

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc.
P.O. Box 10664

State College PA 16805

Editor (see page 8):

David C. Glick

February, 2013

Visit our web site: www.nittanymineral.org

February 20th meeting:

Note the **room change** for this month - **room 119**.

Check our web site for any updates www.nittanymineral.org

Parents must provide supervision of minors.

Are the Exotic Minerals in Carbonatites Evidence for Upper Mantle Pegmatite Analogues?

by Dr. David (Duff) Gold

Emeritus Professor of Geology

The Pennsylvania State University

Our February meeting will be held Wednesday the 20th in room 119 of Earth & Engineering Sciences Building on the west side of the Penn State campus in State College, PA. Maps are available through our web site.

6:30 to 7:30 p.m.: Social hour, refreshments in the lobby

7:30 to 8:00 p.m.: announcements, questions, answers; door prize drawings

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.***

In addition to the dominant carbonate minerals, common minor minerals include sodian augite, sodian richterite, biotite and vermiculite, magnetite, apatite, monticellite, melilite, melanite and kinseyite (Zr garnet), nepheline, and accessory pyrochlore, bastnaesite, badleyite, fluorite, barite, strontonite, monazite, niocalite, lueshite, perovskite, la trappite, titanite, zirconolite, ancylite, synchisite, parisite and xenotime. Some biotites are enriched in barium and some garnets are zirconium rich. Most of the apatites are enriched in rare earth elements and a discrete thorium phosphate (britholite) has been found at the Oka Carbonatite in Quebec. Phalaborwa, in South Africa contains sufficient copper (bornite, chalcopyrite and chalcocite and vallerite) to mine. Alteration products include serpentine, celadonite and wairakite. A zone of supergene enrichment in carbonatites weathering under tropical conditions may contain fersmite, brockite, rhabdophane, churchite, gorceixite, goyazite, florescite, anatase, ferranite, hewittite, montroseite and navajoite as potential ore minerals.

Continued on page 2

ATTENDING THE FEBRUARY MEETING?

Donations of labeled **door prize specimens** are invited.

Your donated snacks and drinks will be welcomed.

Bring a friend!

No Junior Rockhounds Meeting

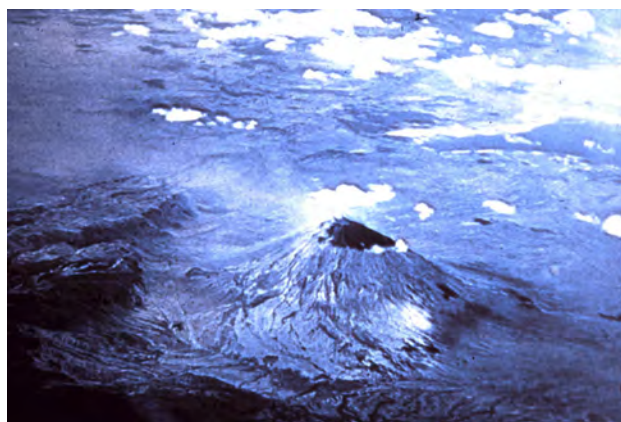
We deeply regret that there will be no Juniors meeting in February, as we are still working on the schedule and a meeting place. We do hope to have it all resolved in time for a March meeting. Please watch our web site <http://www.nittanymineral.org> and the March issue of this Bulletin for news.

- Editor

Minerals Junior Education Day

We haven't finalized the location yet, but we're close, and we need to move ahead with planning. The tentative date is Saturday, April 6. If you have an idea for a station you'd like to present, or are available to help in other ways, please contact Dave Glick (814-237-1094, leave a message; or e-mail xidg@verizon.net). Donations of identified specimens of minerals, fossils or rocks, or books and other earth-science-related items which could be sold at child-friendly prices would also be greatly appreciated.

- Editor



Mt Oldonyo Lengai, an active natro-carbonatite volcano in Tanzania.



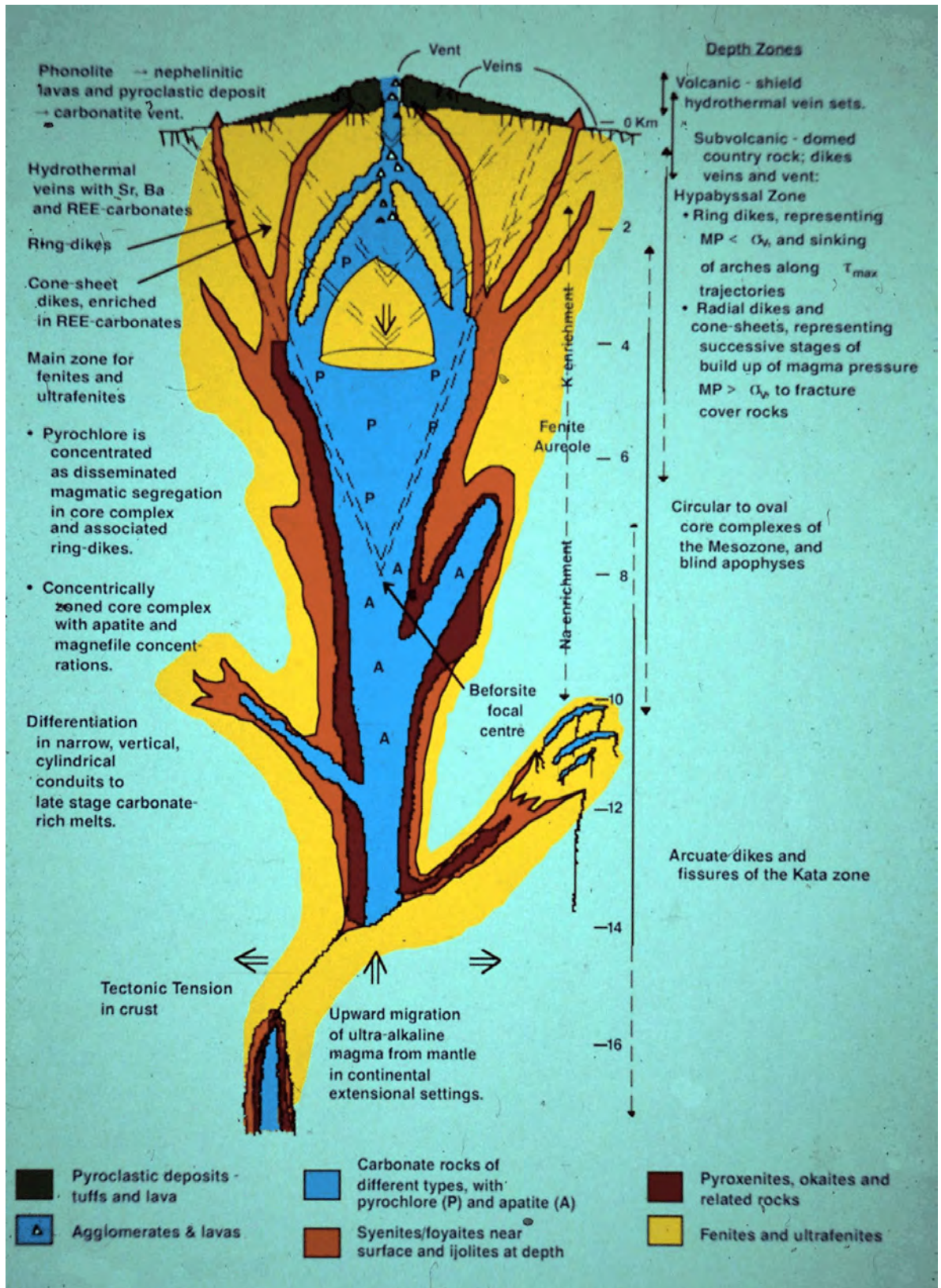
A small volcanic edifice, Kalyonga, a calcium carbonate volcano in Uganda.

Minerals in Carbonatites

Continued from page 1

Except for lithium they share a geochemical signature for an enrichment of the fugitive elements Ba, Sr, Ti, P, RE, Nb, Ta, Th, Zr with granitic pegmatites. These elements accumulate in late fractionating melts in magmas because their anomalous charge and/or ionic radius renders them unsuited by geometry or charge to fit well into the common silicate minerals. Other evidence includes the presence of large crystals of calcite with quench and spinfex textures, and a strontium and neodymium isotopic signature close to that of bulk earth.

Carbonatites are rare deep-seated volcanic edifices that tend to be associated with rift settings on continental cratons. They are the main repositories of the Space Age High Tech (SAHT) elements (super magnets, cell phone and electronic components), the high temperature-high strength niobium steel (used in jet engine turbine blades and the skin for space rockets and vehicles, and pipe-lines), as well as some industrial minerals (vermiculite,



and phoscorite fertilizers).



Geode Night Planned for March 20 Plus Other News

by David Glick, NMS President

As we work on our meeting and event locations, we are planning to have Geode Night as usual in Earth & Engineering Sciences Building on Penn State's University Park campus. Please watch for details and updates on our web site <http://www.nittanymineral.org> and in the March Bulletin.

We are still searching for a door prize coordinator and a refreshments coordinator for our monthly meetings on campus. Since we don't generally have either of those activities at Geode Night in March, the duties would start with the April 17th meeting. Please contact me (see p. 8) if you might be able to help.

This Bulletin is being done in even more haste than usual, so we hope you'll excuse any minor errors. And if you ever receive a printed Bulletin that isn't printed well and you'd like a replacement, just ask.

Geo-Sudoku

by David Glick

This puzzle contains the letters BCEIKORST, and one row or column includes one of the minerals formed by weathering of carbonatites (see p. 1). 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.

	C		I	E	S			R
		R	T				B	E
E			O					
R	I		B					T
		C	S		E	K		
							O	
		E		B	T		I	
	T	I	E	S	O		K	
	R		C				E	S

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 February issue starts with an invitation to the EFMLS Wildacres Workshops for 2013, and a registration form and Spring and Fall class lists are provided. The Fall Speakers-in-Residence are announced: Quintin and Willow Wight. He's the author of the classic reference *The Complete Book of Micromounting*; she's a Research Associate in Gemology at the Canadian Museum of Nature. President Cheryl Neary discusses Wildacres, safety, hearing about the Tucson Show, and more. Ellery Borow's safety article covers hearing protection. Darryl Powell has a variety of ideas for Juniors activities. The ALAA update concerns collecting meteorites on public lands. The EFMLS Convention and Show will be held June 1-2 in Smithtown (Long Island), New York, with the EFMLS Annual Meeting Friday evening, May 31. Another article describes how the Connecticut Valley Mineral Club recovered when their show venue cancelled their reservation.

The **AFMS Newsletter** is available by the same methods. The February issue opens with photos of several items in the Endowment Fund drawing, to be held Sept. 20-22 at the AFMS Convention in Jacksonville, Florida. Tickets are \$5 each or five for \$20. A Presenter's Manual for those giving presentations to juniors is suggested. Entries for the AFMS Program Competition are invited, and some tips are provided; guidelines and entry form are included in the issue. Several Club Rockhounds of the Year are introduced.

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

NMS Visits Academy of Natural Sciences of Drexel University in Philadelphia

by David Glick and Ellen Bingham; photographs by David Glick

Nittany Mineralogical Society was grateful to be invited by Dr. Ted Daeschler for a behind-the-scenes tour of the mineralogical collections. Five members made the trip on Thursday, January 31. We arrived in late morning, had lunch at the Academy café, and had some time to see the public displays. The Academy was founded in 1812, and currently dedicates one exhibit hall to *The Academy at 200: The Nature of Discovery*. Among its wide variety of subjects, it includes minerals and fossils, shown on these pages.

We met Dr. Daeschler as planned in the early afternoon, and went "behind the scenes" to the storage room for the mineralogical collections. We were also accompanied by Fred Mullison, volunteer from the Philadelphia Mineralogical Society, and Phoebe Martinson, museum intern from the Germantown Friends School. We

saw many large new heavy-duty metal cabinets from Delta Designs Limited; Dr. Daeschler and volunteers have been



NMS members examine fossils and minerals in *The Academy at 200: The Nature of Discovery* exhibit



The Academy's 200th anniversary display gallery includes some large and impressive mineral specimens. This wall display is about six feet tall (see photo at left).



"Nine mineral specimens from the Lewis and Clark Expedition. The minerals include two coal clinkers (the residue from burning coal) and seven gypsum specimens."



Devonian lobe-finned fish fossils from northern Pennsylvania, from Dr. Ted Daeschler's research.



A large gallery near the Academy's entrance displays many dinosaur fossils.

working over the last few years to transfer specimens and their labels to individual acid-free trays in the drawers of these cabinets.

We started by viewing the Academy's oldest collection, assembled by Adam Seybert and acquired for

the Academy at its founding in 1812. It has remained intact through the years, and like the larger William Vaux collection which we examined next, is historically important to illustrate what minerals were available and being collected at the time, as well as preserving those specimens as a record of mineralogy.

We saw many specimens from classic localities around the world, and many from Pennsylvania. The quality, variety and number bring to mind the words "impressive" and "striking." The recent efforts at preserving the specimens in up-to-date trays and cabinets also contribute to a great experience in viewing the collections.

References:

Academy of Natural Sciences web site:

<http://www.ansp.org/>

Seybert and Vaux collections:

<http://www.minrec.org/labels.asp?colid=852>



Large fossils in the 200th Anniversary display



Among the Academy's other displays are many life-size dioramas of wildlife in their habitats.



Dr. Ted Daeschler conducts the tour, showing us specimens from the William Vaux collection in their new cabinets.



Azurites from Bisbee, Arizona.



Pennsylvania beryl in the William Vaux collection



Fluorites from England, including Weardale



A very impressive cluster of deep pink rubellite (tourmaline group), white cleavelandite and clear quartz crystals from Brazil. See photo below for scale.



A clear blue topaz crystal from Brazil



Pyromorphites, including specimens from Pennsylvania.



COME INTO THE WILD(ACRES)

by Steve Weinberger, Wildacres Committee Chair
from February 2013 EFMLS News, v. 50, no. 4

As I write this our neighborhood deer herd forms a stark contrast to the snow on the ground as they forage in our wooded backyard. Although a beautiful scene, I can't help but turn my thoughts towards springtime and the chance to head off to see the spring blossoms that always greet us upon our arrival at Wildacres.

Not yet been to Wildacres? Are you ever missing a treat! Wildacres Retreat is a conference center that offers its facilities to non-profit groups such as the EFMLS who conduct educational or cultural programs.

Situated on 1,600 acres on a mountain just off the Blue Ridge Parkway in Little Switzerland, NC (about an hour north of Asheville), the center includes a variety of classroom and meeting spaces, and about 60 double-occupancy bedrooms, each with a private bath. EFMLS has use of Wildacres twice each year and 2013 will be no exception.

In a nutshell...Wildacres is a fabulous place to take classes in lapidary, jewelry making, photography, etc.!!!

Each of our sessions features a guest speaker plus a line-up of interesting classes for participants to choose from. A complete list for each session can be found elsewhere in this issue (or on our web site <www.amfed.org/efmls>).

Spring (April 8-14) will see the arrival of none other than Bob Jones, Senior Editor of *Rock & Gem Magazine* as our Speaker-in-Residence. Bob will provide all of us with six fabulous talks including some about his adventures around the world. He'll be joined by his wife Carol, an exceptional jewelry artist. Bob really needs no introduction other than to say that he's a marvelous person and speaker and that we're in for a treat.

In fall (September 2 - 8), Quintin and Willow Wight from Canada will join us as Speakers-in-Residence. Willow is a Research Associate in Gemology at the Canadian Museum of Nature, editor emeritus of the *Canadian Gemologist* and Canadian delegate to the International Gemmological Conference. As delegate, she and husband Quintin have travelled extensively throughout the world. Willow also had an opportunity to work at the Smithsonian where she examined, verified and catalogued the national gem collection.

Quintin, retired from the Royal Canadian Air Force is a well respected micromineral collector and author. His book, "The Complete Book of Micromounting" is the classic reference. He has published numerous articles on mineral related subjects and presented numerous talks to groups throughout North America, and in Europe, New Zealand and Africa. Inducted into the Micromounters Hall of Fame in 1990, he now coordinates the Hall of Fame for the Baltimore Mineral Society.

So what are you waiting for? Registrations for both sessions are now being accepted and since class size is limited, we suggest that you register NOW so you won't be disappointed.

Want more information? Visit our web site (www.amfed.org/efmls) or the Wildacres web site or contact us at <info@efmls-wildacres.org>. We promise that you won't be disappointed. *

35th Annual Gem- Mineral & Jewelry Show

**Jewelry - Gemstones - Minerals
Fossils - Displays - Door Prizes
Hamilton Heights Elementary School
1589 Johnson Road
Chambersburg, PA**

Directions: Exit 16 off Interstate 81 at Route 30 West. Travel through Chambersburg 2.2 miles to traffic signal at Sollenberger Rd. Turn right on Sollenberger Rd and go 1.0 mile to Johnson Rd on right. The school is .3 mile on the left.

March 23 & 24, 2013

Saturday 10 am- 5 pm Sunday 10 am- 4 pm

Admission \$4.00

Children under 12 free with adult

44th ANNUAL GEM & MINERAL SHOW Presented by

Che-Hanna Rock & Mineral Club, Inc.

A 501c3 not-for-profit organization

MAR. 23, 2013 9 a.m. – 5 p.m.

MAR. 24, 2013 10 a.m. – 4 p.m.

ATHENS TOWNSHIP VOL. FIRE HALL
211 HERRICK AVENUE, SAYRE, PA

Outstanding Geological Exhibits Presented by

Carnegie Museum of Natural History and
Paleontological Research Institute

Special Exhibit & Silent Auction by Carnegie Museum
Fossil Exhibit by Paleontological Research Institute

Demonstrations of Cabochon Making,
Geode Cutting And Faceting

Fluorescent Mineral Programs by UV-Bob

--- Fossil ID by Bill Klose ---

Exhibits of Minerals, Gems, & Indian Artifacts
Mini-mine for Kids

Dealers with Minerals, Gemstones, Fossils,
Jewelry and Hobby Supplies
Door Prizes

Food Available on Premises

Donation Requested: Adults \$3.00

* Students \$1.00 ** Under 8 Free *

See <http://www.chehannarocks.com/show.html>
for driving directions and more

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.

March 2-3, 2013: 50th Annual Gem, Mineral & Fossil Show, "All That Glitters Is As Gold," by Delaware Mineralogical Soc., Del. Tech. & Comm. Coll., Stanton, Del. <http://www.delminisociety.net/marchshow.htm>

March 23-24, 2013: Gem, Mineral & Jewelry Show by Franklin Cty Rock & Mineral Club, Chambersburg, PA. See p. 7.

March 23-24, 2013: Rock & Mineral Show by Che-Hanna Rock & Mineral Club, Athens Township Volunteer Fire Hall, 211 Herrick Ave., Sayre, PA. See p. 7. <http://www.chehannarocks.com/show.html>

March 23-24, 2013: Western Massachusetts Mineral, Jewelry & Fossil Show by Connecticut Valley Mineral Club. **New Location:** Clarion Hotel & Conference Center, 1 Atwood Dr., Northampton, Mass. Sat. 9:30-5, Sun. 10-4. <http://www.westernmassmineralshow.com/>

April 6-7, 2013: Philadelphia Mineral Treasures and Fossil Fair, by Philadelphia Mineralogical Society and Delaware Valley Paleontological Society, Lulu Temple, 5140 Butler Pike, Plymouth Meeting, PA. <http://www.philamineralsociety.org/> <http://dvps.essentrix.net/>

April 18-21, 2013: Rochester Mineralogical Symposium <http://www.rasny.org/MinSymposium/MineralSymp.htmciety.org/>

May 11, 2013: South Penn Spring Rock Swap, by Central PA and Franklin County R&M Clubs; South Mountain Fairgrounds, 1.5 miles West of Arendtsville, PA on Rte. 234.

May 18-19, 2013: World of Gems and Minerals - Jewelry, Bead, Mineral and Fossil Show, by Berks Mineralogical Society. Leesport Farmer's Market, Route 61, Leesport, PA. <http://www.berksmineralsociety.org/>

June 1, 2013: Spring Mineralfest by Pennsylvania Earth Sciences Association. Macungie Mem. Park, Macungie, PA. Saturday only 8:30 - 3:00. www.mineralfest.com

June 1-2, 2013, Eastern Federation of Mineralogical & Lapidary Societies Convention, and Suffolk Gem and Mineral Club Ann. Show, Smithtown, New York. EFMLS Meeting May 31.

Sept 14-15, 2013: CPRMC Show, Harrisburg

Sept. 20-22, 2013: American Federation and Southeast Federation Conventions, Jacksonville, Florida.

Oct. 26, 2013: South Penn Fall Rock Swap, by Central PA & Franklin County R&M Clubs; South Mountain Fairgrounds, 1.5 miles West of Arendtsville, PA on Rte. 234.

Geo-Sudoku Solution

K	C	B	I	E	S	O	T	R
I	O	R	T	C	K	S	B	E
E	S	T	O	R	B	I	C	K
R	I	K	B	O	C	E	S	T
O	B	C	S	T	E	K	R	I
T	E	S	K	I	R	B	O	C
S	K	E	R	B	T	C	I	O
C	T	I	E	S	O	R	K	B
B	R	O	C	K	I	T	E	S

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 prorated 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 to

Nittany Mineralogical Society, Inc.

P.O. Box 10664

State College, PA 16805

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: raltamur@fscj.edu

John Passaneau (Treasurer) 814-231-0969 (h),

e-mail: jxp16@psu.edu

Ellen Bingham (Secretary) e-mail: emb22@psu.edu

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!*

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

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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