

Southern Maryland Rock and Mineral Club



Rock Talk



October, 2016

Message from the President

It's that agonizing time of the year when we need to elect new officers, or should I say find someone who is willing to be an officer. Tim has already said he will continue as Editor and I plan to continue as Webmaster. I believe Dave will continue as Field Trip Chairman and Treasurer. Carole says she is already working on getting speakers for next years Programs. That leaves vacancies for President, Membership Chairman, and Secretary. I ask that you think about accepting one of these positions and let me know if you are interested.

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Next Meeting:

October 24, 2015 @ 7:00 PM

Program: Rock/Mineral Show and Tell

**Refreshments:
TBD**

**Clearwater Nature Center, 11000 Thrift Road,
Clinton, MD.**

NO AUGUST MEETING MINUTES**Upcoming Shows and Events: 2016**

Oct 30. Bethesda, MD. Annual sale and Auction sponsored by the Gem, Lapidary and Mineral Society of Washington, DC. The Woman's Club of Bethesda, Old Georgetown Rd and 5500 Sonoma Rd.

Nov 5-6. Philadelphia, PA. Annual Fine Gem, Jewelry and Mineral Show—Gemarama 2016 sponsored by the Tuscadora Lapidary Society. Greater Philadelphia EXPO Center at Oaks, Hall C.

Nov 19–20. Fairfax, VA. Northern Virginia Mineral Club, 25th Annual Show; in the HUB Ballroom, Student Union II Bldg., George Mason University (park in Lot A off Nottaway River Lane and take free shuttle to and from show); Sat. 10-6, Sun. 10-4; <http://www.novamineralclub.org/events/2016-show>

SMRMC OFFICERS**PRESIDENT**

(position open)

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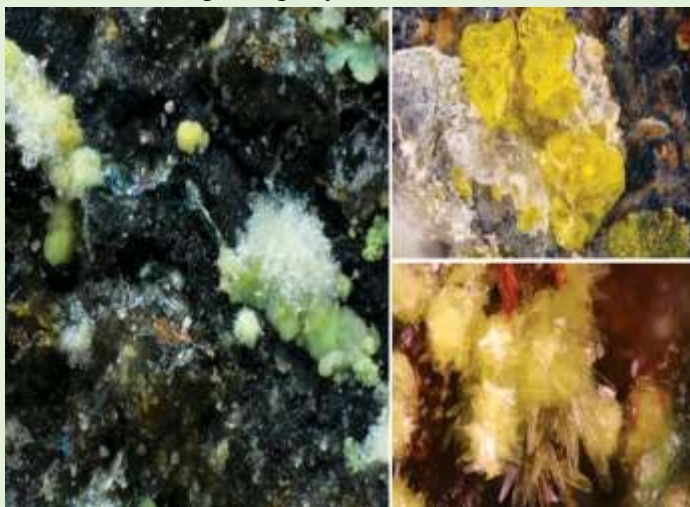
Rocks, Minerals, and Fossils in the News

Rock hounds are on the hunt for new carbon minerals

SID PERKINS

<https://www.sciencenews.org/article/rock-hounds-are-hunt-new-carbon-minerals>

A new challenge has scientists searching for dozens of unknown, beguiling crystals



CAN YOU DIG IT? Abellaite, ewingite and leószilárdite (clockwise from left) are three of the seven carbon-bearing minerals recognized by the International Mineralogical Association in the past year. A search is on to find dozens more undiscovered carbon minerals.

Like many abandoned mines, the Eureka uranium mine in northern Spain is a maze of long, dank tunnels. Water seeping down the walls carries dissolved substances that percolated through rocks overhead. As the water evaporates into the tunnels' cool air, some of those dissolved ingredients combine to make new substances in solid form.

“The mine is a crystallization factory of weird minerals,” says Jordi Ibáñez-Insa, a physicist at the Institute of Earth Sciences Jaume Almera in Barcelona.

Including the uranium-bearing ores that attracted miners to Eureka in the first place, scientists visiting

the mine have cataloged 61 different minerals — solids that have a distinct chemical recipe and arrangement of atoms. The latest find, called abellaite, is a rarity that grows in small pincushions of tiny crystalline needles about 40 to 50 micrometers long. Discovered in July 2010, the mineral has been found only on the walls of a 3-meter-long stretch of one tunnel, says Ibáñez-Insa.

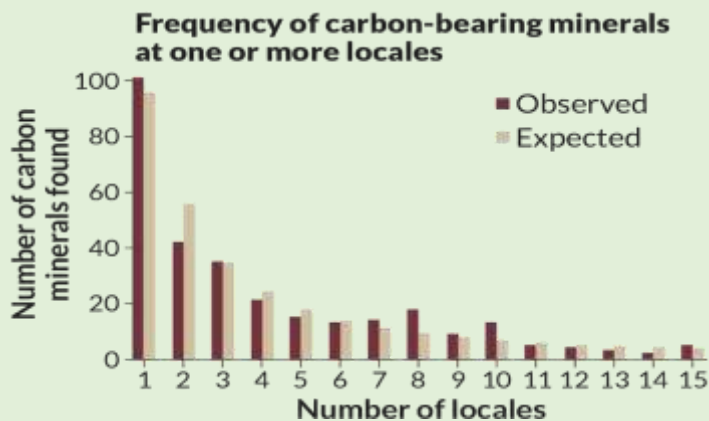
Abellaite is uncommon in another sense: It contains carbon. Of the 5,161 minerals characterized by scientists and recognized by the International Mineralogical Association, just 8 percent, or 416, include carbon.

The Carbon Mineral Challenge, launched last December and running until September 2019, exhorts researchers to scour the landscape — and their museum drawers — for unknown carbon-bearing minerals. In a recent analysis, scientists estimate that there are at least 548 carbon minerals on Earth. That means well over 100 are waiting to be noticed.

The analysis, published in the April *American Mineralogist*, even provides clues about where scientists and rock hounds should look and what recipes and atomic arrangements such minerals might have.

Survey says

The number of minerals found at only one locale is expected to decrease as more minerals are found. But of all known carbon-bearing minerals (maroon bars), most have been found in only a handful of places. Anticipated finds (tan bars) based on statistical analyses, offer hope of yet-to-be-found minerals.



E. OTWELL

Source: R. Hazen *et al*/American Mineralogist 2016

The hunt for carbon minerals is much more than stamp (or rock) collecting. The challenge aims to identify minerals that could help tell the story of the planet’s carbon and water cycles — past and present. Besides having a specific recipe and structure, minerals form only in certain conditions (on Earth and elsewhere), making them keen chroniclers of the environments that existed at the time and place they formed, as well as the conditions since then.

A few minerals are, forgive the phrase, as common as dirt. Of the more than 5,000 recognized minerals, about 100 have been reported by geologists and amateur collectors at more than 1,000 sites worldwide. Many more are very rare: At least 1,000 minerals have been found in only one locale, says Robert Hazen, a geophysicist at the Carnegie Institution for Science in Washington, D.C. More than half of the world’s minerals have been found at five or fewer locations.

Not every mineral on Earth has been discovered, of course. But by analyzing a massive database of known minerals and how common or rare they are, scientists can use a standard statistical tool to estimate the number of minerals yet to be uncovered. Hazen and his colleagues suggest in the August 2015 issue of *Mathematical Geosciences* that there are at least 1,500 undiscovered minerals out there. About 140 of those minerals contain carbon, the team

predicted in the follow-on analysis published in April.

Both professional mineralogists and amateur collectors can participate in the Carbon Mineral Challenge, but any potential discoveries have to survive the strict screening process of the International Mineralogical Association, which Ibáñez-Insa and a raft of colleagues navigated for abellaite. (The mineral was approved in December 2015.) The researchers submitted a portfolio of data — the sample’s appearance, chemical makeup, arrangement of atoms, color, hardness, transparency, fluorescence, a proposed name and more — to the IMA’s Commission on New Minerals, Nomenclature and Classification.

A few dozen new minerals are recognized each year, says Hans-Peter Schertl, a mineralogist at Ruhr University in Bochum, Germany, and an IMA officer. Approval can be straightforward, or it can drag out for months or longer, especially if additional data are required, Schertl says. One strict requirement is that a sample be natural, not lab-made or a result of human interference. Thus, any unusual crystals that grow on the surfaces of rocks that were pulled from a mine and then dumped nearby and exposed to the elements wouldn’t qualify as a mineral, he notes, “Those would just be pretty crystals.”

Oddly, the “natural sample” requirement long prevented official recognition of what is purported to be the most common mineral on Earth. Bridgmanite, an iron- and magnesium-rich silicate, received the IMA seal of approval only in 2014 ([SN: 1/10/15, p. 4](#)). Estimated to make up a whopping 38 percent of the planet’s volume, bridgmanite can exist only at the high pressures found between 660 and 2,900 kilometers below Earth’s surface — too deep to dig up. Scientists had long studied lab-made samples but hadn’t found a natural bit of the mineral until earlier

this decade in a meteorite that landed in Australia in 1879.

In their analysis published in April, Hazen and colleagues included general recipes for a variety of Earth's yet-to-be-discovered carbon minerals. One formula — a complex mix of sodium, lead and carbonate and hydroxyl ions, written scientifically as $\text{NaPb}_2(\text{CO}_3)_2(\text{OH})$ — matches abellaite from the Spanish mine. Bingo. One more carbon mineral in the bag.

Many of those “missing” minerals will be very similar to known forms, with combinations that differ by only a single element — swapping out a magnesium atom for a calcium atom in the recipe for a known mineral, for example, or a sodium atom for a potassium atom.

“The chemical formula tells you a lot about the conditions that a mineral forms in,” says Daniel Hummer, a geochemist at Southern Illinois University in Carbondale and lead scientist for the Carbon Mineral Challenge. It also suggests that existing minerals that have a very similar formula can, in many cases, serve as a guide for what the missing minerals might look like, in terms of the colors or shapes of their crystals.

In fact, similarities could be so strong that a mineral might be overlooked because it looks so much like a known, or even common, mineral. “It’s possible that some of these missing minerals are hiding in plain sight,” Hummer notes.

If not camouflaged, some carbon minerals may simply be so scarce that they’ve never been encountered. In June in *American Mineralogist*, Hazen and environmental scientist Jesse Ausubel of Rockefeller University in New York City discuss [several reasons why minerals can be rare](#) —

so rare, in fact, that the entire world’s supply might fit into a thimble, Hazen says.

First, a mineral might form or remain stable only in extremely unusual combinations of temperature, pressure and pH. The mineral hatrurite (Ca_3SiO_5), for example, forms only at temperatures above 1,250° Celsius and only in the absence of aluminum, the third most common element in Earth’s crust. Hatrurite was first found in Israel, in an ancient limestone deposit that was probably exposed to intense heat generated when hydrocarbons in nearby sediments burned.

Second, a mineral might include chemical elements that are rare to begin with and even rarer in combination. Examples include swedenborgite (which contains the scarce combination of beryllium and antimony) and any mineral that includes tellurium, which on average is found in Earth’s crust at concentrations of 5 parts per billion.

Third, a mineral may be exceptionally ephemeral. Some are so hygroscopic, or humidity-absorbing, that they pull moisture from the air and dissolve themselves, Hazen says. Hygroscopic minerals have to be collected or observed in the field as they form and before they disappear. Then there are the minerals that form in conditions so remote or harsh that scientists hardly ever get near them (think deep-sea hydrothermal vents or active volcanoes).

Some minerals present more than one of these challenges. Consider fingerite, $\text{Cu}_{11}\text{O}_2(\text{VO}_4)_6$, an unstable shiny black mineral that forms only at high temperatures and includes the rare combination of copper and vanadium. This exceedingly rare mineral is known only from samples recovered from rocks near heat-belching fissures and holes atop El Salvador’s Izalco volcano.

There are less hostile places to search for new minerals, though. Fourteen sites worldwide, including mines, have each given up 20 or more carbon minerals, Hazen says. Scientists could revisit those 14 sites and look for more unrecognized minerals, he notes. Or they could simply take a closer look at or perform additional tests on samples already collected from such locales.

Or researchers could target areas where ephemeral minerals could be expected to form, if ever so briefly. For example, calcium carbide — a substance produced on an industrial scale to create acetylene for miner's lamps — reacts so quickly with water that it hasn't been found in a natural setting. But small, short-lived quantities might be produced when lightning strikes near rocks containing both limestone and coal (admittedly, a pretty hostile situation).

There's no reason to be limited by the 14 promising locations. Scientists found the yellowish-white crystals of tinnunculite ($C_5H_4N_4O_3 \cdot 2H_2O$), mineral just recognized in December, in an unexpected milieu: inside the residue of bird poop that had landed on extremely hot rocks overlying an underground coal fire in northwestern Russia. The elevated temperatures drive the crystallization of uric acid in the excrement, the researchers say.

The exotic mineral was dubbed tinnunculite to honor the European kestrel (*Falco tinnunculus*), whose indispensable contribution to mineralogy cannot be denied.

For his part, Ibáñez-Insa plans to spend more time at Spain's Eureka mine. Although the site's uranium ores are no longer worth extracting, scientific treasures akin to abellaite may still lie undiscovered. "I'm pretty sure," he says, "we'll find some more new minerals there."

Rare rocks and minerals on view in Falls, Philadelphia

- By Gwen Shrift, staff writer

http://www.buckscountycouriertimes.com/life-style/local-feature/rare-rocks-and-minerals-on-view-in-falls-philadelphia/article_b4425f6e-96d0-11e6-9383-533cbcbce717.html



Ralph Thomas demonstrates the fluorescence of minerals in his rock collection with an ultraviolet lamp that makes them glow.

As earthlings reach for mysterious boulders on Mars, students of geology want to remind you that there are some pretty nice rocks down here on the home planet.

Local collectors and travelers from faraway places — on Earth — revel in stones that glow tomorrow in Fairless Hills, and in November, scientists roll out a world-class collection of thrilling minerals in Philadelphia.

Every year in late October, hundreds of people haunt the basement of the First United Methodist Church, in the dark for the most part, to watch what happens when short-wave lamps play on minerals saturated by nature with manganese. As Ziggy Stardust would say, the electrons in the rocks freak out in a moon-age daydream and light up the room with a spooky glow.

"When you walk in the exhibit hall, it's like you're walking on Mars," joked Ralph "The Glow Father" Thomas of Lower Makefield, a longtime organizer of the annual Ultraviolet show who is credited with fostering enthusiasm for fluorescent rocks in the area.

"We cover the windows, we cycle all day long, 10 minutes of daylight and 20 minutes of dark, so people can see the minerals in that environment," he said. Enthusiasts and dealers in glowing rocks come from across the region to participate.

Their stock-in-trade is minerals, found in places such as an old zinc mine in New Jersey, that have an otherworldly appearance under the right conditions. The most popular is Willemite, "which fluoresces in a strong green color," said Thomas.

Certain rocks glow because ultraviolet light induces electrons in the atoms within the minerals to leap out of place. When the electrons fall back where they belong, they emit light. This must have given the zinc miners quite a jolt when they first noticed it, but it also made Ogdensburg and Franklin in New Jersey's rural Sussex County world centers for glowing rocks.

The Rock and Mineral Club of Lower Bucks County, which organizes the local show, plans raffles and giveaways at the event. Children 12 and younger who are accompanied by an adult get a free sample of glowing rock. The exhibit is on view from 9 a.m. to 4 p.m. at the church, 840 Trenton Road. A \$2 donation is requested.

Passions kindled by those rocks can be further fed at the "Treasures from the Mineral Vault" exhibit opening Nov. 5 at the Academy of Natural Sciences of Drexel University. Scientists have pulled 50 specimens from the institution's historic collection, an

array designed to give viewers a grounding in the geological magic of which the planet is capable.

"We're showing four different classes of minerals," said Ted Daeschler, an Academy geologist whose work with fossils has helped rewrite the history of early land-dwelling creatures. "With each one, we're talking about the chemical makeup, we are talking about some of the practical uses — how do people relate to quartz every day? — in each case."

The rocks are chosen for their beauty of color and form and glitter, which appealed to 19th-century Philadelphia mineralogist and Academy member William Vaux. "He was a collector, very interested in the beautiful, showy stuff," said Daeschler.

What makes one rock an unglamorous gray pebble, and another a spectacular deep blue azurite? It's in the arrangement of the atoms of elements such as potassium and sodium. "It's like building an Erector set, and changing one of the pieces a little bit, and that will change the optical properties of the mineral," he said.

"Rocks and minerals are different. Minerals are the pure atomic structure of the combination of certain elements. Rocks are essentially ground-up, small pieces of minerals, sometimes they form that way," he said. Water is essential, as it precipitates minerals out of the surrounding earth; temperature and pressure, that is, how deeply the ingredients are buried, also are critical.

Mostly, beautiful specimens that are green or yellow or purple or red are found deep underground; minerals such as quartz, calcite and fluorite live together with valuable metal ores such as zinc or copper, according to Daeschler.

"Most of them come from mining districts," he said of the specimens on view. "Nothing's bigger than a football. Very few crystals in the world are. It's the

variety and rarity that we're presenting. We didn't go for size, we went for variety."

7 real life Jurassic Parks from around the world for dinosaur lovers

<http://www.wanderlust.co.uk/planatrip/inspire-me/lists/7-real-life-jurassic-parks-from-around-the-world-for-dinosaur-lovers>



From the Isle of Skye to Bolivia to a village near Barcelona, dinosaurs are easy to find – if you know where to look. Peter Moore tracks down dino footprints, museums and theme parks around the world

1. Jurassic Coast, Dorset/Devon, UK

The Jurassic Coast stretches for 95 miles between Exmouth in East Devon and Studland Bay in Dorset, and is the UK's only natural World Heritage site. The sedimentary layers here host the stories of 185 million years of Earth's history, and fossickers and scientists alike are constantly unearthing Jurassic-era treasures. Away from the crumbling cliffs, the area's prehistoric past is celebrated and preserved. Exmouth have just unveiled a collection of dinosaurs throughout the city. And in Kimmeridge, a new state-of-the-art museum, featuring a ground-breaking collection of Jurassic Coast fossils, has just opened.



Steve Etches with one of his fossils (Dermot Martin)

Known as the Etches Collection, the museum is home to the extraordinary fossils found by local collector and expert Steve Etches. Over 30 years, Etches discovered, collected and researched over 2000 late-Jurassic Kimmeridgian specimens. Using the latest CGI technology, the museum 'immerses' visitors in this world, a sometimes terrifying underwater struggle to live and survive, and brings the creatures to life as if they were modern day animals.

2. Messel Fossil Pit, Odenwald, Germany

Tucked away in the Odenwald region near Frankfurt, the Messel Fossil Pit is a rare window into the Eocene period and, in particular, the evolution of mammals. Once a volcanic lake surrounded by tropical forest, the oil shale here has revealed such a host of prehistoric treasures that it has been declared a UNESCO world heritage site.



Fossil food chain (senckenberg.de)

A visitor and information centre opened on the edge of the pit in 2010 and houses a collection of the site's most intriguing finds. The most popular is the remains of a prehistoric horse called Eurohippus, small enough to fit in a Lidl shopping bag. The pit is still offering up treasures. Paleontologists recently discovered a perfectly preserved 'fossil food chain' – a snake with a lizard in its stomach, which in turn had a beetle inside its stomach.

3. Dinosaur National Monument, Colorado/Utah, USA

Millions of years ago, when the USA's southwest was not as dry and inhospitable as it is now, a sandbank at the point where the Green and Yampa rivers meet became something of a dinosaur graveyard. Carcasses of dinosaurs from all along the rivers washed up and got stuck here, preserved for all eternity when the sandbar turned to rock. That 'Wall of Bones', a tilted layer of rock containing over 1,500 dinosaur fossils, can be viewed at the Quarry Exhibit Hall in the Dinosaur National Monument on the Utah/Colorado border.



Admiring the Wall of Bones (NPS)

The wall contains the remains of Allosaurus, Diplodocus and Stegosaurus, and there are knowledgeable rangers on hand to help you tell one from the other. If you'd like to see life-sized dinosaurs, set in the land they once called home, drop by Moab Giants where you can walk amongst scarily-realistic models on their dinosaur trail.

4. Isle of Skye, Scotland, UK

At low tide on Staffin Beach on the Isle of Skye you can literally walk in the footsteps of dinosaurs when the receding sea reveals prints left by tiny dinosaurs 165 million years ago. Should you miss the tide, the Staffin Museum nearby has casts of the prints, as well as dinosaur bones and other fossils from the areas as well.



Staffin Beach. Beautiful even when the tide is in (Dreamstime)

In 2015, more fossilised dinosaur footprints, just south of Duntulm Castle. Again, only visible at low tide, these were made by sauropods, a group of huge, long-necked dinosaurs that included the brontosaurus. They date from the Jurassic Period and make up the biggest trackway in Scotland, prompting the Isle of Skye to declare itself the Dinosaur Isle of Scotland.

5. Cal Orcko, Bolivia

Just south of Sucre, in a quarry owned by Bolivia's National Cement Factory, lies an extraordinary sight. Here, amongst giant earth-moving machinery, is a huge limestone wall, covered in thousands of dinosaur footprints. Bizarrely, the footprints seemingly lead from the bottom, up the vertical wall and over the top.



Dinosaur tracks leading up a wall in Cal Orcko (Dreamstime)

Scientists believe the footprints were made by a baby T.Rex, flanked each side by its parents. They hadn't defied gravity. The muck in which they walked solidified and went vertical when plates deep beneath the earth crashed together. At the top of the cliff, you'll find the Cretaceous Museum, home to 24 life-sized dinosaur models and a viewing platform that reveals the sheer magnitude of the world's largest collection of dinosaur footprints.

6. Vallcebre, Catalonia, Spain

Dotted at sites across the world, dinosaur footprints are relatively a dime a dozen. A recent geological survey in the village of Vallcebre near Barcelona, however, found the impression of a dinosaur's scales, formed 66 million years ago when it lay down in the mud.



A brachiosaurus visiting Barcelona millions of years ago (Dreamstime)

Scientists believe the fossil probably belongs to a large herbivore sauropod (they discovered footprints close by). The fact that the fossil dates from the sedimentary rock period proves that it was one of the last dinosaurs to live on the planet.

7. Kronosaurus Korner, Queensland, Australia

Billing itself as Australia's premier marine fossil museum, Kronosaurus Korner is a popular stop on Australia's Dinosaur Trail in western Queensland. Here you'll find 'Penny' the Richmond plesiosaur (Australia's best vertebrate fossil), 'Krono' Kronosaurus queenslandicus (a 10-metre, giant marine reptile) and 'Wanda', Australia's largest fossilised fish.



Dinosaur chained to a fence in Australia (Dreamstime)

The trail also takes in other important sites in Australia's prehistoric history. At Lark Quarry Conservation Park, 110 kilometres south of Winton, you'll find the only evidence of a Dinosaur Stampede on the planet. Closer to Winton, you'll find the Jump-Up Lookout, home to Banjo the Australovenator and the Age of Dinosaurs Museum, featuring the largest collection of Australian Dinosaur fossils in the world.

UTAH FEILD TRIP 2016

by: Tina League



On September 14, 2016 six members of SMRMC : Joe, Paula, Ralph, Teri, Harry and Tina flew to Salt Lake City, picked up two rental Jeeps, hit Wal-Mart for supplies and drove to Delta to begin the 10 day rock collecting trip. This was Ralph's first trip to Utah and his first flight....he was very happy to be back on the ground and ready to explore the west! The weather report for the next few days was perfect-sunny and 70's during the day. No chance of rain..hurray!

9/15/16: We planned to spend the first day digging for Dugway *Geodes*. We headed out into the desert and had to stop for a flat tire...Joe put his NASCAR pit crew skills to work and had the spare on in no time. We had purchased a tire repair kit in Salt Lake City for just such an occasion, but unfortunately the tire was too torn to be repaired, which meant that we would have to cut our day short and get back to town in time to go to the tire shop to purchase a new one. We pressed on and made it to the *Geode* collecting area despite the GPS's instructions to turn on to roads that didn't exist. We spent several hours digging and collecting *Geodes*. Then we moved on to the pink *Topaz* site. We briefly collected pink *Topaz* and *Bixbyite* then headed back to Delta. The tire shop promised a new tire would be there first thing in the morning. We went to the rock shop and dinner.

9/16/16: Joe got the new tire first thing in the morning and then we headed to Topaz Mountain. In 2015 "Topaz Mountain Adventures" staked a claim on the floor of the amphitheater and designated that area as a fee site with blasting tours. The area was very well marked and the roads were left accessible to rockhounds collecting on their own away from the fee area. Ralph and Teri collected nice *Topaz* specimens in area 1. Paula worked the washes and found an interesting *Garnet*. She met Joe up on area 2 after he hiked the entire west wall. Harry and I worked on area 3 and found *Topaz clusters*, *Red Beryl* and tiny scorpions.



9/17/16: We headed to Black Rock to collect gold flash *Obsidian*. Joe found a very large *Obsidian* specimen that gave the TSA in Salt Lake airport a puzzled look when they x-rayed his carry-on. We then headed to the Geothermal Plant area to collect *Opal*, silver flash and snowflake *Obsidian*. Then on to Milford for lunch before we went to Rock Coral Canyon to look for smoky *Quartz*. Nice specimens were hard to come by due to time constraints. We hoped to return to this site later in the week. On the way back to Delta we stopped at the Gunnison Massacre site just west of town. The site has a small marker which shows the area where the railroad survey crew was killed by Ute Indians in October of 1853.



9/18/16: We visited Fort Deseret first thing in the morning. Fort Deseret was built in 1865 by Mormon settlers for protection from the Blackhawk Indian war. It is a mud and straw fort that was built by 98 men in 18 days. It still stands today.



Next stop on our sight seeing tour was to photograph the Indian Petroglyphs near Devils Kitchen. After the photo session we moved on the Painter Springs to collect *Quartz*, *Garnet*, *Diopside*, *Vesuvianite*,

Chalcopyrite, and other minerals. The scenery was beautiful! We hiked and explored for hours. Most of the minerals were micros which made them very easy to carry in pockets. Joe explored the caves near the top of the mountain and spotted a mountain lion.



9/19/16: Fossil day: We went to U-Dig Trilobites and collected for 4 hours. Terri honed her slate breaking skills and revealed several nice *Trilobite* specimens. After U-Dig we headed to the Red Quarry area and found very small multi-colored *Trilobites*. We drove for quite some time trying to find the Swasey Spring collecting area, but were not

successful at locating it. We did get to hang out with the wild horses. That alone was worth the drive!!

9/20/16: Ralph and Teri spent the morning boxing rocks and packing, they were heading home the next day. They talked to a man at the post office who invited them to collect at his very large dump pile by his shop. They were pleasantly surprised by the quality of the material they found there: *Picasso stone*, *Fluorite*, *Zebra stone*, *Calcite*, *Septarian nodules*, *Azurite*, *Wonderstone*, *Lepidolite/Tourmaline*, *snowflake Obsidian* and much more. Joe, Paula, Harry and I spent the morning hunting for artifacts to photograph. We went to Sunstone Knoll and collected *Sunstones* on the way back to town. Ralph told us about the dump site when we got back to town, so he, Paula, Harry and I went there to collect. The specimens were very nice! We took our buckets to the rock shop, weighed and paid and then went on to dinner.



9/21/16: Joe and Paula took Ralph and Teri to the airport in the am. They stopped at some sites closer to Salt Lake on their way back to Delta and then went back to the Geothermal Plant area *Obsidian* site. Harry and I spent the day at Topaz Mountain collecting *Topaz and Red Beryl*. We left early in the afternoon due to rain showers.

9/22/16: We had not visited Fossil Mountain on our previous trips to Utah, so we decided to spend the day in that area. The collecting area was listed as having *Brachiopods*, *Trilobites*, *Echinoderms*, and *Cephalopods*. We found very impressive

conglomerate plates loaded with ancient sea creatures. On the way to the IbeX area Harry got to put the tire patch kit to use on our Jeep. Money well spent. After collecting fossils we drove to Crystal Peak several miles southwest of Fossil mountain. The weather report was for scattered severe storms, so we kept our eyes on the sky. We ended up driving thru a short burst of rain on the way to Crystal Peak, but on arrival we had blue skies and sunshine....briefly. We collected *Spotted Quartzite* until the black clouds on top of the mountain chased us away.

9/23/16: A cold snap and rain descended on Delta. Snow was in the forecast for the higher elevations that night. We spent the morning boxing rocks and making a post office run. After the post office we went to the dump pile and spent several hours collecting specimens in the light rain. Of course that led to another post office run....

We had dinner at the Cafe and packed our bags for the trip home.

9/24/16: In the hotel lobby that morning Harry ran into Dave and Jennifer Kneis-former members of SMRMC who had moved to Colorado. They were in town for the weekend with 30 members of the Colorado club collecting at Topaz Mountain with the Topaz Mountain Adventure tour. There had been a blasting incident the day before which shortened their collecting time. Jennifer showed us her *Topaz* specimen she found. She and Dave are signed up for the Mt. Ida, Arkansas crystal dig in October. It was great to see them and we hope to visit with them in Colorado someday. We stopped to take pictures of the snow capped mountains on the drive back to Salt Lake City. We spent some time in the Rockpick Legend rock shop in Salt Lake before heading to the airport. We bid a fond farewell to Utah and flew home.

Friends of Mineralogy – Pennsylvania Chapter

<http://www.rasloto.com/FM/>

**SYMPOSIUM ON
PENNSYLVANIA MINING AND MINERALOGY**

Mineral Collecting Enthusiasts Meet and Learn

November 5-6, 2016

Franklin and Marshall College, Lancaster, PA

Please Register in Advance

The Friends of Mineralogy – Pennsylvania Chapter will hold their 2016 Symposium and field trip on the first weekend in November. Mineral collectors in attendance on Saturday will meet in the Hackman Physical Sciences Building at Franklin & Marshall College, Lancaster, PA., to hear several talks by experts on minerals, geology and mining in Pennsylvania and beyond. On Sunday, a field trip for those registered for the symposium will provide an opportunity for mineral collecting.

The program planned for the symposium includes these presentations:

Robert Kulp: Dunite in the Serpentinites of the Pennsylvania-Maryland Chrome Mining District;
Ryan Mathur, PhD: Cenozoic mineralization ages for sulfides and calcite in Pennsylvania;
Stan Mertzman, PhD: Hawaiian minerals and geology (Pennsylvania students' experience);
Bill Stephens, PG: Lapidary Grade Agate and Other Semi-Precious Gemstones from the Penn-MD
Serpentine Quarry, Lancaster County, PA;
with plans for another to be announced.

All interested mineral collectors are invited to register and attend. As usual, select mineral dealers will be present, and there will be a silent auction, give-away table, refreshments, and plenty of opportunities for visiting with fellow enthusiasts. Lunch is available at restaurants within walking distance. Please see the web site <http://www.rasloto.com/FM/> for details, updates, and the registration form.

The mineral collecting field trip on Sunday is planned for a location where a variety of minerals may be available. Details will be given at the symposium. The trip is open only to symposium registrants. Safety equipment will be required.

Dates: Saturday & Sunday, November 5-6, 2016

Location: Saturday Nov. 5: Hackman Physical Sciences Bld., F&M College, Lancaster, PA

Sunday, Nov. 6: location to be announced

Registration: \$25 for non-members, \$15 for current FM-Pa members; free for students with student ID.

Please register in advance; a form is available on the web site.

Professional Geologists: lecture attendance qualifies for Professional Development Hours toward license renewal.

Web Site: <http://www.rasloto.com/FM/>

Contact: Joe Marchesani e-mail: Jmarch06@comcast.net phone: 609-433-5129

Official Combined Field Trip Notice(*)

Field Trip to National Limestone Mt. Pleasant mills and Middleburg Quarries on Saturday Oct 29 from 9:00 a.m. – noon and 1:00 p.m. to 4 p.m.

(* This trip is hosted by Montgomery County Club and may include other local EFMLS clubs.)

Meeting Time --- Meet at the Quarry Office parking lot at 8:45 a.m. (no later!!) for listening to owner's Christian testimony (his personal requirement as the cost of admission), a Safety Briefing and signing waiver forms. We plan to break for lunch together at 12 noon, then drive 8 miles to Middleburg Quarry as a group by 1:00 p.m..

Trip Leader --- Dave Lines

Location --- National Limestone quarry, 217 Quarry Rd., Mt. Pleasant Mills, PA 17853 (Approx. 200 miles and a 3-1/2 hour drive from La Plata according to MapQuest)

Directions --- (recommend follow directions from MapQuest)

Special Requirements --- Since this trip is hosted by Montgomery County Club, we must follow their rules. 1st, read and sign their (attached) rules/waiver AND BRING IT TO THE QUARRY. 2nd, if you find something, you are expected to share the collecting spot with everyone else (after you get some specimens for yourself). 3rd, the road to the small wavellite area is one way and narrow --- we may have to take turns digging. 4th, The quarry owner collects rocks and would appreciate the gift of any labeled specimens. 5th, kids (8 years old minimum and be a club member) are allowed, but must be closely supervised and remain next to their parent at all times.

Safety --- steel-toed boots, hardhat, safety glasses, long pants, heavy gloves and bright colored safety vest. Stay clear of all high walls.

Note to Experienced members --- please keep a watch on all of us and say something to those who may not recognize danger before they get into trouble.

What to Collect --- Mt. Pleasant Mills Quarry --- Strontianite, Calcite, Dolomite, sometimes Fluorite --- and Wavellite. Strontianite is best found by breaking open likely looking rocks. A LARGE sledge hammer is helpful. Strontianite is DELICATE. Bring toilet paper/old newspaper to wrap your specimens in. On the top of the ridge, above/behind the quarry, we can dig for Wavellite. Wavellite is found on chunks of limestone/sandstone, which is loose and covered with red dirt/mud. You may need to dig down through several feet of this material to find the "layer" that contains the best wavellite. A short shovel and a pry bar/digging bar help. A garden scratcher is good. Wavellite is best found by wetting promising looking specimens and brushing off the red clay/mud with a stiff scrub brush. Bring a bucket and fill it with water at the office/trailer. This should be wrapped carefully, too. There are also fossils in the same pit with the Wavellite, Brachiopods and moonsnails seem to be most common. On occasion some rarer minerals have been found here as micros --- Variscite and Turquoise. Middleburg Quarry --- (fluorescent) flowstone (travertine stalagmites from ancient limestone caverns) and several minerals. Calcite and Fluorite are the most abundant. Sphalerite and galena (other sulfides) have also been found there as micros.

Equipment/ clothing --- Full safety gear for everyone at all times --- steel toed shoes/boots, safety glasses, hardhat, work gloves, long pants --- rock hammer, 3 - 4 pound crack hammer, chisels, stiff scrub brush, garden scratcher, 5 gal. bucket, old newspaper for wrapping specimens, small pry bar. Optional -- large sledge hammer, long pry bar, extra buckets, loupe/magnifying glass. Your best tools are sharp eyes. Clothing depends on the weather --- long sleeves/coveralls recommended. Rain poncho nice to have. A bow saw is nice to have if the road to the wavellite site has a fallen tree across it.

Quarry Description / Hints --- Both quarries are limestone quarries mined for material to be crushed for road construction and riprap. **Hint** ---Carefully search and *investigate anything that is different*.

Vehicles --- We will be allowed to drive our vehicles into the quarries, although the flowstone collecting area in the Middleburg Quarry may require us to park as much as 100 yards from the material --- a dolly or wheelbarrow may be helpful.

Misc. --- Drinking water, sunscreen, lunch/snacks, "Thank" the quarry owner. Bring signed Waiver from Montgomery Club. Bring a camera and take some pictures for our Newsletter.

Sign-up List --- Sign up at the September or October club meetings or by email to dave.lines@earthlink.net

****If you sign up and later find that cannot make the trip, **call Dave at 240-427-7062** and tell him.

Assumption of risks, waiver, and indemnification agreement (binding for all fieldtrips)

For the purpose of this waiver "field trip facilitators", also referred to as "releasees", include the Gem, Lapidary, and Mineral Society of Montgomery County (GLMSMC), owners, operators, and managers of properties visited as part of the field trip, any third party facilitating, supporting, or managing the field trips, and any affiliates, agents, or officers and directors of these entities. Fieldtrips are events, including educational and collecting trips, organized or announced by the GLMSMC, its officers and directors, or their agents. This agreement applies to all such trips as well as activities involving preparation for or transportation to the event.

ASSUMPTION OF RISKS

Field trip attendees are solely responsible for their own safety. If the attendee brings minor children, the attendee is solely responsible for their safety and supervision. Fieldtrip facilitators provide no supervision of children.

Quarries and other field trip sites have hazardous areas that cannot be made completely safe. Collecting is inherently risky. Risks include falls, wall collapses, collisions with mobile equipment, injury from falling material, flying material, inhalation of dust including asbestos, snakes, insects, contact with toxic natural or man-made material, explosions, and damage to personal vehicles.

Neither the club or property owners provide any insurance or funds to treat injuries that occur during collecting. Attendees must rely on their own insurance and financial resources to handle such events.

The fact that the club or property owner may insist attendees follow safety or etiquette rules or warn that an area or an activity is unsafe does not imply a duty to forbid attendees from or warn them away from all unsafe spots or unsafe activities. Attendees should not assume an area is safe just because others let you work there or are working there themselves. Attendees must use their own judgment, accept the consequences, and hold all others harmless.

Attendees recognize that the fieldtrip facilitators do not make any representations about the character or conduct of any third parties on the property or attending the fieldtrip and are not responsible for their conduct.

INDEMNIFICATION FROM ALL CLAIMS

All attendees agree to indemnify, save, and hold harmless the releasees from any and all liability, causes of action, claims, demands, costs, or debts of any kind incurred or arising from participation in any field-trip, even if such cause is an injury or property damage resulting from error, omission, or negligence by one or more of the releasees. Attendees agree that this waiver is binding on any heirs, insurers, or third parties that may bring a claim on their behalf.

If the terms of this waiver are unreasonable or unacceptable, one must not participate in the field trip.

INDEMNIFICATION OF RELEASEES AGAINST CLAIMS FROM MINOR CHILDREN OR OTHERS IN MY CARE

If despite signing this waiver, I or another person, including my minor child, makes a claim resulting from my, my minor child, or dependents participation in this event or other fieldtrip, I will indemnify, save, and hold harmless each of the releases from any litigation expense, attorney fees, loss, liability, damage or costs any may incur as the result of such claim.

OTHERS ARE PERMITTED TO INCLUDE PARTICIPANTS IN PHOTOGRAPHS OF FIELDTRIPS (PHOTO RELEASE)

All participants grant to the fieldtrip facilitators and participants the right to take photographs of them and their family members or property present at the trip. The participants authorize any of the photographers or fieldtrip facilitators, their assigns and transferees to copyright, use and publish the same or in print and/or electronically. Participants agree that these individuals or organizations may use such photographs with or without their names for any lawful purpose, including for example, publicity, web content, or advertising.

SEVERABILITY and JURISDICTION

The attendee agrees that the venue for any dispute related to this agreement or any fieldtrip shall be the State of Maryland and the County of Montgomery.

The attendee hereby expressly agrees that this release and waiver is intended to be as broad and inclusive as permitted by applicable law and that if any portion hereof is held invalid, it is agreed that the balance shall, notwithstanding, continue in full legal force and effect.

AGREEMENT TO FOLLOW RULES

The attendee recognizes that participating in these fieldtrips is a privilege subject to revocation by any of the releasees. Attendees agree to follow all trip rules and agree to leave the property if asked to do so by the property owner or representative or employee of the property owner or trip leader, regardless of whether the attendee agrees with the decision. If the attendee disputes a decision of a fieldtrip leader, he or she must still follow the instructions of the leader and address the issue according to the rules of the respective club. The attendee agrees not to litigate such disputes and agrees that the above indemnification agreement applies to any such litigation he or his agent pursues on his behalf.

The undersigned has read, understands, and agrees to the above "Assumption of risks, waiver, and indemnification agreement," agrees to follow the rules (below or attached), and represents that they are a member in good standing of a participating club and are attending voluntarily and for their own enjoyment. I further acknowledge that my agreement applies to all GLMSMC fieldtrips.

Participant (signature)	Printed Name	Date

If participant is a minor:

parent signature	Parent name	Date

Rules

1) Required safety equipment.

The following equipment is required for everyone, including minors. Collectors missing required safety equipment will be asked to leave.

- **Hard Hat** (ANSI Z89.1, certified for industrial head protection and with a mfg sticker showing it is no more than 5 years old. These are readily available at home improvement centers (ie. Home Depot, Lowes) and hardware stores. Bike helmets and other sport helmets are NOT suitable).
- **Eye protection** – safety glasses and/or goggles
- **Steel toed shoes** (boots that provide ankle support are far safer than low cut steel toed shoes). Soft toed sport shoes are not safe or acceptable.
- **Gloves**
- **Long pants**
- **Fluorescent safety construction vest** (some quarries will require these, we may not know ahead of time).

Other safety equipment (we don't check for this, but you should use it!):

- **sunscreen**
- **drinking water**
- **fully charged cellphone**
- **snacks**
- **raingear**
- **bandaids for minor cuts**

2) **Children:** I will post the age limits with each trip. In quarries where children are permitted, parents are responsible and assume all risk. Parents should stay with their children, watch them, and leave with them when they become too restless to be safely monitored. Children must have the required safety equipment specified above.

3) **General rules:** Collectors must RSVP by the date specified in the announcement. Quarries are hurting from the recession and don't want to send their employees out to supervise only two or three collectors, so we need to give an accurate headcount ahead of time. I will have to be less lax about this going forward. If I find I don't have enough people the Thursday or Friday before the trip, we may have to cancel. **DO NOT BE A NO-SHOW!!**

Collectors who are late may miss the safety briefing and hence the privilege of collecting. Please be on time!

It is important to obey all instructions of the group leader, the group leader of any other participating club, and quarry employees. Failure to do so or unsafe behavior can lead to a collector being forbidden to participate in future field-trips, and other sanctions.

In any site covered by OSHA or MSHA rules (quarries, construction sites), hard hats, eye protection, and hard toe boots must be worn at all times.

All trips will have a group leader, either the field-trip chair or his designee. Most quarries don't want groups entering without a leader.

If you find a spot and need to get a tool to work it or take a break, leave a tool by it to mark it as a spot. Honor other people's spots.

If you find a nice boulder, are studying it or starting to "work it" and another collector, who is also searching the area informs you that he "found" that a few minutes ago, politely thank him and let him know that you have decided to work on it.

Don't "claim" any spot you are not currently working, unless you are merely getting equipment to help you work it or taking a break. Let others have the joy of discovery. If you claim more than one spot at a time or keep searching for new spots, don't complain if someone starts working one of them.

Removal all tools, food wrappers, and trash from the site; don't be a litter bug!

4) Collecting equipment.

- Backpack for tools, etc.
- Water--for drinking and rinsing potential specimens.
- Newspaper & boxes -- for wrapping & carrying specimens
- Five gallon bucket (or something similar for schlepping things around)
- A 3-5 pound blacksmith's hammer or hand held sledge. Do not use carpenter's hammers!
- Cold chisels or masonry chisels. Use wood chisels only if you enjoy ruining your tools and showering yourself and your friends with shrapnel.
- Long arm 8+ pound wrecking hammer--for breaking big boulders.
- An old pocket knife or small screw driver for prying apart small delicate specimens.
- Magnifying glass or loup for examining smaller specimens.
- Camera
- Battery powered UV lamp & dark shroud for lamping fluorescent minerals.
- Pen and notepad for signing safety briefing log and recording names, details, and useful information.

5) Photography.

Photography is permitted. If the photos of company equipment are expected to be posted on the website, please ask the host employee for permission first. Please also inspect photos so that photos that may show inadvertent safety issues (e.g. someone who removed their goggles) are not distributed or posted on the web. We have had situations where this has created problems; and also situations where companies have used photos from club members in their material.

--

David J. Fryauff, GLMSMC field trip chairman

240-277-7206

fryauffd@yahoo.com

The 25th Annual Richmond Gem & Mineral Society Rock Sale and Swap Saturday, November 12, 2016 9:00 a.m. - 3:00 p.m.

*The Rock Sale/Swap is indoors (overflow will be in the parking lot), so come rain or shine!
Open to children and adults (from novice to expert) to purchase or trade (swap) mineral, gem, fossil, shell, and
lapidary specimens.*

Ridge Baptist Church Meeting Hall 1515 East Ridge Road, Richmond, VA 23229

- Doors open at **7:00** a.m. for inside setup. Inside table fees are \$20.00 per table (regardless of 6' or 8' table size) and are limited (44 total tables). RGMS will provide all interior tables which are a mix of 6' and 8'.
- Parking lot spaces are \$20 for approximately 6 spaces and you must provide your own tables.
- Everyone please bring your own table coverings.

To register for a table(s) or exterior space, please download the registration form and mail (with fee) to the address listed on the form. We suggest a **2** table limit. Table reservations are based on "first received, first assigned".

ALL PARTICIPANTS - PLEASE LABEL YOUR MATERIAL Please have at least one flat of good material specifically labeled for children and novice collectors for swap (trade) or give away. Promote the hobby!

To defray sale/swap costs, RGMA asks that each seller/swapper provide a least one nice specimen or similar item for our annual auction. Please no junk!

Food and beverages are available at near-by restaurants. Restroom facilities are available in the building.

FOR MORE INFORMATION CONTACT: Andy Dietz (dietziv@yahoo.com) or
Bob Simon (dino_safaris@yahoo.com).

DIRECTIONS: Since 1998 the swap has been at this location in Henrico County near Regency Square Mall and Douglas S. Freeman High School.

North or South of Richmond, Virginia:

Use I-95 to Exit 79 to I-64 West (North of Richmond City).

Leave I-64 at Exit 181A (South) on Parham Road.

Proceed south on Parham Road for about 1.5 miles and TURN LEFT ONTO EAST RIDGE ROAD. (A right turn at this intersection takes you onto Quioccasin Road to Regency Square Mall).

The Ridge Baptist Church and Meeting Hall are 400 feet on the right, across from Kroger's Grocery.

MEETING HALL IS THE WHITE BUILDING at the rear of the parking lot.

There is ample parking in front of the Meeting Hall. Swap signs will mark both entrances.

East or West of Richmond, Virginia

Use I-64 to Exit 181A

(South) and follow the directions above.

**Richmond Gem and Mineral Society (RGMS)
24th Annual Sale and Swap**

REGISTRATION FORM

NAME _____

ADDRESS

EMAIL ADDRESS _____

TELEPHONE NUMBER _____

NUMBER OF TABLES (\$20 EACH) _____

PLEASE MAKE CHECKS OUT TO --

RICHMOND GEM AND MINERAL SOCIETY (RGMS)

MAIL REGISTRATION FORM WITH FEE TO --

**ANDY DIETZ
12417 GLEN CARRIE ROAD
ASHLAND, VA 23005**



The Southern Maryland Rock and Mineral Club

Meetings take place on the 4th Tuesday of each month at 7:00pm

Clearwater Nature Center, 11000 Thrift Road, Clinton, MD.

For More information, call:

(301) 297-4575

We're on the web:

SMRMC.org