

**DVESScapades**  
*escapades: interesting, stimulating, exciting activities and adventures*



**Delaware Valley Earth Science  
Society Newsletter**



**November 12, 2008**

**ALERT \*\*\* STOP THE PRESSES \*\*\* ALERT**

**DVESS has a new home** (2<sup>nd</sup> month)

**Centenary United Methodist Church, 151 South White Horse Pike, (route 30)  
in Berlin, 856-767-3881 or 856-767-7453.**

Located between Estaugh Ave and W Taunton Ave on your left, the church is on the right hand side. Come to the November meeting and check us out for yourself.

**We'll have coffee and snacks waiting for you!**

**Nov** will feature past President Dr. Phillip Betancourt who will present his new Tsumeb lecture.

**President's Message** - by **AnnLynne Benson**, DVESS President and EFMLS Director  
Our first meeting in our new permanent location worked out quite well - we had plenty of room to spread out and we expect that word of mouth will draw new attendees every month. When was the last time YOU invited someone to attend? People LOVE to be invited - do them a favor and include them in your happy hobby.

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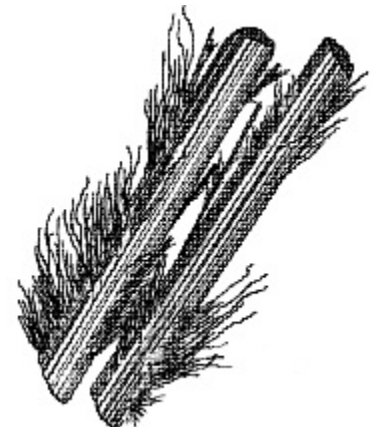
ELECTIONS are coming up in December - come to the November meeting and meet the candidates. Nominate someone you respect, or someone who isn't there (some people really DO like surprises).

\*\*\*\*\*

The AMERICAN FEDERATION was unfortunately forced to cancel the annual convention due to the Hurricane which struck Texas on September 12. It was an "agonizing decision" for Shirley Leeson, the 2008 AFMS President. The Endowment Fund drawing was postponed until October 15 to allow for receipt of ticket sales; results will be announced in November and prizes will be mailed to the winners.

**Fibrous** (minerals of the month)

Some minerals can break into very thin, flexible fibers. These fibers can be short or very long. Mineralogists describe these minerals as fibrous. Asbestos is a mineral that breaks into fibers. Asbestos does not melt or burn. Because of this property, asbestos fibers were used to make everything from insulation for hot pipes, to brakes on cars and trucks, to fireproof clothing for firefighters. It was discovered, however, that very tiny asbestos fibers can get into a person's lungs and can cause cancer. Today scientists are trying to find or invent materials that are as resistant to heat and flame as asbestos but do not cause health problems. Here is a specimen of green chrysotile asbestos from Canada. Crocidolite asbestos is deep blue.



**GONE!!!! Don't miss this opportunity** to allow your child to get involved in a healthy, wholesome and interesting hobby. The American Federation Junior Rockhounds' Program is a flexible, inclusive program designed for as few as one single child. You can use your own activities or the Federation's Merit Badge Program, "independent study" or the kids can just participate in the regular workshops, shows, and field trips the club undertakes in its normal course of business (see the badges at <http://www.amfed.org/fra/meritbadge.htm>). The Badge Manual was developed to give folks with minimal knowledge what they need to guide kids through the activities, and the pages can be shared with parents to work with their kids on their own at home. DVESS Juniors' activities have always been provided "no cost" to the child; the Federation encourages us to give parents a copy of the manual so they can help their kids choose activities they'd like to do. The Merit Badge Program can also be used outside the club, with Girl or Boy Scouts or a geology club at a local school. Taking **any** first step toward having fun with the next generation of rockhounds will ensure a future for DVESS.

**GONE!!!! Your right to collect fossils is about to expire!** Bill HR554 will make it a crime to collect fossils on public lands ( **OUR** lands, since **WE** are the public ). We believe this bill will go directly to the floor for the vote. Congressman John Culberson, **R**, 7th District West Houston, Texas **who is a rockhound himself** said he **needed** each rockhound **throughout the U.S.** to contact their congressman and let them know their feelings on the issue. See <http://www.amfed.org/efmls/efoct08.pdf> for a letter written by a professional geologist to his Representative. Take a moment to preserve the future of our hobby by contacting your Representative; you can find her/his contact information at <https://forms.house.gov/wyr/welcome.shtml>. ( note all hyperlinks in color are instant links, click on them and voila !! You are at the recommended sight) See an article later on in this newsletter.

## **Agriculture Committee**

### **Members:Democrat Majority**

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## THE KLOTSCHTEIN DIAMOND

thanks to Bob Livingston

A businessman boarded a plane to find, sitting next to him, an elegant woman wearing the largest, most stunning diamond ring he had ever seen. Being a rockhound, he asked her about it. "This is the Klotschtein diamond," she said. "It is beautiful, but there is a terrible curse that goes with it." "What's the curse?" the man asked. "Mr. Klotschtein," she answered.

Meeting was held at the organization's new "digs": Centenary United Methodist Church in Berlin, New Jersey. President Ann Lynne Benson gaveled the meeting to order at 8:00pm

Officers present were Ann, Gary Weinstein - Treasurer/Programs/Membership, Grant Elliott - Recording Secretary, Mel LeCompte - Junior Rockhounds /Field Trips Designate and Carol De Cuzzi - Newsletter Editor.

PROGRAM: Carol educated and regaled us with her knowledge of wire wrapping. It was a hands-on presentation, so that all of us unwashed and fumble fingered had to successfully wire wrap our own little goody. Sharks teeth were provided by Carol to those who thought they were going to skate through and just watch. Thank You Carol for a very informative presentation. This writer now feels like an expert.

UPCOMING PROGRAMS: Phil Betancourt will present his new Tsumeb SW Africa lecture in November. The usual festivities of gift exchange, election of officers, and good food (Possibly Berlin Diner) will take place in December. Other possible future speakers include Gene Hartstein, John Sanfacon, Amy Carpovelli, Chet Lemanski, and Manny Robbins.

ALTERNATIVE MEETING SITE: Gerald Feigin, 2<sup>nd</sup> VP had telephoned Gary that he has a room at a nursing home in Washington Township lined up for monthly meetings. The membership indicated they like the new location at Centenary UMC in Berlin. Mel stated Berlin location will cost DVESS \$20 to \$40 monthly rent (Electricity, etc.). The

Washington Township location will be investigated before committing to Berlin.

EXECUTIVE BOARD MEETING: October meeting at Gary's house on 10/15/2008. Future Executive Board meetings may be held at the church location in certain months - all to be determined later.

BANQUET: the 10/19/2008 banquet has 20 people signed up. The restaurant is expecting 30 people. Gary will negotiate the number to 25, if Vitarellis holds firm to the 30 people. DVESS will absorb the difference. Since the church location has a kitchen, catering future banquets was discussed. Gary will confirm Vitarelli's audio-visual capabilities in regard to the Russian Gem Treasures VHS tape program presentation.

TREASURER: DVESS Filing Fee is due. The Eastern Federation insurance premium is also due. President Ann approved these disbursements.

UPCOMING ELECTIONS: The following were nominated - Ann (President), Lou Detoskey (1<sup>st</sup> VP), Richard R. Murray (2<sup>nd</sup> VP), Gary (Treasurer), and Grant (Recording Secretary). Peter De Cuzzi will be a membership conduit for any other nominations.

FIELD TRIPS: Carol indicated a Sterling Hill event is scheduled for our organization on 11/16/2008. That wild and crazy guy, Lou Detofsky, may coordinate field trips in 2009.

PRIZE DRAWINGS: Two door prizes - won by Stu Cleveland and Peter/Carol De Cuzzi. Meeting adjourned at 10pm.

## Hadrosaurus foulkii - THE DINOSAUR THAT CHANGED THE WORLD

special exhibit at the Academy of Natural Sciences opens on November 22<sup>nd</sup> and runs thru April 19<sup>th</sup>, 2009. In 1868 the Academy became the first museum in the world to display the complete skeleton of a dinosaur. See Hadrosaurus foulkii again, remounted and reinterpreted for the 21<sup>st</sup> century and learn of its fascinating discovery 150 years ago.

**More info from our Pres** Our banquet was a success - socially, if not technologically. Despite some difficulty with the sound track of the Russian Gem Treasures video, we enjoyed a fine meal and the company of our "old" friends (including the newlywed Detofsky's) and some new friends including Gary's friend John, Ann's daughter Karen (Joey's mom), Bill Prince and friend Joe from the Lower Bucks club, teenagers Ethan Rodriguez and friend Kyle (guests of the Selenite Queen) and Carol and Pete's friend Marta. Carol's ensemble included a fashionable fingertip to elbow-length cast and a bright yellow "Swiss cheese" foam guard matching a sturdy (if invisible) steel plate in her wrist - our newsletter editor took a header into her outdoor pond during a painting project.

Our thanks to Gary for providing marvelous door prizes for all and a silent auction!! With the club picking up more than half the cost of the meal, the benefits of membership are obvious. Thanks to one and all for attending and making our banquet such great fun!!

\* \* \* \* \*

ULTRAVIOLATION was also a success; many of the usual dealers and our fellow members attended and some newcomers were attracted. Hopefully Sharon with sons Tyler and Justin will be inspired to attend our Junior Rockhounds program. If you like flashy minerals, keep this show in mind for next year.

\* \* \* \* \*

NEVER have I understood **pseudomorphs**. To me they defy comprehension. Yes, I have sat through lectures about them. Yes, I have seen many in shows and in Gary's store; and yes, I own a couple.

**"Pseudomorph"**: *pseudo* = false, *morph* = shape; a mineral that has the crystalline form of another mineral rather than the form normally characteristic of its own composition; occurs when the chemical environment changes and therefore the chemistry of the mineral changes - the **original** mineral becomes a **new** mineral with a **different** chemical formula, BUT retains the **shape** of the original. Yeah, right. Their descriptions sound more like a practical joke than a science lesson: "The tabular region containing fine-grained (fuzzy looking) minerals used to be something else, but is entirely gone."<sup>[1]</sup> sillimanite after kyanite (yes that's silly all right)<sup>[2]</sup>

I can parrot their names: hematite after pyrite, muscovite after garnet, quartz after calcite, calcite after glauconite (I have a

couple of them), malachite after azurite, aragonite after the slipper, atacamite after the mouse, after the - EXCUSE ME!?!?!  
AFTER THE **WHAT?!!!!**

As the Selenite Queen, I've seen minerals in some odd places. One of my favorites is a selenite-encrusted sewer pipe which used to be in the Rutgers Geology Museum. Len Morgan had a large glass bottle in which he grew selenite crystals. But getting back to the mouse - it died in a copper mine in Russia. Before it had a chance to decay, it was replaced with the copper mineral atacamite. Crystals also grew on its back and tail (<http://www.fmm.ru/specimensen/mouseen.htm>).

As for the slipper - ya gotta see it to believe it!!

(<http://www.fmm.ru/specimensen/1243op1en.htm>). Uh, nope - don't believe it.

[1]

<http://www.geo.umn.edu/orgs/whitney/pseudomorphs.htm>

[2] ibid

SEE AN ARTICLE FOLLOWING FOR MORE INFO AND EXPLANATION

#### Other Happenings:

**Nov 16** a Sterling Hill event is scheduled for our organization on 11/16/2008, contact our Pres or Gary for info on rides etc, see box on pg. 8



- Nov 22 – 23:** 17th Annual Gem, Mineral & Fossil Show sponsored by the Northern Virginia Mineral Club. George Mason University, Student Union Bldg II, Rte 123 & Braddock Rd, Fairfax, VA
- Nov 22-23:** 42nd Annual Gem, Mineral, Jewelry Bead & Fossil Show sponsored by the Gem & Mineral Society of the Palm Beaches. So. Florida Fairgrounds Expo Center East, West Palm Beach, FL

## UPCOMING EVENTS

Academy Of Natural Sciences, Philadelphia

### **New Jersey State Museum Sunday Science Lecture Series**

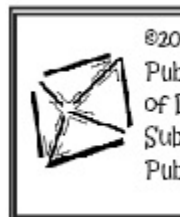
- Jan. 11, 2009** Dr. Daniel Rubenstein, Princeton University  
**"Zebra Societies & Conservation: Different Types for Different Stripes"**
- Feb. 8** Dr. Chet Sherwood, The George Washington University  
**"A Natural History of the Human Brain"**
- March 8** Dr. Ian Burrow, Hunter Research  
**"Secrets of the Ancients: Myths & Mysteries in Archaeology"**
- April 5** Dr. Chung Shih, Infineum USA  
**"Silent Stories - Fossil Treasures from Liaoning, China"**
- May 3** Dr. Kenneth Miller, Rutgers University  
**"Sea-level & Climate Change: Should I Sell My Shore House?"**
- June 14** Robert Denton, Discoverer and leading paleontologist of the famous Ellisdale Fossil Site

**Space is limited. Reserve your seats early!**

**WHAT YOU NEED TO KNOW Free Admission - Free Parking, Museum Auditorium**

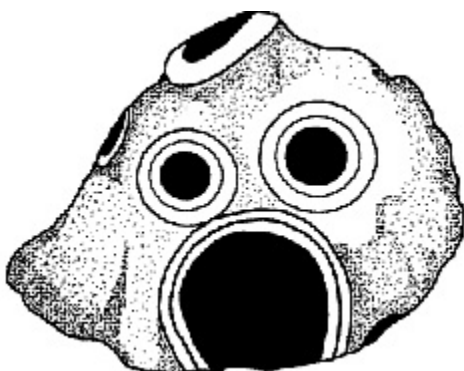
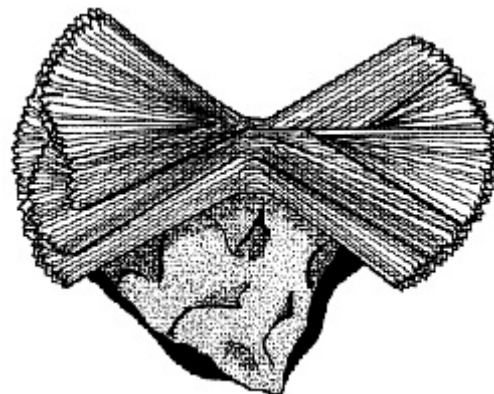
**Each lecture begins at 4pm. Light refreshments will be served.** For more information, or to make reservations, please call (609) 292-8594

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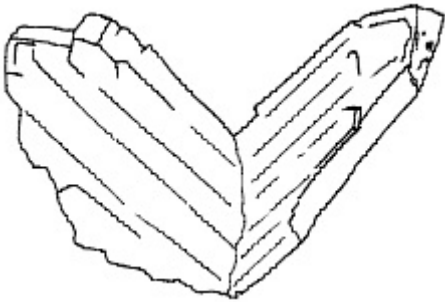
## Bow-Tie Crystals

A single stilbite crystal looks like a thin blade. But when thousands of stilbite crystals grow together, they can form groupings of crystals, like this specimen from India, that look like an old-fashioned bow tie. If you look carefully you can see how a number of crystal groups have grown over each other to create the bow-tie shape



**Eye Agate** "Here's Looking at You" Agate is a form of quartz that has bands of different colors. Some agate specimens, when cut and polished properly, reveal circular bands that look like eyes. Here is an outstanding example from Brazil. The outer ring of the eye (and the "mouth," too) is light brown. The next band is white. Eye agates are rare. Some experts believe that about 5 out of every 100 agates has an eye formation.

# Pseudomorph

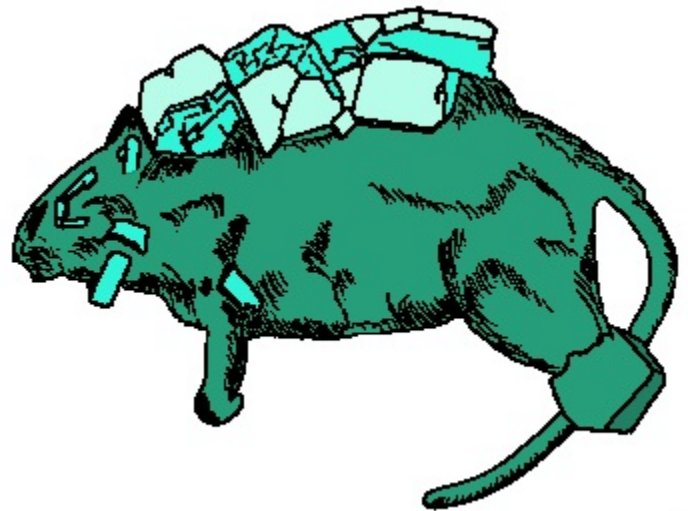


## “False Form”

The word pseudomorph is made up of two Greek words: pseudo means false and morphe means form. A pseudomorph starts off as a particular mineral. **But**, when the chemical environment changes, the chemistry of the mineral changes. The original mineral becomes a new mineral with a different chemical formula. **However**, the specimen keeps the shape or crystal form of the original mineral.

For example, the crystals pictured here were originally dark blue azurite crystals. But due to chemical changes, the azurite turned into malachite and the specimen is now dark green. Mineralogists would describe this specimen as “Malachite after Azurite.” It is called “The Atacamouse”

This is the weirdest pseudomorph you will ever see! Yes, it is a mouse. It died in a copper mine in Russia. After the poor little mouse died, it didn't decay. It was replaced with the copper mineral, atacamite. Atacamite crystals also grew on its back and tail.



## Ram's Horn Selenite



Ram's Horn Selenite is a popular name given to gypsum specimens that form in curved growths that look like rams' horns. These beautiful and delicate specimens grow in caves where the air is very dry and where they will not be disturbed or damaged. Water that is carrying dissolved gypsum seeps out of the cave walls. When the water hits the dry cave air, the water evaporates and gypsum solidifies on the cave wall. As more water seeps out and evaporates, more gypsum is deposited on the cave wall. This new gypsum pushes the older gypsum away from the cave wall. This process continues, making the gypsum deposit longer and longer and longer. The gypsum curves because more gypsum is deposited on one side than the other, causing one side to grow faster than the other. This is a Ram's Horn Selenite specimen from

Chihuahua, Mexico. Specimens like this one have also been found in Kentucky and Texas in the United States, and also in Morocco.



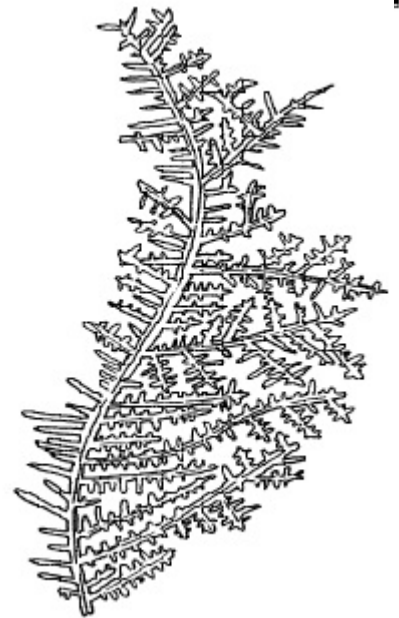
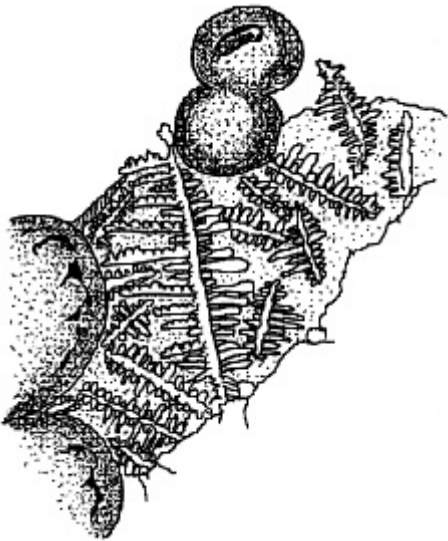
## Incredible Crystals

You are probably used to seeing crystals that are about as tiny as a fingernail up to specimens that are about as big as your head. However, some minerals, when allowed to grow in very special conditions, can be bigger than a car! Above are gypsum crystals that were discovered in 2000 deep underground in the Naica mine, Chihuahua, Mexico. Some of the crystals are up to 40 feet long and are estimated to weigh up to 55 tons . . . each! These crystals are easily the largest gypsum crystals found anywhere in the world. They



may very well be the largest crystals of any mineral ever found!

**Dendritic** “Branching” Some minerals form growths that look like branches on a bush or small tree. They are described as looking like plants. This is similar to arborescent. Pictured here are silver specimens that show this dendritic growth pattern.



A long time ago, in 1934, a mineralogist named George Letchworth English wrote a book for serious mineral collectors called *Getting Acquainted with Minerals*. He wrote a special chapter about the funny shapes that some minerals have and he called them "Mineral Pranks." In this issue of *Mini Miners* (the club subscribes to this publication so we can benefit from this terrific source of info. See other articles and photos with in this issue) you will see and learn about some of these "mineral pranks." Perhaps you even have some samples in your own collections. Some mineral collectors even specialize in certain "mineral pranks." Some collect only twin crystals. Others collect only specimens with inclusions.

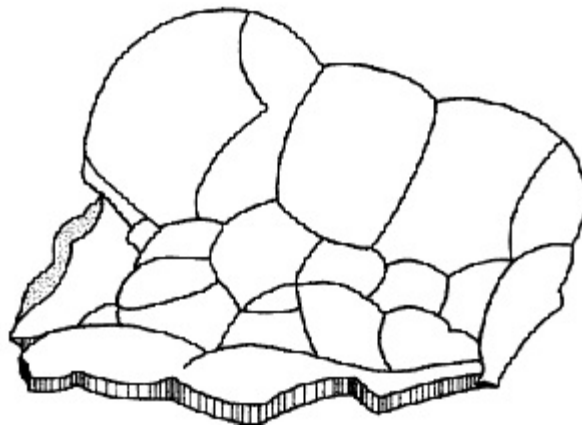
Here is the earliest known picture of George Letchworth English. He wrote the mineral collectors' book "*Getting Acquainted with Minerals*" which was published in 1934 by the McGraw-Hill Publishing Company. You can still buy copies of this book through book sellers on the internet.



This picture was taken in 1893 and shows a young George English and his little girl, Gwendolen who was just over 2 years old. (This is the first time this picture has ever been published in any mineral publication.)

Mr. English was a famous mineral dealer who had mineral selling businesses, first in Philadelphia and later in New York City. Later in life he worked as the mineral specialist for the Ward's Natural Science Establishment in Rochester, New York. Near the end of his life, he published his book about minerals and mineralogy. The mineral Englishite was named after him. (This picture was discovered on ebay, along with an autographed copy of Mr. English's book, for only \$9.99!)

**Reniform** The word reniform is from the Latin words **renes** which means kidney and **formis** which means form. In other words, it describes a mineral that looks like a kidney. Here is a specimen of hematite from Cumberland, England. The miners called this shape kidney ore because the dark, blood red, rounded masses of hematite look like kidneys. Notice that the hematite is rounded, but not in individual balls that look like grapes. Do you remember what mineralogists call specimens that look like bunches of grapes?





**DVESS MEETING LOCATION** : Centenary United Methodist Church, 151 South White Horse Pike, (route 30) in Berlin, 856-767-3881 or 856-767-7453. Located between Estaugh Ave and W Taunton Ave on your left, the church is on the right hand side.

### **MEMBERSHIP INFORMATION**

Regular members are entitled to participate in all DVESS activities. Sponsoring members are entitled to the same plus a specially chosen mineral specimen. Dues are renewable each year in January. Membership rates for the Society:

#### **Regular Membership:**

\$15.00 for the 1<sup>st</sup> family member + \$5.00 for each additional family member

\$10.00 for the 1<sup>st</sup> Senior ( 65+ ) member + \$5.00 for each additional family member

\$10.00 for Rowan University Students with College ID

#### **Sponsoring Memberships ( each additional family member - \$5.00 ):**

*"Silver"* \$50.00 for 1<sup>st</sup> family member - receive a Geode Specimen

*"Gold"* \$75.00 for 1<sup>st</sup> family member - receive a Native Gold Specimen

*"Platinum"* \$100 for 1<sup>st</sup> family member - receive a Premium Specimen

### **SOCIETY INFORMATION**

The **Delaware Valley Earth Science Society, Inc.**, ( DVESS ), a non-profit organization, was founded in 1956 and incorporated in the state of New Jersey in 1957. The Society:

- \* promotes interest , knowledge and the development of skills in the "earth sciences". These interests include mineralogy, paleontology, lapidary arts, archeology and local preservation.
- \* supports the conservation of natural resources, advocates the availability of collecting sites and maintains close contact with those in the academic field.
- \* is a member club of the Eastern Federation of Mineralogical and Lapidary Societies ( <http://www.AmFed.org/EFMLS> )

### **MEETINGS**

The Society meets the 2<sup>nd</sup> Wednesday of each month throughout the year at Centenary United Methodist Church, 151 South White Horse Pike, (route 30) in Berlin

Anyone with info for the newsletter please share with me. You can be published! Stuff you did in school, on a trip etc. see my info in the box at the end of this newsletter.

As the backbone is the mainstay of the dinosaur fossil, YOU are the mainstay of DVESS. When was the last time anyone gave you Carte Blanche in an organization. That's what we're offering you. We need you to help preserve DVESS, so that it doesn't become extinct.

[SeleniteQueen@comcast.net](mailto:SeleniteQueen@comcast.net)

**AFMS CODE OF ETHICS** (American Federation of Mineralogical Societies)

- I will respect both private and public property and will do no collecting on privately owned land without the owner's permission.
- I will keep informed on all laws, regulations of rules governing collecting on public lands and will observe them.
- I will to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind - fences, signs, buildings.
- I will leave all gates as found.
- I will build fires in designated or safe places only and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material - matches, cigarettes, etc.
- I will fill all excavation holes which may be dangerous to livestock.
- I will not contaminate wells, creeks or other water supply.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field trip leaders and those in designated authority in all collecting areas.
- I will report to my club or Federation officers, Bureau of Land management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the "Golden Rule", will use "Good Outdoor Manners" and will at all times conduct myself in a manner which will add to the stature and Public "image" of rockhounds everywhere.

<b>DVESS Directory 2008</b>	
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## **Glow-in-the-Dark Jewels**

How the Hope Diamond's mysterious phosphorescence led to "fingerprinting" blue diamonds

By Kenneth R. Fletcher

Smithsonian.com , January 14, 2008

Observing the afterglow of the world's largest deep-blue diamond has produced a unique identification method that could help track stolen gems or pick out phony diamonds from natural stones.

The new study was triggered by a curious habit of the Smithsonian's 45.5 carat Hope Diamond, possibly the most-viewed museum piece in the world.

The Hope has long been known to emanate an eerie reddish-orange glow for a few minutes after being exposed to ultraviolet light, but the phosphorescence was poorly understood, says Jeffrey Post, the curator of the National Gem and Mineral Collection at Smithsonian's National Museum of Natural History and one of the researchers of the study.

To study the phenomenon, Post and other scientists went into the museum's vault after hours with a portable spectrometer, a machine that can measure the intensity and duration of phosphorescence.

While the glow was thought to be unique to just a few blue diamonds, the researchers discovered that almost all emit a glow after exposure to ultraviolet radiation. The report in the January edition of the journal *Geology* suggests that measuring the glow can lead to a unique "fingerprint" in blue diamonds that could aid in exposing diamond fraud.

Blue diamonds get their color from traces of boron. They are some of the most rare and valuable diamonds in the world, making up only one out of several hundred thousand diamonds, Post says.

The glow is believed to be an interaction between ultraviolet light, boron and nitrogen in the stones. While most blue diamonds appear to glow bluish-green after ultraviolet exposure, the study showed that blue often covers up a red phosphorescence. The Hope simply has a stronger red glow than most.

When the ratio between blue and green was first

plotted, along with the duration of the glow, researchers could not find a pattern.

"We were struck by how much data scattered," Post says. "Then it dawned on us that the fact that the data does scatter so well is a good thing, because it means that each of these diamonds has its own unique behavior, or its own fingerprint."

He believes the relative amounts of boron and nitrogen could cause the variations in phosphorescence among natural blue diamonds. Scientists also observed a markedly different glow in synthetic and altered diamonds.

The most immediate application of blue diamond fingerprinting could be distinguishing phony diamonds from the real thing, says Peter Heaney, professor of geosciences at Penn State University who also worked on the study.

Because fake diamonds are increasingly realistic, when you bring a valuable stone to the jeweler to have work done "you want to be sure that the blue diamond you are getting back is the same one you brought into a jeweler," he says. Post says that the method "could be very helpful" in tracking stolen diamonds by matching the diamond's fingerprint with a suspected recut version.

The best news is that the fingerprinting method is non-invasive and will not damage the stone, Heaney says, which allowed the researchers to work with 67 valuable natural blue diamonds and three synthetic ones in the Smithsonian and private collections.

But Heaney says that because of the rarity of blue diamonds, especially those with known origins, it is uncertain whether the technology could be used in other applications, like identifying where a diamond came from. Knowing origins could help reduce the sale of conflict diamonds, whose trade fuels wars in parts of Africa.

Still, Post says the easy-to use, portable and relatively inexpensive spectrometer could be another tool for "checking and making sure that a particular stone has all the right characteristics of being a natural stone."

Find this article at:

[http://www.smithsonianmag.com/science-nature/Glow-in-the-Dark\\_Jewels.html?c=y&page=2](http://www.smithsonianmag.com/science-nature/Glow-in-the-Dark_Jewels.html?c=y&page=2)

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