

Nittany Mineralogical Society Bulletin

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

Editor (see page 8):

David C. Glick

January, 2016

Visit our web site: www.nittanymineral.org

January 20th meeting:

Landscapes and Geology of Pennsylvania

by

Robert Altamura

Our January meeting will be held Wednesday the 20th in room 114 (larger 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.

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

7:45 to 8:00 p.m.: announcements, questions, answers

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!*

Pennsylvania is a beautiful and varied state. The Commonwealth has both flat and hilly regions and also has mountainous country. It has large through-going rivers such as the Delaware and the Susquehanna rivers, fast, rocky streams like the falls along Hickory Run, and slow going meandering streams such as Penns Creek and much of Spring Creek. There are wide, fertile valleys, such as the Gettysburg-Newark lowlands and the Great Valley. In the Appalachian Plateaus province (see photo) there are elevations up to 3,213 feet, the highest elevation in the Commonwealth which occurs at Mt. Davis near

ATTENDING THE JANUARY MEETING?

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

Your donated snacks and drinks will be welcomed.

Bring a friend!

the West Virginia state line. The lowest point in the Commonwealth is the Delaware River (sea level). Pennsylvania is without a marine coastline, but does have a significant shoreline along Lake Erie.

The lay of the land and its geological and soil resources have affected the course of human events in the Commonwealth of Pennsylvania. For example, transportation of goods and coal to the west was hampered by the steep escarpment of the Allegheny Mountains eastern front since early days of settlement. The landscapes of the state are the result of the underlying geology and soils. The geological history of Pennsylvania goes back in time approximately 1 billion years, the age of the oldest bedrock. Since that time the land of Pennsylvania has been ever changing as a result of geological processes including plate tectonics, glaciation, and ever present weathering and erosion. All of the principal rock types are present in the state along with some interesting minerals and fossils, which will be discussed. The State geological map of Pennsylvania (Berg, 1980) portrays 217 different formations from approximately a billion to 12 thousand years old. A terrane model will be used to explain the distribution of the great number of formations and their geology (see article on pages 3-5). The purpose of this presentation is to describe the landscapes and geology of the state; to

discuss how the landscapes relate to the underlying geology, but also to correlate landscapes and geology to people that settled Pennsylvania and those that live here today.

A special mention will be made of the minerals and fossils that have been found and might be collected in the rocks near Centre County.

REFERENCE

Berg, T.M., Chief Compiler, 1980, Geologic map of Pennsylvania: Topographic and Geologic Survey, Commonwealth of Pennsylvania, Department of Environmental Resources, 1:250,000 scale, 3 sheets.



Appalachian plateau. View of the Grand Canyon of Pennsylvania from lookout tower near Wellsboro, PA. Bedrock making up most of the canyon walls consists of sandstones of the Devonian Catskill Formation. (Photo by R. Altamura)

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 January issue starts with an introduction to the plans for the Spring and Fall sessions of Wildacres Workshops, and class descriptions are provided. The sessions will feature Helen Serras-Herman in May and Alfredo Petrov in September as Speakers-in-Residence. Larry Heath, Federation President, discusses some of the structure of its governance. The safety article is on "car talk" and other distractions. Club Rockhound of the Year selections are solicited - don't be the one who puts the "pro" in procrastinate, submit honorees now!

The **AFMS Newsletter** is available by the same methods. The December/January issue was summarized last month.

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

-Editor

Social Hour Schedule Shift

by David Glick, NMS President

A reminder - we have shifted our meeting schedule by 15 minutes - Social hour at 6:45, business meeting at 7:45. We'll continue to start the program at 8:00 p.m.

Door Prizes & Giveaways

by David Glick, NMS President

A few years ago we had a project to provide one or two good quality specimens for each meeting's door prizes, principally by purchasing them for around \$20-\$25 each. The Board has decided to renew that program and a few fossil and mineral specimens were purchased at the Harrisburg Show to get it started. If you have a few attractive, identified, labeled specimens to donate for this program, they would be welcomed. We would like to limit each month's drawings to just a few specimens to keep the time down and the impact up.

We do want to continue the tradition of providing a way for extra, useful but perhaps less impressive specimens to find their way to new owners who would appreciate them. To do this, we will set aside a space in the lobby for a giveaway section. Specimens (preferably identified with at least one label) can be placed there during the social hour for anyone to pick up. Leftovers can be picked up by the donor or given to NMS for future use. ❄

Geo-Sudoku

by David Glick

This puzzle contains the letters CEKOPRSTY. One row or column includes a two-word term for what geologists see making up the landscapes of Pennsylvania. As usual, 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.

		S				Y		
R	O		K			P		
	Y					K		C
K				Y			C	R
	S	O						
	R	Y			E	O	K	
Y	P	E	R					
		R	O	P	K			E
	T			E	C		S	P

Classifieds

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

FOR SALE: 2 Homemade Lapidary saws for sale - 14" and 18". Both come with working motors, arbor, belt, pulley, rock clamp/carriage, and a blade. Both are mucked-out and ready to move. Both could use a little TLC. For more info contact Mike Zelazny at fabricatefilm@yahoo.com

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

Avid collector wants these to be purchased by someone who would appreciate them. Contact Frank & Gail Beall, 724-789-7290. See much more complete listing at www.nittanymineral.org/beall.pdf and in earlier NMS Bulletin issues.

Pennsylvania Geology Shapes its Land and the Lives of its People

by
Robert Altamura

The geology of Pennsylvania consists of more than 200 different bedrock formations. To understand complex geological areas such as Pennsylvania, it is useful to think in terms of terranes, regions of similar geology and structure which generally include multiple formations. A terrane is a large region of the Earth's crust that has experienced certain cycles of sedimentation and deformation during an extended period of compression (collision) or extension (pulling apart). Fold mountain belts are created during collision of continent-size and larger crustal (lithospheric) plates; rift valleys and oceanic basins are created by spreading events that break these plates apart. Plate tectonics traces the cycles of plate movements through geological time.

The formations of the state are summarized in the terrane map of Pennsylvania (Figure 1). This map reflects the role of plate tectonics in the geological history of our state. Each terrane (see map) is named after its plate tectonic ancestry.

From 450 to 250 million years ago, during the Paleozoic Era, several crustal plates, including Proto-Africa and Proto-Eurasia, collided with the North American plate to create the Appalachian Mountains and the supercontinent Pangea (Figure 2). During this collision, the Brandywine and other similar microcontinents (Suspect terrane) that existed between Proto-North America and Proto-Africa were thrust against the continent of Proto-North America (brown on the terrane map), closing and collapsing the intervening Iapetus Ocean (green on terrane map). The collision deformed crustal rocks of these two ancient continents as well as volcanic rocks and sediments of the Iapetus Ocean floor. Rocks and sediments of the Iapetus terrane exposed in the Piedmont physiographic province of eastern Pennsylvania were relatively deep water deposits (Figure 3) and were highly deformed, metamorphosed to form schists and gneisses, and were intruded by granites and associated pegmatites during Appalachian Mountain building. However, Iapetus terrane rocks and sediments in the central and western part of the Commonwealth were relatively shallow water ('shelf') deposits of an inland sea (Figure 3); they were highly deformed into tight folds and many faults with only low-grade metamorphism (toward the east) and open folds and fewer faults with little to no metamorphism (in the west).

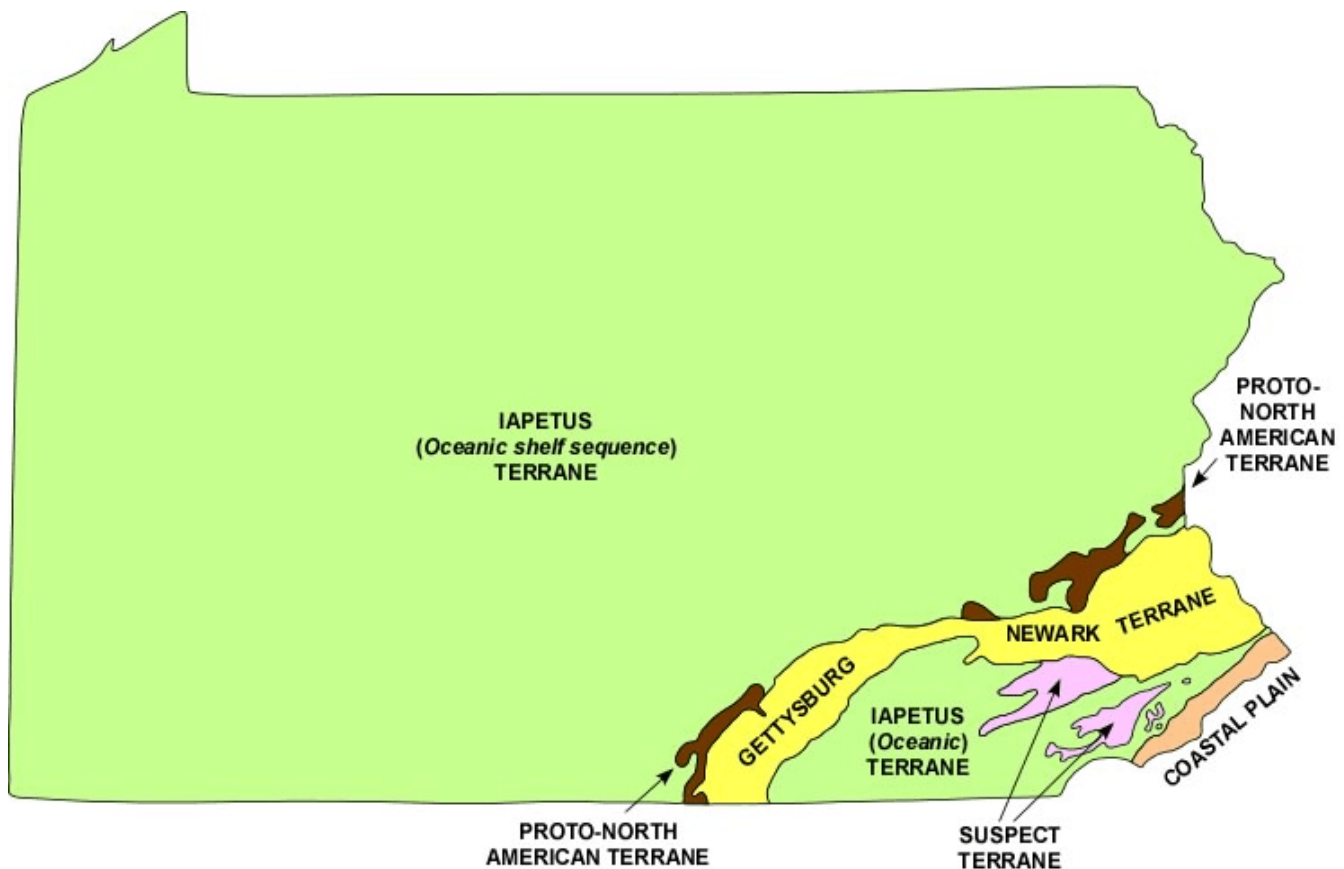
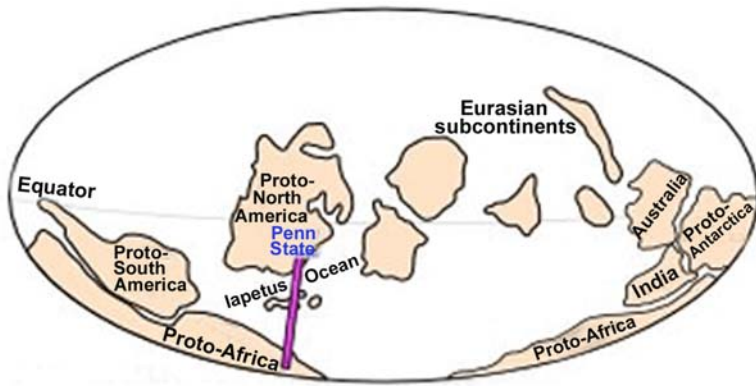
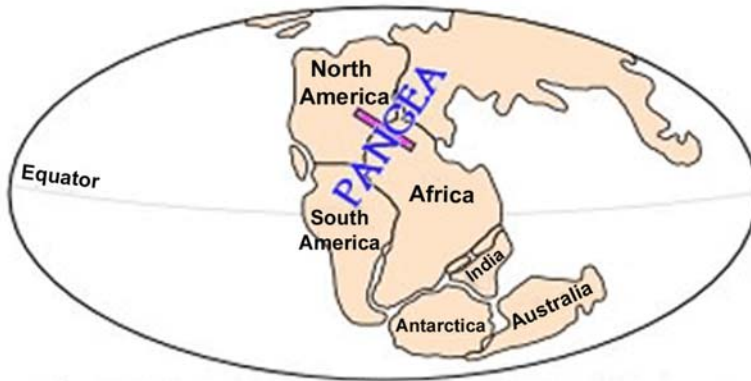


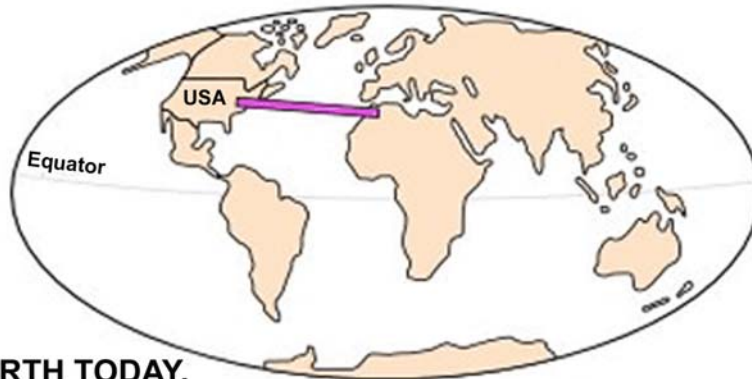
Figure 1. Geological terrane map of Pennsylvania.



THE EARTH, 500 MILLION YEARS AGO.



THE EARTH, AFTER COLLISION, 250 MILLION YEARS AGO.



THE EARTH TODAY.

Figure 2. Illustration showing the ever-changing geography of planet Earth. The slow movement of the continents is called plate tectonics and is the principal force that shapes the world. The purple bar in each diagram connects Penn State to Africa through time. (Adapted from Bell, 1985)

The bedrock of the Commonwealth reflects the continental and oceanic origin and the processes of plate collision. Shortly after the collision ended, at the beginning of the Mesozoic Era or about 235 million years ago, plate tectonic processes reversed. Pangea began to break apart, initiating the opening of the Atlantic Ocean and leaving the members of the Suspect (also called Avalon) and Iapetus terranes welded to Proto-North America here in Pennsylvania and elsewhere along the Atlantic margin of the U.S. During the early stages of the break up, rift basins formed along both sides of the zone where the Atlantic Ocean finally

opened. The Gettysburg-Newark terrane (yellow on the terrane map) in eastern Pennsylvania is the eroded remnant of two connected 'failed' rift basins. The basins contain 200 million year old sedimentary rocks (redbeds or brownstone) and intrusions of diabase (basalt).

Along the south-eastern edge of the state, a belt of relatively unconsolidated sediments known as the Atlantic Coastal Plain occurs (tan on the terrane map, Fig. 1). This material accumulated from erosion of the Appalachian Mountains during the past 10 million years. Since then some of the northern parts of the state were glaciated and received glacial deposits of till (hard pan) and stratified drift (sand and gravel) upon the melting of the last ice sheet some 12,000 years ago – only yesterday in geological terms.

All of the above geological events coupled with constant weathering and erosion, mostly by water, have resulted in the landscapes that we see today in the Commonwealth. Early settlers moving up the

rivers found their travels more difficult when they reached the first rapids or waterfalls at the fall line, but the same feature provided energy for water-powered mills. Nearby landscapes with flat land for building and farming became attractive sites for settlement. This probably influenced the location of some early colonial settlements in the areas of Philadelphia and Trenton, New Jersey. The availability of utilitarian earth materials for products for both building (dimension stone, brick clay) and industry (iron, lead, copper, etc.) and fertile soils for agriculture influenced settlement as well.

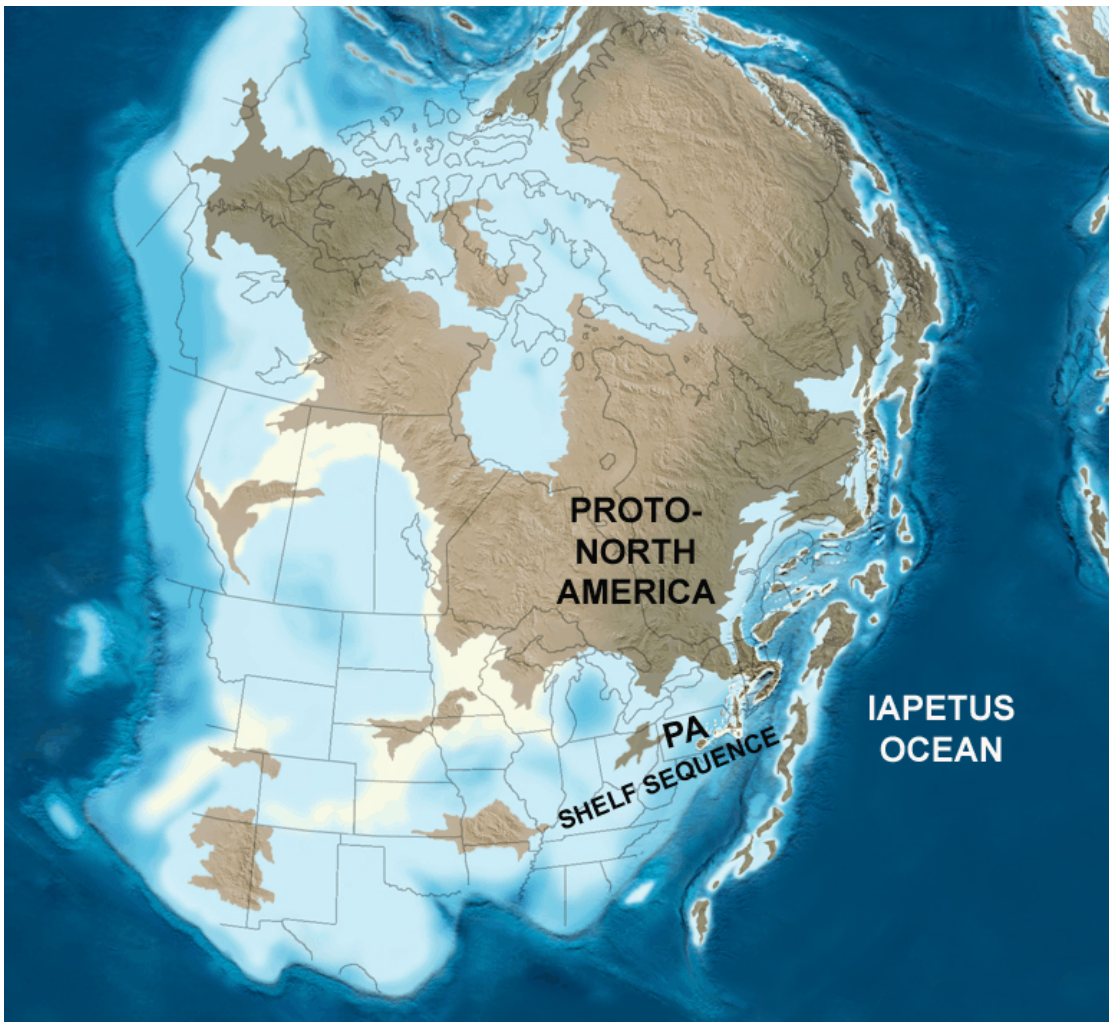


Figure 3. Paleogeographic map of Proto-North America during the Ordovician Period showing subaerial continental crust (basement) and deep water Iapetus Ocean and a relatively shallow water shelf or inland sea connected to the Iapetus Ocean. Note the location of Pennsylvania (PA). Modified from map © Ron Blakey, Northern Arizona University Dept. of Geology, <http://www2.nau.edu/rcb7/namO470.jpg> retrieved on 1/14/2016; permission granted for “educational, non-profit, non-commercial purposes” per <http://jan.ucc.nau.edu/rcb7/RCB.html>

In the beginning, colonial miners sought high value/low volume ores such as gold and silver, typical of early settlement of an undeveloped region. In Pennsylvania, this early search had little success, although significant gold was later produced at Cornwall as a by-product of smelting high volumes of iron ore, according to Barnes and Smith (2001). Later, as population expanded, more utilitarian commodities such as iron, lead, zinc, limestone and building stone were sought. Silver was produced as a by-product of smelting lead ore (galena). As the state developed significantly, low value/high volume commodities such as aggregates dominated the mineral industry as they do today. Specialty commodities such as industrial-grade limestone like that which occurs at Pleasant Gap, and high quality ceramic clay (underclays) associated with coal deposits, also have been valuable products.

The people of Pennsylvania have also turned to natural resources for energy. With the advance of the industrial revolution in the United States in the early 19th century, there came a need for more and more energy. Pennsylvania turned to locally-derived charcoal for smelting iron, and later turned to its abundant coal resources for this and a multitude of other uses. Northwestern Pennsylvania saw the start of the oil industry in 1859, and oil and natural gas continued to be produced through the 20th century. In the current century, natural gas production from different formations and production methods has produced another geological energy “boom.”

Taking a moment wherever you are in the state to view the land and imagine the fantastic geological history that was involved in the formation of the landscape can be awe-inspiring. Picturing the 5,000 foot thick ice sheet that deposited soil in northern parts of the state, or imagining the mountain building forces that folded rock formations in the valley and ridge province, tilting some to vertical orientations, or imagining the rupturing of the rift basin involved in the splitting of the supercontinent Pangea, can be almost as breath-taking as watching the Old Faithful geyser erupt. While Pennsylvania may not have the tallest mountain or the spectacular features of a Yellowstone National Park, it offers a lot.

REFERENCES CITED

- Barnes, J. and Smith, R., 2001, The nonfuel mineral resources of Pennsylvania: Pennsylvania Geological Survey Educational Series 12, 38 p.
- Bell, M., 1985, The face of Connecticut: Connecticut Geological and Natural History Bulletin 110, 196 pages.

Wildacres spring classes

May 9-15, 2016

Speaker-in-Residence: Helen Serras-Herman

from EFMLS Newsletter 53:3, January 2016

Class & Instructor	Description
Beading: Kumihimo With Magmata Beads – Mia Schulman	Quite different than other kumihimo classes. Students will learn a new kumi technique to complete a lovely necklace. 2-day class offered first semester. No prior experience necessary.
Beading: Russian Spiral Necklace Mia Schulman	Using two sizes of seed beads, a lovely spiral pattern develops. Students will complete a necklace which can be worn alone or use to hang a pendant (instead of using a chain.) 2- day class offered second semester. No prior experience necessary.
Cabochons – Basic Bernie Emery	Learn to transform a piece of rock into a shiny, well-formed cabochon. You will learn the use of the trim saw as well as basics of grinding, sanding and polishing. Slabs are provided or students September use their own with approval of the instructor. Please bring an apron and safety glasses. 2-day class offered first semester. No prior experience necessary.
Cabochons - Intermediate Bernie Emery	Learn to cut different shapes and the techniques needed to do so. Slabs are provided or students September use their own with approval of the instructor. Please bring an apron and safety glasses. Prerequisite: Students must have prior experience with capping and use of the trim saw. 2-day class offered second semester.
Faceting Larry Heath	Students will learn to cut and polish a 57-facet round brilliant gemstone. In addition, they will learn how to identify well-cut stones, select rough material and see whether or not they enjoy this fascinating aspect of the hobby. Students are asked to bring an Optivisor (#7 or #9) and an apron. 4-day class. No prior experience
Flint Knapping Michael Miller	The class will focus on replicating tools made by Stone Age cultures. Beginning level students will learn to work flint with percussion and pressure flaking techniques. Projects may include arrowheads, knives, scrapers and survival tools. Students are encouraged to bring any flintknapping tools or knappable (conchoidal fracturing) rock they have to supplement class materials. Leather gloves recommended. Safety goggles will be provided. Prerequisites: none but hand-eye coordination is a must. Nominal class fee will cover a flintknapping tool kit and knapping materials. 2-day class offered both semesters.
Geology I Rob Robinson	A basic introduction to rocks and minerals and the study of the earth. The class will include a discussion and class activity about how geologists interpret rocks to tell geologic history related to their formation, deformation and sequence and timing of events. Weather permitting there will be a field trip to local rock exposures to illustrate local rock types, the deformation types, and how a geologist maps and interprets structures (limited walking is required.) Please bring a loupe or other magnification, hiking boots or sturdy shoes and outdoor clothes for the half-day field trips. Geologic hammer and safety glasses are also desirable. (Do not bring a nail hammer – they are unsafe to hit rocks.) 2-day class offered first semester. No experience needed.
Geology II Rob Robinson	An overview of plate tectonics, geologic history and the geology of the Blue Ridge region and its minerals. We will discuss the geologic environments hosting mineral and gem collecting sites. Come prepared to identify some of your collecting localities to be part of this exercise. Weather permitting there will be a field trip to the Blue Ridge Museum showing local rocks and geologic history and another to see local geology. (A one-mile walk over gentle trails is required for the geology trip.) Some knowledge of basic geology preferred. Please refer to Geology I for suggested tools,. Clothing and magnification. 2-day class offered second semester.
Pewter Fabrication Bruce Gaber	Learn to make functional and decorative objects from a wonderfully versatile metal. Pewter is easy to work and easy to solder. This allows us to make a variety of forms in a much shorter time than working in silver. Pewter finishes can range from a glossy high luster to a deep rich matte. It can be embellished by embossing and by the addition of an etch or patina. Join us as we explore this most ancient and traditional material. Modern pewter contains no lead. 4-day class. No prior experience needed.
Basics of Scrimshaw Sandra Brady	Scrimshaw, a folk art dating back centuries, is a special form of engraving applied to ivory and similar materials. This course offers an excellent way to begin traditional scrimshaw. Working with a hand scribe you will learn attractive shading techniques and how to work on both natural and man-made materials. You will also learn basic composition and tool sharpening, as well as transfer methods for those who are "drawing challenged." An optivisor or other magnification is recommended. 2 day course offered first semester. No prior experience necessary.
Scrimshaw – Color Basics Sandra Brady	Building on the methods taught in the first semester, students will be introduced to color. Again, working on both natural and man-made materials, modern scrimshaw methods utilizing the beauty of color will be explored. Preservation of your art work will be included. Bring an optivisor. 2-day course offered second semester. Prerequisite: Basics of Scrimshaw.
Soapstone Carving Sandy Cline	This class will provide a general introduction to the carving of soapstone. You will develop a working knowledge of the material, tools, safe handling issues and the methods used to complete a carving. You will produce a simple piece and progress to making a more advanced sculpture of your choice. The development of your own personal style will be encouraged. No prior experience needed. 2-day class offered both semesters.

Wildacres Fall Classes

September 5-9, 2016

Speaker-in-Residence: Alfredo Petrov

from EFMLS Newsletter 53:3, January 2016

Class & Instructor	Description
Faceting – Steve Weinberger	Students will learn to cut and polish a 57-facet round brilliant gemstone. In addition they will how to identify well-cut stones, select rough material and see whether they enjoy this fascinating aspect of the hobby. Students are asked to bring an optivisor and/or jeweler's loupe if you have one as well as an apron. 4-day class. No prior experience necessary.
Fused Glass – Advanced Becky Edmundson	Students will learn to use a wet saw to cut shapes, a grinder to smooth the glass, and a jeweler's bit to cut a channel in the piece before it is fire polished in a kiln. You should expect to complete a minimum of two pieces. Students are asked to bring safety glasses and, if you own them, a glass cutter and breaking pliers. No prior experience necessary. 2-day class offered first semester. Note: The advanced class is offered before the basic class because more firing time is needed for the more complex pieces.
Fused Glass – Basic Becky Edmundson	Fused glass is the art of cutting and layering pieces of glass and then firing them in a kiln. Dichroic coated glass gives a 3-D look. Students will learn the basics of cutting and firing the glass and will complete at least two pieces of jewelry. Students are asked to bring safety glasses and, if you own them, a glass cutter and breaking pliers. 2-day class offered second semester.
Jewelry Design Brenda Smith	This is NOT a production class, but a class for those with the technical skills required for their preferred jewelry fabrication method, be it wrapping, chain, beading, smithing, cold connections, stone cutting, enameling, etc. Utilizing your sketchbook, and techniques learned from the class for creating exciting new shapes, this class takes you to the next level by using your skills to create your own, unique, one-of-a-kind designs. There will be homework assignments to enable you to get the most from the class. 4-day class.
Opals – Beginning Cheryl Kasper	In this two day class you will learn to cut opal and get an introduction into looking for and working with color play. Day one will focus on helping you to become more comfortable with cabochoning softer material, and finishing up to 5 cabs you can take with you. Day two will focus on precious opal and working with color play. You will receive a kit that includes a student guide and all materials needed for classwork, including several pieces of common opal and one precious opal to get you started. Additional higher quality opal will be available for purchase if desired. 2-day class offered first semester. No prior experience required.
Opals – Advanced Cheryl Kasper	This two day class will focus on the geological factors that influence working the rare and beautiful precious opal from Lightning Ridge, Australia, and specific techniques for working with this material. Some cabochon (any stone type) cutting experience required. Some opal experience helpful, but not required. All materials needed for classwork, including at least 2 – 3 pieces of low-medium quality opal will be provided. Higher quality opal will be available for purchase. 2-day class offered second semester.

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.

January 23, 2016: 2nd Annual Philadelphia Interclub Mineral and Fossil Swap and Sell. Cathedral Village, 600 E. Cathedral Rd., Philadelphia PA 19128. Sat. only, 9:00-1:00. Contact John Rateike, 215-576-0741

March 5-6 2016: *Where in the World?*, 53rd Annual Gem, Mineral & Fossil Show, by Delaware Mineralogical Society, Del. Tech. & Comm. Coll., 400 Stanton-Christiana Rd., Newark, DE. Sat. 10-6, Sun. 11-5. <http://delminsociety.net/marchshow/marchshow.htm>

March 12, 2016: 40th Annual Micromount Show, sponsored this year by Leidy Microscopical Society. Northminster Presby. Ch., 140 Trenton Rd., Fairless Hills PA 9a.m. - 3 p.m.

March 12, 2016: Midwest Fluorites Sympos. by Friends of Mineralogy Midwest Ch.. Miami Univ., Oxford, OH.

March 19-20, 2016: Gem, Mineral & Jewelry Show, by Franklin County R&M Club. Hamilton Heights Elem. School, 1589 Johnson Rd., Chambersburg PA

March 19-20, 2016: Gem, Jewelry, Mineral & Fossil Show, by Che-Hanna R&M Club. Athens Twp Fire Hall, Sayre, PA. <http://www.chehannarocks.com>

April 2-3, 2016: Philadelphia Mineral Treasures & Fossil Fair, by Phila. Min. Soc. & Del. Valley Paleo. Soc. Lulu Temple, 5140 Butler Pike, Philadelphia PA

April 14-17, 2016: Rochester Mineralogical Symposium, Rochester, NY. <http://www.rasny.org/minsymp/>

April 16-17, 2016: North Rocks! North Museum Gem, Mineral, Fossil & Jewelry Show. Farm & Home Center, 1383 Arcadia Rd., Lancaster PA. Sat. 10-5, Sun. 10-4. <http://www.northmuseum.org/events/>

May 14-15, 2016: World of Gems & Minerals Show, by Berks Mineral. Soc. Leesport Farmers Mkt, Rt 61, Leesport.

May 21, 2016: The Earth Science Show & Sale, by Rock & Mineral Club of Lower Bucks Cty. Fairless Hills, PA., 9 - 4

June 4, 2016: Spring Mineralfest, Macungie, PA Sat. only, 8:30 - 3:00. <http://www.mineralfest.com/>

June 17-18, 2016: Lancaster Cty. Club Show, Quarryville, PA

Geo-Sudoku Solution

E	K	S	C	R	P	Y	T	O
R	O	C	K	T	Y	P	E	S
T	Y	P	E	O	S	K	R	C
K	E	T	P	Y	O	S	C	R
C	S	O	T	K	R	E	P	Y
P	R	Y	S	C	E	O	K	T
Y	P	E	R	S	T	C	O	K
S	C	R	O	P	K	T	Y	E
O	T	K	Y	E	C	R	S	P

Visit us at www.nittanymineral.org

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

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SOCIETY OFFICERS

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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.