

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc.

P.O. Box 10664

State College PA 16805

October, 2014

Visit our web site: www.nittanymineral.org

Editor (see page 8):

David C. Glick

October 15th meeting:

Charles R. Knight - Art and Geology

by

Dr. Charles E. Miller, Jr.,
with an introduction by
Rhoda Knight Kalt



Charles R. Knight mural of a Cretaceous confrontation between Triceratops and Tyrannosaurus rex. (Permission from Field Museum of Chicago.) See p. 3.

Our October meeting will be held Wednesday the 15th 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 7:00 p.m.: Social hour, refreshments in the lobby
7:00 to 7:30 p.m.: special tribute in lobby - **please attend!**
7:30 to 7:45 p.m.: brief Annual Meeting and elections;
door prize drawings
~7:45 p.m.: introduction by Rhoda Knight Kalt and
program by Dr. Charles E. Miller, Jr.

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 National Fossil Day event!

Our October 15th meeting will be an event of wide-ranging interest. Charles R. Knight (1874 - 1953) was the artist responsible for widely seen paintings of dinosaurs, extinct mammals and more, which illustrated museum displays and books through the 20th century; see the **article on page 3** for more examples. An exciting feature of the program is that Knight's granddaughter, **Rhoda Knight Kalt**, will be visiting us and providing an introduction with reminiscences of her grandfather. It will also be National Fossil Day and Earth Science Week, through which we expect to take advantage of some extra publicity. The meeting is free and open to all (parents/ guardians must provide supervision of minors), so please invite any friends who might be interested! With two speakers and a brief Annual Meeting and elections (see p. 2), we'll have a very full schedule, so we'll start a little early. **Please arrive by 7:00 p.m.** if possible, to attend a special tribute. The brief Annual Meeting will start promptly at 7:30 p.m.

ATTENDING THE OCTOBER MEETING?

Please help with publicity - Tell a friend - Bring a friend!
We don't need additional door prizes or snacks this time, but they will be welcomed in November.

Annual Meeting and Elections in October:

by David Glick, NMS President

The October 15th meeting will be the **Annual Meeting of the Corporation**, and will include election of officers. Reports are being provided to members prior to the meeting. We will keep the business meeting very short in order to accommodate our program on C. R. Knight.

In accordance with our bylaws, the Board of Directors, acting as the Nominating Committee, announced the following slate of candidates last month:

President: David Glick

Vice-President: Robert Altamura

Treasurer: Stuart Bingham

Secretary: Ellen Bingham

The Board truly needs **additional volunteers** to get involved with running the Society, providing **new energy and fresh thinking**. 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!

Dues Are Due - See Page Two

Earth Science Week, October 12-18

National Fossil Day, October 15

Geoscience for Everyone Day, October 16
- see page 7

November Meeting Program:

The November 19th meeting will feature Penn State Geosciences Research Associate Don Voigt speaking on The West Antarctic Ice Sheet Divide Ice Core Project; Mineralogy and Physical Properties of Ice. We'll have refreshments, door prizes, etc. as usual. Please plan to attend!

Dues are Due!

by David Glick, NMS President

Our membership year ends on October 31. Current members whose renewal has not been received by October 9 should receive another dues form with this mailing. The form and payment can be mailed in or brought to our October meeting. Your **prompt payment helps a lot** in reducing work for our volunteer staff. The rate remains at \$20 for an individual member, with other options available. Forms may also be downloaded from our web site.

The dues form includes a line for "don't send a printed Bulletin." If you read the Bulletin on the web site anyway, you can help reduce our printing and mailing expenses by checking this line. You can go back to the printed version, or request individual printed issues, at any time.

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 October issue begins with news of the 2015 convention, March 27-29 in Hickory, North Carolina. It will include a collecting field trip to the Reel Amethyst Mine on the 27th. President Hazel Remaley closes out her term with a final letter, encouraging us all to volunteer in our federation. The safety article concerns critters - not wild ones, but our dogs and cats accompanying us on trips, and keeping them safe. The Eastern Foundation Fund, each One Teach One Award, and Club Rockhound of the Year award are covered; five inductees into the National Rockhound Hall of Fame are discussed. The success of 2014 Wildacres Workshops is noted; announcement of dates for the 2015 Spring & Fall sessions is expected soon.

The **AFMS Newsletter** is available by the same methods. The October issue announces three winners of the 2014 Program Competition: *Garnets - An Overview*; *Kentucky Agates*; and (for juniors) *Can You Dig It - What is a Fossil?* Program Competition Chair Marge Collins is moving on after 20 years as the volunteer in that position. Jim Brace-Thompson's column reviews several Classic Kids' Books on Rocks. President Richard Jaeger's column notes several good collecting sites which were recently closed because of damage, illegal access, extreme overcollecting, etc. Shirley Leeson's ALAA column notes another such instance on US Forest Service Land in Montana. These instances emphasize the need for all of us to collect responsibly and in reasonable amounts, abide by the AFMS Code of Ethics, and to stay on good terms with land owners and stewards. Shirley suggests that after

verifying agency regulations for a collecting site, we take before and after photographs of our collecting visit to the site (cleaning up the site if needed) and provide the photos to the responsible agency with our thanks.

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

Pennsylvania's Mineral Heritage Symposium November 1-2

Friends of Mineralogy - Pennsylvania Chapter will hold their annual symposium at Franklin & Marshall College in Lancaster, Pa., on Saturday November 1, with a field trip (for symposium registrants only) on Nov. 2.

This year's theme is Pennsylvania's Mineral Heritage, scheduled speakers are listed below. There will also be invited mineral dealers; a give-away table; silent auctions of specimens, books, tools, and more; and plenty of opportunities for fellowship with other avid collectors. Professional geologists can receive professional development hours for lecture attendance. See the web site for updates and a registration form: <http://www.rasloto.com/FM/>

Symposium Presentations Scheduled So Far:

Mining History of the Serpentinites, Pennsylvania and Maryland

Stephen Shank, Pennsylvania Geological Survey

Xenoliths of the Triassic Passaic Formation in the Monocacy Hill diabase intrusion, Amity Township, Berks County, Pennsylvania

Robert Kulp, West Chester University

The French Creek Iron Mine - A Collector's Memories of a Lost Mineralogical Treasure

Bill Stephens, PG, Stephens Environmental

The Fritz Island Mine, Cumru Township, Berks County, Pennsylvania

Ronald A. Sloto, U.S. Geological Survey - Editor

25th Ultraviolation Fluorescent Minerals Show

from EFMLS calendar,
<http://www.amfed.org/efmls/calendar.htm>

Saturday October 25: Fairless Hills, PA

If Your Rocks Don't Glow You're at the Wrong Show SHOW – SWAP – SELL

Presented by The Rock and Mineral Club of Lower Bucks County. Saturday October 25, 2014, 9:00 AM to 4:00 PM - First United Methodist Church, 840 Trenton Road, Fairless Hills, PA. \$2 donation - Kids 12 & under free. Food and Beverages available. Raffles & other exciting give-a-ways.

ULTRAVIOLATION is the ultimate show for the fluorescent mineral enthusiast, whether a novice or serious collector. The show features many of the world's premier fluorescent mineral dealers who strive each year to bring the biggest, brightest and best fluorescent minerals to satisfy the insatiable cravings of the fluorescent collector.

Charles R. Knight - Art and Geology

by

Dr. Charles E. Miller, Jr.
Geologist

A tour of major natural history museums in the United States includes murals, paintings, and sculptures of Charles R. Knight (1874-1953; Figure 1). Among those museums are: American Museum of Natural History (AMNH), New York City; National Museum of Natural History (Smithsonian), Washington, D.C.; Field Museum of Natural History, Chicago; Carnegie Museum of Natural History, Pittsburgh; Academy of Natural Sciences, Philadelphia; Florida Museum of Natural History, Gainesville; Page Museum (La Brea Tar Pits), Los Angeles, and Natural History Museum of Los Angeles County, and many others. His paintings and sculptures are also in a number of major zoos and libraries across the country.

Knight is the best-known paleoartist and considered today the “father of paleoart.” In his book *Wonderful Life*, the late Stephen Jay Gould writes: “Not since the Lord himself showed his stuff to Ezekiel in the valley of dry bones had anyone shown such grace and skill in the reconstruction of animals from disarticulated skeletons. Charles R. Knight, the most celebrated of artists in the reanimation of fossils, painted all the canonical figures of dinosaurs that fire our fear and imagination to this day.” *Scientific American* also recognized Knight’s contribution in purveying paleontology to the public with a seven-page article in the June 1996 issue (<http://gspauldino.com/SciAmCharlesKnight.pdf>). One of Knight’s paintings – “Tiger and Peacock” – is valued at \$1.2 million. Many consider this the greatest tiger painting in the world. The tiger was painted at the Bronx Zoo in New York. He tried to paint an animal from life whenever possible.

This talk recognizes Charles R. Knight’s art and its contributions to paleontology. The influence of Knight’s paintings goes beyond



Fig. 1: Charles R. Knight posing at one of his paintings. He was born legally blind. When painting, he always had his face close to the canvass. Unlike most artists, he liked someone standing next to him, talking as he painted. Knight had a great fear all his life of losing his sight, as his painting depended on it. (Rhoda Knight Kalt, personal communication, 2-23-14).

museums, libraries, and zoos. For decades historical geology and paleontology textbooks have used his paintings. Even Hollywood used Knight’s paleoart. Both the 1925 “The Lost World” and the 1933 classic “King Kong” relied on Knight’s paintings of dinosaurs. His paintings had appeal because they provide what prehistoric bones, alone, cannot – social interaction and paleoecology. Knight was the first artist to work with paleontologists, making his paintings as realistic as the knowledge of the times allowed. His iconic 1927 painting of a tyrannosaurus and triceratops facing off (Figure 2) is an example. This is a 20-foot x 10-foot mural in the Field Museum of Chicago. After seeing this painting, one cannot help but wonder which dinosaur won the confrontation.



Fig. 2: Charles R. Knight mural of a Cretaceous confrontation between Triceratops and Tyrannosaurus rex. (Permission from Field Museum of Chicago.)



Fig. 3: Charles R. Knight painting of Rancho La Brea tar pools during the Pleistocene. Shown: saber-tooth cat *Smilodon*, bird of prey, and extinct species of horse. (Permission: Field Museum of Chicago.)

Figure 3 is a Charles R. Knight painting of the Rancho La Brea Tar Pits as they may have looked during the Pleistocene (2.8-0.11 million years ago, mya). Shown are: the saber-toothed cat *Smilodon*, extinct species of horse, and a large bird-of-prey. The tar pits are in Hancock Park in Los Angeles. Natural asphalt seeps to the surface along a fault. Water accumulating on the tar belies the natural trap below. Animals coming to drink are trapped in the tar, attracting predators who also become mired. The bone collection here is one of the largest and best preserved for Pleistocene vertebrates. Common large vertebrate fossils at the site are mammoths, dire wolves, short-faced bears, ground sloths, and saber-toothed cats. Excavations continue at the tar pits.

One of the most famous Charles R. Knight murals (Figure 4) is at the Field Museum of Chicago. It depicts the sauropod *Apatosaurus* (*Brontosaurus*) during the Jurassic Period (201-145 mya). Of the three geologic time periods for dinosaurs (Triassic, Jurassic, Cretaceous), these animals reached their greatest size in the Jurassic. *Apatosaurus*, with an average length of 75 feet, is



Fig. 4: Charles R. Knight mural of *Apatosaurus* (*Brontosaurus*) during the Jurassic. Three "proto-crocodilians" are in a group in the foreground. In 1927 when Knight painted this 20- x 10-foot mural, the skull of *Apatosaurus* was unknown. The head was painted based on a skull of *Camarasaurus*, another sauropod dinosaur. (Permission: Field Museum of Chicago.)

probably the best known of the largest dinosaurs. It is commonly displayed in natural history museums, used in cinema and television, appeared on postage stamps, and was the logo for Sinclair Oil. In the United States, *Apatosaurus* is usually associated with the Morrison Formation (NMS Bull., March, 2012), consisting of swampy lowland, lake, river channel, and floodplain sediments. In-situ *Apatosaurus* bones in the Morrison are preserved at Dinosaur National Monument in Colorado and Utah. The greatest concentration of *Apatosaurus* footprints in the

United States is at the Purgatoire River near La Junta, Colorado (NMS Bull., February, 2002). There, more than 100 trackways (1300+footprints), mostly from *Apatosaurus* and *Allosaurus*, are found. This is the largest dinosaur tracksite in North America. Better known are the Paluxy River sauropod tracks at Glen Rose, Texas. These, in conjunction with nearly-parallel carnivore tracks, led to one of the greatest stories in geology – that never happened (NMS Bull., April, 2013). The story tells of a carnivore attacking the sauropod. However, both the sauropod and carnivore trackways show little or no deviation or obvious change of pace. Such reaction would be expected if a 14-foot carnivore attacked the sauropod.

In 1923 the first whole dinosaur eggs were discovered at the Flaming Cliffs of the Gobi Desert in Mongolia. Roy Chapman Andrews led the expedition from the AMNH. In recognizing this discovery, the Field Museum of Chicago commissioned Knight to paint a scene depicting Cretaceous (145-66 mya) dinosaurs and eggs (Figure 5). At that time, it was thought the eggs were of *Protoceratops*, an early member of horned dinosaurs, because fossils of those

dinosaurs were found nearby. In 1993 identical eggs were discovered in the Gobi, one with an *Oviraptor* embryo. A website for the Field Museum of Chicago indicates a date of 1922 for this painting. This is anachronistic in that it precedes the discovery date of July 1923. Obviously, the 1922 date is erroneous. The Field Museum confirms this assumption with the correct date being 1927 – when the painting was received (William Sampson, personal communication, 2-19-14). Discovery of

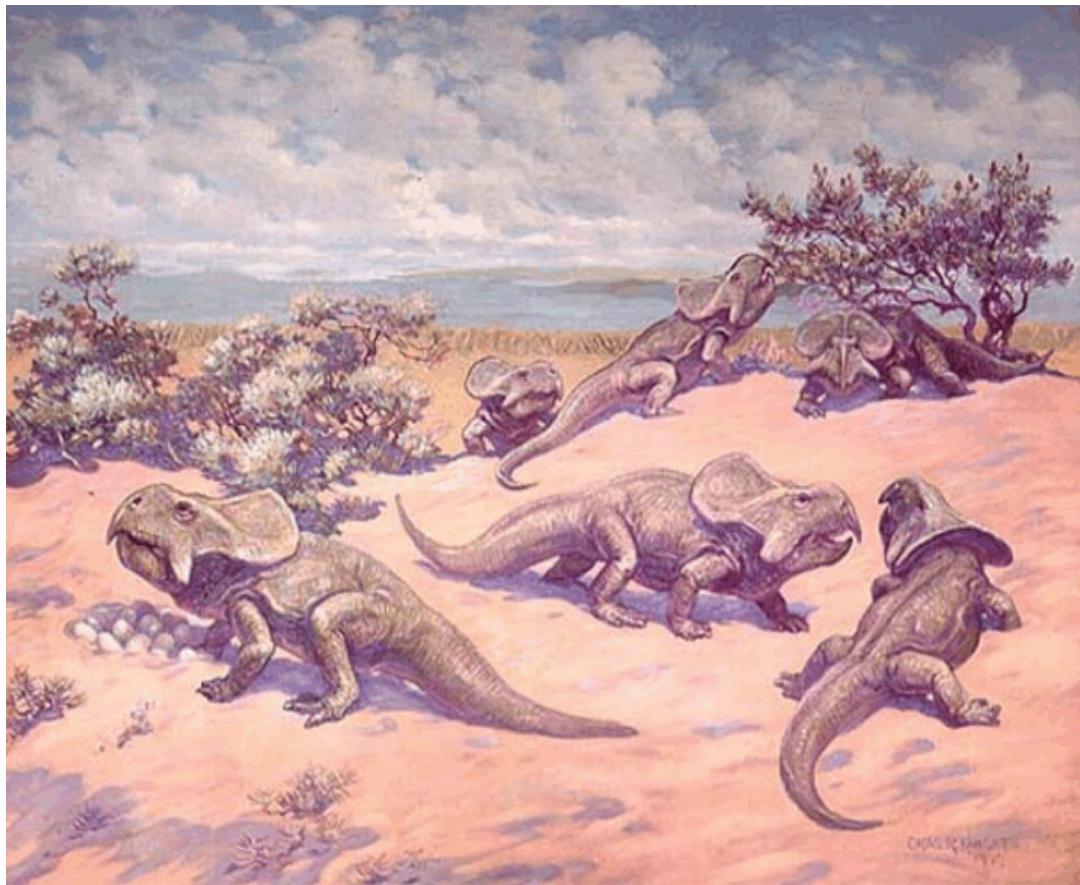


Fig. 5: Charles R. Knight painting of Cretaceous *Protoceratops*, primitive ceratopsian dinosaurs, with eggs; Flaming Cliffs of the Gobi Desert in Mongolia. These were found in 1923 on an expedition from the AMNH that Roy Chapman Andrews lead. These were the first whole dinosaur eggs discovered. In 1993 it was determined these eggs were actually those of *Oviraptor*, not *Protoceratops*. (Permission: Field Museum of Chicago.)

Protoceratops fossils and whole dinosaur eggs was popularized in the Roy Chapman Andrews' 1953 book "All About Dinosaurs." This was the first of an "All About" series on science that Random House published.

Another well-known Charles R. Knight painting at the Field Museum depicts the Cretaceous Interior Seaway

(Figure 6). This seaway bisected North America, connecting the Gulf of Mexico and Arctic Ocean. The painting shows a mosasaur and giant turtle in the seaway as *Pteranodon* flew overhead. Fossils of these animals are found in the Cretaceous Niobrara Chalk of Kansas. Mosasaurs are marine lizards with elongated heavy jaws and were top marine predators of the time. Knight's painting shows the mosasaur attacking the sea turtle. Fossil evidence supports this association. Many specimens of mosasaur are so complete they preserve stomach contents, including turtles. Knight was known for consulting with paleontologists in preparing his paintings. It is likely that information found its way into Knight's work. In addition to turtles and other prey, mosasaurs ate ammonites. These mollusks of the Class Cephalopoda have internal chambers, were carnivores,

and had tentacles for grasping prey. The living nautilus is similar to extinct, coiled ammonites. Numerous ammonites have been found with holes in them. Not all of the holes can be attributed to mosasaur attacks. However, some ammonites display holes in a triangular pattern matching mosasaur teeth. Additionally, the size and shape of the



Fig. 6: Charles R. Knight painting of the Cretaceous Interior Seaway, showing a mosasaur attacking a sea turtle and *Pteranodon* flying overhead. (Permission: Field Museum of Chicago.)

holes and their presence on both sides of the ammonites, corresponding to the upper and lower ammonite jaws, is evidence of mosasaur attacks.

Figures 7 and 8 are Charles R. Knight paintings of mammoths and mastodons, respectively. These are probably the most popular animals of the Pleistocene. Similar in appearance, there are differences between these two extinct proboscideans. Mastodons were larger, had a high-peaked forehead, and longer tusks. One diagnostic difference between the two animals can be seen in teeth morphology. Mammoth teeth consist of flat enamel ridges

or crests and are high crowned, suitable for eating grasses. In comparison, mastodon teeth have large conical cusps and are low crowned, adapted for eating twigs and leaves. Based on gut contents consisting mostly of coniferous twigs, mastodons usually were browsing animals, predominantly in woodlands and forests. The geographic distribution of mammoths and mastodons was great enough that their fossils have been found in most states. In Pennsylvania, fossil proboscideans have been found in 24 counties. Relative to State College, the closest proboscidean fossils have been mastodons at Frankstown, Saltillo, and Shirleysburg.



Fig. 7: Charles R. Knight painting of wooly mammoths (foreground) and rhinoceros (background) during the Pleistocene. (Permission: Field Museum of Chicago.)



Fig. 8: Charles R. Knight painting of a family of mastodons. (Public domain.)

Rhoda Knight Kalt, granddaughter of Charles R. Knight, continues her grandfather's legacy. She maintains a website (<http://www.charlesrknight.com/>) about her grandfather, lectures on his works, and arranges tours across the country. As a young girl, each Friday for years she joined her grandfather at the AMNH and on Saturday's she joined him at the Central Park Zoo. Her grandfather was often ahead of his times with his portrayal of animal behavior. In light of additional findings, paleontologists now revert back to many of his ideas. (Rhoda Knight Kalt, personal communication, 2-23-14). Rhoda travels from New York to share memories and answer questions about her grandfather, who she called "Toppy." She will precede the writer's talk.

Geo-Sudoku

by David Glick

This puzzle contains the letters ACGHIKNRT, and one row or column spells what painting one might want after this month's program. 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 | G | T | | H | C | | N | A |
| | | | | | | | R | |
| C | | K | | I | | | | T |
| T | K | | I | | | | | |
| H | C | | | | A | | | |
| G | I | | K | | | | | |
| A | H | G | | | T | | | |
| | G | I | | H | N | A | K | |
| T | I | A | | | C | G | | |

Earth Science Week

From their web site

Since October 1998, the American Geosciences Institute has organized this national and international event to help the public gain a better understanding and appreciation for the Earth Sciences and to encourage stewardship of the Earth. This year's Earth Science Week will be held from October 12-18 and will celebrate the theme "Earth's Connected Systems."

The following web site contains links to see the many ways that everyone can participate in Earth Science Week! <http://www.earthsciweek.org/about-esw>

Geoscience for Everyone Day: We Want You

From

Earth Science Week web site

www.earthsciweek.org/newsletter/2014/september

Join the Earth Science Week team in encouraging everyone - including women, minorities, and people with a range of abilities - to explore geoscience careers on "Geoscience for Everyone Day," Thursday, October 16, 2014.

If you're an educator, invite a geoscientist to speak in your classroom. If you're a geoscientist, visit a school or volunteer at a science center. Organize a scout event,

lead a field trip, or hold a special "Take Your Child to Work Day." You can make a real difference during Earth Science Week 2014 by opening a young person's eyes to the world of Earth science.

Doing so, you'll be supporting the efforts of AGI Member Societies such as the Association for Women Geoscientists and the National Association of Black Geoscientists in raising awareness of the remarkable opportunities available to all young people in the Earth sciences. To learn more about Geoscience for Everyone Day, go to <http://www.earthsciweek.org/geoscience-everyone-day>

Are you a geoscientist who's not sure where to start? See "Visiting Geoscientists: An Outreach Guide for Geoscience Professionals," a handbook co-produced by AGI and the American Association of Petroleum Geologists' Youth Education Activities Committee. Professional geoscientists can provide unique enrichment opportunities, based on their education, experience, and first-hand knowledge of the workplace. To download the handbook, see <http://www.agiweb.org/education/aapg/index.html>

National Fossil Day™ Overview

The National Park Service and the American Geosciences Institute are partnering to host the fifth annual National Fossil Day on October 15, 2014 during Earth Science Week. 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 discovered on the nation's public lands preserve ancient life from all major eras of Earth's history, and from every major group of animal or plant. In the national parks, for example, fossils range from primitive algae found high in the mountains of Glacier National Park, Montana, to the remains of ice-age animals found in caves at Grand Canyon National Park, Arizona.. See

<http://nature.nps.gov/geology/nationalfossilday/>

Classifieds

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

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 mineral and mineral related subjects. My catalogued 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

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 25, 2014: South Penn Fall Swap & Sale by Central Penn and Franklin County Rock & Mineral Clubs, at South Mountain Fairgrounds, 1.5 miles west of Arendtsville, PA on route 234 (Address for GPS: 615 Narrows Rd, Biglerville, PA 17307). Adults \$1.00; Children free. 8:00 to 3:00. \$10 to set up, first come basis to set up. Located in covered pavilion. Food stand. Contact Tom Smith: tsmith1012@comcast.net

October 25, 2014: 25th Ultraviolet - Fluorescent-only Mineral Show / Swap / Sell, by Rock & Mineral Club of Lower Bucks County, at First United Methodist Church, 840 Trenton Rd., Fairless Hills PA 19030. Sat. only, 9-4. www.mineralevents.com/flyers/2014ultraviolet.pdf See p.2.

November 1-2, 2014: Friends of Mineralogy - PA Chapter Symposium (Nov. 1, Lancaster, PA) and Field Trip (Nov. 2). See p. 2. <http://www.rasloto.com/FM/>

November 1-2, 2014: Gemarama, Rhapsody in Blue, by Tuscarora Lapidary Society. The School at Church Farm, Exton, PA . Sat 10-6, Sun. 10-5. <http://www.lapidary.org/GEMARAMA/Gemarama.html>

November 22 - 23, 2014: 23rd Annual Gem, Mineral & Fossil Show, by Northern Virginia Mineral Club & GMU Dept of Atmospheric, Oceanic & Earth Sciences, at The HUB Ballroom, George Mason Univ., Route 123 & Braddock Rd, Fairfax VA. Sat 10-6, Sun 10-4. www.novamineralclub.org

March 27-29, 2015: EFMLS Convention and Show, Hickory, North Carolina. Field trip March 27.

Geo-Sudoku Solution

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| I | G | T | R | H | C | K | N | A |
| H | K | N | T | A | G | I | R | C |
| A | C | R | K | N | I | G | H | T |
| N | T | K | H | I | A | R | C | G |
| R | H | C | N | G | T | A | K | I |
| G | I | A | C | K | R | H | T | N |
| K | A | H | G | C | N | T | I | R |
| C | R | G | I | T | H | N | A | K |
| T | N | I | A | R | K | C | G | H |

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

David Glick (President) 814-237-1094 (h)
e-mail: xidg@verizon.net
Dr. Bob Altamura (Vice-President) 814-234-5011 (h)
e-mail: raltamura@comcast.net
Ellen Bingham (Secretary and Acting Treasurer)
e-mail: emb22@psu.edu
John Passaneau (Treasurer, on leave)

OTHER CONTACTS

Field Trips: Ed Echler 814-222-2642
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: Mike Zelazny e-mail: maz166@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