustal extension, similar to the East African rift system.

One legacy of this region's past is the derelict whaling station at Stromness, South Georgia Island. Rusting infrastructure and abundant whale bones attest to a dead industry. Today, it is a hazardous site. However, in 1916 it began closure to the Imperial Transantarctic Expedition. This is where Shackleton and his companions hiked down after their 36-hour crossing of the island to this station.

Gondwanaland (Gondwana) was the Southern Hemisphere's supercontinent consisting of South America, Africa, Australia, Antarctica, and India. Reconstructing this landmass is based on numerous observations, several of which are discussed. Distribution of certain fossils could

Figure 4: magellanic (a), king (b), gentoo (c), and chinstrap (d) penguins.

Figure 5: (a) Fur seals, (b) Elephant seals, (c) Leopard seal.

question is "Why not?" Similarly, why are there no penguins in the Arctic? They are common in the Antarctic region (Figure 4) along with seals (Figure 5), whales, and flying birds (Figure 6). Of the former, four types are presented: magellanic, king, gentoo, and chinstrap (Figure 4). Also, the author's amazing discovery will be announced. The Antarctic ecosystem also includes elephant, fur, and leopard seals (Figure 5). Of these, cute as they may seem, the latter are apex predators. They are known to kill humans. Imagine the fear of one member of Shackleton's expedition when an 11-foot, 1300-pound leopard seal chased him on an ice flow. Directly or indirectly, this region's ecosystem depends on krill. These two-inch crustaceans sustain the larger animals, including baleen whales. This is also the land of the amazing albatross (Figure 6b). Some spend the first 6+ years flying without touching ground (but landing in water).

The Antarctic region is a "special place." That protection is the result of international agreement signed in 1959, but which expires in 2048. To protect this "special place," strict biosecurity measures were imposed, both on and off the ship. The big question is: "Will the treaty hold in the future?"

❄

not have occurred without contiguous land masses. Other evidence involves paleomagnetism. Mid-ocean ridges are sites of crustal divergence, where new crust is formed as basalt fills in voids. Iron in the basalt aligns with Earth's magnetic poles, as either normal or reverse polarity. This becomes a paleomagnetic record on the seafloor, allowing for reconstructing tectonic plates to their original position at the time seafloor spreading began.

Do not go to Antarctica looking for polar bears. There are none. The challenge

Figure 6: (a) Southern giant petrel, (b) wandering albatross, (c) kelp gull, (d) South Polar skua.

Geo-Sudoku

by David Glick

The puzzle below contains the letters ACHINPRST. One row or column spells an Antarctica resident. If you've read this issue, you've seen it. 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.

	R			C			P	
			R	T				
	S		A		H		I	
				A				
I	N		C		R	P	S	T
		R	T					C
	H							
		S		P	A	N		
P	A	N	H			S	T	

RECENT EVENTS

Closeup (field of view 15mm) of crystal groups in a Chihuahua, Mexico, geode from Jeff Smith's March 20 Geode Night. *D. Glick photo*

Lincoln Caverns personnel staff a popular station at March 23rd Minerals Junior Education Day (see p. 1). *D. Glick photo*

Safety:

Got a Second?

Ellery Borow,
AFMS Safety Chair
from AFMS Newsletter
v.77 no.3, April 2024

If so, please use it wisely.

It takes just a second for a dopped stone to come loose from the dop wax as one is cabbing the stone.

It takes just a second for a sharp sliver of quartz to go flying after a hammer and chisel strike.

It takes just a second for a damaged electrical cord to arc and cause a fire in nearby flammable material.

It takes just a second to trip on an electrical cord laying on the floor of your rock and mineral show.

It takes just a second for a show table to collapse because the latch securing the legs was not secured.

There are a great many calamities which can occur in a second or less.

To be safe it is often a simple matter of taking a second, or two, to ensure one's safety.

In all the above instances it would just a second or two to:

Test the dop wax

Put on safety goggles

Inspect the electrical cord

Rearrange things to eliminate the tripping hazard

and

Make sure the show table leg latches are secure.

Got a second? All through our lapidary and jewelry workshops, show facilities, meeting rooms, digs, and field trips there are to be found areas having potential safety issues. In the overall scheme of things taking a moment to make sure you, your family, and the public attending our activities will have a safe and enjoyable time.

Please give safety the necessary time. After all, sometimes, it just takes an extra second to make sure you are safe.

UPCOMING EVENTS

Confirm details of events before attending.
https://efmls.org/events/
See other show calendar links on our web site.

April 27, 2024: NMS at Rhoneymeade. See pages 1, 3.

May 4-5, 2024: Annual Gem & Mineral Show, by Mineralogical Society of Northeastern Pennsylvania. Oblates of St. Joseph Seminary, 1880 Hwy 315, Yatesville, PA 18640 (just outside of Pittston, PA). Sat. 10-5, Sun. 10-4. http://msnepa.org/events.html

May 13-19, 2024: EFMLS annual Wildacres Workshop. See p. 3 and https://efmls.org/wildacres/

June 1, 2024: Spring Mineralfest, by Penna. Earth Sciences Assoc. Macungie, PA. Sat. only, 8:30 -3:00. https://www.mineralfest.com/

June 8, 2024: EFMLS Convention at Sterling Hill Mining Museum, Ogdensburg, New Jersey. See page 2.

July 27-28, 2024: Gem, Mineral and Fossil Show by Monongahela Rockhounds. West Mifflin Vol. Fire Co. #4, Skyview Hall, 660 Noble Dr., Pittsburgh PA 15122. Sat. 10-6, Sun. 10-4. https://www.monongahelarockhounds.org/events-shows

August 16-18, 2024: Gem Miner's Jubilee Gem & Jewelry show. Lebanon Valley Fairgrounds and Expo, 80 Rocherty Road in Lebanon PA. Fri & Sat 10-6, Sun. 10-4. https://www.gem-show.com/summer-show

October 5, 2024: Fall Mineralfest, by Penna. Earth Sciences Assoc. Macungie, PA. Sat. only, 8:30 -3:00. https://www.mineralfest.com/

Nov. 2- 3, 2024: Gemarama Annual Show, by Tuscarora Lapidary Society. Greater Philadelphia Expo Center, 100 Station Avenue, Oaks, PA. Saturday 10-6 / Sunday 10-5. https://www.lapidary.org/gemarama/

Nov. 9-10, 2024: Annual Symposium & Field Trip, by Friends of Mineralogy - Pennsylvania Chapter.

Geo-Sudoku Solution

N	R	H	S	C	I	T	P	A
A	I	C	R	T	P	H	N	S
T	S	P	A	N	H	C	I	R
H	C	T	P	A	S	I	R	N
I	N	A	C	H	R	P	S	T
S	P	R	T	I	N	A	H	C
C	**H**	**I**	**N**	**S**	**T**	**R**	**A**	**P**
R	T	S	I	P	A	N	C	H
P	A	N	H	R	C	S	T	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 $25 (regular member), $10 (student rate), $18 (seniors), $35 (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

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

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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:

David Glick E-mail: xidg@verizon.net
425 Armagast Rd. phone: (814) 810-2116 (h)
Bellefonte, PA 16823-9762

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 (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