



The Mineral Newsletter

Meeting: June 22 Time: 7:45–9:00 p.m.

Long Branch Nature Center, 625 S. Carlin Springs Rd. Arlington, VA 22204



The Whitney Alexandrite, part of the Smithsonian's gem collection. Discovered in Russia in the 19th century, Alexandrite is a form of chrysoberyl, the birthstone for Gemini on the Star Sign Stone Chart. The newly discovered mineral was named for Czar Alexander II. Alexandrite changes color under different light sources, as shown here.
<http://geogallery.si.edu/index.php/en/1007546/alexandrite>

Alexandrite Gemini birthstone

Volume 56, No. 6

June 2015

You can explore our club website:

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

Northern Virginia Mineral Club members,

Please join our June speaker, Jim Kostka, for dinner at the Olive Garden on June 22 at 6 p.m.

*Olive Garden, Baileys Cross Roads (across from Skyline Towers), 3548 South Jefferson St.
(intersecting Leesburg Pike),
Falls Church, VA
Phone: 703-671-7507*

Reservations are under Kathy Hrechka, Vice-President, NVMC. Please RSVP to my cell at 703-407-5393 or kshrechka@msn.com.

Jim Kostka **Radioactive Minerals, Part 2** **June 22 Program**

Jim Kostka will give our club the second part of his presentation on radioactive minerals. He gave the first part at the NVMC meeting in May of last year.

Jim's presentation last year was both informative and entertaining. Jim has some great stories—you won't want to miss them!



Carnotite (potassium uranium vanadate), a radioactive mineral. Photo: Pat Haynes.

Jim is a rock collector who specializes in radioactive rocks. His theme is, “If it don’t click, I don’t collect it.”

One of Jim’s specialties is to help fellow collectors evaluate the radioactivity of the rocks in their collection—and to get rid of some of them if they wish to “cool down” their homes. He will help them find good homes for any unwanted rocks.

There is lots of material to cover, so come ready to listen and learn. You can find pictures of Jim and his presentation last year in the [GLMS Rockhounder](#).

As an added bonus, we will also hear from NVMC member Conrad Smith, who will talk about his plans for college. ➤



The Prez Sez

by Wayne Sukow

Congratulations to our club members for passing the 2015 NVMC budget at the May club meeting! Thanks in particular to NVMC Executive Board members Kathy Hrechka, Kenny Loveless, David

In this issue ...

Lonsdaleite	p. 3
Safety tip	p. 3
Previous meeting.....	p. 4
Donation: Fred Schaefermeyer Fund	p. 8
Next stop: New York!	p. 8
Students nominated for scholarships	p. 9
Mineral of the month: Wulfenite.....	p. 10
Genesis inscribed in the rocks?	p. 11
Global pegmatite distribution	p. 14
Field trip idea.....	p. 15
Self-collecting at Morefield Mine.....	p. 16
AFMS: No kids allowed?.....	p. 17
EFMLS: Hosting the convention	p. 17
Glass Beach.....	p. 18
Upcoming events.....	p. 19

MacLean, and Rick Reiber for doing so much to make it happen!

Enjoy the summer ... enjoy the self-guided field trips, enjoy success in collecting! Come back refreshed ... and ready to come forward when new club officers are needed in the fall! ➤

Wayne



“Okay, which one of you guys is taking the steroids I found in the locker room?”

The Corunduminium, [Funny Caption Contest](#).

News Notes Lonsdaleite

By Ed Goldberg

Editor's note: The piece is adapted from The Conglomerate (newsletter of the Baltimore Mineral Society, Baltimore, MD), July 2014, p. 5.

Everyone knows that diamond is the hardest naturally occurring mineral—or is it?

Lonsdaleite is composed of carbon, but the crystal structure is different from diamond. Pure lonsdaleite is harder.

Lonsdaleite is extremely rare because it forms when meteorites containing carbon in the form of graphite hit the Earth at high velocity. The sudden compression can rearrange carbon atoms to form lonsdaleite.

One type locality is the Canyon Diablo meteor crater an hour east of Flagstaff, AZ, although the mineral is also found in other locations around the world. Each location save one is a meteorite impact site. The one exception is a kimberlite pipe in China that contains lonsdaleite.

Naturally occurring lonsdaleite has a hardness of only about 7 due to imperfections in the crystal structure. Synthetic lonsdaleite created in the laboratory without imperfections has tested harder than diamond (greater than 10). ➤



Lonsdaleite, Canyon Diablo meteor crater, Flagstaff, AZ.

Petrified Wood for Sale

I have two large pieces of petrified wood that my father acquired years ago. I thought I would try to get them into the hands of someone who does lapidary work.

I've attached a couple of pictures. One piece weighs around 120 pounds, the second around 45 pounds. They came from the California desert; one side of each is cut, and the grain and colors seem pretty nice.

I have a general idea of their value but am certainly open to offers.

Paul Lawrence (pnsalawrence@cox.net)



Safety Tip: Loose Ends

Adapted from Ellery Borow, "Safety Matters—Loose Ends," EFMLS News, September 2013, p. 4.

Don't let loose ends trip you up!

Loose ends can include shoe laces, shirt cuffs, loupe chains, watch bands, shirt tails—you name it! While collecting, a hammer swing can be interrupted by loose jacket folds and boot laces can get trapped in rocks. Shirt sleeves can get caught in lapidary equipment or burned by alcohol lamps, and aprons can get hung up on sharp table edges. Things often reach out and grab any loose end in reach, taking you by surprise.

So watch out for those loose ends!

Previous Meeting Minutes May 18, 2015

by Dave MacLean, Secretary

Vice-President Kathy Hrechka called the meeting to order at 8 p.m. at the Long Branch Nature Center in Arlington, VA.

The minutes of the April 27 meeting were approved as published in *The Mineral Newsletter*.

The vice-president recognized past Presidents Sue Marcus, Rick Reiber, and Barry Remer.

Kathy also recognized Ken Reynolds as a new member.

Old Business

Treasurer Rick Reiber, assisted by Kenny Loveless, addressed the 2015 NVMC budget. Rick said he could not present the complete budget because the space charges at George Mason University for the November 2015 NVMC show are not yet certain.

For the budget, Rick assumed a 0-percent increase in income over 2014 and a 3-percent increase in expenses, including space rent at the Long Branch Nature Center, meeting program expenses, etc. Income includes annual dues of \$2,750 and net proceeds from the annual mineral show and the biannual auction.

Proceeds from the auctions go into the Fred C. Schaefermeyer Scholarship Fund for students at George Mason University, James Madison University, and Northern Virginia Community College. The NVMC's purpose is outreach and education for the public.

Rick read every expense category and budget amount aloud. After discussing the budgeted amounts, members made no motions to change any of them. A motion to accept the budget was made and seconded. The budget passed unanimously.

Awards

Jim Kostka, show co-chair, laid out certificates of appreciation for those who worked at the November 2015 NVMC show.

Kathy asked newsletter editor Hutch Brown to hand out awards that club members won in the EFMLS Bulletin Editors' Awards Contest (BEAC) for 2014. President Wayne Sukow, who attended this year's

All photos are from Sheryl Sims. Thanks, Sheryl!!



Certificates of appreciation for members who volunteered at the 2014 GMU club show.

EFMLS conference in North Carolina, had brought back the awards. The award winners were:

Large Bulletins:

NVMC, *The Mineral Newsletter*—6th place

Technical Educational Articles:

Hutch Brown—1st place

“Sugarloaf Mountain: A Maryland Mystery”



Kathy Hrechka (left) and Sheryl Sims (with editor Hutch Brown) were among the recipients of awards in the BEAC for 2014.

Hutch Brown—3rd place
“Why Is the Chesapeake Bay Sinking?”

Non-Technical Educational Articles:

Pat Flavin—5th place
“Fracking on the Chesapeake Bay”

Sheryl Sims—7th place
“Going Once! Going Twice! Sold!”

Gerry Cox—10th place
“EFMLS Wildacres Program: Best Bargain Vacation Ever”

Written Features:

Kathy Hrechka—3rd place
“Geo Trip to JMU and Shenandoah Caverns”

Jim Kostka—4th place
“‘Geology 101’ at Leisure World”

Announcements

Muriel Frink contributed \$96 to the Fred C. Schaefermeyer Scholarship Fund in celebration of Fred’s 96th birthday. (See the story below.)

The Morefield Mine in Amelia, VA, was open until May 30. Families could collect on Saturdays from 9:30 a.m. to 5:00 p.m., but the mine’s future schedule is uncertain. The [Morefield Mine Website](#) describes the mine’s history and visiting days/hours.



Show-and-tell: Scott Braley brought a dazzling array of cassiterite crystals (bottom) and smoky quartz in schist (top), all self-collected in Australia.

Sadly, the old Rutherford Mine is now covered over with a subdivision.

The Southern Maryland Club show was held on Saturday, May 30, at the Ruhl Armory in Towson, MD.

Jeff Guerber and Barry Remer won the drawing for door prizes.

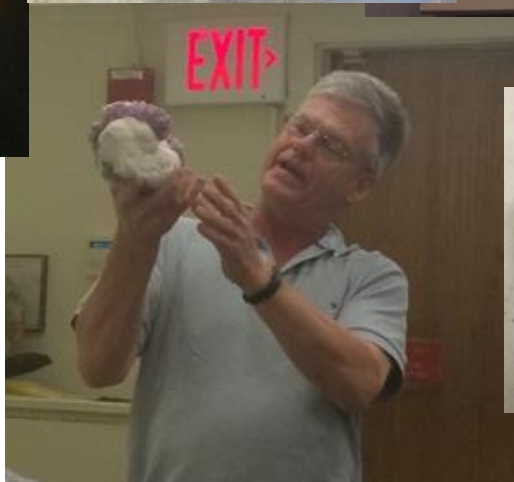
Meeting Program: Show-and-Tell

The program was show-and-tell. Members briefly and enthusiastically talked about mineral and fossil specimens and other items they chose to put on display.

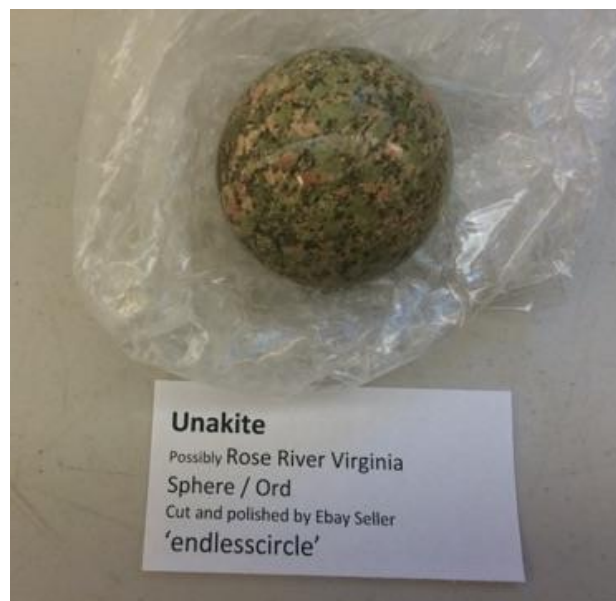
Scott Braley	Self-collected cassiterite crystals and smoky quartz in rotten schist, NSW, Australia
Kathy Hrechka	Microminerals from A to Z
David MacLean	Chabazite on dacite, Csodi Domb, Dunabogdany, Hungary
Bill Oakley	Brochantite Granite with blue lazulite, K-2 Mountain, Gilgit, Pakistan Cabochons
Joseph Poranshi	Sapphire, Afghanistan Fluorite, China Quartz, Maury River, near Goshen, VA Beryl, Brazil



**Club show-and-tell a
huge success—
dozens of specimens
and stories**



Craig Moore	Barreites, tidal mud flats, AK
Sue Marcus	Palygorskite, Metaline Falls, WA
Rich Palaschak	Campbellite, Bisbee, AZ Turquoise, Bisbee, AZ River turquoise, NM Opal, ID Copper, Keeweenau area, MI
George Reimherr	Vivianite crystals, Richmond, VA, found on a construction site in 1966
Matt Charsky	Big fat tourmaline crystal, Brazil
Jim Kostka	Quartz crystals, Brazil, WWII surplus for radios Spheres of various rocks Teaching kit for minerals
Hutch Brown	Unidentified, Morefield Mine, Amelia, VA Crinoid stem in poorly metamorphized sandstone (Antietam quartzite?), Arlington, VA

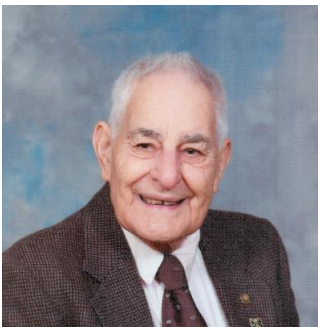


Ken Reynolds	Fluorite, Mexico? Emerald in matrix, Colombia Barite Calcite with goethite Concretion, Glen Canyon, AZ
Sheryl Sims	Septarian nodule with quartz crystals in center, Glen Canyon, AZ? ➤

Lazulite



New club member Ken Reynolds—welcome, Ken!



Special Donation Fred C. Schaefermeyer Scholarship Fund

Years ago, the NVMC established a fund for presenting promising students in fields related to our hobby with scholarships to help further their studies. In honor

of longstanding club member Fred Schaefermeyer, it is known as the Fred C. Schaefermeyer Scholarship Fund.

Fred now lives in Wheatridge, CO, together with his companion, Muriel Frink. Muriel recently sent the club a note, along with a gift. ➤

Next Stop: New York!

by Tyler Hansen

Editor's note: The author, an Earth sciences major at James Madison University, received a scholarship from the NVMC's Fred C. Schaefermeyer Scholarship Fund to help defray the costs of his studies.

My time in the field of geology has been short so far, but my experiences and knowledge gained have been wonderful, and I know they will last. My goal is to one day teach geology and other Earth sciences in high school or college. To get there, I need to widen my knowledge and expand my understanding.

That is why I joined nine other James Madison University students, along with Professor Lance Kearns and his wife Cindy, on a trip to upstate New York in quest of minerals and a new understanding of geology. After an exhaustingly long trip, we finally arrived at our first stop: Niagara Falls!

The author at Niagara Falls.



*Northern Virginia Mineral Club
ATTN: Rick Reiber*

Enclosed find my check for \$96.00 to go into the Fred Schaefermeyer Scholarship Fund—in remembrance of Fred's 96th birthday.

I am so pleased to report he is getting active again and we're hoping with warmer (and not so icy) days we can get out and about.

P.S.: Tell Cynthia Payne "Happy Belated Birthday" from Fred (and myself)!

I read the newsletters to Fred as soon as they arrive. Thank you!

Muriel Frink

Here we took loads of pictures and discussed the tectonic history of the falls as well as the composition of the underlying rock. We also visited various sites around the falls to gain a better understanding of its geologic history and how it has changed over time.

After a day in Niagara, we traveled a short distance to Rochester, NY, where the 42nd Annual Rochester Mineral Symposium was being held. To be honest, I did not know what to expect, but when I arrived, I was not disappointed.

At the symposium, we bounced from lecture to lecture learning all about minerals, from how they are photographed to their origin or rarity. This symposi-



Dr. Steve Chamberlain welcoming attendants to the 42nd Annual Rochester Mineral Symposium.

um had it all! Beautifully run by Dr. Steve Chamberlain, it introduced us to spectacular mineral specimens from around the world, with a wide variety of sizes, colors, and prices.

Entire rooms were dedicated to selling specific minerals—an excellent way for me to begin my mineral collection for my future students to see. Several collectors were very well known and had a wealth of information to share with us. One even gave us a tour of their personal collection.

This trip was an incredible experience! I cannot wait for next year's symposium to further my collection.

But thanks to the NVMC's Fred Schaefermeyer Scholarship, I can expand my knowledge even more by exploring parts of Ireland when I study abroad this summer. I am incredibly grateful for this scholarship and the greater opportunities I know it will bring me on my trip to Ireland. ↗

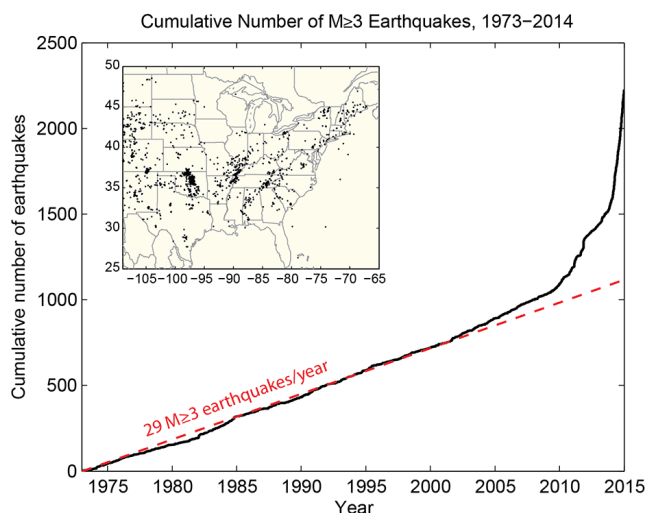
Induced Earthquakes

Thanks to Pat Flavin for the reference!

A USGS study found that the number of earthquakes in the central and eastern United States has increased dramatically in recent years. Most are in the 3–4 range of magnitude.

The increase coincides with the injection of wastewater in deep disposal wells. The wastewater is mostly a byproduct of oil and gas production.

You can find more on this story at <http://earthquake.usgs.gov/research/induced/>. ↗



Students Nominated for Scholarships

The NVMC has nominated two students for \$400 grants from the Fred C. Schaefermeyer Scholarship Fund to help them further their studies. Both are longstanding junior members of our club.

In the fall, Conrad Smith plans to attend the New Mexico Institute of Mining and Technology, where he intends to double-major in geology and mineral engineering.

Alex Brenner is a sophomore at the California Institute of Technology, where he is majoring in geology. Last summer, he conducted a paleomagnetic and stratigraphic study of Paleoproterozoic sediments from northern Canada; this summer, he will perform a spectroscopic search for trace water in meteorites and lunar material.

The Brontosaurus Is Back

Thanks to Sue Marcus for the reference!

First named in 1879, the Brontosaurus was later reclassified as part of a genus called Apatosaurus.

After reexamining the fossil record, scientists now believe that the differences are great enough to accord the Brontosaurus status as a separate genus.

You can find the full story at <http://www.zmescience.com/science/biology/brontosaurus-back-research-0423423/>. ↗





Perfect 100-Carat Diamond

Thanks to Sue Marcus for the reference!

In April, Sotheby's sold a rare 100-carat emerald-cut perfect diamond, just one of six diamonds over 100 carats and of comparable quality

ever to be sold at auction. The diamond sold for \$22.1 million.

You can find the full story at

<http://observer.com/2015/02/sothebys-perfect-100-carat-emerald-cut-diamond-could-fetch-25-million/>.

➤

Missing Yellowstone Magma

Thanks to Sue Marcus for the reference!

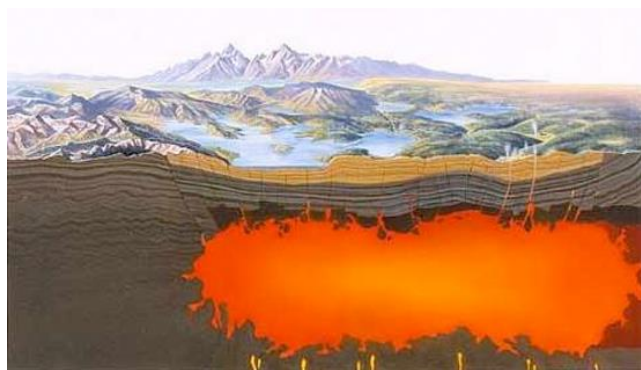
Yellowstone is a continental "hotspot" where a plume of magma from the Earth's mantle reaches the Earth's surface. Although the Yellowstone volcano hasn't erupted in 640,000 years, huge reservoirs of magma lie just beneath the Earth's surface.

Researchers long ago found one magma reservoir, but they knew there must be another. Now they have found it—a far larger reservoir of magma lying beneath the first.

You can find the full story at

<http://blogs.discovermagazine.com/d-brief/2015/04/23/magma-yellowstone/#.VTlabDcpMsE>.

➤



Mineral of the Month: Wulfenite

by Hutch Brown



Smithsonian National Mineral Collection. Top: San Francisco Mine, Sonora, Mexico; bottom: Red Cloud Mine near Yuma, AZ. Photos: Chip Clark.

<http://geogallery.si.edu/index.php/en/1054764/wulfenite>

Wulfenite (lead molybdate, PbMoO_4) is bright orange-red to yellow-orange in color, sometimes brown. It crystallizes in the tetragonal system, often occurring as stubby, pyramidal, or tabular crystals.

Wulfenite was first described in 1845 from Bad Bleiberg, Carinthia, Austria. It was named for Franz Xavier von Wulfen (1728–1805), an Austrian mineralogist.

Wulfenite occurs as a secondary mineral in oxidized hydrothermal lead deposits. It has been mined for its molybdenum. A noted locality for wulfenite is the Red Cloud Mine in Arizona. Crystals there are deep red in color and usually very well formed.

Wulfenite is soft, with a hardness of about 3 on the Mohs scale (equivalent to calcite). It sometimes fluoresces yellow, orange, or red. It has a greasy luster and a yellowish-white streak.

Sources: Wikipedia, Mineralogy Database.



Story of Geology Genesis Incribed in the Rocks?

by Hutch Brown

Editor's note: This piece begins a new series on the intellectual and scientific underpinnings of our hobby. Each piece will focus on a single contribution. The ancient Greeks as well as Chinese and Arab scholars made far-reaching scientific discoveries, but Christian Europe largely dismissed or ignored them, so I will begin with the biblical account of the Great Flood. **Disclaimer:** This article does not necessarily express the views of other NVMC members. If you want to comment or contribute, send your writings to me at hutchbrown41@gmail.com.

I am not religious, but I was raised as a church-going Episcopalian, so I know the Christian Bible stories. One of the most fascinating tales—I can remember it from the time I was 5 years old—is Noah and the Great Flood.



Later, during my graduate studies, I came to realize how central that story was to the Christian worldview in the Middle Ages and beyond. The mainstream European worldview was that most of the rock formations we see around us resulted in a very short time from a global catastrophe—the Great Flood.

How did that belief come about? And how did it contribute to the science of geology that we know today?

Catastrophism

The story of Noah spoke to the early modern mind. Most people in Europe lived in grinding poverty, buffeted by forces with causes beyond their ken. Armies pillaged entire landscapes during incessant wars, including the religious wars so characteristic of the age. The Thirty Years War alone (from 1618 to 1648) cost Germany about a third of its entire population.

Moreover, incurable diseases such as smallpox and the Black Plague depopulated entire areas for generations at a time. Climate-related events ranging from prolonged drought, to prolonged rain, to prolonged cold meant regional starvation for peasants and other humble folk. Disaster could strike at any moment.

Death and destruction seemed to stalk the world; the great watchword of the age was *memento mori*—“Remember: Thou shalt die.” Contemporaries firmly believed in a great Wheel of Fortune that inevitably brought disaster to even the most fortunate. The lesson was to focus not on this world but on the next.



John Martin, The Deluge (1834). Oil on canvas. Source: Wikipedia.

In this context, the story of the Great Flood resonated. According to Genesis, God punished a sinful world by destroying it in a great deluge, saving only Noah and his family. Rains lasting for more than a month transformed the entire Earth into a single great ocean. All terrestrial life disappeared except for the people and animals that Noah carried on his ark.

So it is no surprise that early scientific inquiry focused on catastrophes to explain the world. To this day, believers in the literal truth of the Bible have sought empirical proof of the Great Flood in the geological record. In the 17th century, they included every major scientist, naturalist, and natural philosopher.

These men (they were all men) already knew how the Earth was created, because the Bible told them so. They even knew when it happened, because Archbishop James Ussher, a 17th-century Irish biblical scholar, had done the math: The Creation began on the evening of October 22, 4004 BC.

Early modern scientists saw it as their Christian duty to find the story of Genesis inscribed in the Earth's surface. Their belief that it was possible is called natural theology, and they made lasting contributions to our scientific knowledge of geology.

Nicolas Steno

A good example is the Danish anatomist Niels Stensen, who Latinized his name to Nicolas Steno (a common practice among European scholars, perhaps because they wrote their works in Latin). Most of Steno's contemporaries believed that fossils such as sharks' teeth grew naturally in rocks, much as quartz forms inside a vein. In fact, fossilized sharks' teeth were known as “tongue stones.”



Nicolas Steno. In later life, Steno converted to Catholicism and was named a bishop.
Source: Wikipedia.

In 1666, after dissecting the head of a shark, Steno concluded that sharks' teeth and other fossils came from living beings. He theorized that rocks and minerals were originally fluids that precipitated out of the ocean that once covered the globe. The material that settled onto the ocean floor solidified into rock, enclosing sharks' teeth and other fossils. Steno attributed rocks without fossils to the time of Creation in Genesis before God created life.

Early modern naturalists believed that matter was composed of tiny "corpuscles" (akin to the modern concept of molecules). Steno maintained that fossils gradually transformed from animal into mineral corpuscles. Pretty good, no?

Law of Superposition

Steno's theory of the formation of rocks on the global ocean floor had a logical corollary: Younger sediments overlaid older ones. For Steno, the horizontal layers of rock he saw in the mountainous and coastal landscapes where he worked (mostly in Italy, a center of learning at the time) represented a time sequence, with the younger layers overlying older ones.

That might seem obvious today. But at a time when most people regarded rock layers as all formed at the same time during the Creation, it was a revolutionary insight. The Law of Superposition was Steno's greatest contribution to the science of geology, and it remains central to stratigraphy to this day.

Steno recognized other principles of geology as well. Working in Italy as he did, Steno knew about volcanism, and he recognized that molten rock can intrude older layers of rock and form a younger layer overlying them. He also knew that shifts in rock masses—what we now call thrust faults—can bring older layers of rock to rest on top of younger ones.

For Steno, none of this conflicted with the biblical account of the Creation. Indeed, he converted from the Lutheranism of his native Denmark to Catholicism in later life and participated as a Catholic bishop in the Counter-Reformation of the late 17th century.

And, when you think about it, there is no contradiction. The Great Flood would have unleashed catastrophic forces on an unimaginable scale. For the Great Flood, at some stages, to have forced up lava, shifted rock layers, and gouged out rock formations—and, at other stages, to have laid down new rock layers—was not beyond the realm of the early modern imagination.

Empiricism—Key to Science

The natural theology of Steno and others was based on their faith that material reality attested to the Word of God as recorded in the Bible. Their focus on material evidence—part of a trend among naturalists since the late Middle Ages—broke with an intellectual tradition thousands of years old.

Since the time of Aristotle, natural philosophers had drawn conclusions about the world based on pure reason rather than material evidence. Through natural theology, Steno and others fundamentally changed the way scientists approached the world, laying the empirical foundations for modern geological science.

➤

Acknowledgment

Thanks to Sue Marcus for reviewing and commenting on the article. The author is solely responsible for the views expressed here and for any errors.

Next issue: How the story of Noah inspired geologists to search for evidence of the Great Flood. Did they find it on the floor of the Black Sea?

Source

University of California Museum of Paleontology. 2008. Understanding evolution. "Fossils and the birth of paleontology: Nicolas Steno." Berkeley, CA.

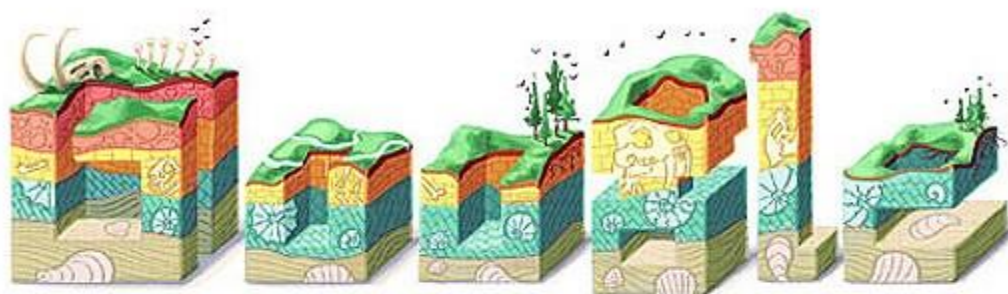


The Grand Canyon illustrates the Law of Superposition, with younger sedimentary rock layers overlying older ones. Photo: National Park Service.

Google Doodle Salute to:

Nicolas Steno

On January 11, 2012, Google posted a doodle for Nicolas Steno, one of the founders of geology, to mark his 374th birthday in 1638.



Google Search

I'm Feeling Lucky

Introducing Search plus Your World. Search the web, your photos, friends' posts, and more.

[Learn more](#) about searching on Google with SSL. Go to [classic Google](#).

Nicolas Steno, born Niels Stensen, was a Danish anatomist and geologist famous for his Principle of Original Horizontality, the theory that layers of rock form horizontally.

Steno also devised the Law of Superposition, according to which older layers of rock underlie younger layers unless they have been disturbed.

Steno's insights into how rock layers form made him a pioneer of stratigraphy, the study of rock layers. Steno's research led to his discovery that solid bodies such as fossils and minerals can be found inside solid rock. He published the discovery in a 1669 dissertation.

Steno died in 1686 at the age of 48.



Dr. Michael Wise Patterns of Distribution of Granitic Pegmatites— A Global Perspective

by David MacLean, Secretary

Editor's note: The program for the NVMC meeting on April 27, 2015, featured Dr. Michael Wise from the Department of Mineral Sciences at the

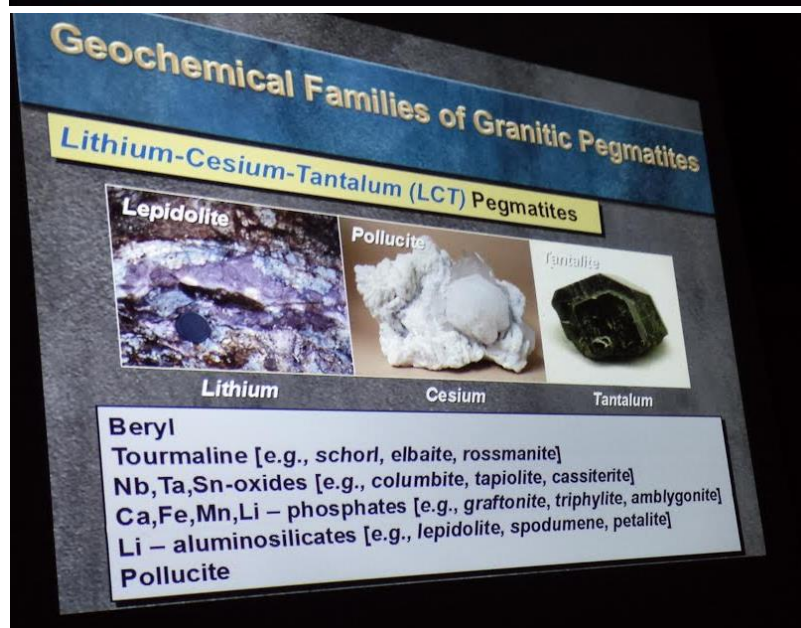
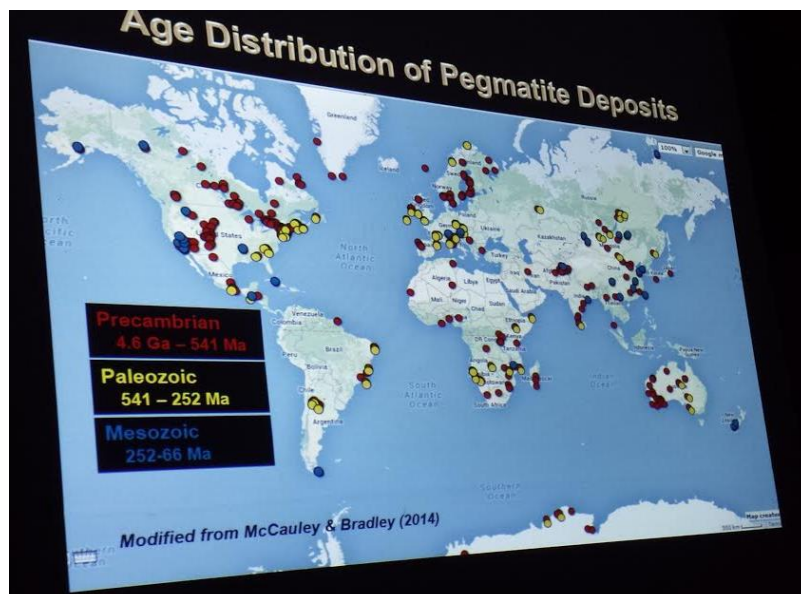
Smithsonian Institution. This is a summary of his presentation.

Geologists have identified 11,500 pegmatites on continents around the world, ranging in age from Archean (3.8–2.5 billion years old) to Cenozoic (66–7 million years old). The youngest known pegmatite, 7 million years in age, is located near San Diego, CA. Dr. Wise is studying the patterns of distribution of pegmatites in relation to tectonic features such as rift zones and subduction zones.

Pegmatites come in two basic types: lithium–cesium–tantalum (LCT), often with phosphate minerals; and niobium–yttrium–fluorine (NYF), with topaz, lanthanide minerals, and fluorite.

In the United States, pegmatite localities include:

- New England.....LCT with phosphates, cavities
- Southwest Adirondacks (NY)NYF
- Mid-Atlantic states.....NYF with amazonite
- Southeastern Alabama.....LCT with muscovite, spodumene, cassiterite
- Black Hills (SD).....LCT with phosphates, no pockets
- Northern WisconsinNYF
- Southeastern Montana.....NYF
- MN, OK, NV, Llano (TX)NYF
- Pike's Peak batholith (CO).....NYF with amazonite, smoky quartz, fluorite
- ID, MT, NM, WYLCT
- East of Phoenix (AZ)NYF
- Beaver County (UT).....NYF
- San Diego area and north of San Bernardino (CA).....LCT with tourmaline, garnet, lithium, beryl, boron



Some pegmatites in Missouri, Oklahoma, and Texas defy classification.

Pegmatites usually occur in clusters of as many as a hundred pegmatite bodies. They are related to bodies of granite but not necessarily to the nearest granite body. Their elemental composition tends to vary with their distance from the associated granite body. For example, pegmatites associated with the redout granite in the Northwest Territories of Canada vary in their absolute and relative concentrations of beryllium, lithium, cesium, tantalum, and niobium with their distance from the granite.



Pegmatite from Brazil: weathered feldspar with blue corundum crystals. Source: Wikipedia.

Pegmatites are relatively small and not mappable on a large scale, unlike other bodies of rock. They are complex, containing both large and small crystals and including up to half of the elements in the periodic table. Unless they are gem-bearing, pegmatites are of little economic value.

Gem-bearing pegmatites are found in the following places:

Amazonite CO; Minas Gerais, Brazil; Ontario, Canada; Amelia, VA

Pink beryl morganite CA, CO, ME, Brazil

Elbaite CA; ME; Northwest Territories, Canada; Minas Gerais, Brazil

Spodumene kunzite CA; Minas Gerais, Brazil

Topaz CO; New England; Amelia, VA

Pegmatites are associated with geologic processes. Pegmatites in rift zones, where there has been melting of the lower crust and mantle, are NYF. Examples include the Pike's Peak batholith in Colorado and the Great Rift Valley in East Africa.

Pegmatites associated with I-type subduction zones, where there has been melting of oceanic crust, are either NYF or LCT. Examples include LCT pegmatites in New England and NYF pegmatites in North Carolina and Virginia. ➤

Future Field Trip?

At the May club meeting, Craig Moore spoke about Morefield Mine, a family-operated mine near Richmond, VA. Located in a feldspar pegmatite, the mine produces gem-quality amazonite. But the Morefield pegmatite has many other minerals as well, including topaz and garnet.

In spring 2014, the mine was open on a dig-for-fee basis to groups during the week and to families on Saturdays. The mine's spring calendar ended on May 30, and plans for the future are uncertain.

But if the mine opens again in fall, it might make a great club field trip! (Check out the [Website](#).)



Minerals from Morefield Mine: amazonite (bottom), gray feldspar (moonstone?) (left), and albite (top) with amazonite and black tourmaline. Photo: Hutch Brown.

GeoWord of the Day

(from the American Geoscience Institute)

periodicity hypothesis

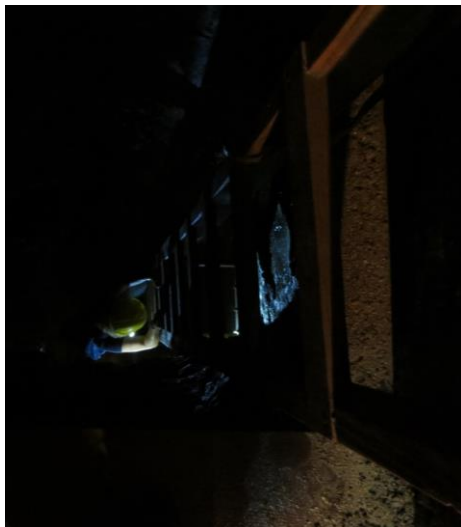
The proposal, based on the analysis of the stratigraphic records of marine families and generated by David Raup and John Sepkoski, Jr., of the University of Chicago, is that mass extinctions have occurred about every 26 million years from about 250 million years ago to the present.

(from the Glossary of Geology, 5th edition, revised)

Self-collecting at Morefield Mine on May 30, 2015
Photos from Kathy Hrechka



Kathy Hrechka sluicing mica and amazonite.



Laura Dwyer descending a ladder into the mine shaft.



Kenny Reynolds standing at the entrance to the vertical mine shaft.



Closeup of amazonite and mica in the mine.



Kathy and Laura admiring the amazonite in the walls of the pegmatite at a mine level 75 feet underground.



Children Need Not Apply??

by Jim Brace-Thompson, AFMS Juniors Program Chair

Editor's note: The article is adapted from A.F.M.S. Newsletter (December 2014/ January 2015), p. 3.

Within the past few weeks, I've had three experiences that can only be characterized as disturbing for anyone with an interest in mentoring kids and encouraging them in our hobby.

The first was reading a club bulletin publicizing an upcoming field trip and extolling all the great stuff that would be found—only to conclude with the notice: “No children allowed.”

The second was a trip to an honest-to-goodness mom-and-pop rock shop while visiting relatives in another state. Emblazoned on the door was a notice that absolutely no kids under 8 were allowed inside, and even kids 8 to 16 had to be accompanied by an adult. The store turned out to be closed that day so I couldn't learn the reason for these restrictions, but it wouldn't have mattered had they been open. My wife Nancy said that with a sign like that, she wouldn't have gone in even if they were offering a fire sale at 90 percent off.

Finally, in a newsletter article announcing an upcoming club trip, notice was given that “unattended children will be sold as slaves.” Though tongue-in-cheek to underscore the need for parental supervision, it exudes an attitude toward and about kids that is less than welcoming.

The fabled Golden Age of rock-hounding is gone. Our privilege to collect on public (and even private) lands is under constant assault and restriction; interest in joining social groups (in-person as opposed to online) is dwindling; it proves ever harder to recruit new members and officers to lead us; yet folks are actively dissuading interest by the next generation? What's wrong with this picture?



Before I was even in school, I'd be out on my belly picking fossils from our driveway gravel. My parents encouraged my interest, signing me up for field trips sponsored by the Illinois Geological Survey, taking me to my first rock show, and more. In 4H, when I saw there were no units on rocks, our leader signed me up for their “Do Your Own Thing” program, which I turned into a fossil unit, crafting a booklet about fossils to go along with my small collection and getting my first blue ribbon at a county fair. In church, our preacher engaged me in a discussion about how, viewed metaphorically rather than literally, the Seven Days of Creation could be seen as an early version of the geological time scale. And in school, a teacher allowed me to do my research project on what killed the dinosaurs rather than on Chaucer like everyone else. (My conclusion: little green men from Mars. Even then, I wasn't a very good researcher.)

In short, at numerous junctures and in numerous contexts, people took an interest in *my* interest and encouraged me along. And these weren't even rock people. Shame on us if we can't take such an interest in a like-minded soul just starting out in the hobby we love and just trying to have fun! ↗

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Future EFMLS Conventions and You

by Matt Charsky, EFMLS Convention Advisory

Editor's note: The article is adapted from EFMLS News (December 2014), p. 3.

As many of you already know, a regional convention is a great way for clubs to communicate with other clubs. Our annual convention is consistent with the EFMLS motto, “Communication and involvement are the keys to our success!”



Recently, several clubs have stepped up to the plate and hosted the annual EFMLS convention. I commend each and every one of these clubs! Their conventions have included useful annual meetings, formal award presentations at both the banquet and the editor's breakfast, and informative cracker barrel sessions to discuss current issues. Some have also included educational talks and some have included our AFMS scholarship nominees in person. Simply put, conventions are our annual tradition for rekindling friendships with people who share the same passion for our hobby.

Fortunately, we are scheduled to meet in Hickory, NC, in March 2015, an event hosted by the Catawba Valley Gem and Mineral Club; but after that we have no host clubs scheduled for future EFMLS conventions. There's not a lot of work for the host club when the EFMLS comes to town. Could your club consider hosting a convention? Could you bring it up at your next board of directors' meeting?

If your club is interested in hosting, please let me know by phone at 703-522-7415 or by e-mail at matt2430@comcast.net. I will tell you exactly what we need, plus I will tell you about our monetary incentive to host a convention.

I can recall the many good times I've had at EFMLS conventions. Just mention the name of the host club or the city where the convention was held and that's enough to bring a smile to your face. So let's keep the memories going and ensure that these conventions are held as our key to communicate. ♪

Glass Beach—Recycled by the Ocean

by Roger Campbell

Editor's note: The piece is adapted from Gem Cutters News (newsletter of the Gem Cutters Guild of Baltimore, Inc.), December 2014, p. 7; via Backbender's Gazette, December 2014, via The Telephone City Crystal, October 2014.

In the early 1900s, residents of Fort Bragg, CA, threw their household garbage over the cliffs above what is now Glass Beach. Their garbage, of course, contained lots of glass.

Beginning in 1949, the area around Glass Beach became a public dump, and locals referred to it as The

Dumps. Sometimes, fires were lit to reduce the size of the trash pile (up to 30 feet high).

In 1967, city leaders closed the area. Over the next 30 years, the pounding waves cleaned the beach by breaking down everything but glass and pottery. The waves washed the trash up and down, back and forth, creating tons of polished broken glass. Smooth colored glass particles settled along the seashore by the millions, forming a magnificent beach. The name of the area changed from The Dumps to Glass Beach.

Sea glass—glass that tumbles in the surf long enough to frost and smooth its surface—can take anywhere from 10 to 30 years to make. The ocean waves break the glass into shards and tumble it in the water, where sand and rocks act like sandpaper to smooth out its rough edges. Sometimes, sea glass passes through fire, becoming fire glass, the rarest of sea glass; it has inclusions, just like precious gems.

In 1998, the private owner decided that Glass Beach should belong to the public, and in 2002 it became part of MacKerricher State Park, open to the public. Within a few years, Glass Beach won fame, attracting large numbers of tourists.

Where people originally wanted to dump glass on the shore, now they want to take it home as a souvenir. Ironically, where it was once illegal to dispose of glass, now it is a crime to take it away.

Visiting Glass Beach today is a unique experience. What makes it even more remarkable are the sounds the glass pebbles make as they are washed by gentle waves. ♪



Upcoming Events (of interest in the mid-Atlantic region)

June

6: Macungie, PA—64th Semi-Annual Spring Mineral Show; Pennsylvania Earth Sciences Association; Macungie Memorial Park.

6-7: Marion, KY—Annual show; Ben E. Clement Mineral Museum, Fohs Hall, 201 North Walker Street; Sat 9-5, Sun 9-4; admission free; info: Tina Walker, 270-965-4263, beclement@att.net.

6-7: Canandaigua, NY—GemFest 2015; Wayne County Gem and Mineral Club; Greater Canandaigua Civic Center, 250 N. Bloomfield Road; info: www.wcgmc.org

6-7: Monroe, NY—Mineral, Gem, Jewelry, Fossil SHOW SELL & SWAP; Orange County Mineral Society; Museum Village, 1010 Rt. 17M; Sat/Sun 10-4; adults \$5, seniors & kids \$;

13: Greensboro, NC—Annual show; Greensboro Gem & Mineral Club; Greensboro Day School, 5401 Lawndale Drive; Sat 10-6; adults \$4, seniors \$2, students \$2, children \$2; info: Charlie Finch, 336-696-7745, ggmc.rockhounds@gmail.com.

25: Washington, DC—Webcast with Smithsonian geologist Tim McCoy on what meteorites can tell us about the formation of the solar system. To register, go to <http://qrius.si.edu/webcast-astrogeology-meteorites-and-spacecraft-missions>.

26-28: Fishersville, VA—Annual show; Treasures Of The Earth Gem & Jewelry Shows; Augusta Expo, 277 Expo Rd, I-64 Exit 91; Fri/Sat 10-6, Sun 11-5; \$4 (3-day pass), children under 16 free; info: Van Wimmer, 540-384-6047, van@toteshow.com.

July

11-12: Syracuse, NY—GemWorld 2015, 49th Annual Show; Gem & Mineral Society of Syracuse; SRC Arena and Events Center; contact Dick Lyons show@gmss.us

18-19: Erie, PA—46th Annual Show and Sale; Gem City Rock & Mineral Society; JMC Ice Arena, 423 W 38th Street; Sat 10-6, Sun. 10-5; adults \$4, seniors \$3, children under 12 free; info: Bob Gallivan, 814-454-6770, gallivan@lycos.com.

22-26: Franklin, NC—Annual show; Damian Bellgali; Echo Valley Show Place (across from GLW), 6456 Sylva Rd; Wed/Thu/Fri/Sat 9-5, Sun 9-4; admission free; info: Damian Bellgali, 678-852-8273, mandybelghali@yahoo.com.

23-26: Franklin, NC—50th Annual Macon County Gemshow; Gem & Mineral Society of Franklin; Robert C. Carpenter Community Building, 1288 Georgia Road; Thu/Fri/Sat 10-5, Sun 11-4; adults \$2, children under 12 free; info: Linda Harbuck, 800-336-7829, lindah@franklin-chamber.com.

25-26: Cutchogue, NY—34th Annual Gem, Mineral & Jewelry Show; Long Island Mineral & Geology Society; Main Road (Rte 25); Sat 10-5, Sun 10-5; adults \$6 (with flyer \$5), children under 12 free; info: <http://www.limineralandgeology.com>

August

22-23: Madrid, NY—50th Annual Rock & Mineral Show; St. Lawrence Co. Rock & Mineral Club; Madrid Community Center.

September

19-20: Mays Landing, NJ—Cape-Atlantic Rock Hounds Annual Fall Gem, Jewelry, Rock, Mineral and Fossil Show; 2641 Cologne Ave.; Sat/Sun 9-5; info: call Billie Brockhum at 609-879-1179

26-27: West Friendship, MD—51st Annual Gem, Mineral & Jewelry Show; Gem Cutters Guild of Baltimore; Howard Co. Fairgrounds.

26-27: Franklin, NJ—59th Annual Franklin-Sterling Gem & Mineral Show; Franklin Mineral Museum; Franklin School, 50 Washington Ave; Sat 9-5, Sun 10-4; Outdoor Swap: Sat 7:30-6, Sun 10-5; adults \$7, children 6-16 \$4; info: <http://spmom3.wix.com/franklin-gem-mineral>

October

23-25: AFMS Convention and Show, hosted by the South Central Federation; Austin, TX.





2015 Club Officers

President: Wayne Sukow
d8olite@fastmail.fm
Vice-President: Kathy Hrechka
kshrechka@msn.com
Secretary: Dave MacLean
dbmaclean@maclean-fogg.com
Treasurer: Rick Reiber
mathfun34@yahoo.com
Field Trip Chair: Ted Carver
jtcarve@msn.com
Webmaster: Casper Voogt
webmaster@novamineralclub.org
Communications: Jim Kostka
jkostka@juno.com
Editor: Hutch Brown
hutchbrown41@gmail.com
Show Co-Chair: Tom Taaffe
rockcllctr@aol.com
Show Co-Chair: Jim Kostka
jkostka@juno.com
Greeter/Door Prizes: Ti Meredith
ti.meredith@aol.com

PLEASE VISIT OUR WEBSITE AT:
<http://www.novamineralclub>

The Northern Virginia Mineral Club

You can send your newsletter articles to:

news.nvmc@gmail.com

Visitors are always welcome at our club meetings!

RENEW YOUR MEMBERSHIP!

SEND YOUR DUES TO:

Kenny Loveless, Treasurer, NVMC
PO Box 10085, Manassas, VA 20108

OR

Bring your dues to the next meeting.

Purpose: To promote and encourage interest in and learning about geology, mineralogy, lapidary arts, and related sciences. The club is a member of the Eastern Federation of Mineralogical and Lapidary Societies (EFMLS, <http://www.amfed.org/efmls>) and the American Federation of Mineralogical Societies (AFMS—at <http://www.amfed.org>).

Dues: Due by January 1 of each year; \$15 individual, \$20 family, \$6 junior (under 16, sponsored by an adult member).

Meetings: At 7:45 p.m. on the fourth Monday of each month (except May, November, and December)* at **Long Branch Nature Center**, 625 Carlin Springs Road, Arlington, VA 22204. (No meeting in July or August.)

**Changes are announced in the newsletter; we follow the snow schedule of Arlington County schools.*