

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc.

P.O. Box 10664

State College PA 16805

Editor (see page 8):

November, 2009

Visit our web site: www.ems.psu.edu/nms/

David C. Glick

November 18th meeting:

6:30 p.m. to ~9:00, at a special location:

Annual Holiday Social & Sale at Prospector's Restaurant

by David Glick

Our November meeting will be held Wednesday the 18th at 6:30 p.m., in the private room of Prospector's Allegheny Rib Company at 2080 Cato Avenue, just off West College Ave. (PA 26 South) across from Harner Farms. See directions on this page.

The event has free admission, free parking, and free refreshments, and is open to all – please come, bring your family and guests, and share an enjoyable evening! -Editor

Our November meeting will be our annual Holiday Social & Sale. It is open to all NMS members and guests; admission is free to all. It will be at Prospector's restaurant (directions at right); our event will be in the private room (from the front door, it's straight ahead to the back section, then turn right and continue to the room). Doors will open at 6:30 p.m. and close at about 9:00 or later; everyone may come and go on their own schedule.

We have arrangements with three NMS members to have a variety of items for sale. Willard Truckenmiller will have lapidary rough and slabs, polished stones and more. His material generally includes materials from some old-time collectors in the western U.S., such as plume agate, Biggs jasper and petrified woods. Ruth Park will have semi-precious stone necklaces and bracelets, fun glass, and nice cultured pearls. Tim Holtz' Rock World will be selling mineral specimens and a variety of quartz crystals (including some large crystals). We thank them for participating and adding to our event, and for providing a portion of their sales to NMS. Any other current NMS members with Pennsylvania sales tax licenses who would like to participate should contact David Glick immediately (see page 8).

The club will have for sale NMS T-shirts, mineral sets, and posters. Also, NMS will have a small silent auction of Michigan native copper specimens donated by Mrs. Jean Carpenter. We do not plan to have door prizes at this meeting. Snacks and appetizers from the restaurant will be provided by NMS, and individuals can order beverages and food in the room. Members are allowed to bring other party food, particularly your favorite holiday baked goods or dessert items; they can also be brought for our December meeting (see page 2). Of course the restaurant and bar are

available to attendees throughout the evening; you can enjoy a full dinner in their dining room before, during or after the event. They are open all evening.

We hope you can make it. Each year we have a good time socializing while selecting from the interesting items for sale. *

ATTENDING THE NOVEMBER MEETING?

This event is free and open to all - bring a friend!

No door prizes this month - bring them next month.

Your donated snacks will be welcomed.

Junior Rockhounds:

Next Meeting on Dec. 14th

Junior Rockhounds meetings are scheduled for 7:00 p.m. on the second Monday of the month this fall. The final meeting will be on December 14. The location is room 117 of Earth & Engineering Sciences Building, Penn State's University Park "West Campus." This is the same location as the last couple of years, and the same building as our regular meetings.

Each month's meeting has a new topic or topics with fun, hands-on learning for the kids. We encourage those who attend to become NMS members, but it's not required. Just \$7.00 covers a whole year (through October 2010) of student membership. Parents may get a lot out of the meetings, too! Check the web site for news, or contact Dr. Andrew Sicree (see page 8). - Editor

Directions to Prospector's for the November meeting

From downtown State College, Atherton Street & College Avenue near campus: go "west" on West College Avenue (PA Route 26 South) away from town 3.0 miles. Just past Dix Honda, turn left on to Cato Avenue, then immediately turn right into the parking lot. If you're still on West College when you get to State College Ford and Sheetz at Whitehall Road, you've gone too far. - Editor

PLEASE PAY DUES

A form is enclosed if we have not received your payment. This will be your last printed Bulletin unless we receive your membership dues. We hope you will renew!

- Editor

More NMS News Inside...

Don't Miss It!

December 16th meeting:

Flintknapping

For our December meeting, we'll be back at Earth & Engineering Sciences Building for a program on flintknapping. Because of the overlapping interests, we are arranging for this to be a joint meeting with the Bald Eagle Archaeological Society. We'll take that occasion to provide beverages, cheese and crackers, etc., and members are invited to bring their favorite holiday snacks to share.
- Editor

Tax-deductible donations welcomed

by David Glick, NMS President

NMS received 501(c)(3) status from the IRS during 2008, which means that your donations to NMS are tax-deductible. Your donations will help fund our educational purpose and programs. Please make checks payable to 'NMS, Inc.', include a memo noting that it is a donation, and send to the P.O. Box (in banner on front page). Or contact the president or treasurer (see p. 8) for more information.

Minerals to school students

The idea has been raised to provide a gift of a mineral specimen to each student in a school. To advertise and raise interest, we would distribute specimens broadly in order to reach all interested children. A volunteer is needed to look in to how this might be accomplished.
- Editor

Minerals Junior Education Day Volunteer Needed

We are planning for our 12th annual Minerals Junior Education Day in spring 2010. We hope to have it on Saturday, April 10, although the date won't be definite until we are able to reserve the site.

A volunteer is sought to organize the event under the Board's direction. That would involve arranging for about eight stations on a variety of topics including minerals, their properties and uses, fossils, geology and its applications, gems, gold, etc. Each station is staffed by people who can discuss the topic; some sort of hands-on activity for the students is very desirable, as is a pertinent specimen for each student to take home. We do have a number of people who are willing to present stations, so it's mostly a matter of contacting people early and arranging for who will do what part. NMS can help acquire the giveaway specimens if we have enough advance notice of what is needed.

Publicity and an advance registration method and personnel are also needed. If you are interested in organizing this, or have an idea for a station, etc., please contact Dave Glick or another Board member (see p. 8).
- Editor

A Note from the President

by David Glick

Elections were held at the annual meeting of the corporation on October 21st. I thank everyone who attended and participated, and thank and welcome Ellen Bingham, our new Secretary.

I was saddened by the passing of June Culp Zeitner (see News from the Federations on page 3). She was there at the start of the post-WWII boom in mineral collecting and lapidary as a hobby, and her writing brought awareness of it to huge numbers of people. Interest grew immensely during the period that she was writing, and she was certainly responsible for some of that growth. For baby boomers, her books came at just the right time. I always found her style, which incorporated travel and the pleasure of discovery, collecting, and sharing, to be very enjoyable. The Rockhound Hall of Fame in South Dakota, which I visited a couple of years ago, is a lasting institution which arose from her work.

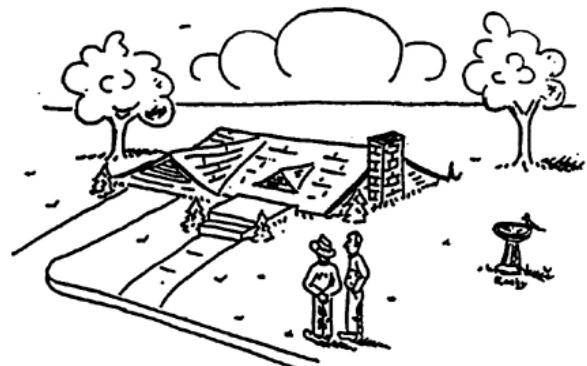
We could still use volunteers for appointed positions involving publicity, meeting refreshments, and more. Please contact me if you might be interested.

Please pay those dues! Thank you!

*

Nittany Gem & Mineral Show June 26 - 27, 2010

We have confirmation of our reservation of Mount Nittany Middle School for our show on June 26-27, 2010 (set-up on Friday the 25th). Dealer contracts will go out soon, after we update some wording. Please mark the date on your calendars to volunteer and/or attend, and tell your friends.
- Editor



**I Knew Ole Rocky Was Getting
Too Many Rocks In His Basement!**

by Rocky West in the T-Town Rockhound 7/61
via Beehive Buzzer 10/98 & others

From SCRIBE 2008 CD-ROM

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.ems.psu.edu/nms/ or remind Dave Glick to bring a printed copy to a meeting for you to see.

The November issue notes that club insurance available through EFMLS has not increased in price for the coming year [NMS has already sent in our payment] New EFMLS President Loren Patterson introduces himself and his involvement in collecting and lapidary. EFMLS Treasurer Lou Buddell is the recipient of the Citation Award, the federation's highest honor. The safety article is a "short and sweet" list of some of the most important safety rules. Awards for competitive displays at the Bristol convention are described, and more displays for the March 2010 convention in Delaware are invited. The Club Rockhound of the Year, Each One Teach One, AFMS Scholarship, Membership awards, and Web Site Contest Programs are covered. New AFMS VP Matt Charsky provides an article explaining the relationship between AFMS and EFMLS. Editors' Contest results are reported, as are results of the recent fundraiser drawing for the Eastern Foundation Fund. NMS's own John Passaneau won a wire-wrapped ammonite pendant. The mystery prize was a handcrafted clock made from a Brazilian agate slab.

June Culp Zeitner, the "First Lady" of rockhounding, died on October 11, 2009. From the 1940s into the new millennium, she was a prolific author of books about collecting localities (such as Appalachian Mineral and Gem Trails, of particular interest to those in our area) and columns and articles in *Lapidary Journal* and *Rock and Gem* magazine. Contributions in June's memory can be made to the AFMS Scholarship Foundation. Please see the newsletter for more about her, and about contributions.

The **AFMS Newsletter** is available by the same methods. The October issue includes some topics already covered in the October EFMLS notes last month. Joy Bourne reports on a very successful AFMS Convention in Billings, Montana. The 2010 AFMS endowment fund drawing is introduced. The juniors article suggests programs and projects related to the proposed birthstone postage stamps. Fran Sick, Public Relations Chair, presents key elements in producing good publicity material. John Martin introduces himself as the new Conservation & Legislation Chair, and asks to be notified about proposed or

pending legislation or legal action of interest to rockhounds.

The November AFMS issue starts with coverage of the All-American Club Yearbook project. The safety article warns of those quick stops to look at rocks, for which we might not have our safety equipment and our safe-operating frame-of-mind in order. The 2010 Bulletin Editors' Contest and the Program Contest are introduced. Lilian Turner is honored; she passed away in September, and had been active in the approval of the two US postage stamp issues showing minerals; with the Smithsonian, particularly regarding diamonds and jade; and with display awards for juniors both nationally and in her local club in Maryland. The juniors article addresses ways of supporting school geology clubs, or local clubs specifically for juniors.

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

November 14th *Final Sale of Wintringham Collection* From Ron Kendig

We are announcing your final opportunity to purchase a part of the Neil Wintringham collection. The sale will be held *Rain or Shine* Nov. 14 at the Sterling Hill Mine, Ogdensburg, New Jersey. <<http://www.sterlinghillminingmuseum.org>>

! Sales start at 900 AM and go til around 300 PM. We suggest you arrive early so you don't miss any treasures. Items will be outside under the pavilion and inside next to the snack area.

! Call Auction by Auctioneer Dick Hauck includes extraordinary or unusual specimens.

! Silent Auctions will feature many old books and pamphlets.

! As the day progresses, prices will be discounted. Whatever is not sold by the end of the day is being donated to the Hudson Institute of Mineralogy. <<http://www.hudsonmineralogy.org>>

Neil was a mineral collector for over 70 years. During this time he amassed thousands of mineral specimens. He collected all sizes, varieties and quality, from micro to macro. Most have not seen the light of day for over 50 years. Many are from sites closed to collecting and specimens hard to acquire. There are also still hundreds of specimens besides the micromounts. Neil was an avid reader with a library of over 1600 titles. Since Neil was active in collecting at Sterling Hill, this is an appropriate farewell for him.

Join us on the 14th; take a mine tour, collect on the dumps, and of course buy minerals and books! We are attaching a flyer for the sale, if you cannot access it or have questions, please contact us. *

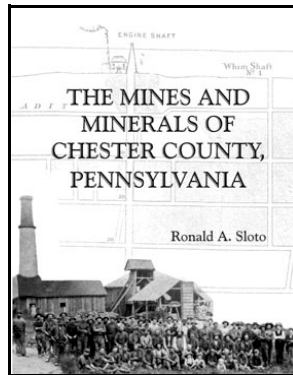
Just Published:The Mines and Minerals of
Chester County, Pennsylvania

by Ron Sloto

I have written a book (just published on September 30) about the Mines and Minerals of Chester County, Pennsylvania, which has many notable localities – Wheatley mine, French Creek mine, Brinton’s quarry, Cornog quarry, Unionville corundum mines, and the Parksburg rutile area, just to name a few. This book is the result of a 30-year research effort and pulls together over 200 years of history and mineralogy for Chester County mines and mineral localities.

The book was privately printed, and only 300 copies are available. My main goal is to get the book into the hands of those who are interested in Chester County mineralogy. It is not a profit-making venture; I am hoping only to recoup my printing costs. It was written as a reference book and includes an extensive bibliography, maps showing the locations of the mines, and cross-references for mine names and minerals. I am an experienced author. I work for the U.S. Geological Survey and have over 70 papers and publications to my credit; however, only a few are on minerals.

Ordering information and examples of some of the color illustrations are at <http://rasloto.com/book/> ❄



Quartz (Herkimer “diamond”), St. Johnsville Quarry, St. Johnsville, Montgomery Co., New York. 2 x 2 x 1 cm.

J. Passaneau photo, using procedure described in article.

Photos to be Displayed at EMS Museum

By John Passaneau

Penn State’s Earth and Mineral Sciences Museum will have a photo display of ten of my mineral specimen photographs. It will be in the hallway in the ground floor of Deike Building at the Museum rooms. It should be up around November 21; there is no fixed end date.

The camera I used for some photographs is Canon Digital Rebel, a 6-megapixel camera, and now a Canon 40D, a 10-megapixel camera, plus several different macro lenses. The real workhorse is the software. These pictures are made up of between 5 and 19 separate exposures, each taken at a different focal point to cover the whole depth of the specimen. These photographs are then assembled in a program called Helicon Focus that extracts the parts of each photograph that are in focus and makes one photographic file out of those parts. This file is then processed through Adobe Photoshop and other add-on software to make the final image. The printer used for most of these photographs is an Epson R1099. The quality is the result of careful calibration to get the most out of the equipment. This process allows me to make photographs that would be difficult or impossible in conventional photography. These are not Photoshop creations, other than the focus stacking, no techniques are used that would not be normally used by anyone wishing to get the most out of their photography. Finally, technology has caught up with my vision and I can make the photographs I have always wanted.

The gallery at <http://www.personal.psu.edu/jxp16/> has many additional photographs. ❄



Some example photos from Ron Sloto’s Chester County book, used by permission.

Students Visit Collection

by John Passaneau

I can't think of a greater pleasure in having a rock collection than sharing it with someone, unless it's sharing with kids. On October 29th I had the great pleasure of a visit by nine kids from the Nittany Valley Charter School and their two instructors. They were a very lively and enthusiastic group. They were using the field trip to my collection as part of their earth science studies. It was a trip when each one entered my basement rock room every one of them said "WOW." I spent the next hour or so showing off points of interest in my collection and answering their many questions. A few had brought specimens with them and asked if I could tell them what they were. We ended the visit by turning off the lights and looking at my fluorescent minerals. I took a group photo just before it was time for them to leave and I gave each one 2 plastic bags with a pyrite specimen and a magnetite crystal. On Nov 4th in the mail I received a package with thank you notes from all nine of the students and one from their teachers. It was a big kick to read the kids notes and see in their own words what interested them most about the visit. I hope to see more kids in the future. ✨



Students visit John Passaneau and his mineral collection.
J. Passaneau photo.

New book coming soon:

Myth, Legend, Reality: Edwin Laurentine Drake and the Early Oil Industry

by William R. Brice, PhD.

"Here is the true story behind the legends surrounding Colonel Edwin L. Drake, who drilled a successful oil well in the wilderness of western Pennsylvania in 1859 that launched the modern petroleum industry." Order at www.oil150.com/store/ under "Publications."

- Editor

Weird Geology: Diamonds in Space

by A. A. Sicree

Not all diamonds on the Earth are native to our planet. Some meteorites are known to contain diamonds. Some of these extra-terrestrial diamonds formed when asteroids collided with each other. Because of their great speeds, the shock wave of the collision is so intense (high pressure) that graphite in the asteroid is changed into diamond. "Shock diamonds" are at most only one- to two millimeters in size and are typically highly fractured. Fragments of asteroids that land on the Earth are called meteorites.

Some meteoritic diamonds, however, are older than the asteroids. Indeed, they may be older than our solar system! They formed when the star that was the precursor to our Sun went supernova and spewed out the elements that subsequently built up our sun, the planets, and the asteroids. These "presolar" diamonds – even smaller than shock diamonds – got caught up in the formation of the asteroids, and were later carried to the Earth in meteorites. These diamonds are studied for clues to the origins of our solar system.

If you desire a truly humongous diamond, you must venture beyond our solar system. White dwarf stars are the remnants of burned out suns and they're composed of carbon and oxygen. Recently, while studying a white dwarf star (technically named BPM 37093) located 50 light-years from the Earth in the constellation *Centaurus*, astronomers from the Harvard-Smithsonian Center for Astrophysics determined that the core of the Earth-sized little star had solidified into diamond. "The interior of this white dwarf has solidified to form the galaxy's largest diamond," reported astronomer Travis Metcalfe. This diamond is 2,500 miles (4,000 km) across and weighs 3 million trillion trillion times more than the 3106-carat (five carats equal one gram, so the stone was approximately 1.3 pounds) Cullinan, the largest diamond ever found on Earth!

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10 years ago in NMS

In November 1999, the meeting program was "Lime and Lapis: Minerals in the Medieval Artist's Palette," presented by Master John the Artificer and Master Brendan Brisbane (also known as John Rose and Robert Rich). Minerals Junior Education Day had been held in October, with over 200 students and their parents taking part.

- Editor

Popular Mineralogy

Interesting mineralogy and earth science for the amateur mineralogist and serious collector - #25

Diamond vs. Graphite

by Andrew A. Sicree

Hard vs. soft

Most mineral collectors know that diamond and graphite are chemically the same, differing only in their crystal systems and their cost. Diamond is a cubic mineral while the mineral graphite possesses hexagonal symmetry.

Diamond, of course, is the hardest substance known. One characteristic of a good gemstone is that it has to be hard enough to stand up to the wear-and-tear of being worn on a ring, but even among gemstones, diamond's hardness stands out. On the Mohs Scale of Hardness, talc (H=1) is on one end while ruby/corundum (H=9) and diamond (H=10) are on the other. This scale gives the impression that diamond is only a step harder than corundum. But if we measure "absolute hardness" with a sclerometer – an instrument that gives a much more precise and meaningful measure of harness – we find that, if talc has an absolute hardness of one, then corundum has an absolute hardness of 400. Diamond then has an absolute hardness of 1600, four times the hardness of corundum and 1600 times the hardness of talc.

On the other hand, graphite is stuck way down at the bottom of the Mohs Scale of Hardness. At H = 1½, it is among the softest minerals, almost as soft as talc. Graphite is so soft we can use it to make pencils – it is actually softer than the paper we write upon.

But the two differ in much more than hardness. Graphite is always a black, opaque mineral, while diamonds occur in every possible color and they can be clear or white or black and opaque. Although some diamonds may be semi-conductors, most diamonds are electrical insulators. Graphite, on the other hand, is a good conductor of electricity. These two species have other dramatically different properties. But if both graphite and diamond are composed solely of carbon, why are their properties so drastically different? Can crystal structure be so much more important than chemical composition?

My apologies for the absence of the crossword puzzle and last month's solution. I've been trapped by my schedule! Everything will be back to normal next month. -Editor

Allotropy in carbon

Diamond and graphite are *allotropes* of carbon – pure chemical elements that share the same bulk chemical composition, but with the atoms bonded together in different arrangements. Two or more allotropes can exist for an element and each will have a different arrangement of atoms. Allotropes are analogous to *isomers*, which are chemical compounds with identical molecular formulae but different structural arrangements. Other allotropes of carbon exist, but only graphite and diamond are found in nature as minerals. In addition to diamond and graphite, the list of pure solid elemental carbon allotropes includes amorphous carbon, *fullerenes*, and other more exotic structures. Fullerenes (a.k.a. *buckminsterfullerenes*) are structures in which the carbon atoms form sheet-like structures, balls, or tubes. One fullerene, C-60, is composed of 60 carbon atoms and looks like a microscopic soccer ball.

Toner used in photocopiers and laser printers is simply a mixture of carbon powder (usually a mixture of fine particles of amorphous carbon and graphite) with a fusible (i.e., "meltable") polymer.

Bonding in diamond

In any crystalline solid, atoms are arranged in a three-dimensional lattice. Each atom in a crystal lattice is bonded to its nearest neighbors in a precise, repeating pattern. The strengths of the inter-atomic bonds and the geometry of the lattice control the properties of the solid. Differences in the atomic structural arrangements of diamond and graphite are the source of their radically disparate properties.

A glance at the periodic table tells us that carbon has four valence electrons. Thus each carbon atom usually forms four chemical bonds. Unlike elements such as sodium and chlorine, which react to form ionic bonds, carbon tends to form covalent bonds.

In the diamond structure, carbon's four valence electrons, one in an s-orbital and three in p-orbitals, undergo sp³ hybridization. This means that electrons in the s- and p-orbitals combine to produce a tetrahedral hybrid orbital. This hybrid orbital enables carbon to form four bonds, each bond having the same strength, and each bond forming at the corner of a tetrahedron with the carbon atom in the center. When multiple

carbon atoms bond together with overlapping sp^3 hybrid orbitals, each carbon atom connects to four other carbon atoms and the resulting structure is a three-dimensional tetrahedral lattice, much like an atomic jungle gym.

The three-dimensional lattice of diamond is extremely strong and it renders diamond impervious to dissolution, even in most strong acids. The structure also makes diamond the hardest substance known. And because the overlapping sp^3 hybrid orbitals hold their bonding electrons quite tightly, diamond is a good electrical insulator. However, impure diamonds with small amounts of boron (substituting for some carbon atoms) are semi-conductors. These diamonds tend to be blue in color. The deep blue color of the famous Hope Diamond in the Smithsonian is thought to be the result of boron impurities.

The structure of graphite

Alternatively, graphite's structure is based on sp^2 hybridization. This means that one carbon s-orbital from hybridizes with two p-orbitals to yield a trigonal planar hybrid orbital which is triangular rather than tetrahedral in shape. Each carbon atom with an sp^2 hybrid orbital will then bond to three other carbon atoms in the same plane. The result is a sheet of carbon atoms arranged in a hexagonal pattern, like a sheet of chicken wire. The remaining unhybridized p-orbitals stick out above and below the sheet of carbon atoms. These p-orbitals provide the electrons that allow the carbon sheets to stick together. The sheet structures are stacked one on top of the other and are bonded together by the overlapping unhybridized p-orbitals, producing pi bonds.

Graphite's inter-sheet pi bonds are weak in comparison to the bonds formed between carbon atoms within a sheet. The slippery feel of graphite arises from these weak pi bonds because it takes only a small amount of pressure to break the pi bonds holding sheets together. Sheets of graphite begin to slide, one over the other. Graphite is thus quite soft and has a slippery feel. Also, because the non-hybridized p-orbitals overlap, the electrons in graphite's pi bonds are delocalized, meaning that they are free to move about within the space between the graphite sheet structures. In metals, such as copper, delocalized electrons are the cause of electrical conductivity. Graphite is a semi-metal. Graphite crystals have the highly unusual characteristic of being a poor conductor of electricity in directions perpendicular to its sheet structures but a good conductor in directions parallel to the sheets. This is because the conductive delocalized pi bond electrons can migrate in between the sheets but cannot easily cut across from one sheet to the next.

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Graphite and Lead in Pencils

Every schoolchild knows that pencil lead isn't really "lead" but rather it is graphite. Before graphite came to be used in pencils, charcoal or lead metal sticks were used for making marks. Metallic lead is quite soft and will leave a gray streak on paper. Although graphite has replaced lead for writing purposes, we have retained the use of the word "lead" – much to everyone's confusion.

In the 1500s, a huge deposit of bulk graphite was discovered near Borrowdale, in Cumbria, England. This material could be sawn into sticks, and because it was thought to be a form of lead, it was called *plumbago* (Latin for "lead ore"). Apparently, it was first used for marking sheep, but its value for writing on paper soon became apparent. And because it could withstand the heat of molten iron, it was also valuable for lining molds used for the manufacture of cannon balls. Graphite acted as a mold release agent, making it easier to remove a freshly-cast iron cannonball from the mold.

Although the Borrowdale material could be sawn into usable pencil-like sticks of pure graphite, most of the world's graphite wasn't so pure. It had to be separated from other minerals. In the 1600s, powdered graphite was mixed with other materials (including sulfur and antimony) and molded into pencil-like sticks, but these every graphite composites were inferior to the sawn sticks of graphite. In the late 1700s, French and German inventors discovered that graphite could be mixed with clay, molded into rods, and then fired in an oven to produce composite that was ideal for writing. Moreover, by varying the clay content, hardness of the rods could be changed, and different darknesses of marks achieved. And thus the modern pencil lead was born.

A harder pencil makes a lighter mark and a softer pencil makes a darker mark. Modern pencils usually bear markings indicating the hardness and tone of the pencil. One system for indicating pencil hardness uses "H" (for hardness) to "B" (for blackness), and "F" (for fine point). Commonly used pencils progress from "B" to "F" to "HB" to "H". Some manufacturers use numbers (1 = "B", 2 = "F" to $2\frac{1}{2}$ = "HB", 3 = "H"). Specialty pencils can be harder than "H" (labelled "2H," "3H," "4H," etc.) or softer than "B" (labelled "2B," "3B," "4B," etc.). Marking schemes vary from manufacturer to manufacturer. ©2009 A. A. Sicree

*Dr. Andrew A. Sicree is a professional mineralogist and geochemist residing in Boalsburg, PA. This **Popular Mineralogy** newsletter supplement may not be copied in part or full without express permission of Andrew Sicree.*

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Some Upcoming Shows and Meetings

Our web site <http://www.ems.psu.edu/nms/> has links to more complete lists and details on mineral shows and meetings around the country.

- Nov. 14, 2009:** Sterling Hill Mining Museum, NJ.
- Fluorescent Mineral Society Northeast Regional Meeting;
 - Final Sale (including auctions) of the Neil Wintringham Collection (9:00 - 3:00);
 - Rock, Mineral and Fossil Identification Days (10:00 a.m. - 12:30 p.m.).
- <sterlinghillminingmuseum.org/visitor/schedule.php#events>

March 6 - 7, 2010: EFMLS Convention & Delaware Mineralogical Society Show, Stanton, DE.



For sale / trade: Equipment & Materials

For sale or trade for non-PA minerals: Alaska Gold Survey book, the 18th Annual Report of Dept. of Interior Vol. 3 1897, with 390 pages including illustrations on Alaska gold prospecting, mining & geology, plus more. E-mail Tim at <stamprockcoin314@hotmail.com>

For sale: Large mineral collection; will sell all or part. Tumble polisher with three 12-lb. and one 6-lb. Drum plus grits, polishes and pellets. My phone number is (570) 672-2325. Leave a message if I'm not in.

For sale: Very nice rock and mineral collection along with four display cases. Call Dale at 717-252-1363.

For sale: Jade in various types & colors; mostly rough, plus some slabs; some fine Coober Pedy opal. Also equipment and jewelry making supplies from jewelry studio and production shop. Contact Daniel G. Reinhold in Mill Hall, PA; phone 570 726-8091 after lunch every day, or e-mail: dreinhold1@comcast.net



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). Your dues are used for programs and speakers, refreshments, educational activities, Bulletins, and mailing expenses. Please fill out a membership form (available on the web site), 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@fccj.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 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: Tim Holtz

e-mail: stamprockcoin314@hotmail.com

Publicity: Volunteer Needed!

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.