

The Danburite

The Danbury Mineralogical Society, Inc.

P.O. Box 2642, Danbury, Connecticut 06810-2642

October 2013

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PAGE 1

NEXT REGULAR MEETING **THURSDAY, October 3, 2013**

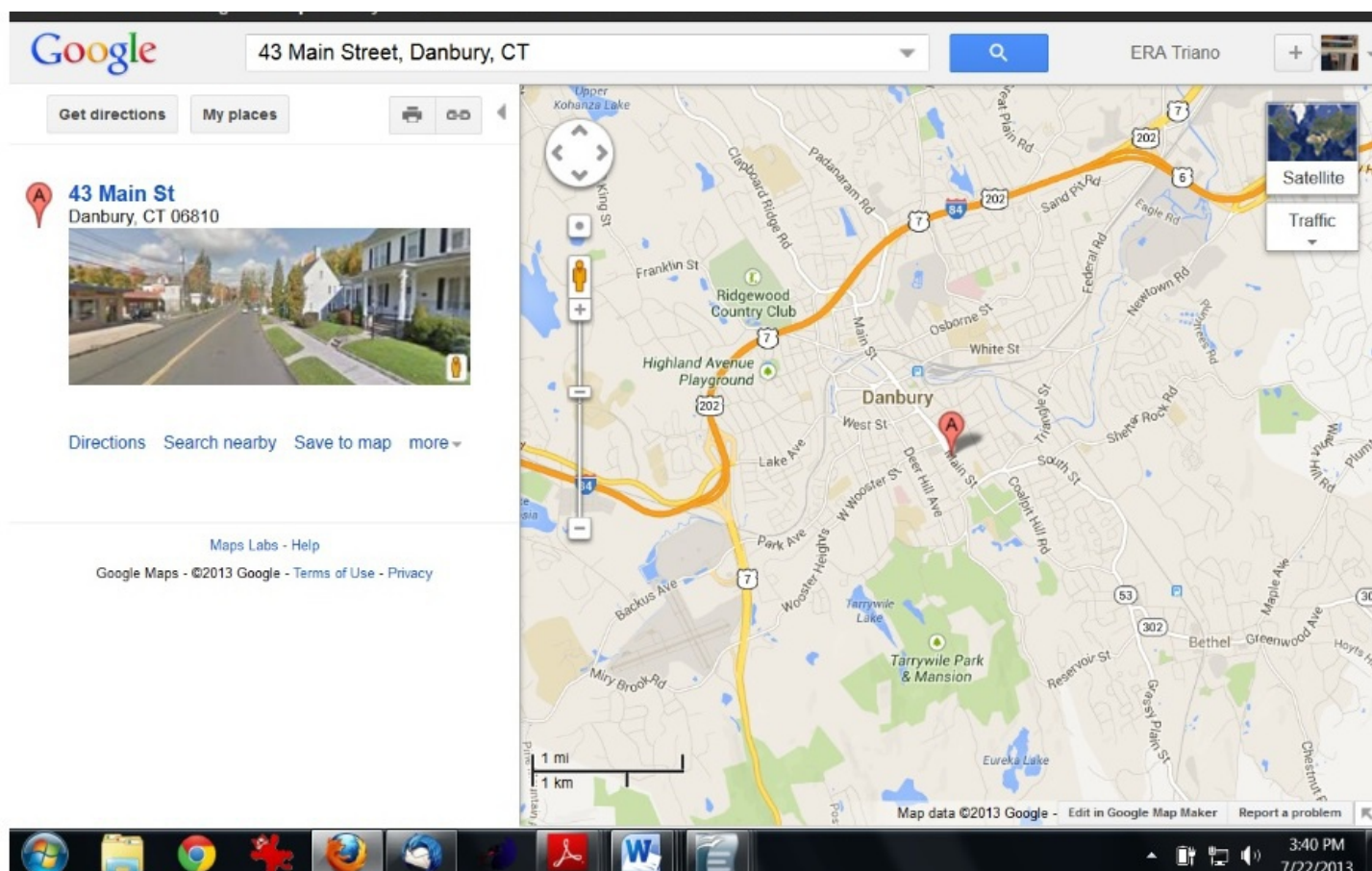
Meeting starts at 7:30 p.m.

COOL NEW LOCATION !!

The meeting will be at the **Danbury Museum & Historical Society**
43 Main Street, Danbury CT

Earth Science Week is October 13 – 19
2013 Theme “Mapping Our World”

National Fossil Day is October 16



NEW DMS WEBSITE <http://danburymineralogicalsociety.weebly.com>

AFMS WEBSITE <http://www.amfed.org/> EFMLS WEBSITE

<http://www.amfed.org/efmls/>

President's Message

Well, I think we all survived! The world-famous Danbury Mineralogical Society Gem, Mineral & Fossil Show for 2013 has come and gone and the world did not implode!

I think overall we had a good Show, at least for Sunday (as I did not get to the Show until 4:00 PM on Saturday). At first it seemed a little slow on Sunday, but eventually picked up somewhat after 1:00 PM or so.

There are sooooooooooooo many folks to thank for their help I may forget someone. Please forgive me if I do - - -

First of all I would like to say mooch - oos grace - e - aas to both Jack and Tom. It seemed they were everywhere (at once) and helped with questions, announcements, set-up, electrical cabling, etc., etc., etc. Just incredible support!

Gail & Friends Inc. (our grub supplier) did another outstanding job in the food area. I think they only had one hot dog left at the end of the day Sunday. What planning!

Jason was super at the club table, answering questions pertaining to geology and the club in general. I remember one particular query posed to him about whether this person had some meteorites. Unfortunately, they were just some pieces of slag. Bummer.

Dan & Peg (not my wife and I) were stalwarts at the entrance to the show, spending a lot of time getting all the "paying customers" thru the turnstile.

All of the above people, and more (including Mark, Tom's Boy Scouts, Laurie's gang from North Salem (some of them scouts as well I think), Lizzie and her crew from Patterson, and others too numerous to mention, were a GREAT help at both set-up and take-down. "We couldn't have done it without 'ya" to coin a phrase.

We have a number of things to do for the last few months of 2013, such as picking a new "slate of officers" to vote into office for 2014

and beyond (please think of volunteering someone, or choose to submit your own name), pick a restaurant and a speaker for our annual seminar in January, and numerous other items. I will try make a list for the member meeting, or at least for the next board-of-director (BOD) get together.

Speaking of a BOD meeting, I plan on having them monthly for a bit, at my house. That way we save some bucks by not holding them at the Danbury Historical Society, and it's closer for some of the officers/editors (3 of whom live in N.Y.). Of course this may change after the election of the new officers, but at least until the end of December we will be getting together in Brewster.

I do have some bad news to report; our vice-president, Rick Sinclair, has submitted his resignation. I would like to say THANX A BUNCH for your tireless work in helping the club over the years, especially recently in choosing topics for discussion at the member meetings, picking speakers when we need them, working with the neighboring clubs on field trips, etc. It will be VERY difficult to replace him.

I think I got most of what I wanted to say.
Rock On - - -
Dan

The OCTOBER Program will be ...

Jack Pawloski's program on the volcanos of Iceland.

Our new meeting place, the **Danbury Historical Society & Museum**, has an extensive website with lots of educational links and cool events: www.danburymuseum.org/danburymuseum/Home.html

DMS Board of Directors' Meeting 9/25/2013 McAuliffe Residence

Present:

President Dan McAuliffe, Treasurer Laurie Mechanic-Goodman, Editor Emeritus Hank Henning, Editor Lizzie Triano... guests/new BOD members Peg Hedrick (to be Secretary Pro Tem) and Dan Garrity.

We do have the Danbury Historical Society for meetings, at the price Rick originally quoted (that is to say, \$50 not \$70 for the evening). We believe the timeframe involved is 7 – 9 pm.

Gratefully accepting Peg Hedrick as Secretary pro tem through the end of the year, and then on the slate of officers going in to elections for the new year.

There was discussion regarding planning the January seminar dinner (and getting speakers). Possible locations include Two Steps in Danbury, The Hearth in New Milford, Tonnelli's Restaurant in Bethel, Francos in Brookfield, and the Holiday Inn at Exit 8. Peg H. will look into some of them, and this writer forgets who else was looking into what in that regard.... Dan McA had the lead for getting a seminar speaker. (Lizzie took on getting program/speakers for Nov & Dec.)

2013 Show follow-up: we are still waiting for the final bill from the school.

There was some discussion regarding planning the 2014 show.

We need a slate of officers. Dan is willing to continue as President (but NOT as show chair), Peg Hedrick is interested in running as secretary, and Laurie consented to continue as treasurer. Hank suggested, and the Board agreed, that the BOD could act as the "show chair" for 2014. Lizzie mentioned to Dan that she would take on the VP role again if there were no takers at the October meeting. (Lizzie and Laurie both expect to miss the October meeting due to school conflicts.)

We should have a BOD/Show special meeting at Tom P's convenience.

Peg H & Dan G would like to see a field trip to Fonda. There was also discussion of a club trip to the Olive Gunnison Natural History Museum at the Akin Free Library in Pawling

NY, as well as possibly the Bruce or the Peabody or

Our Meetup site needs to be marked "Inactive." Dan will look into that.

Laurie is working on the weebly website and would like feedback, suggestions, etc.

Next BOD meeting tentatively scheduled for Wednesday, October 23.

MULTI-CLUB FIELD TRIPS

August 25 field trip to Old Mine Park, Trumbull, Conn.



Photo by L. Voytek

Please see Field Trip Schedule at the end of this issue of the Danburite – includes multi-club events, some shows, and tentative events!

DMS Hastings Claim

As you may know, our claim's address is on Stone Arabia Road, in Fonda, NY.

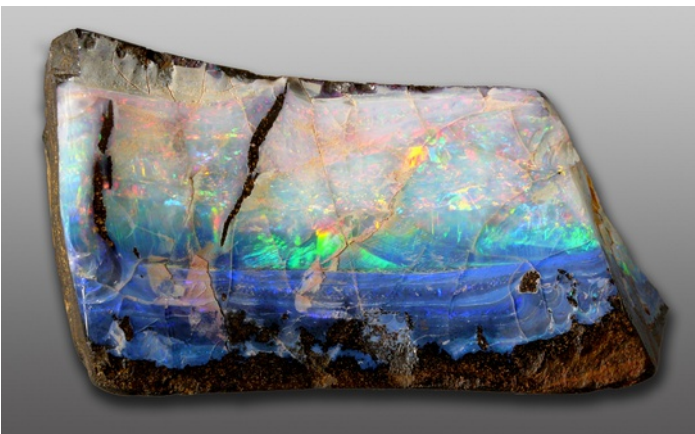
OPAL

October's birthstones include opal, rose zircon, and tourmaline. Let's talk about opal. (We covered birthstones in 2011 – if you are new and/or impatient, request your preferred month back issue and I'll email it to you.)

Opal is considered a gemstone, although technically it's not a mineral (just as technically the tomato is a fruit). A mineral is an inorganic substance with a definite chemical composition and crystalline structure (more or less). Opals (and amber) have an amorphous structure. (Also, amber is organic.) One can be more or less technically rigorous depending on context. Mindat defines opal succinctly: "Although it is

still (2007) regarded as a valid mineral species for historical reasons, Opal is not a true mineral in the accepted sense of the word as it is either composed of [Cristobalite](#) and/or [Tridymite](#) or composed of amorphous silica.” (Editor's note: as I was composing this article, Alfredo Petrov pointed out, “Trouble is opal is a lot of different things. I'd consider the truly amorphous type (hyalite) to be a real mineral. Opal's "image problem", so to speak, among professional mineralogists is that it's amorphous, no crystallinity, and in general mineralogists don't like amorphous materials because they can't study them by x-ray (their most common tool) as they give no clear XRD pattern, and furthermore it is often difficult to determine whether an amorphous substance is a single compound or a mixture. Hyalite is obviously not a mixture, so it still deserves a "real mineral" species status among the opals.”

We all know that there are several varieties of opal. The basic precious opals are named according to the color of the background material (“jelly”): white, black, grey, etc. Fire opal is the glassy orange stuff. There are actually many subtypes of opal, and you can check out one list of them (with photos and gemological data) on [gemdat](http://www.gemdat.org/gem-3004.html): <http://www.gemdat.org/gem-3004.html>.



Opal (length: 6 cm). Australia photo by Hannes Grobe. Creative Commons license via Wikimedia Commons.

When shopping, remember that opals are often mounted and sold as doublets or triplets – thin slices of colorful opal gem topped (and sometimes backed) by quartz. Doublets and triplets are pretty enough, and suitable for some applications – just make sure that you know what you are looking at and/or paying

for. The same is true for lab-created/synthetic opal.

Your editor's “field” is more the library than the mine, and one of the fun things we've discovered is the habit of looking at older reference books to see how our views (whether scientific or aesthetic) have changed.

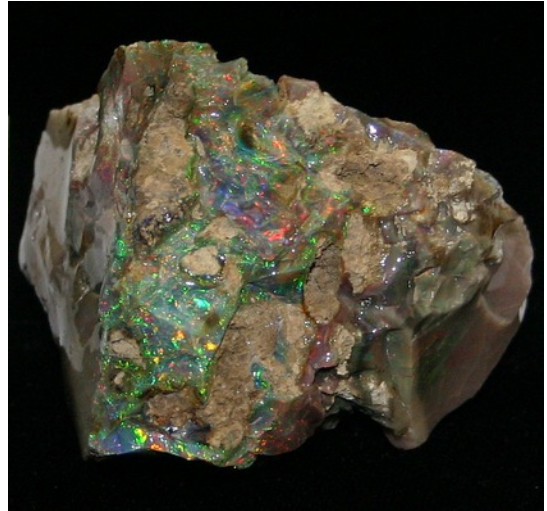


Photo by Chris Ralph via Wikimedia Commons. Nevada Opal. nevada-outback-gems.com

For example, the play of color in precious opal is explained today as being due to light diffracting among sub-microscopic spheres of silica in the gem. Antoinette Matlins explains it this way: “Opal is composed of hydrated silica spheres. The mini-rainbows seen in most opals result from light interference created by those spheres.” ([Colored Gemstones: The Antoinette Matlins Buying Guide](#), GemStone Press, 2002 Second Printing.)

Walter Schumann, in [Gemstones of the World](#), is more precise:

“The electron-microscope, using a magnification of 20,000, reveals the cause: tiny spheres (as small as 0.001 millimeter in diameter) of the mineral cristobalite layered in siliceous jelly cause the diffraction and interference patterns.”

Common knowledge, you say? It seems to be now. But we haven't always had scanning electron microscopes. In [The Story of the Gems: A Popular Handbook](#), by Herbert P. Whitlock (Lee Furman, NY: 1936), opal's magic is explained thusly: “Opal is one of the very few minerals that do not crystallize. It is a solidified jelly composed of silica with a small and somewhat variable proportion of water. In the

precious varieties of opal, those which furnish the opal gem stones, this amorphous jelly-like mass in the process of hardening was traversed by a multitude of small cracks. It is the presence of these cracks, which were subsequently filled with a later deposit of opal, that gives to this remarkable gem its singular play of color. The light that is returned to the eye, after being reflected from the surfaces of these exceedingly fine cracks, is subjected to interference and broken up into colors just as light reflected from any film, such as a soap-bubble, is broken up by interfering waves of light. The thinner and more uniform the series of cracks, the finer and broader the flash of reflected color."



Fire Opal image from Wikimedia commons
Photo by Elke Wetzig ([Elya](#))

Another thing that varies is recommended care of gems, including opal. Recently, in a mineral club bulletin(!), I saw repeated the advice I got from another girl back in my college days, which was to use toothbrush and toothpaste on my jewelry. Horrified jewelers have since disabused me of that idea, of course (toothpaste contains abrasives, which can harm gold and softer stones). We also still see the advice to clean opals with oil and/or store them in oil. Matlin, at least, strongly advises otherwise, although she does agree with those who recommend immersion in water.

I've enjoyed seeing Ethiopian opals, especially, for sale by some of the dealers at

local shows, but I haven't purchased any (yet). If any club members have, and are working with it, maybe you could share some photos.

Editorial Ramblings

by Lizzie

I'd love to include more lapidary, gemological, and other fun & pretty information in here, but as I don't get out as much as I used to, and we did the birthstones a year or so ago, I'm kind of at a creative block here. Unless you want to keep hearing gloom and doom about climate change, pollution, and all the "heavy" sides of earth science, you might want to help me remember the "fun" sides more...

I wouldn't turn down a subscription to Gems & Gemology, either. Just sayin'.

Climate Change deja vu: the PETM and Today

Atmospheric changes, oceans rising, changes in climate and terrain affecting everything that lives on the planet – turns out we've done it before, about 56 million years ago, and scientists are still trying to figure out what happened, how it happened, and how studying what happened can give us insights to what's happening today.

In October 2011, National Geographic magazine ran a nicely illustrated piece called "World Without Ice," about the event known as the Paleocene-Eocene Thermal Maximum (PETM) and how it relates to today. The article is available to subscribers (including digital subscribers, but not, alas, the general public) at <http://ngm.nationalgeographic.com/2011/10/hothouse-earth/>.

Palaeontology Online, however, is more generous, and can provide an introduction to the topic. Here is the opening of their article, "[Patterns in Palaeontology: The Paleocene–Eocene Thermal Maximum](#)," by [Phil Jardine](#):

The Paleocene–Eocene Thermal Maximum (PETM) is one of the most intense and abrupt intervals of global warming in the geological record. It occurred around 56 million years ago, at the boundary between the [Paleocene](#) and [Eocene](#) epochs. This warming has been linked to a similarly rapid increase in the concentration of greenhouse gases in Earth's atmosphere, which acted to trap heat and drive up

global temperatures by more than 5 °C in just a few thousand years. The fossil record gives us the means of understanding how life was affected by the PETM, and so provides an excellent opportunity to study the relationships between evolution, extinction, migration and climate change.

The National Geographic article, by Robert Kunzig, covers most of the information in the PO piece, and goes on to explore the terrain of the Bighorn Basin in Wyoming, with vertebrate paleontologist Philip Gingerich, whose articles are listed in the “further reading” section of the PO article. These articles, as well as others, trace the evidence in the fossil record of a massive warming event millions of years ago, including its effects over hundreds of thousands of years.

One of the neat things about reading these articles is observing the scientific mind at work; not only are we along for the ride as they hypothesize, make observations, and draw conclusions, but we also get to listen in on the questions left unanswered. Where did the carbon spike come from? (There are a number of theories, but the most popular, and chilling, seems to be a runaway thaw of methane hydrate – chilling because we may be setting ourselves up to replay that exact scenario). Why did there seem to be more insect activity in the fossil leaves? (Were the leaves less nutritious? Had the insects experienced an increase in metabolic rates? Were there just more bugs?)

Evidence that the PETM caused increases in ocean temperatures globally included fossilized planktons ... the ancient remains of cousins to today's “red tides.” Studying the evidence left by an incredible acidification of the ancient oceans, scientists estimated that the long-ago warming event involved a release of approximately 4.5 trillion metric tons of carbon into the atmosphere – an amount more or less equal to all current fossil fuel deposits. It took the planet about 150,000 years to recover.

Before you read this next bit, an excerpt from the National Geographic article, keep in mind that the scientist I am about to mention receives lots of hate mail and death threats. Yes, in the 21st century, scientists in this country receive death threats!

Matt Huber, a climate modeler at Purdue University [now director of Purdue Climate Change Research Center] who has spent most of his career trying to understand the PETM, has also tried to forecast what might happen if humans choose to burn off all the fossil fuel deposits. Huber uses a climate model, developed by the National Center for Atmospheric Research in Colorado, that is one of the least sensitive to carbon dioxide. The results he gets are still infernal. In what he calls his “reasonable best guess at a bad scenario,” (his worst case is the “global-burn scenario”), regions where half the human population now lives become almost unbearable. In much of China, India, southern Europe, and the United States, summer temperatures would average well over 100 degrees Fahrenheit, night and day, year after year.

Climate scientists don't often talk about such grim long-term forecasts, Huber says, in part because skeptics, exaggerating scientific uncertainties, are always accusing them of alarmism. “We've basically been trying to edit ourselves,” Huber says. “Whenever we see something really bad, we tend to hold off. The middle ground is actually much worse than people think.

“If we continue down this road, there really is no uncertainty. We're headed for the Eocene. And we know what that's like.”

(Excerpt from “World Without Ice,” by Robert Kunzig. National Geographic magazine, October 2011.)

We sponsor the Danburite page at MINDAT:

<http://www.mindat.org/min-1218.html>

Unfamiliar with mindat.org ? You might like to check out their page about Tilly Foster:

<http://www.mindat.org/loc-4004.html>

Speaking of Tilly Foster, Wikipedia needs our help:

http://en.wikipedia.org/wiki/Tilly_Foster_Mine
“This article about a location in [Putnam County, New York](#) is a [stub](#). You can help Wikipedia by [expanding it](#).” !!

Brad Smith's BenchTips

JUST SAY NO TO OPTIVISORS

During his annual vision-check, a jeweler friend of mine wondered why not have his reading glasses made with bifocals that would magnify the same as the Optivisors? So he asked the ophthalmologist if he could add around +2.00 diopters into bifocals.

The doctor checked with his supervisor and came back all excited. They all agreed that it was a great idea and even gave him a special device to measure how far he holds a jewelry piece from his eye, to get the focal distance exactly right. So if all goes well, no more sweaty, bulky optivisors! Anyone else tried this?



MANDRELS

Straight rod mandrels have a multitude of uses in helping to bend sheet and wire. Frequently we choose a round rod for winding jump rings. Common sources for different sized rods are knitting needles, wooden dowels and clothes hangers. Metal rods can also be found in hardware stores and hobby shops.

But to get the right "look" in chain mail designs, you must have just the right size mandrel, and often they are not easy to find. Jewelry catalogs sell selections of straight rod mandrels for \$50 or more, but my choice is from Harbor Freight. They have a set of 28 sizes, from 3/32 inch to 1/2 inch, for under ten bucks. It's called a Transfer Punch Set. The catalog number is #3577, and the price is \$ 9.95 Plus, look for the 20% off coupon on any one item in their advertising circular. That cuts your cost to around eight bucks. I've bought four of these over the last couple years. www.harborfreight.com

More BenchTips by Brad Smith are at [groups.yahoo.com/- group/BenchTips/](http://groups.yahoo.com/-group/BenchTips/) or [facebook.com/BenchTips](https://www.facebook.com/BenchTips)

~~ Fun Stuff ! ~~

COMET ISON!

Perhaps you've [read the news](#). This Fall, the big ticket show is the approach of Comet C/2012 S1 ISON. The passage of this comet into the inner solar system has been the most anticipated apparition of a comet since [Hale-Bopp](#) in 1997.

Read more:

<http://www.universetoday.com/104818/comet-ison-a-viewing-guide-from-now-to-perihelion/#ixzz2fwGGRi5r>

Dating of Beads Sets New Timeline for Early Humans

via Science News "...from universities, journals, and other research organizations"

Sep. 13, 2013 — An international team of researchers led by Oxford University have new dating evidence indicating when the earliest fully modern humans arrived in the Near East, the region known as the Middle East today. They have obtained the radiocarbon dates of marine shell beads found at Ksar Akil, a key archaeological site in Lebanon, which allowed them to calculate that the oldest human fossil from the same sequence of archaeological layers is 42,400-41,700 years old. This is significant because the age of the earliest fossils, directly and indirectly dated, of modern humans found in Europe is roughly similar. This latest discovery throws up intriguing new possibilities about the routes taken by the earliest modern humans out of Africa, says the study published online by the journal PLOS ONE. The research team radiocarbon dated 20 marine shells from the top 15 metres of archaeological layers at Ksar Akil, north of Beirut. The shells were perforated, which indicates they were used as beads for body or clothes decoration by modern humans. Neanderthals, who were living in the same region before them, were not making such beads. The study confirms that the shell beads are only linked to the parts of the sequence assigned to modern humans and shows that through direct radiocarbon dating they are between 41,000-35,000 years old.

The Middle East has always been regarded as a key region in prehistory for scholars speculating on the routes taken by early humans out of Africa because it lies at the crossroads of three continents -- Africa, Asia and Europe. It was widely believed that at some point after 45,000 years ago early modern humans arrived in Europe, taking routes out of Africa through the Near East, and, from there, along the Mediterranean rim or along the River Danube. However, this dating evidence suggests populations of early modern humans arrived in Europe and the Near East at roughly the same time, sparking a new debate about where the first populations of early humans travelled from in their expansion towards Europe and which alternative routes they may have taken.



....

The earliest European modern fossil, from Romania, dates to between 42,000-38,000 years before the present time, and specialists have estimated the age of Kent's Cavern maxilla from southern England, between 44,000-41,000 years, and that of two milk teeth in southern Italy, at 45,000-43,000 years old. The new dating evidence from Ksar Akil is largely comparable to these ages, if not slightly younger.

[Regarding above image: ancient beads]

Beads from the site of Ksar Akil (Lebanon) found closely associated with the skeleton of an early modern girl dating to between 39,000-41,000 years ago. The beads shown here are made of the shell of a small marine snail (Nassarius gibbosulus/circumcinctus). The large Glycymeris valve in the centre was not pierced, but its surface preserved bright red pigmentation. (Credit: Katerina Douka and Natural History Museum London)

Read full article at:

<http://www.sciencedaily.com/releases/2013/09/130913093314.htm>

Editor's note: Compare these findings to the African marine shell and ostrich egg shell ornaments we may be more accustomed to hearing about. The above article relates to early human migration patterns, whereas the African artifacts tend to tell us more about overall human origins (predating European sites). Listed below are some dates gleaned via a simple internet search on earliest ostrich shell beads in South Africa, for example. Note the difference in estimated dates between these sites/layers and the Eurasian ones listed above.

Howiesons-Poort ("techno-tradition"), 65,000 – 59,000 years ago

<http://www.sci-news.com/othersciences/anthropology/article00764.html>

Blombos Cave, South Africa (coast). Used repeatedly, especially between 100,000 and 70,000 years ago, and again recently (between 2,000 and 300 years ago).

http://en.wikipedia.org/wiki/Blombos_Cave

It's All in the Spelling

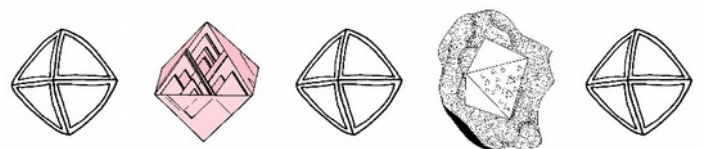
CARAT – a standard unit of mass used for precious stones, especially diamonds, is equal to 200 milligrams.

KARAT – a unit of proportion of gold in an alloy equal to 1/24 part of pure gold.

CARET – ^ - a mark on printed or manuscript material to show where something such as a letter or word should be inserted. In the United States, the caret is usually made just under the line. Other cultures invert the caret and place it above the line.

CARROT – Bugs Bunny's favorite food !

From SCRIBE (Special Congress Representing Involved Bulletin Editors), July-Sept. 2013.



How about some more GeoWords of the Day?

aphrizite (*aph'-ri-zite*) A black variety of tourmaline containing iron.

gyre (a) A closed geostrophic circulation in the ocean much larger than an eddy. (b) The closed geostrophic circulation in each ocean basin centered on the subtropical high-pressure region. The water within each subtropical gyre turns clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere. Acceleration causes sea level to fall along mainland coasts; deceleration leads to rise. Cf: Coriolis force.

Weber's line (*We'-ber's*) A hypothetical boundary between the Asian and Australasian biogeographic regions. It generally coincides with the Australian-Papuan shelf and is sometimes used in preference to Wallace's line. Named after Max Weber (d. 1937), German zoologist.

All terms and definitions come from the [Glossary of Geology, 5th Edition Revised](#).

News from Around the Collecting World

Mini Miners Monthly has a rousing version of Mineral Bingo in the September 2013 issue, complete with instructions how to play with various age/expertise levels, from beginner through mineral-savvy. Really beautiful illustrated copy, will be a treat for educators and program directors!

ALSO STILL HAPPENING: Sale through the end of the year: Diamond Dan Publications has been creating fun, educational booklets for kids for 20 years now! In celebration we are offering the biggest discount we have ever offered: **25% OFF all of our activity books.**

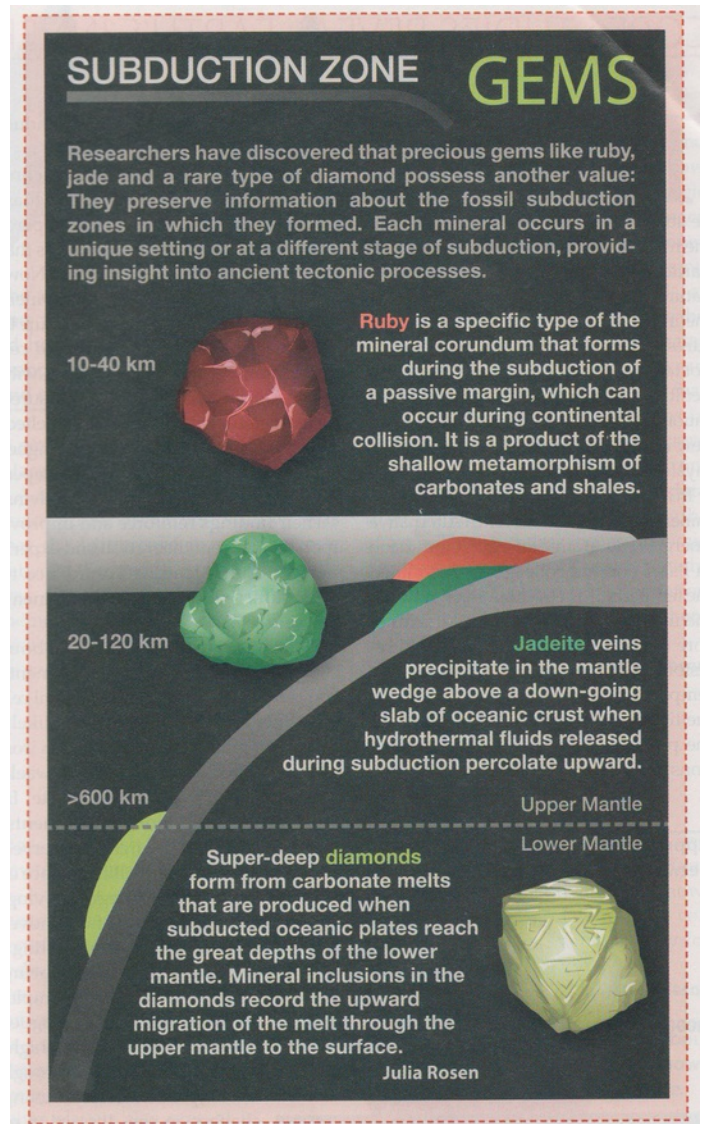
Thank you for the many years you have supported our work and have dedicated yourselves to teaching and inspiring the next generation of mineral collectors.

<http://www.diamonddanpublications.net/>

Bulletin of the New York Mineralogical Club.

Sounds like their Annual Banquet was even better than I was imagining... sigh... the many personalities of the stones known collectively as "jade."

NYMC's next meeting, Wednesday, October 9, will feature speaker Michael Silver, CEO of American Elements, with "How Minerals will Impact Global Geopolitics in the 21st Century."



Gem tectonics image from Earth Magazine, Sept. 2013

Garnet Gazette of the Mid-Hudson Valley Gem & Mineral Society. Did anyone get to their show? Alas I did not.

We're looking forward to having Carolyn Reynard from MHV as our November speaker.

The Vug of the **Stamford Mineralogical Society**). Congratulations to "Ol' Editor Ed" Mattson for a trophy-winning display at the federation convention. We'll have to find out more about THAT.

Thanks to editor/webmaster Dan Imel, the EFMLS News is now posted to the federation website in a timely manner. Check out current & past newsletters at <http://www.amfed.org/efmls/newsletters.htm>.

If you are new to the area and/or the hobby, and live in central Connecticut, you would be well advised to check out "the Meriden club" as well! [Www.lmscc.org](http://www.lmscc.org)

***In case you missed the news: Green's Farm has been SOLD.
(no more collecting at Roxbury)
That's all, folks!***



Cassie V. was among the last lucky visitors.
Photo by L. Voytek

Museums and Other Fun Places

(Got ideas for places we should add? Please send them to lizziewriter@optonline.net.)

The Institute for American Indian Studies (www.IAISMuseum.org) 860-868-0518

Soon www.iaismuseum.org/calendar.shtml will have more information on these events:

October

- 12 Stress Relieving Seminar
- 13 Book Signing & talk, Karen Coody Cooper
- 19 Friction Fire
- 19 Autumn Full Moon Walk
- 26 Beginners Yoga for Kids

November (Native American Heritage Month)

- 2 Footsteps Through Time
- 3 Archaeology Roundtable
- 10 Veterans' Day Celebration
- 16 Scout Day
- 23 Family Herbal Class
- 29 Time for Stories
- 30 Indian Holiday Market

December

- 1 Artifact Identification
- 1 Indian Holiday Market
- 7 & 8 Indian Market
- 8 LAC Lecture
- 14 & 15 Indian Market

****Note that Indian [Holiday] Market will run three weeks this year and NOT the week before the Christmas holiday. Please plan accordingly!**

IAIS hosts the Litchfield Hills Archaeology Club's website as a sub-section of theirs, at <http://lhac.iaismuseum.org/>. You can check out their [Facebook page](#), and look at photos from the field, such as this one:



Bruce Museum
Greenwich, CT
<http://brucemuseum.org>
203-869-0376

APPRAISAL DAY Sat. 10/26

11 am – 3 pm

Are your family heirlooms worth anything beyond sentiment?

Are there treasures hidden in your attic?

Come to the Bruce Museum where specialists from Bonhams will provide auction estimates of your items.

Estimates will be given for the following categories:

American & European Paintings, Silver, Ceramics, Jewelry, Americana, Books, Japanese and Chinese Art

Members- \$25 per 2 objects

Non-Members- \$30 per 2 objects

Additional items \$10 per object (pay at door)

Limit of 5 objects

Participants are responsible for moving their items.

Reservations are recommended.

Tickets may be purchased at the door.

Proceeds from this event will benefit the Bruce Museum's educational programs and exhibitions.

For more information please contact Michelle Spinei at mspinei@brucemuseum.org

Whoa, hey, nobody caught this.... I'd conflated the Yale and Harvard Peabody Museums.... they are listed separately now.

Peabody Museum of Archaeology and Ethnology
<https://www.peabody.harvard.edu/>
617-496-1027

"From towering Native American totem poles and large Maya sculptures to precious artifacts of the ancient world, the Peabody Museum is among the oldest archaeological and ethnographic museums in the world with one of the finest collections of human cultural history found anywhere."

Yale Peabody Museum
<http://peabody.yale.edu/>
(203) 432-5050

2013 Paleozoic Partners (nature.nps.gov)

September's Paleozoic Partner is **Yale Peabody Museum of Natural History**. [Well it was, but the #GOPShutdown sidelined a lot of federally funded science activities/projects/research, sorry.]

The museum houses the spectacular pyritized trilobites from Beecher's Trilobite Bed in upstate New York!

The **Division of Mineralogy** is pleased to make available the following out-of-print articles:

[Connecticut's Iron and Copper. Part 1.](#)

[Connecticut's Minor Metals and Her Minerals. Part 2.](#)

Both articles by Charles Rufus Harte, and presented at the 60th Annual Report of the Connecticut Society of Civil Engineers. Courtesy of the [Connecticut Society of Civil Engineers](#) Section of the American Society of Civil Engineers. Used by permission. These facsimile PDF versions are provided for research and personal use only. Any other use is prohibited. Contact the CSCE for more information.

Requests for general information on minerals or mineralogy should be directed to the Peabody [Department of Public Education](#) at 203.432.3775 or peabody.education@yale.edu.

The Yale Peabody Museum's collections are available to legitimate researchers for scholarly use. Loans are issued to responsible individuals at established institutions. Loans and access to the collection can be arranged through the [Collections Manager](#).

New York State Museum, Albany NY<http://www.nysm.nysed.gov/>

(518) 474-5877

Free Admission !! closed Mondays**Just two of their many events:****State Museum Research and Collection
Lecture Series: Stone Tools and Human
Evolution**

October 02, 2013 : 7:00 P.M. - 8:00 P.M.

Location: Huxley Theater

Description: While *Homo sapiens* is not the only tool-using species in the animal kingdom, our capacity for technological development and innovation is nothing short of astonishing.Recent archaeological excavations in Africa date the earliest evidence for hominid manufacture and use of stone tools to 2.6 million years ago. From these earliest beginnings, Dr. Jonathan Lothrop, curator of archaeology at the NYS Museum, traces the fundamental role that stone technology played in human evolution and the evolutionary success of genus *Homo*.**National Chemistry Day: "Energy: Now and Forever!"**

October 19, 2013 : 10:00 A.M. - 4:00 P.M.

Location: Fourth Floor - Terrace

Description: Fun for all ages - Free program

Chemistry Magic Show at 1 p.m. in the Clark Auditorium! The day's activities include interactive chemistry demonstrations, fun hands-on activities and experiments and door prizes. There is also a student-illustrated poetry contest. Create an illustrated poem at the event or bring yours to the Museum by noon. Winners announced at 1 p.m. Categories for prizes are listed below: Categories: K-2nd; 3rd-4th; 5th-8th and 9th-12th. For more information, contact National Chemistry Week co-coordinators, Mayrita Arrandale at Mayrita.ARRANDALE@atotech.com and Tina M. Ovitt at TinaO@kinesis-usa.com.**Connecticut Science Center****Hartford, CT**<http://www.ctsciencecenter.org/>**860.SCIENCE (860-724-3623)**

Dinosaur fans of all ages will be excited to meet our very own roaring, moving, life-size Dilophosaurus. This animatronic wonder is stationed on the 6th floor near a brand new dino dig table.

Corning Museum of Glass**Corning, NY 14830**

607-937-5371

800-732-6845

Website: www.cmog.org

Sat., 5/18/2013 - Sun., 1/05/2014

Symbolizing power, enabling ornamentation, and facilitating trade, glass beads are miniature masterpieces that have played significant roles throughout time and across cultures. This major exhibition explores glass beads and beaded objects made by various cultures, representing 3,500 years of human history. *Life on a String: 35 Centuries of the Glass Bead* will showcase, for the first time, many important works from the large historical glass bead collection of The Corning Museum of Glass as well as objects on loan from seven institutions.**~ Events Calendar ~***Shows with web links may have coupons!***October****5, Macungie, PA -- Autumn Minerafest:** 61st semi-annual Minerafest, organized by: [Pennsylvania Earth Sciences Association](http://www.pennsylvaniaearthsciencesassociation.org). Macungie Memorial Park (Poplar Street). Indoor / outdoor. 8:30 - 3. www.minerafest.com/minerafest61.pdf**5 - 6, Riverdale, NJ -- North Jersey Autumn Outdoor Gem & Mineral Show & Swap,** organized by: [North Jersey Mineralogical Society](http://www.northjerseymineralogicalsociety.org). The Glenburn Estate (211 Hamburg Turnpike). 9 - 5 Sat. & Sun. Free Admission.

19, Albany, NH -- Annual show; Saco Valley Gem & Mineral Club; Albany Town Hall; Rte. 16; Sat. 9-5; adults \$2, children (under 12) free with adult; silent auction, dealers, grand prize, auction, cutting rough, lapidary rough, mineral specimens, tools; contact Jonathan Herndon, 110 Ossipee MT Rd., Center Ossipee, NH 03814, (603) 539-3884; e-mail: jherndon1@roadrunner.com

19-20, Bristol, CT - 41st Annual Gem and Mineral Show by the Bristol Gem and Mineral Club. Beals Senior & Community Center, 240 Stafford Ave. Contact: bristolgem.org or Dave Korzendorfer: dkorzend27@comcast.net.

26, Fairless Hills, PA -- *Ultraviolation* : 24th annual fluorescent-only mineral show / swap / sell (*"If your rocks don't glow, you're at the wrong show"*). Organized by Rock & Mineral Club of Lower Bucks County. First United Methodist Church (840 Trenton Road). 9:00 AM – 5:00 PM, Cost \$2.00 Donation, Children 12 years old and younger FREE. Contact Chuck O'Loughlin, 130 Maple Terrace, Merchantville, NJ 08109, 856-663-1383, ultraviolation@yahoo.com

26, Arendtsville (Biglerville), PA – South Penn Rock Swap (not to be confused with the September show), organized by: [Central Pennsylvania Rock and Mineral Club](http://CentralPennsylvaniaRockandMineralClub.org) and the Franklin County Rock & Mineral Club. South Mountain Fairgrounds (1.5 miles west of Arendtsville on Route 234). GPS address: 615 Narrows Road, Biglerville, PA. Sat. 8 – 3. Adults \$1, students and children free. Outdoor show. Info: Tom Smith, 10 Roger Ave., Shippensburg, PA 17257, (717) 532-7204; tsmith1012@comcast.net; www.rockandmineral.org

26 - 27, Rochester, NY– 41st Annual Rochester Gem, Mineral, Jewelry & Fossil Show, organized by: [Rochester Lapidary Society](http://RochesterLapidarySociety.org). NEW LOCATION: [The Main Street Armory](http://TheMainStreetArmory.org) (900 East Main Street, Rochester). Sat. 10 – 6; Sun. 10 – 5. Adult - \$6, Children under 12 free with an adult. 2-day pass only \$9. Students receive half price admission with valid school issued ID. <http://www.rochesterlapidary.org/show/>

26 – 27, Evansville, IN – 47th Annual Gem, Mineral & Fossil Show of the Evansville Lapidary Society. Washington Square Mall, Green River Road & Washington Avenue. Sat. 10 am – 9 pm; Sun. Noon – 5 pm. Beads ~ Slabs ~ Geodes ~ Fossils ~ Jewelry ~ Minerals ~ Carvings ~ Crystals ~ Meteorites ~ Specimens ~ Cutting Rough ~ Cabochons ~ Faceted Stones ~ Tumbled Stones. Junior Rockhound booth, Free tumbled stones for kids, Door prizes, Working demonstrations, Private Collectors' exhibits, and a 285-pound geode. New Members Always Welcome! Free Parking, Free Admission, Shops & Restaurants, Indoor Mall. ELS 812-425-GEMS. <https://www.facebook.com/groups/Lapidary>

November

2 – 3, Exton, PA - 44th Annual Gemarama. "2013: Shades of Red" sponsored by the Tuscarora Lapidary Society. The School at Church Farm, Business Rte. 30, 1 / 2 mile west of Frazer Rte 30 exit off Rte. 202.

2 – 3, Brewer, ME - 9th Annual Rock & Gem Show of the Penobscot Mineral & Lapidary Club. Brewer Auditorium. Contact: Ruth Siebert @ 207-234-2253 or www.penobscotmineralandlapidaryclub.com

9 – 10, New York, NY – New York Gem & Mineral Show. Holiday Inn, 440 W 57 St. 10:00AM-6:00PM Sat; 11:00AM-5:00PM Sunday. Admission is \$6.00; kids under 12 are free. Lectures, 20 top dealers, retail and wholesale. <http://www.excaliburmineral.com/shows.htm>

23 – 24, West Palm Beach, FL - 47th Annual Gem, Jewelry, Bead, and Fossil Show of the Gem & Mineral Society of the Palm Beaches. South Florida Fairgrounds, 9067 Southern Blvd. Contact: Barbara Ringhiser: bar5678@aol.com.

23 – 24, Fairfax, VA - 22nd Annual Gem, Mineral & Fossil Show of the Northern Virginia Mineral Club. George Mason University, Braddock Rd. & Rt. 123, Fairfax, VA. Contact: www.novamineralclub.org

You can find gem and mineral show listings in hobby and trade magazines as well as online. Here are some fairly useful websites, and there are also listings at the Federation sites by region.

<http://www.mineralfest.com/calendar.html>

<http://www.rocksandminerals.org/Coming%20Events/coming-events.html>

<http://www.rockngem.com/show-dates-display/?ShowState=ALL>

<http://www.mindat.org/eventlist.php>

<http://gemshows.blogspot.com/>

Recommended Site: The Evansville (IN) Lapidary Society has been a busy group. Check them out on Facebook:

<http://www.facebook.com/groups/Lapidary/>

Club President Michael Zink has shared a number of photos of their renovated cabbing shop! Their show is October 26 & 27, in Evansville, IN.

(And since some of you eschew FB, here's their blog URL too:

<http://evansvillelapidarysociety.tumblr.com/>)

Bigger than Pantone Green 17-5641!*

As you may know, the NYC club's annual banquet celebrated the minerals known as jade (jadeite and nephrite)... and then the Gem, Lapidary & Mineral Society of Washington, DC enjoyed a presentation by gem artist and past club president Helen Serras-Herman, MFA, FGA, about Mayan jade. Sounds like it must have been a fantastic evening! You can see some of Ms Serras-Herman's work at her website www.gemartcenter.com, and the club's site is www.glmsdc.com. (Via *The Dopstick*.)

Furthermore, the magical editors' network has granted me the pleasure of connecting with Sheryl Sims, editor of *Mineral Minutes*, the bulletin of the Mineralogical Society of the District of Columbia. *MM* runs longer than the Danburite, and is beautiful & full of serious hobby-related news. September's article about labeling and cataloging one's collection could be of interest to a few DMSers. Also in that issue is a peek at a Powerpoint presentation about the petrified forest – by a junior member (the editor's daughter) and her friend, and

looking sharp enough to be a club program for “grownups.” (They got an “A,” of course.)

You can access the MM via their club website: www.mineralogicalsocietyofdc.org/.

(The DMS Facebook page includes links to many of the clubs featured in the Danburite, as well as other clubs and events.)

And here's the general DC event link again:... mineral hobbyist stuff in the DC area:

mc-computing.com/other/Mineral_COE.html.

Just in case you'll be traveling that way...

**Pantone Emerald Green 17-5641 was the official “color of the year” where such things are determined. (2014's color is looking to be 18-3949 “Dazzling Blue.”)*

Follow-ups

Earth Science Week

“Mapping Our World,” the theme of ESW 2013, engages young people and the public in learning how geoscientists, geographers, and other mapping professionals use maps to represent land formations, natural resource deposits, bodies of water, fault lines, volcanic activity, weather patterns, travel routes, parks, businesses, population distribution, our shared geologic heritage, and more. Maps help show how the Earth systems – geosphere, hydrosphere, atmosphere, and biosphere – interact.

<http://www.earthsciweek.org/index.html>

National Fossil Day

nature.nps.gov/geology/nationalfossilday/

Paleontology

<http://blogs.discovermagazine.com/d-brief/2013/09/20/dinosaur-feathers-found-in-ancient-amber/#.UkmmvT9JZGr>

PETM

<http://people.earth.yale.edu/paleoceneecene-thermal-maximum>

<http://www.annualreviews.org/doi/abs/10.1146/annurev-earth-040610-133431>

Encyclopedia Britannica: **Paleocene-Eocene Thermal Maximum (PETM)**, also called Initial Eocene Thermal Maximum (IETM), a short interval of maximum temperature lasting approximately 100,000 years during the late [Paleocene](#) and early [Eocene epochs](#) (roughly 55 million years ago). The interval was characterized by the highest global temperatures of the [Cenozoic Era](#) (65 million years ago to the present).

See complete entry at:

<http://www.britannica.com/EBchecked/topic/1419455/Paleocene-Eocene-Thermal-Maximum-PETM>

www.motherjones.com/environment/2012/03/heat-wave-climate-change-future-matthew-huber-interview

http://web.ics.purdue.edu/~huberm/Matthew_Hubers_Climate_Dynamics_Prediction_Laboratory/CDPL.html

Comet Ison

<http://www.universetoday.com/101798/debunking-comet-ison-conspiracy-theories-no-ison-is-not-nibiru/>

Ancient Ostrich Shell artifacts, etc.

<http://sanweb.lib.msu.edu/DMC/African%20Journals/pdfs/PULA/pula015001/pula015001006.pdf> "An archaeological examination of ostrich eggshell beads in Botswana."

Ostrich eggshell beads on Pinterest:

http://www.pinterest.com/search/?q=Ostrich_egg_shell

<http://popular-archaeology.com/issue/december-2012/article/the-first-modern-humans-arose-in-south-africa-say-researchers>

References related to the Opals article

<http://www.antoINETtematins.com/>

<http://reneenewman.com/index.htm>

<http://www.mindat.org/min-3004.html>

<http://en.wikipedia.org/wiki/Hyalite>

<http://geology.about.com/od/mineralsresources/a/whatsamineral.htm>

<http://www.jstor.org/stable/30062035>

Curiosity

Diggin' the Martian Soil: "[They found](#) that the sample contained around 2 percent water, probably hidden in the glassy particles. The analysis also found a variety of chlorine compounds, including perchlorate, a toxic component of rocket fuel, which could complicate future plans for humans to live and work on Mars. Both the water and the chlorine probably come from the atmosphere, Leshin explains. "The dirt is acting as a bit of a sponge," she says. So far, they haven't found any organic compounds that might signal life. "

www.sciencenews.org/view/generic/id/353543/description/Curiosity_gets_the_dirt_on_Mars

Mineral Club Links

Lapidary and Mineral Society of Central Connecticut

<http://www.lmscc.org/> (also on Facebook)

Bristol Gem & Mineral Club

<http://bristolgem.org/>

Connecticut Valley Mineral Club

<http://www.cvmineralclub.org/> (also on Facebook)

Stamford Mineralogical Society

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

Mid-Hudson Valley Gem & Mineral Club

<http://mhvgms.org/>

New Haven Mineral Club

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

Orange County Mineral Society

<http://www.orangecountymineralsocietynewyork.com>

The North Jersey Mineralogical Society

<http://nojms.webs.com/>

North Shore Rock and Mineral Club

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

and there are more to be found at

<http://www.amfed.org/efmls/clubs.htm>

The DMS is on Facebook!! Are You ?

There are in fact a lot of rockhounds – and lapidary hobbyists of all types -- on Facebook. Sometimes the link will say “closed group” or you will have to send a request to join, and that is just to try to keep out spammers, so don't worry about it – not a test or anything like that.

So sign in or sign up at www.facebook.com and search for Danbury Mineralogical Society PAGE. Come on, you know you want to!

While you are there, check out the IAIS' page at www.facebook.com/pages/The-Institute-for-American-Indian-Studies/94523613907?ref=ts and

Rock, Gem and Mineral Clubs at www.facebook.com/RockGemMineralClubs

You can see lots of fun shared photos (and meet other rockhounds) in the group “The Rockhound Connection”

www.facebook.com/groups/169785333057/10150901166988058/

Mindat has a FB “group” page also, at www.facebook.com/groups/mindat/

and there is their sibling page for Gemdat: <http://www.facebook.com/groups/141931992617518/?ref=ts&fref=ts>

American Geosciences Institute has a page at www.facebook.com/agiweb

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Editor Emeritus	Hank Henning	hank@bestweb.net

AFMS Code of Ethics

- 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.

The Danbury Mineralogical Society Inc. is a non-profit corporation and is affiliated with the Eastern Federation of Mineralogical and Lapidary Societies and The American Federation of Mineralogical Societies. Meetings are held at 7:30 pm on the first Thursday of the month from October to June the Danbury Historical Society & Museum, Danbury, Connecticut. (Summer meetings have started to occur now that we no longer meet at a school.) Visitors and guests are welcome at all meetings. The January meeting is usually a dinner seminar. August is preparation time for our annual mineral and jewelry show in September.

Current membership dues are \$15 per adult individual \$20 per family (including children under 18), and \$10 for students and senior citizens. Only dues-paying members are covered by our liability and accident insurance and may receive the print version of the **Danburite**. **Please be sure we have your CORRECT email address on file! If you absolutely must receive your copy by real mail instead, please let us know that also. Cancellations and other critical updates are disseminated by email and on our Facebook page as well as the website.**

The particular objectives for which this Society is formed are:

- To promote general interest in mineralogy
- To study rocks, minerals, fossils and the lapidary arts through lectures and discussion groups and field trips.
- To encourage the search for minerals indigenous to our areas
- To keep an accurate and permanent record of all mineral localities visited by this society and to make such records available to all members.

The Danburite is published monthly except July and August by the Danbury Mineralogical Society, Inc. *The Danburite* may be quoted and unless otherwise noted all material may be reprinted provided credit is given to the author and *The Danburite*. The Editor, the officers of the Danbury Mineralogical Society, and The Danbury Mineralogical Society, Inc., are not responsible for the accuracy or authenticity of information in articles accepted for publication, nor are the opinions expressed therein necessarily those of the editor and the officers and other members of the Danbury Mineralogical Society Inc.

As an educational non-profit society, part of our function is to find and share information that may be of interest to our membership as well as to earth science and jewelry hobbyists in general. Where possible, we attain permission to reprint materials found elsewhere, and consider these excerpts and references to be covered under the Fair Use clause of copyright law (Section 107). Line drawings unless otherwise attributed are from "MinPics" collection purchased from Diamond Dan Publications.

LOCAL FIELD TRIP & EVENT SCHEDULE 2013(subject to change – **tentative dates in red**)

<u>DATE</u>	<u>EVENT DETAILS</u>	<u>HOST CLUB</u>
Sept. 28	Hooper Garnet Mine in the Adirondacks - garnets in gneiss- hard rock mining. Gem garnet fragments in stream below Barton Mine facility.	Mid-Hudson Carolyn: sunstone33@verizon.net
Sept. 28-29	Franklin, NJ show/Sterling Hill Mining Museum, Ogdensburg, NJ gem & mineral garage sale Sterling Hill Mining Museum, Ogdensburg, NJ Public collecting - Fill quarry and Passaic pit areas**	
Oct. 12	Fossil Discovery Center dig at Sterling Hill Mining Museum, Ogdensburg, NJ **	
Oct. 12	Clark Hill Quarries, E. Hampton, CT *	Bristol
Oct. 13	Case Quarries, Portland, CT*	New Haven
Oct. 19	Sterling Hill Mining Museum, Ogdensburg, NJ Night collecting (6-10PM) for Museum members only. **	
Oct. 19-20	Bristol club show - bristolgem.org	
Oct. 26	Ultraviolation fluorescent mineral show/sale/swap. Rock & Mineral Club of Lower Bucks County. First United Methodist Church (840 Trenton Road), Fairless Hill, PA ultraviolation@yahoo.com	
Oct. 27	Sterling Hill Mining Museum, Ogdensburg, NJ Public collecting - Fill quarry and Passaic pit areas**	
Oct. 26-27	Rhode Island club show – www.rimh.us	
Nov. 2-3	Stamford club show - www.stamfordmineralsociety.org	
Nov. 9	Fossil Discovery Center dig at Sterling Hill Mining Museum, Ogdensburg, NJ **	
Nov. 9-10	New York City Fall Gem & Mineral Show www.excaliburmineral.com/shows.htm	
Nov. 23-24	Worcester club show - www.worcestermineralclub.org	
Nov. 24	Sterling Hill Mining Museum, Ogdensburg, NJ Public collecting - Fill quarry and Passaic pit areas**	

ALSO: November 2 bus trip to the Harvard's natural history museum in Cambridge, MA. Details in progress, trip sponsored by the Meriden club, which has seating priority – to be opened to other clubs if it does not fill.

Host Club contact info:

BRISTOL & MERIDEN, CT	Harold Moritz fritzandsheila@pobox.com (860) 873-3957
NEW HAVEN, CT	Ray Meyers raymond.meyers@ct.gov
MID-HUDSON VALLEY, NY	Contact noted for each trip.

*Limit on DEP permit trips is 25 participants; contact the host club to sign up.

(continued next page)

Case Quarries info - www.lmscc.org/case.htm

CCC Quarries info - www.lmscc.org/CCCQuarry.htm

Clark Hill Quarries info - www.lmscc.org/clark_hill.htm

** The Sterling Hill Mining Museum in Ogdensburg, NJ (sterlinghillminingmuseum.org/visitor/schedule.php) is open to collecting daily on the Mine Run dump, 10 AM. – 3 PM, and on the last Sunday of each month in the Fill quarry and Passaic pit areas also, 9 AM-3 PM. Collecting fees: \$5 admission plus \$1.50/lb for all material taken.

Also the Franklin Mineral Museum (\$7 admission, www.franklinmineralmuseum.com) is open daily April through November, Monday through Friday 10 AM – 4 PM. Saturdays 10 AM – 5 PM and Sundays 11 AM -5 PM. Collecting available daily for another \$7 (combined with admission \$12), plus \$1.50 per pound.

*** Maine Geological Survey field trips:

www.maine.gov/doc/nrimc/mgs/explore/minerals/fieldtrips/fieldtrips.htm

You can link to it from www.lmscc.org by scrolling to the bottom of the page and clicking on their logo.

HERKIMER/FONDA Map:

