

Mineralogical Society of the District of Columbia



MINERAL MINUTES

The Mineral Minutes is the bulletin of The Mineralogical Society of the District of Columbia, Inc.

The purpose of this Society is to promote interest in mineralogy, geology, and related earth sciences and to encourage mineral collecting. An annual scholarship is awarded to a deserving student in the related field.

The Mineralogical Society of the District of Columbia is one of the founding Societies of the Eastern Federation of Mineralogical and Lapidary Societies.

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WELCOME BACK!



*Bob Simonoff is a mineral collector with his daughter Jessica. He has been collecting and reading about minerals for about 5 years. He enjoys field collecting, when it is not 110 degrees and humid.
(Photo by Bob Simonoff)*

September 5, 2012 Presentation and Speaker – Bob Simonoff: The Ste. Marie Aux Mines Mineral Show

Last year, one of the most popular mineral shows in Europe, the Ste. Marie Aux Mines show in France, was embroiled in a controversy. There were concerns whether or not the show would continue forward – or if it did continue, would it still be great. We had already decided to go to France for a family celebration, visit Paris, attend the show, and spend a day touring the Alsace region of France, where Ste. Marie Aux Mines lies. Come hear the story of the controversy and how it turned out; see hundreds of mineral photos; and see the sights and scenery from the Alsace region.

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THE PREZ SAYS...

By Tom Tucker

SOMETHING FOR NEARLY EVERYONE

In the mail, the morning after our stimulating program about dinosaur tracks, I opened my newly arrived caving newsletter and there they were – dinosaur tracks! Then were all over the place! More specifically, they were in Torotoro National Park, Bolivia. Included among the tracks is what is said to be the "longest set of continuous tracks in the World". They measured over a quarter of a mile. There are pictures and the tracks are real. They measure maybe about a foot and a half long each.



In one place, in particular, they lead right in to a large cave entrance! Pretty cool, eh? I know, that they're trace fossils. They didn't really walk into the cave. The tracks are Cretaceous in age, I believe, and the cave is much more recent.

Oh, did I mention that the article was about caving in Bolivia? The newsletter contained something of interest for nearly everyone! It had information about caves, of course, and featured some that were up to several miles long. The newsletter also covered Mountains. Some of them were over 21,000 feet in altitude. Oh, and there was the 7,500-square mile salt flats. They are the largest on Earth. Are you interested in canyons? It featured spectacular deep and narrow canyons, and strange types of cacti.

Are you interested in the human factor? There were an abundant number of mummies. Many still receive grave offerings which include bowls of food and coca leaves. Also of interest was a small cave near the remote silver mining town of San Vicente. The cave was where Butch Cassidy and the Sundance Kid hid out during their last days on Earth. (They should have stayed in Wyoming!)

For volcanoes lovers, the newsletter mentioned volcanoes with steam vents, geysers, and mud pots. There were boiling pools without "Do not touch" signs. It appears that you're on your own to be stupid. One could read about the high altitude lakes with isolated white islands of borate minerals. Or, browse through an article about oilbirds that use echolocation similar to bats. The high altitude lakes were visited by flamingos. Temperatures there reportedly reach minus 68 degrees at night. Just picture the llamas, alpacas, and vicunas (llama-like mammal).

I must admit that I had no idea Bolivia was so large! It's half as large as Texas! The author, CarolJo Rushin-Elron, reported that there is one small impediment to exploration activities in the countryside. It seems that the primary form of "protest", almost to the point of being a national sport, is a "bloqueo". Bloqueos are road blockades and their occurrences are both frequent and unpredictable. They can last for days and it is dangerous to try and run them. Just think—you thought the Beltway was bad!

The article, by the way, is called, "Beneath Bolivia: Caving at High Altitude". It can be found in the June, 2012 issue of the NSS News, Vol. 70, No. 6, p. 8.

THE ABCD'S OF HELPING MSDC TO THRIVE

- A: Always remember to invite a guest to our meetings.**
- B: Be sure to keep an eye out for speakers.**
- C: Consider ways that you can contribute to the life of our club**
- D: Dues! Please pay your annual dues.**

Linked-In: <http://earthsky.org/astronomy-essentials/earthskys-meteor-shower-guide>

MSDC IS NOW ON FACEBOOK!

Steve Johnson created a Facebook page for our club. Visit "Mineralogical Society of the District of Columbia" to add your comments, links, and photos. (Administrators are: Steve Johnson, Betty Thompson, Bob Simonoff and Sheryl Sims.)

Olympic Gold Medals: A Nest Egg for Athletes' Retirement?

By Andy Thompson

Not since the ninth century when the Vikings first raided the British Isles has the world witnessed such an



enthusiastic rush for London gold. This summer, instead of the raiders coming from Scandinavia, today's gold rush has participants from over 200 nations.

There are 302 gold medal events during this summer's Olympics. Keeping in mind that many of those events are team sports, the actual number of medals to be distributed will be in the range of 4,700, with a third of them being identified respectively as gold, silver and bronze. The recipients include both the Olympic and Paralympic participants. The metals were mined by Rio Tinto, produced in the Royal Mint headquarters in South Wales and stored in the vaults of the Tower of London until presentation time.

Casual viewers of these Olympic events may be curious: Can the winners of the gold retire on the value of these gold medals? Hardly. Olympic guidelines specify there must be at least 6 grams of gold in each gold medal. Accordingly, this year's gold medal is comprised of just 1.34% gold, 92.5% silver, 6.16% copper with the combined weight being 412 grams.

Although the price of an ounce of gold and silver varies daily, the early August average was \$1,614 for gold and \$28 for silver. Recalling that there are 31.1 grams per troy ounce, the 6 grams of gold in each medal, measuring one fifth of an ounce of gold, would be worth \$323. The remainder of the gold medal is made out of silver and its price also fluctuates. At an average of \$28.00 per troy ounce, and with the entire medal weighs 412 grams, the value of the remaining silver in the gold medal hovers around \$344, bringing the total value to around \$667. Clearly, the value of the gold medals is found not in the price of gold or silver as such, but rather in its inspirational value. Today's Vikings and mineral hunters would probably agree and readily endorse this conclusion.

(Note: A troy ounce (oz t) is a unit of imperial measure. Today, it is most commonly used to gauge the weight of precious metals. One troy ounce is currently defined as exactly 0.0311034768 kg or 31.1034768 g. There are approximately 32.15 troy oz in 1 kg. http://en.wikipedia.org/wiki/Troy_ounce.) (photo credit: Gazimal | Iconica | Getty Images)

Upcoming Events & Presentations

MSDC October 3, Presentation by Susan Fisher: Fluorite - A Mineral for All Seasons. Fluorite is a popular mineral for collectors but it has also utilitarian side. We will explore the basic facts about fluorite, the contributions it has made to the development of industry and science, and then take a pictorial trip around the world looking at fluorites from some well-known and lesser known sites.

MSDC November 7, Presentation by Johnny Johnsson: Johnny Johnsson, geologist and mining historian, will tell the story of "Chromite in Maryland & Pennsylvania - A History." Maryland and Pennsylvania dominated the production of chromite during the 19th-Century, centered around Baltimore's Tyson family. Through slides, lecture, and discussion, we will consider the discovery and development of this important ore mineral of chromium and the history of the local chrome mines and manufacture of chromium compounds.

Nov: 17 & 18 21st Annual Gem, Mineral & Fossil Show. Sponsored by the Northern Virginia Mineral Club. www.novaminalclub.org. Show site - George Mason University, Student Union Bldg. II (The Hub), Rte. 123 & Braddock Rd, Fairfax, VA. Hrs.: Saturday 10:00 AM - 6:00 PM, Sunday 10:00 AM - 4:00 PM 20 plus Dealers selling Minerals, Fossils, Crystals, Gems, Jewelry, Carvings, Meteorites & more! Demonstrations, Exhibits, Door Prizes & Kid's Activities including, Mini-mines & Fossil Dig. Silent Auction on Sunday. Admission: Adults \$5, Seniors \$3, Teens (13-17) \$3. Children (12 & under) FREE, Scouts in uniform FREE, GMU Students w/valid ID FREE. GMU Campus map: <http://eagle.gmu.edu/map/fairfax.php>. Parking: On campus use GMU's parking Lot A. Enter Lot A from Nottaway River Lane where you will also find our courtesy shuttle to the Mineral show.

MSDC Meeting Minutes – June 2012

Interim Secretary, Betty Thompson

MSDC sources report that our dutiful club secretary, Pat Rehill, has been spotted vacationing out west in various mines, quarries, and national park rock formations. We look forward to hearing all about it!

Meeting Date: June 6, 2012

Meeting Place: Cathy Kerby Room, Smithsonian Institution National Museum of Natural History

Agenda: Club President Tom Tucker recognized MSDC past presidents: Cynthia Payne, Ed Fisher, & Andy Thompson

Minutes Approved: May 2012

Attendance: 29 people

Visitors: Cort McElroy's friend Theo, Leslie & Dave Nanney's friends, John and Suzie Widener, Sheila Stanford, speaker's wife, and Barry Sperling and Randy Latimer.

Treasurer's Report: Financial status is fine.

Old Business: The board met on May 12 at Susan and Ed Fisher's home. Secretary Pat Rehill will provide the minutes when she returns from travel. Major topics were future finances, membership, program ideas, and the need for new people in MSDC leadership (Want to get involved? Let Tom or Andy know!). Cynthia Payne will be the MSDC delegate to the Eastern Federation annual meeting (9/14-16, Harrisburg, Pennsylvania).

New Business: Steve Johnson's offer to set up a Facebook page for MSDC was gratefully accepted as a super way to share info, invitations with friends, and engaging new people. There was also interest in Noreen & Robert Clemenzi's suggestion that a few area mineral clubs cooperatively create a Meetup.com presence so we can sponsor events. Visitor, John Widener, noted that our website is out of date; over the summer, Betty Thompson will learn Casper Voogt's new software to keep it current. Cynthia Payne encouraged people to buy Eastern Federation raffle tickets to pay expenses for production of slide programs that are a mainstay for many clubs. Tom Tucker let everyone know that the Eastern Federation meeting (9/14/-16, Harrisburg, PA) is looking for competitive and non-competitive exhibits.

Geology in the News: Cynthia noted that exactly 100 years ago, on 6/6/1912, the most powerful volcanic eruption of the 20th century covered Alaska's Valley of 10,000 Smokes with 700 feet of ash, per the story at http://www.washingtonpost.com/national/alaskans-gear-up-to-mark-100th-anniversary-of-most-powerful-volcano-of-20th-century/2012/06/02/gJQAPImI9U_story.html. Robert Clemenzi mentioned the rocks, picked up by kids at a California beach that caused spontaneous fire in their mom's pocket. The rocks were unusually high in a phosphorus that's probably human-made. The beach is near a Marine base and a nuclear power station. http://www.washingtonpost.com/national/beach-rocks-that-burned-calif-woman-contain-elevated-phosphate-levels-source-unclear/2012/06/01/gJQAPLQE7U_story.html. Cynthia asked about "belemnites" mentioned in Paul Theroux' book *Kingdom by the Sea*; Steve Johnson and others described these calcium carbonate shells, precursors of the nautilus.

Congrats: Rebecca Siegal graduated from Radford University! We're sure of a bright future for this smart young woman with new credentials in anthropology, archaeology, & forensics. Best wishes, Rebecca!

Care and Condolences: Jack Busch has had several falls recently and is reportedly recovering well. Jack, we hope the summer brings you back to full strength and holds lots of reasons for your wonderful grin!

Moving: This summer our long-time member Denise Whitman plans to move to North Carolina near her family. Denise has been club secretary, contributed to meetings with her wide-ranging knowledge, volunteered at the Natural History Museum's Discovery Room, and patiently and graciously used her Museum badge to ferry us through security systems to our meeting room. We'll miss your cheerful presence, Denise. Stay in touch!

Refreshments: Thanks to Ruth Goen and Ann Cameron Siegal for delicious refreshments!

The meeting concluded at 9:15 pm.

Treasurer's Note: Treasurer, Rick Reiber



(photo by S. Sims)

**Dues Reminder:
It's not too late!**
Please pay your
2012 dues! \$20
for single
member-ships.

Has Your Contact Information Changed?
Please provide Rick with your updated information.

ENJOY REFRESHMENTS? Please sign-up with Betty Thompson to bring refreshments to our monthly meetings. Thanks!



(Photo by Cynthia Payne)

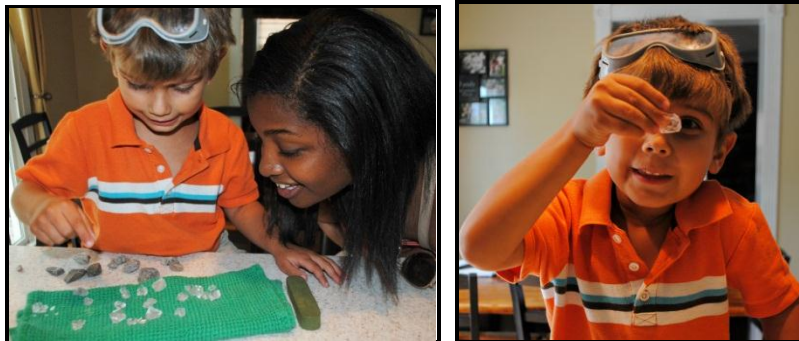
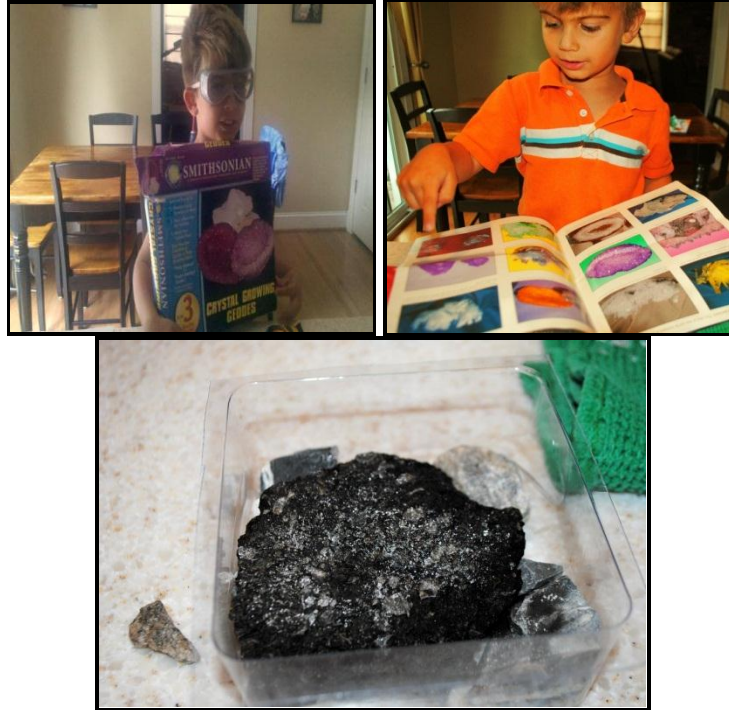
WELCOME! Guests are always welcome to attend MSDC meetings. Please invite your friends! In June, the following visitors attended our meeting: Cort McElroy's friend Theo, Leslie & Dave Nanney's friends, John and Suzie Widener, Sheila Stanford, speaker's wife, and Barry Sperling and Randy Latimer. Thank you for joining us!

Speakers/Presenters: We welcome your speaker suggestions! Please let Andy Thompson or other MSDC officers know if you have speaker contacts and/or suggestions.

2012 Speaker Flash Back!

- January 2012: Dr. Cari Corrigan gave a wonderful presentation on Meteorites in Antarctica.
- February 2012: MSDC President, Tom Tucker, gave an informative presentation on his mineral travels in Vietnam.
- March 2012: Alan Cutler, (Author and geology professor at Montgomery College) spoke on the geological and mineralogical vision of Nicholas Alan Cutler Steno (1638-1686).
- April 2012: Joe Marx (Adjunct Professor of Geology, NVCC) discussed Bowen's Reaction Series.
- May 2012: Dr. Cari Corrigan gave an informative presentation on the Lorton Meteorites.
- June 2012: Ray Stanford shared information on dinosaur tracks in Maryland and brought in wonderful fossils for us to examine and enjoy.
- July 2012: No meeting.
- August 2012: No meeting.

Budding Jr. Rock Hound, Brice Trinidad, Grows Crystals



(photos by Sarah Trinidad & S. Sims. Brice shows Amber Wihshi, lower left, his newly-grown crystals.)

Geodes 2: Geodes in Sedimentary Rocks

by Bob Carnein, Lake George Gem & Mineral Club

From: *LGGMS Newsletter*, 4/2010

(2nd Place – AFMS Original Adult Articles Advanced.)

Copied, as permitted, from AFMS website.—MSDC Editor

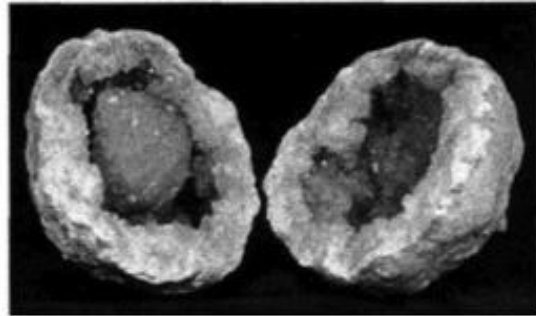
In the March newsletter, we looked at geodes that occur in igneous rocks. This month, we will think about sedimentary geodes and the minerals that have been described in geodes of both types. As is usual with most scientific topics, explaining the origin of geodes isn't simple. But don't despair; bear with me while we explore some geology and a little bit of chemistry.

Although geodes are found in sedimentary rocks of various ages and types, by far the largest U.S. deposits occur in carbonate rocks (dolostone and limestone) of Mississippian age (about 350 million years). These are found in a broad band extending from eastern Iowa into adjacent Illinois and Missouri, and in similar-age rocks in Indiana, Kentucky, and Tennessee. There are even some occurrences in Georgia and Alabama.

The Mississippian geodes are concentrated in layers of the Warsaw Formation and other carbonate rocks of the same age. It and the Ramp Creek Fm. of south-central Indiana include geode-rich zones that have supplied literally millions of geodes to collectors. In some places, creek beds are clogged with "geodes", most of which are actually solid quartz nodules. Local residents sometimes even use them to construct walls and houses.



www.providencehome.org/Grotto.htm



An "inverted" Keokuk geode, Henry Co., IA
(author's collection)

Good exposures of the Warsaw beds near Keokuk, Iowa, result in some collectors using the common name *Keokuk geodes*, or simply *Keokuks*. Quartz is the most abundant mineral, and the geodes range from an inch or so to nearly three feet across. Their shapes vary from nearly spherical to irregular or flattened in the plane of layering in the enclosing carbonate rocks. Some resemble a head of cauliflower.

Commonly, rock layers immediately above the geode zone contain abundant fossils and fossil fragments, suggesting those rocks formed in an environment of shallow, turbulent, clear sea water with plenty of oxygen and nutrients. Fossils include mollusks (clams, snails, and cephalopods), echinoderms (sea urchins, crinoids, and blastoids), brachiopods, horn corals, and sponges. Most of these animals "filter" food particles suspended in the water. However, the geodes themselves typically occur in layers of finer grained dolostone with relatively few fossils. These rocks probably formed in somewhat deeper, quiet water lacking abundant oxygen.

Even today, controversy surrounds hypotheses on the origin of the Mississippian geodes of the Midwest. I will summarize two hypotheses, but you need to realize that we have here a textbook case of multiple working hypotheses—a fundamental principle underlying most geological research. The idea is that several researchers come up with competing explanations for how a given feature (in this case geodes) forms. These researchers then "battle it out" in peer-reviewed publications and by presenting their results at meetings. Eventually, a consensus develops among researchers, and one or two hypotheses win approval. In the case of the origin of sedimentary geodes, the two "theories" summarized below may both be correct.



Outline of the Illinois basin, a major **Midwestern** sedimentary depression. aapp.org

Theory 1. The first theory suggests that geodes form by replacement of anhydrite (CaSO_4 , calcium sulfate) nodules by silica. It is well summarized in Barwood and Shaffer (see references below). Imagine a Mississippian shoreline area in what is now the Midwest (and extending along the margin of the Illinois basin 350 million years ago). The climate is hot and dry, similar to that in parts of the Persian Gulf today. Near the shore, wave action keeps the water stirred up and provides abundant oxygen. Marine invertebrate animals (most of which depend on suspended food particles for sustenance) thrive in this environment. Intense evaporation raises the salt content of the water, and brines form. (A brine is a solution that is saltier than "normal" sea water.) (cont. on p. 9)

Thinking Ahead: We've had an enjoyable summer and are falling back into the routine of work, school, and guilty pleasures. This is the perfect time to **consider how you can best serve our club.** Answer yes to any of the following questions and you can count yourselves among the few, the proud, the chosen!

- Do you have speaker ideas? (Contact Andy Thompson)
- Are you able to bring refreshments to our monthly meetings? (Contact Betty Thompson)
- Can you help plan our holiday party? (Contact Tom Tucker)
- Are you willing to take a turn serving as a club officer? (Contact Dave Nanney and Dave Hennessey)
- Do you have articles that you'd like to share? (Contact Sheryl Sims)
- Are you able to help with something other than what is listed here? If so, please contact one of our MSDC board members and let them know that you'd like to volunteer.

MSDC Board Members



(photo by Susan Fisher)

l-r: Pat Rehill, Andy Thompson, Tom Tucker, Dave Hennessey, Dave Nanney
front row: Cynthia Payne, Sheryl Sims, Rick Reiber

KNOW YOUR EFMLS OFFICERS

R. J. Harris, President, <roqfreq at rjharris.com>; **Cheryl Neary**, 1st Vice President, <ciervo.neary at gmail.com>

Hazel Remaley, 2nd Vice President, <northridge5 at verizon.net>; **Gerry Cox**, Secretary, <gerryannec at verizon.net>

Lou Budell, Treasurer, <labudell at windstream.net>; **Michael Patterson**, Assistant Treasurer, <Michael.Patterson at pgparks.com>

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For more information about the **Eastern Federation Mineral & Lapidary Society**, visit: <www.amfed.org/efmls>

EFMLS Annual Conference: September 14-16, 2012. Theme: Crystals – “Flowers of the Mineral Kingdom” – Harrisburg, PA. Hosted by the Central Pennsylvania Rock & Mineral Club. www.rockandmineral.org.

AFMS NEWS

Matt Charsky was installed as AFMS 2nd VP at the July conference in Minnesota. If you have any AFMS questions or concerns, please contact him at <Charsky.Matthew @ epa.gov>

Barbara Sky attended the AFMS conference and stated that, “the AFMS/MWF show was in the largest gymnasium I've ever had to walk the length of and the meeting rooms (for Convention business) were the same distance from the gym as the gym was long.” Barbara stated that “there were six competitive exhibits, yet eight trophies won. That was possible because two cases were judged in MWF first and won trophies there and then were re-judged in AFMS.”

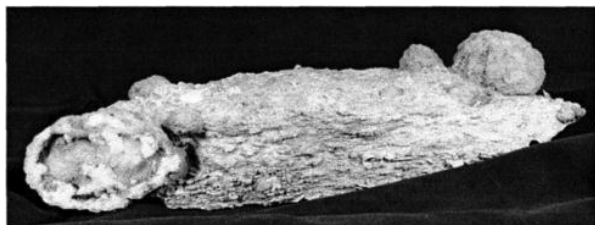
Kathy Hrechka also attended the AFMS conference on Saturday, and enjoyed/learned a lot at the mineral show.



Sheryl Sims, Editor – I need your help and your articles! Please keep your submissions coming! The *Mineral Minutes* newsletter deadline is the 15th of each month. Please email your submissions to me at <sesims4 at cox.net>. Thank you!

(cont. 'd from p. 7)

In shoal (shallow) areas, waves break up shelly material, forming a coarse shell hash. The brines work their way downward through this coarse carbonate sediment and outward toward the center of the basin. As these oxygen-rich brines work their way out into the deeper, oxygen-starved water of the Illinois basin, they lose oxygen and encounter finer carbonate sediments deposited in deeper water. Here, a crucial chemical change occurs. The limestones, which are made of the mineral calcite [CaCO_3], are converted to dolostone, which is made of the mineral dolomite [$\text{CaMg}(\text{CO}_3)_2$]. Magnesium ions in the brines substitute for half of the calcium in the limestone. This process releases calcium ions into



Unusual small geodes in a "shell hash" bed, from near Bedford, IN (author's collection). Note resemblance of right-hand geode to a fossil "sea urchin."

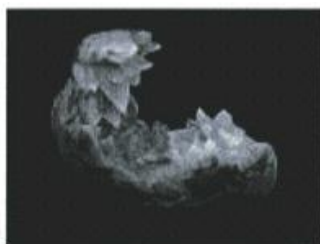
the brines, and this "extra" calcium causes the precipitation of anhydrite [CaSO_4] as nodules on the sea floor.

As this process proceeds, the lack of oxygen, combined with other features of the chemical environment, causes some of the anhydrite around the outsides of the nodules to break down. This does two things: it makes sulfur available to form sulfide minerals such as pyrite; and it raises the pH of the water (makes the water less acidic). Silica in sponge spicules, volcanic ash, or other sources is more soluble in water of higher pH, so, as the pH rises, silica dissolves into the water and becomes available to replace anhydrite and limestone. Deposition of silica on and in the rinds of anhydrite nodules forms a gelatinous layer that is the beginning of geode formation (it becomes the chalcedony layer that forms the outer shell of most Mississippian geodes). Over time, water seeping through the silica gel dissolves out the remaining anhydrite in the core of the nodule, at the same time depositing additional silica (forming a layer of coarser quartz crystals) and other geode minerals (including pyrite and other sulfides). Voila! You end up with a layer of fine grained dolostone peppered with geodes. In deeper water, the fine grained carbonate rocks are partly replaced by chert, and in shallower water, the carbonate rocks are coarse grained and contain little silica. As the environment shifts, geode and chert formation will shift too. As a result, the distribution of geodes is patchy, rather than continuous.

Theory 2. Some geodes are thought to be "geodized" fossils or "exploded" fossils. One hypothesis (see Smith, 2007) suggests that, instead of anhydrite nucleating to form a nodule (as above), it nucleates in a cavity inside of a dead invertebrate. This may occur because the decay of organic material uses up oxygen, producing local conditions like those described above. Quiet water is probably required for this to work. As the anhydrite grows, the host fossil "explodes", in some cases fragmenting to the point where it's barely recognizable. The anhydrite may even extrude through the side of



Chalcidony-filled geode from near Tampa, FL. (author's collection)



Fluorescent calcite in bivalve, Rucks Pit, FL. Appalachee-minerals.com



Rhodochrosite lining clam, Kerch, Crimean peninsula, Crimea Oblast, Ukraine. mindat.org



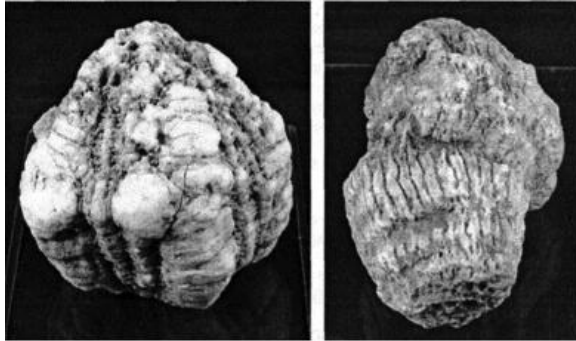
Anapaite in fossil bivalve, Kerch, Crimean peninsula, Crimea Oblast, Ukraine. irocks.com

the fossil. Then, silicification takes over, converting the anhydrite-filled fossil into a geode (again, as above). All gradations, from easily recognizable silicified fossils to badly distorted examples, are known from rocks in Indiana (Beanblossom Cr., Brown Co.), Iowa (near Keokuk), Kentucky (near Louisville), Illinois (near Hamilton), Ohio (near Hillsboro), and Tennessee (near Nashville). In a slightly different category, I would be remiss not to mention the "geodized fossils" from near Tampa and Fort Drum, FL. Near Tampa, Miocene colonial corals have been replaced by chalcedony, forming the beautiful "agatized" geodes commonly seen at mineral shows. At Rucks Pit, near Fort Drum,

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clams of the genus *Mercenana* and other fossils are filled with gold-colored calcite crystals that are very fluorescent. Finally, clams and other fossils of the Crimean peninsula are famous for rare fillings of anapaite, barite, rhodochrosite, and vivianite.

At the end of this paper, I have listed some references that you can consult to read more about these hypotheses,



"Geodized" fossils
(crinoid; horn coral),
Heltonville, IN (author's
collection; Jeff Smith
collector)

plus several more. Some are readily available and non- technical; others are relatively advanced.



"Exploded" fossil brachiopod
from the Ramp Cr. FM., near
Heltonville, IN (author's
collection; Jeff Smith
collector)

Minerals of Geodes. If you are a mineral collector, you might be interested to know what minerals, besides quartz and chalcedony, are reported to have been found in geodes. In the list below, I haven't tried to separate the minerals of igneous geodes from those of sedimentary examples. Having originally thought that 20 or 25 minerals might be found, I was surprised at the number. Some of the examples are definitely identified, while others are reported but not confirmed. Here's the (by no means complete) list:

Anapaite	gypsum	rancieite
Ankerite	hematite	retgersite
Apatite	hollandite	rhodochrosite
Aragonite	honessite	romanechite
Aurichalcite	jamborite	rutile
Barite	jarosite	siderite
Beidellite	kaolinite	smithsonite
Bimessite	magnetite	smythite
Calcite	manganite	sphalerite
Celestine	marcasite	sulfur
Chalcedony	millerrite	szomolnokite
Chalcopyrite	mordenite	tenorite
Copiapite	nontronite	todorokite
Cryptomelane	pyrite	violarite-polydymite
Dolomite	pyrolusite	vivianite
Fluorite	pyrrhotite	wurtzite
Galena	quartz	zaratite
Goethite	ramsdellite	

In addition, gas, mercury, opal, and water have been reported.

References and Additional Reading:

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Fisher, I.S., 1977, Distribution of Mississippian geodes and geodal minerals in Kentucky: *Economic Geology*, v. 72, n. 5, p. 864-869.

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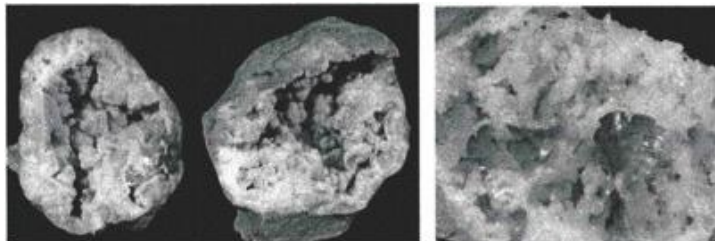
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Chalcedony geode, near Bedford, IN
(author's collection)

Ankerite in quartz geode, near
Bedford, IN
(author's collection)

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WHERE IN THE WORLD ARE DAVE & LESLIE NANNEY?

During the summer, Dave and Leslie Nanney, visited the I-68 road cut through the crest of Sideling Hill in western Washington County, Maryland. This cut through is said to be one of the “best geologic exposures in the northeastern U.S.” It is a great educational/research tool for geologists as well as a popular tourist attraction. Visit the Sideling Hill Exhibit Center in Hancock, MD, or the following links: <http://www.mgs.md.gov/esic/fs/fs17.html> and <http://www.mgs.md.gov/esic/brochures/sideling.html>.



View west from the pedestrian bridge.
(photo by Dave Nanney)

MSDC RAFFLE!



Thank you for your mineral donations. They will be used as door prizes.

(photo by S. Sims)

We have your winning ticket in the bag!

Unable to attend any mineral collecting field trips over the summer, I opted for a former hobby – **rock painting!** *(S. Sims)*



MINERAL MINUTES

Pre-Meeting Dinner: Join us for dinner at the Pier 7 Restaurant at 6:00 PM for dinner before the club meeting.
650 Water St SW, (at S L St), Washington, DC 20024, (202) 554-2500, www.pier7restaurant.com/Menu.

Please call Susan Fisher at 703-830-9733 to make a reservation if you wish to attend.

Visitors are always welcome at our monthly meetings and dinners!
MEMBERSHIP APPLICATION OR RENEWAL
THE MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA (MSDC)

Family ~ \$25.00 per year. One address.

Individual ~ \$20.00 per year.

New * Renewal Dues are for Year _____ *

For new members who join in the last months of the year, membership will extend through the following year with no additional dues.

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Pay at December or January meeting or mail to:

Mineralogical Society of DC

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Alexandria, VA 22304

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OK TO INCLUDE YOU ON CLUB MEMBERSHIP LIST? Distributed to Club members only.

Yes – Include name, address, phone, email.

If you want any information omitted from the membership list, please note:

Omit my: Email, Home phone, Work phone, Mobile phone,

Address, Name

SPECIAL CLUB-RELATED INTERESTS? _____

MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA

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Editor: Sheryl Sims, sesims4@cox.net

Co-Web Master: Casper Voogt & Betty Thompson, www.mineralsocietyofDC.org

Meeting Dates, Time, and Location: The first Wednesday of each month. (No meeting in July and August.) The National Museum of Natural History, Smithsonian Institution, 10th Street and Constitution Ave, Washington D.C. We will gather at the Constitution Avenue entrance at 7:45 PM to meet our guard who will escort us to the Cathy Kirby Room. If you park on the street, **THERE ARE NOW PARKING FEES, PAYABLE AT THE KIOSKS, AND ENFORCEMENT UNTIL 10 PM.**

MINERAL MINUTES



Newsletter of the Mineralogical Society of the District of Columbia



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