

# Nittany Mineralogical Society Bulletin

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

Editor (see back page):

September, 2024

Visit our web site: [www.nittanymineral.org](http://www.nittanymineral.org)

David C. Glick

September 18th meeting:  
IN PERSON at BOAL HALL

## The Colorado Plateau and "The Grand Staircase"

by  
Dr. Charles E. Miller, Jr.

Our September meeting will be held Wednesday the 18th 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," refreshments

7:45 to 8:00 p.m.: Announcements, door prizes, sales

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.**

-Editor

The Colorado Plateau is a major physiographic province comprising parts of Colorado, New Mexico, Arizona, and Utah. Approximately 5-6 million years ago (mya), the plateau uplifted to its maximum height and tilted, accelerating erosion. The result is spectacular scenery in 10 national parks, 20 national monuments, and 30 wilderness areas. This month's talk highlights some of these.

Please attend our Sept. 18<sup>th</sup> meeting to see this presentation, and see the full article on pages 4-6.

## Fall Schedule Update

Note Dr. Thornburg is now set for November.

October 16: A presentation for NATIONAL FOSSIL DAY, by Dr. Chris Widga, Director, Penn State Earth & Mineral Sciences Museum and Art Gallery.

November 20: Reconsidering the Ordovician, Ancient Landscapes, and the Elusively Enigmatic Juniata Formation in Central Pennsylvania, by Dr. Jesse D. Thornburg, Temple University

December 18 (tentative): Holiday Dinner at Quaker Steak & Lube restaurant

**DUES Time Once Again  
- SEE PAGE 2**

## Chert & Furnace Slag Field Trip

Our August 17 field trip near Pennsylvania Furnace was another success. Lots of banded / mottled chert in shades of gray, with some red and yellow, was found. Iron furnace slag ranged from blues (some with clear stripes) to green, olive drab, and lots of black. -Editor



Chert, from near PA Furnace, about 2.5" across.



A variety of iron furnace slag from near PA Furnace; most of these pieces are about 1.5" across. Both photos by D. Glick.

## ATTENDING THE SEPTEMBER 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!

## DUES Time Once Again

David Glick, NMS Membership Chair

Our new membership year starts on November 1. For NMS members who have not yet renewed, a dues form is included with this issue, either on paper or electronically. The form is also available on the web at <<http://www.nittanymineral.org/mem.htm>>. If you bring your dues and form to the **September** meeting, or send them in during September, we won't need to send another form to you in October. **OR**, use the PayPal connection on our web site which has been updated for the new membership year (and email the dues form). The annual dues are: \$25 regular membership; \$18 seniors 65 years+; family \$35; students \$10. Your dues are used for programs and speakers, meeting hall rental, refreshments, educational activities, Bulletins, and mailing expenses. We look forward to your continuing membership!

## August Show & Tell Video

We covered quite a variety of topics at our August Show and Tell meeting; the video is now on the web site at <http://www.nittanymineral.org/programs.htm> Videos from many previous meetings are there as well.

## Geo-Sudoku

by David Glick

The puzzle below contains the letters CEHIMRSTY. One row or column spells a science which, along with crystallography, is essential in mineralogy. 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.

		H		S			Y	R
		C				M		
E	R		I			S	H	
H	E	S		R			M	T
			H	T		Y	E	S
I			S		E			H
R			T	H			S	
S	T	Y					I	
	H							

## NMS Picnic August 24

David Glick, NMS President

Good food and good times! Thanks go to our host, NMS vice president Bob Altamura, and a l l w h o attended.



## 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 the left sidebar of our web site, <<http://www.nittanymineral.org>>.

The **Eastern Federation's** September Newsletter notes that the next EFMLS Board meeting, Sunday October 13 from 7:00 to 9:00 p.m., will be open to the general membership via Zoom. New officers and Board members will be introduced. Information is provided on schedule and hotel room reservations at the March 27-30, 2025 EFMLS/AFMS Convention in Hickory, North Carolina. A very thorough two-part article on Tools and Equipment for Field Trips is reprinted from the Richmond Gem and Mineral Society's newsletter, *The Collecting Bag*.

The **AFMS** September Newsletter has several reports on the large and successful convention in Ventura, California. Minutes of the Federation's Annual Meeting are provided. The fourth issue of *Crack the News*, by and for kids and teens, has been published at <https://www.juniors.amfed.org/juniors-newsletter> and they are now gathering articles and other items for the next edition. Annual Scholarship recipients for the regional federations are listed. For EFMLS, Honoree Dr. Howell Bosbyshell chose Abigail Nalesnik, University of Delaware, and Elizabeth (Karlee) Finch, Columbia University. All American Club and AFMS Rockhound of the Year recipients are presented. *-Editor*

## Jim Stauffer Collection Auction

As noted last month, avid collector James D. Stauffer passed away in March (see obituary at <<https://www.snyderfuneralhome.com/obituary/james-d-stauffer/>>). The impressive collection assembled through his life will be sold at auction on Saturday, October 12, by Boltz Auction Company in Lancaster <<https://www.boltzauctions.com/>>.

## George Loud Collection Auction

Long-time collector George Loud is selling most of his collection. The auction sale will extend through a full year; information can be found and bids can be entered at <<https://www.mineralauctions.com/>>.

## Green Pennsylvania Minerals...

Is the theme of the 2024 FM-PA Symposium (see below), in keeping with the 43rd FM-TGMS-MSA Tucson Mineral Symposium (February 2025) theme: Shades of Green: From apatites to zeunerites – more than just emeralds. FM-PA is seeking a few more speakers on green PA minerals or related topics (beryl, pyromorphite, and wavellite are already covered); an honorarium is offered. Contact Dave Glick <[xidg@verizon.net](mailto:xidg@verizon.net)> if you might have a talk to offer.

## Earth Science Week

### Celebrate “Earth Science Everywhere”

#### October 13-19, 2024

from <https://www.earthsciweek.org/>

The American Geosciences Institute organizes Earth Science Week every October. Toolkits - collections of print materials - are available. There will be a webinar each day of the week, and last year’s webinars are available. There are contests for photographs, video, visual arts, and essays. See the website for all of this and more.

“Earth Science Week is more than an event; it’s a global movement towards understanding and cherishing our planet. This initiative ignites curiosity and fosters appreciation for the Earth sciences. It brings to light the intricate connections between geoscience and our daily lives. With a plethora of educational activities, resources, and events, Earth Science Week is a vibrant call to action for individuals of every age and background. It’s an invitation to dive into the fascinating world of Earth’s processes, explore the bounty of natural resources, and discuss the pivotal role of geosciences in addressing critical societal challenges. This initiative doesn’t just educate; it inspires a lifelong passion for Earth science and instills a deep sense of stewardship for our planet and its future.”

“Every October, this enthusiasm comes alive as community groups, educators, and citizens around the globe host an array of celebratory events.”

## Rockin’ in the Alleghenies - JOHNSTOWN

### FM-PA Annual Symposium and MINERAL, FOSSIL & GEM SHOW



**Friends of Mineralogy - Pennsylvania Chapter**  
**SYMPOSIUM & SHOW Nov. 9, 2023 - Field Trip Nov. 10**  
 Attend ONLINE -OR- IN PERSON at University of Pittsburgh - JOHNSTOWN

## SECOND ANNUAL MINERAL, FOSSIL & GEM SHOW

### SHOW SATURDAY 8:30 - 6:00 ADMISSION FREE TO ALL

#### 40 TABLES OF SELECTED VENDORS

**SYMPOSIUM** for mineral collecting enthusiasts Non-members \$ 15.00 Members \$10.00 Students free

**Friday evening Nov. 8:** Meet & Greet - bring your mineral specimens to talk about.

**Saturday Nov. 9:** Hybrid Symposium - **ONLINE** or **IN PERSON**

8:00 a.m. to 5:00 p.m. at University of Pittsburgh - Johnstown

Talks by knowledgeable **SPEAKERS** concentrating on **Green Pennsylvania Minerals, including:**

Beryls of Pennsylvania - by Ronald A. Sloto, PG, West Chester University

Pyromorphite in Pennsylvania - by Ross Elliott, PG, Delaware DNREC

Wavellite at Mt. Pleasant Mills, Pennsylvania - by Bill Stephens, PG, Stephens Environmental

Silent Auction – Give-away Table – Meet Fellow Collectors

Professional Geologists: Professional Development Hour credits available for full lecture attendance

**FIELD TRIP Sunday Nov. 10** Mt. Pleasant Mills Quarry. Open only to symposium registrants.

Visit our web site for details, registration form, changes and updates: [www.rasloto.com/FM](http://www.rasloto.com/FM)

## The Colorado Plateau and "The Grand Staircase"

by Dr. Charles E. Miller, Jr.

The Colorado Plateau is a major physiographic province comprising parts of Colorado, New Mexico, Arizona, and Utah (Figure 1). Approximately 5-6 million years ago (mya), the plateau uplifted to its maximum height and tilted, accelerating erosion. The result is spectacular scenery in 10 national parks, 20 national monuments, and 30 wilderness areas. This month's talk highlights some of these. Images are the author's unless otherwise indicated.

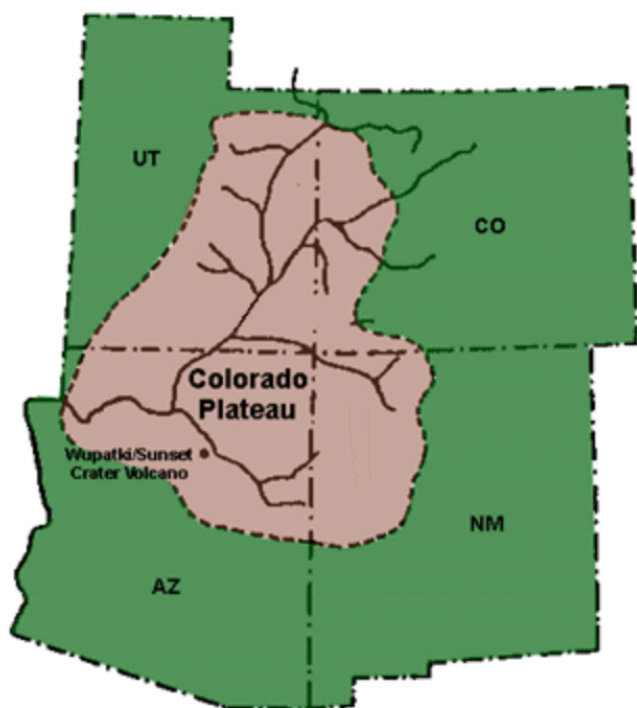


Figure 1: The Colorado Plateau. (Wikipedia)

The Plateau's origin involves subduction of the Farallon Plate (off the West Coast) under the North American Plate. That created (west to east) the Sierra Nevada, Basin and Range, Colorado Plateau, and Rocky Mountains. Both the Plateau and the Rockies were uplifted at about the same time. One difference, however, is that the former did not finish its elevation gain until about 5-6 mya. Timing of Plateau uplift involves dating basalt flows, incised meandering rivers, and other observations.

Near the Utah-Arizona border are the Goosenecks (Figure 2) - meanders of the San Juan River entrenched 1000 feet deep. The river travels approximately 22

miles through meanders that extend one air mile. This is paradoxical in that meandering streams normally lack sufficient gradient to erode downward. The Colorado Plateau uplift rejuvenated streams by increasing gradients, enabling meandering rivers to erode more effectively. The Goosenecks are an example of this, as is the Colorado River in the Grand Canyon.



Figure 2: Incised meanders (Goosenecks) of the San Juan River at Mexican Hat, UT.

North to south, the Plateau descends through "The Grand Staircase" (Figure 3). It is described as the world's most complete sequence of sedimentary rocks, exposing 525 million years of strata with very few gaps. Youngest strata are in the north (Bryce Canyon National Park) and oldest are in the south (Grand Canyon National Park). With apologies to "The Lone Ranger": "Nowhere in the pages of geologic history can one find more spectacular scenery. Return with us now to those thrilling days of yesteryear!"

The most striking features at Bryce Canyon are the vivid colors of sediments and hoodoos (Figure 4). The park mostly consists of amphitheater-shaped basins formed from headward erosion into the Plateau.

Stratigraphically lower is Zion National Park, known for deep canyons (Figure 5) and other spectacular scenery. Particularly noticeable is the cross-bedded Navajo Sandstone (Figure 6), preserving wind deposits in a former, mostly desert setting. In this rock, one can see ancient sand dunes and penecontemporaneous deformation (Figure 7). Look that up in your Funk and Wagnalls. This is the geologic term for soft-sediment deformation, here due to dune collapse. One of the park's hiking trails - not for the faint-hearted - is "Angel's Landing." It is a fin of Navajo Sandstone rising 1488 feet above the canyon floor. At the top, some sections are only a few feet wide with 1400-foot drop-offs on both sides! Does that interest you?

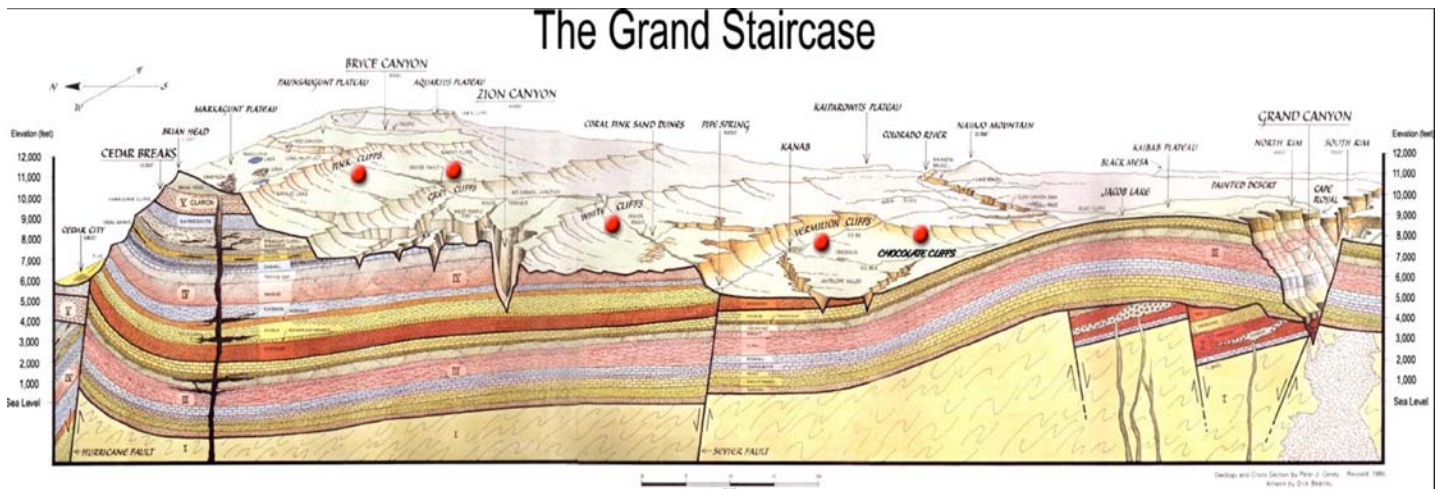


Figure 3: The Grand Staircase. Red dots show exposed cliffs. NPS image.



Figure 4: Hoodoos in Bryce Canyon National Park.

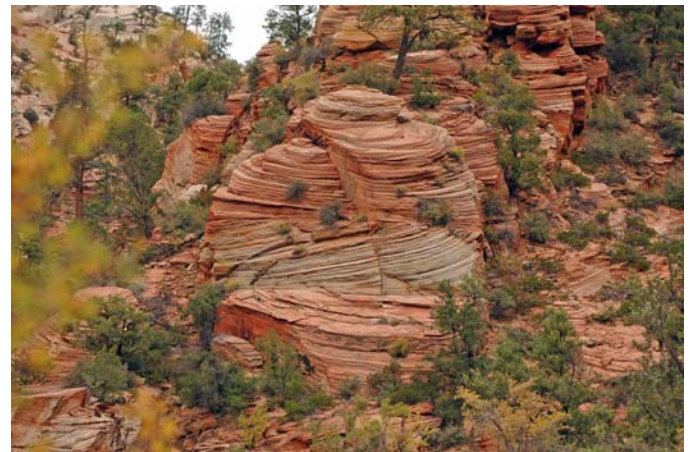


Figure 6: Cross-bedded Jurassic Navajo Sandstone at Zion National Park.



Figure 5: View from Observation Point showing the Virgin River in Zion Canyon 2100 feet below.

The Colorado Plateau is dissected (deeply eroded), as evidenced from previous images. Additional erosion is seen in Canyonlands and Grand Canyon National Parks (Figures 8 and 9, respectively). In places, the latter is 6000 feet deep. With its many national parks, national monuments, and wilderness areas, the Colorado Plateau offers endless opportunities to view

geology. This talk attempts to describe some of it. And although this is a plateau and not a mountain, this talk might make it possible to better appreciate Bob Dylan's lyrics: "How many years must a mountain exist before it is washed to the sea."

Other topics in the talk include Capitol Reef and Petrified Forest National Parks, Antelope Slot Canyon, "The Wave," and the "Goblet of Venus." "Hi yo, Silver!"



Figure 7: Penecontemporaneous deformation in the Navajo Sandstone



Figure 8: Headward erosion at Canyonlands National Park, UT.



Figure 9: Deep erosion in the Grand Canyon, AZ.

## Central Pennsylvania Rock & Mineral Club's

### 58th Annual Gem, Mineral and Jewelry Show

Saturday, September 28, 2024 10 a.m. - 6 p.m.  
Sunday, September 29, 2024 10 a.m. - 4 a.m.

“NEW” Location:  
Zembo Shrine Auditorium  
2801 N. 3rd Street  
Harrisburg, PA 17110

The Gem, Mineral and Jewelry Show is a great opportunity to see a variety of items from all over the world. You'll find Exhibits from local dealers as well as those who travel to the show from all over the country. Our rock show offers something for everyone, with everything from rough rocks and crystals to finished jewelry. Whether you're a beginner or an experienced collector, this is the perfect place to find what you're looking for!

- Club member displays of rocks, minerals & fossils!
- Over 25 vendors of rocks, minerals and jewelry!
- Silent Auctions on the quarter hour!
- Kids Area with 25c wheel of rocks, mini-mine, more!
- Free prize drawings!
- Educational mineral and fossil displays!
- Relax and have lunch or refreshments in the cafeteria!
- Free off-street parking!

We can't wait to see you there!

Admission Information: \$6 or \$5 with postcard or Ad Postcard is valid for up to 4 admissions

Children 12 and under free w/ paying adult  
Scouts in uniform are free

<https://rockandmineral.org/rock-shows/58th-annual-gem-mineral-and-jewelry-show>



## Autumn Mineralfest

mineral, fossil, and gem show

Over one hundred tables loaded with minerals, fossils, crystals, geodes, gemstones, and gemstone jewelry from six continents and outer space

**Saturday, 5 October 2024**  
8:30 AM to 3:00 PM

**Macungie, Pennsylvania**  
Macungie Memorial Park – 50 N. Poplar Street

FREE ADMISSION and free parking  
Rain or shine - over 50 vendors indoors, outdoor tailgate section weather permitting  
Family oriented - younger attendees encouraged  
The stage will be a darkroom with fluorescent mineral vendors



mineralfest.com

Sponsored by the  
**Pennsylvania Earth Sciences Association**  
a 501(c)(3) nonprofit educational organization

PESA is a Lehigh Valley based group of mineral and fossil collectors, gemstone and lapidary artisans, and other earth science enthusiasts.



facebook

Maps and more at [www.mineralfest.com](http://www.mineralfest.com)



*Come and see the colors!*

## Mount Bethel Gem, Mineral & Fossil Show

at the Mt. Bethel Firehouse  
2341 Rt.611  
Mt. Bethel, Pa.  
(only 2 miles from Rt.80/46 in NJ)

**Oct. 19 & 20, 2024**  
Admission:  
Adult \$5  
\$1 off w/flyer  
Kids FREE

See amazing treasures from the Earth! Our show features Gems, Minerals, Fossils, Meteorites, Crystals, Stones, and MORE!!

Ample FREE parking!  
FREE Mineral specimen for kids!  
Giveaways and Door Prizes all day!  
Food and Refreshments available.  
Hours: Sat. 9-5, Sun. 9-4

## UPCOMING EVENTS

Confirm details of events before attending.

<https://efmls.org/events/>

See other show calendar links on our web site.

**Sept. 21-22, 2024:** Franklin Mineral Show and Swap. Franklin Fire Department and Fireman's Memorial Park, 137 Buckwheat Rd & Parker St., Franklin, New Jersey 07416. Sat. 9-5, Sun. 10-4. <https://www.facebook.com/AnnualFranklinSterlingGemMineralShow/>

**Sept. 28-29, 2024:** 58th Annual Gem, Mineral and Jewelry Show, by Central Pennsylvania Rock & Mineral Club. Zembo Shrine Auditorium, 2801 N 3<sup>rd</sup> St., Harrisburg PA 17110. Sat. 10-6, Sun. 10-4. See page 7. <https://rockandmineral.org/rock-shows/58th-annual-gem-mineral-and-jewelry-show>

**October 4-6, 2024:** 68<sup>th</sup> Annual Desautels Micromount Symposium, by Baltimore Mineral Soc. Natural History Museum of Maryland, 6908 Belair Rd, Baltimore, MD, 21206. Friday starts 7:00 p.m., Sat & Sun. 9:00 a.m. Also on Zoom. <https://www.baltimoremineralsociety.org/desautels-symposium.html>

**October 5, 2024:** Autumn Mineralfest, by Penna. Earth Sciences Assoc. Macungie, PA. Sat. only, 8:30 -3:00. See page 7 and <https://www.mineralfest.com/>

**October 19-20, 2024:** Mount Bethel Gem, Mineral & Fossil Show. Mt Bethel Firehouse, 2341 Route 611, Mount Bethel, PA 18343 (2 miles from 80/46 junction in NJ). Sat 9-5, Sun 9-4.

**Oct. 26, 2024:** South Mountain Rock Swap & Sale, by Franklin County R&M Club. South Mountain Fairgrounds, west of Arendtsville PA on PA Route 234. Sat. Only, 8-3. See Facebook Franklin County Rock and Mineral Club

**Oct. 26, 2024:** Ultravioletation Fluorescent-only Mineral Show, by R&M Club of Lower Bucks County. First United Methodist Church, 840 Trenton Rd, Fairless Hills, PA 19030. Sat. only, 9-4. <https://sites.google.com/view/lowerbucksparocks/shows>

**Nov. 2-3, 2024:** Gemarama Annual Show, by Tuscarora Lapidary Society. Greater Philadelphia Expo Center, 100 Station Ave, Oaks, PA. Sat. 10-6 / Sun. 10-5. <https://www.lapidary.org/gemarama/>

**Nov. 9-10, 2024:** Annual Symposium & Field Trip and 2<sup>nd</sup> Annual Show, by Friends of Mineralogy - PA Chapter. See p. 3. and <https://rasloto.com/FM/>

### Geo-Sudoku Solution

T	I	H	C	S	M	E	Y	R
Y	S	C	R	E	H	M	T	I
E	R	M	I	Y	T	S	H	C
H	E	S	Y	R	C	I	M	T
M	C	R	H	T	I	Y	E	S
I	Y	T	S	M	E	R	C	H
R	M	I	T	H	Y	C	S	E
S	T	Y	E	C	R	H	I	M
C	H	E	M	I	S	T	R	Y

### 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](http://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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Penna. Furnace PA 16865

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Membership Chair: David Glick (see above)  
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Publicity:

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](mailto: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](http://www.nittanymineral.org)