



# Southern Maryland Rock and Mineral Club



## ROCK TALK



## NOVEMBER 2021

23 November 2021 at 1900 (7 PM)

Meeting at OLD WALDORF SCHOOL

(next to the Waldorf JayCees Hall)

North of the RT 301 / RT 5 Intersection

**FACE MASK REQUIRED** - Charles County Requirement

### Editor Comments....

October / November 2021 had multiple events, adventures and stories for all.

As one reads through the ROCK TALK, one will find how well another trip to HK Penn Quarry went for a first-timer; how the re-opening of the James Madison University Mineral Museum went; when and where in Maryland, Chromite was "king"; fossil find in Calvert County along with other interesting stories from around the world!

My most sincere thanks to Dave, Ralph, Ray and Cheryl for submitting stories for this month's ROCK TALK!!

### MAJOR REMINDER

**We will not be meeting** December 2021, January and February 2022 at the OLD WALDORF SCHOOL. BUT, I will be attempting to maintain communications with all with the ROCK TALK. Keep the emails moving between members. Dave will be working with many for a possible Show in the Spring, so watch your email for possible telecons/meetings to advance its possibility to a reality.

### OCTOBER 2021 MINUTES

**OCTOBER MINUTES** submitted by Cheryl.

MEETING WAS CALLED TO ORDER AT a 7:03  
BY CAROLE

**VISITORS/NEW MEMBERS:** No visitors, however we went around and gave our names so many of the new members that were present could get to know us.

**MEMBERSHIP:** 44 Members at this time.

**EDITOR:** Rich is always looking for new ideas articles or subjects of interest for the newsletter.

**WEBMASTER:** The site of our clubs web page, Weabley, has been bought by Square, which is a financial institution. They have been encouraging Bob to switch to their site but he is holding off for now. Currently we have a legacy website which is free. In the future though, if pushed, we may have to pay for the website.

**TREASURER:** Dave read the treasurers report, it will not be published in the newsletter, if you want to see the report see Dave.

**PROGRAMS:** November program is on Claystone Creek being given to us from a new member Kurt Knower. Refreshments provided by Sondra. A motion was made, seconded and voted on to keep the meeting on 11/23/21 which is Thanksgiving week.

A discussion about the yearly Christmas party was discussed with many members still not comfortable gathering indoors, maskless. A motion made, seconded, and voted on decided there will be no party this year.

**FIELD TRIPS:** Dave and Rich are attending the **JMU open house** 10/29/21 for the new museum curated by Dr Lance Kearns.

10/27/21 Dave sent out emails to club members to encourage them to fossil hunt during a blow out tide.

11/13/21 **Richmond swap** ,fliers available and info in newsletter for details if you are interested in going.

11/27/21 Joint club trip to **Odessa Delaware** for fossilized wood and possible Native American artifacts. We have been invited by the Calvert Marine Museum Fossil club.

**OLD BUSINESS:** There was a discussion about purchasing a projector for the clubs use. We decided to hold off till next year to revisit the idea. Joe and Paula have said theirs can be used as long as they have ample notice.

Dave started another discussion about having a rock show in the future. Cheryl volunteered to call local clubs for (if she gets a listing ) so there are no conflicting dates. It was decided to try and keep it smaller as a test run for future shows. Kenny and Bob joined the committee with Dave, Theresa and Ralph B to look into the logistics.

**NEW BUSINESS:** none

**ADJOURNED:** at 7:45, followed by refreshments from Ralph G and a program by Carole on fish fossils from Wyoming. She generously donated numerous samples for us which were given out by numbers like the door prizes. We all got a chance to try our hand at the tedious work of prepping the fossil for display. Thank you Carole and Al.

### November Program Paint Branch Creek

By our new member, Kurt Knower!  
The many colors of Paint Branch Creek. This talk will explore my journey into getting nature pigments from Paint Branch Creek in College Park. It started when I was at UMD in the late 80s.

I will show the many shades of pigments and samples of the clay stones that contain many limonite and Hematite and other clays. I will show how the nature stones and clays look and how I process them into the pigments that can be used. I will have examples of pigment that I have processed as well as the natural stones.

I may also talk about the Native American use of the pigments. Also I will have some canvases I just bought that I will paint on so the club can see the possible applications.

**Refreshments: Sondra**

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2021 PROGRAMS/REFRESHMENTS SCHEDULE		
MONTH	PROGRAM	REFRESHMENTS
NOVEMBER	Paint Branch Creek by Kurt Knower	Sondra
DECEMBER	NO MEETINGS	
JANUARY		
FEBRUARY		



## JMU Mineral Museum by Dave Lines

Photos by Dave Lines

"These are some of the pics from the JMU Grand Re-Opening of the new Mineral Museum. The first is a pic of our members who attended (Rich ---his wife Deb also came but is not pictured --- Ann and Dave, Sandy and Sam Lyon). It was quite an affair with delicious catered goodies to eat and wine to sip as we listened to several speakers extol the fabulous new specimens donated by the Peter Via estate. The superb level of perfection and quality of the specimens on display was truly spectacular. I could detect no dings, bruises, nicks, chips or damage of any kind on these beauties. Many of the crystals of the gem minerals were particularly stunning --- see-through clarity with sharp, complete terminations that rival the best specimens in museums around the world. The new museum was about twice as large as the previous JMU Mineral Museum and included an additional small room dedicated to fluorescent minerals.



The attendees were divided alphabetically into 12 separate groups that were each limited to a museum tour lasting only 5 --- yes, FIVE --- minutes. I snapped

pictures as fast as I could, but it was a blur. Fortunately, after the last group left, they allowed those interested to return. Sandy, Sam, Ann and I returned and stayed about 30 minutes more until they kicked us out.

I spoke with Dr. Lance Kearns, who was in charge of putting together all this huge undertaking, and he said that we were the very first people to have viewed the museum. He was rightfully very proud of the final product. The times when it will be open to the public are posted on the museum website at

<https://www.jmu.edu/mineralmuseum/index.shtml>

As an aside, Dr. Kearns (actually both Lance and his wife Cindy are PhD doctoral professors there) is pictured in a wheelchair --- a temporary condition --- because he slipped while exiting a hot tub. Hope he is back on his feet soon.



If you are in the Harrisonburg, Virginia area in the Shenandoah Valley, I hope you will take the time to visit this very special collection. I think you will be glad you did."













## Calendar of Events

Many events are still being postponed/cancelled and/or rescheduled due to the COVID-19 pandemic.

Please check with the sponsoring club to make sure the event has not been cancelled due to the ongoing COVID-19 pandemic before attending any event.

**November 20-21 - 54th Annual Gem, Mineral, Jewelry, Bead and Fossil Show,** South Florida Fairgrounds Expo Center East, 9067 Southern Blvd., West Palm Beach, Florida, sponsored by the Gem & Mineral Society of the Palm Beaches. Saturday 9 am-6pm; Sunday 10 am-5 pm. Admission \$9, children under 12 free. 2-day admission \$14. Visit website for \$1 off coupon, [www.gmspb.org](http://www.gmspb.org). For more information contact Barbara Ringhiser, [bar2678@aol.com](mailto:bar2678@aol.com) (561-585-2080).

**November 26-28 - Annual Rock and Mineral Weekend,** Sponsored by the Morris Museum Mineralogical Society, 6 Normandy Heights Road, Morristown, NJ. November 26 – 10:00 AM-5:00 PM, November 27 – 10:00 AM-5:00 PM, November 28 – 1:00-4:30 PM. Morris Museum members free, adults \$12 (\$8 seniors, students, and children 3-17 years old), children under 3 free.

**March 5-6, 2022 - 58th Annual Gem, Mineral and Fossil Show,** sponsored by the Delaware Mineralogical Society. Double Tree by Hilton Hotel, 4727 Concord Pike (Route 202), Wilmington, DE. Adults \$6, Seniors \$5, Juniors \$4, children under 12 and scouts in uniform free with an adult. March 5 – 10:00 AM-5:00 PM, March 6 -

11:00 AM–5:00 PM. Info and discount ticket: [www.DMSrocks.org](http://www.DMSrocks.org).

**March 26-27, 2022 - Che -Hanna Rock & Mineral Club 2nd Annual Show.** Wysox Volunteer Fire Co. Social Hall, 111 Lake Road, Wysox, PA. March 26 – 9:00 AM-5:00PM, March 27 – 10:00 AM – 4:00 PM. Adults \$3, Students \$1m

### Saturday, November 27, 2021, Petrified Wood, Odessa, Delaware

This is a John Wolf Memorial Trip. Special COVID instructions: Wear a mask (& wear it properly) except when you are all alone or with immediate family. Park your car at least a full car length behind the car in front. We will be in a big field (corn this year) and you will have no trouble staying 20 yards apart.

Sign up by email, the earlier the better but no later than Thanksgiving, [robertertman@msn.com](mailto:robertertman@msn.com).

And a special note: This is a working farm. If the harvest isn't in, we will have to postpone the trip.

This year we will meet directly at the farm (directions at sign up), starting at 10:00 AM (but don't go to the farm early)

We'll walk the fields and collect petrified wood (cypress), probably originally deposited in the Cretaceous or Paleocene Rancocas Group and later redeposited in a Pleistocene bed. (Thanks to Dr. Earl Manning, DVPS member, for correcting our previous description of the petrified wood as being Pleistocene.) No special equipment is necessary; in fact, you should leave your tools at home so that we do not do anything to cause erosion on this low-till farm. Here's a link to a nice write up about one of our trips to a nearby site:

<http://viewsofthemahantango.blogspot.com/2011/08/petrified-wood-from-delaware.html>

Dave will have further information for those interested in this trip. Multiple trip reports can be found at the club's website.

### **Field Trip to HK Penn-MD Quarry by Ray Scott**

Photos by Ray Scott

I arrived to the quarry as one of the first ones there. I introduced myself to everyone as they arrived since I didn't know anyone there. Everyone was friendly and welcoming. We waited to have the safety briefing and then everyone caravanned to a lower pit next to the water. Searching around I found some nice serpentine specimens and a couple really nice yard rocks. On the next rounds of searching with eyes adjusted to what I was really looking for I started to find nice pieces of translucent antigorite. I asked the worker at the quarry where they blasted last and he pointed it out so I mainly searched there, picking up nice pieces of the antigorite here and there that got blasted around.

It was announced that we are headed to a new spot higher up so we all caravanned there. There was a lot of the nice serpentine stuff up there but didn't see much of the antigorite myself. I did find a nice fist sized piece of deweylite that everyone was jealous about. While searching I found a bunch of small pieces of deweylite that looked like it was another fist sized piece that got ran over by one of the quarry trucks or equipment. I picked up all of the pieces regardless. Time was called at ten till noon for us to pack up so we all

caravanned out of the quarry and I made my way home.



Overall it was a nice day with good weather and plenty of material to find and collect. I really don't have a bad thing to say about the trip except the traffic around D.C. on the way home. I think it's really great that the Quarry opens up to the clubs and they were very friendly. Definitely a must visit if you get the chance.



### **Giant SHARK — possibly a megalodon — sunk its teeth into a baleen whale 15 million years ago, bite marks on a flipper bone reveal**

The whale's fossilised radius bone was found in Parkers Creek, Maryland

It was likely dead at the time of the attack, Calvert Marine Museum experts said

The nature of the gouges indicate it was bitten and thrashed about three times

It is hard to be certain which ancient shark was responsible for the damage

However, one possibility is a juvenile megalodon, the largest shark ever known

- By [IAN RANDALL FOR MAILONLINE](#)
- PUBLISHED: 09:48 EDT, 4 November 2021 | UPDATED: 11:48 EDT, 4 November 2021

A baleen whale was lunch for a giant shark — possibly a [megalodon](#) — some 12–15 million years ago, bite marks on a fossilised flipper bone have revealed.

Perhaps fortunately for the whale, it was most likely dead at the time and floating at the sea surface when the shark scavenged it, Calvert Marine Museum experts said.

Analysis of the damage inflicted to the flipper bone, or radius, suggests one shark repeatedly sunk its teeth into the corpse, thrashing its head back and forth to tear off each bite.

As is standard for so-called 'trace fossils' — evidence of animal behaviour — the bite marks were given their own species name, that of 'Linichnus bromleyi'.

The 11-inch-long bone was found at Parkers Creek, in Maryland's Calvert County, by local fossil collector William Douglass, and donated to the Calvert Marine Museum.

Identifying the exact shark species that left the bite marks is difficult — but suspects include a young *Otodus megalodon*, the [largest shark ever known](#) to have lived.

Megalodon was an extinct mackerel shark thought capable of growing up to 65 feet in length and biting through flesh and bones with a force of 182,200 newtons.



**A baleen whale was lunch for a giant shark — possibly a megalodon — some 12–15 million years ago, bite marks on a fossilised flipper bone, or 'radius', have revealed. Pictured: an artist's impression of the shark feeding on the larger whale**

'This bone is very unusual because it preserves so much evidence of head-thrashing behaviour of an extinct shark feeding on an extinct whale', Calvert Marine Museum's curator of palaeontology and paper author Stephen Godfrey said in a press release.

Multiple gouge marks were found on both sides of the whale's flipper bone, indicating that the shark took at least three bites of the large marine mammal.

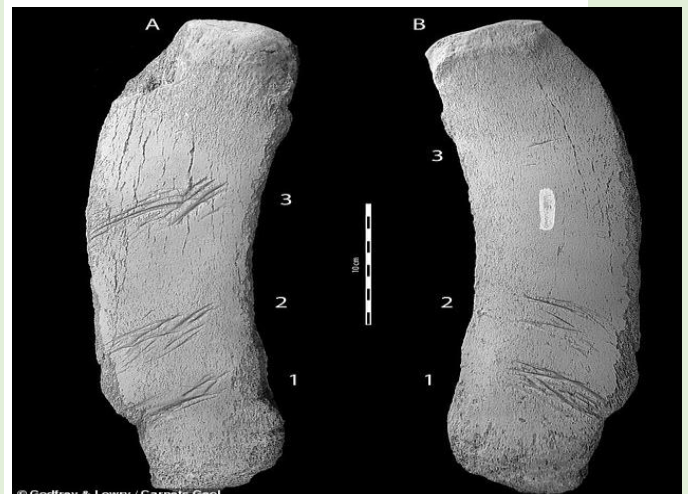
'The bite–shake traces consisting of shallow, thin arching gouges on the radius likely indicate scavenging rather than active predation,' Dr Godfrey told [Live Science](#).

'The shark would have clenched down on the flipper firmly and then shaken its head vigorously in an attempt to cut through the bone (unsuccessfully) or to simply remove flesh. After it had removed some, it re-bit the flipper to remove more.'

Based on the radius bone's flattened and curved shape, the researchers believe that the fossil originally belonged to a filter-feeding baleen whale — most likely *Diorocetus hiatus*, an extinct species known to have lived in the area.

'When a whale dies, it inverts and floats at the surface of the water due to the build-up of abdominal gases from decomposition,' Dr Godfrey told Live Science.

Scavenging sharks often feed at the ocean's surface — and the whale's flipper would have been an easy target for the hungry creature, the team explained.



**Analysis of the damage inflicted to the radius (pictured, following whitening to enhance the contrast) suggests that the shark repeatedly sunk its teeth into the corpse, thrashing its head back and forth to tear off each bite. The numbers indicate the gouges left by each of the three bites, in the**

### most likely order that the marks were inflicted

Alongside Megalodon, several other sharks could have been behind the posthumous attack, Dr Godfrey said, including *Alopias grandis* or *palatasi*, *Galeocerdo aduncus*, *Hemipristis serra*, *Physogaleus contortus* and *Sphyrna laevis*.

Unfortunately, the bite marks do not indicate clearly enough whether or not the shark had serrated teeth — which could have been used to narrow down the culprits.

Were the marks made by a shark with non-serrated teeth, Dr Godfrey told Live Science, then the 'most likely candidate would be *Carcharodon hastalis* — the ancestor of the living great white shark.'

The full findings of the study were published in the journal [Carnets Geol.](#)



**The 11-inch-long bone was found at Parkers Creek, in Maryland's Calvert County, by local fossil collector William Douglass, and donated to the Calvert Marine Museum**

<https://www.dailymail.co.uk/sciencetech/article-10165073/Fossils-Giant-SHARK-possibly-megalodon-sunk-teeth-baleen-whale-15-million-years-ago.html>

### MEGALODON EXPLAINED



Pictured: Megalodon

The megalodon, meaning big-tooth, lived between 15.9 and 2.6 million years ago.

*O. megalodon* is considered to be one of the largest and most powerful predators in vertebrate history and fossil remains suggest it grew up to 65ft (19 metres) long.

It's thought the monster looked like a stockier version of today's much feared great white shark and weighed up to 100 tons.

Megalodon is known from fossilized vertebrae and teeth, which are triangular and measure almost eight inches (20cm) in diagonal length.

Famed fossil hunter Vito 'Megalodon' Bertucci took almost 20 years to reconstruct a megalodon's jaw - largest ever assembled - which measures 11ft across and is almost 9ft tall.

The Megalodon's colossal mouth would have produced a but force of 10.8 to 18.2 tons. The ancient shark has been described as a super predator, because it could swim at high speeds and kill a wide variety of prey such as sea turtles and whales, quickly in its strong jaws.

<https://www.dailymail.co.uk/sciencetech/article-10165353/Paleontologists-290M-year-old-reptile-fossil-Utah-new-species.html>

## **Paleontologists find unusual 290 million year-old reptile fossil in Utah's Canyonlands National Park they think might be a newly-discovered species that's never been seen before**

Paleontologists discovered a 290 million-year-old fossil that likely belonged to an 'early reptile relative' and could be a new species

The fossil is roughly the size of an iguana and it has the creatures vertebrae, top of the skull, some of the shoulder girdle and forelimb

The discovery was made last month at Utah's Canyonlands National Park After its identity, exact age and context of the fossil are determined, the fossil will be sent to museums for exhibit

By [CHRIS CIACCIA FOR DAILYMAIL.COM](#)

PUBLISHED: 10:21 EDT, 4 November 2021 | UPDATED: 10:50 EDT, 4 November 2021

Paleontologists have discovered a 290 million-year-old fossil in [Utah](#) that likely belonged to an 'early reptile relative' and could wind up being an entirely new species.

The discovery, made last month at Utah's Canyonlands National Park, is a 'rare' example of a Permian-aged skeleton, said paleontologists at [Arizona's](#) Petrified Forest National Park, who worked on the team that was part of the discovery.

The fossilized specimen was found in the bottom of a slickrock wash that was threatened by erosion by rainstorm that previously hit the canyon.

'It's roughly the size of an iguana and (the fossil) preserves at least the vertebrae, top of the skull, and some of the shoulder girdle and forelimb,' Adam Marsh, lead paleontologist at Petrified Forest National Park, said in comments obtained by the [Charlotte Observer](#).

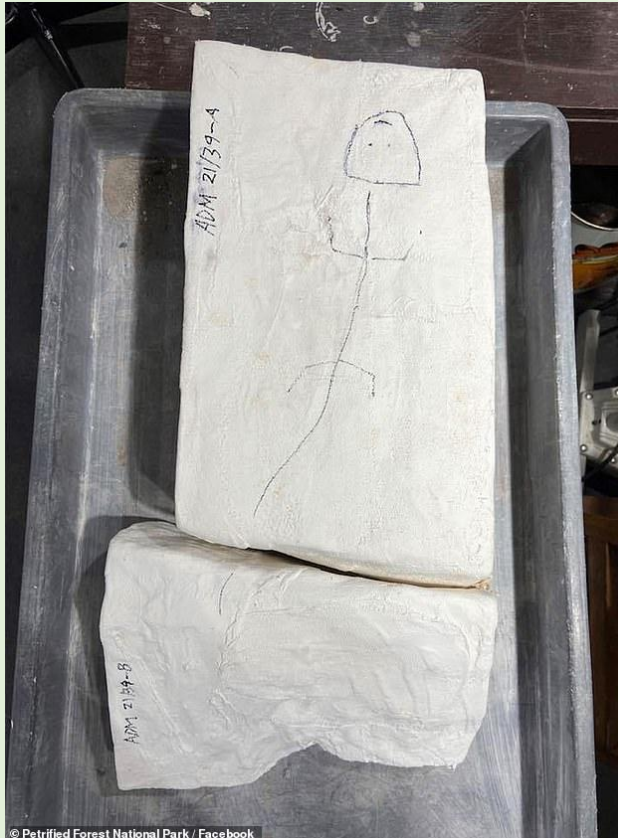
'We're preparing the fossil at Petrified Forest and it will eventually get CT scanned in the next year.'



**Paleontologists discovered a 290 million-year-old fossil that likely belonged to an 'early reptile relative' and could be a new species**



**The fossil is roughly the size of an iguana and it has the creatures vertebrae, top of the skull, some of the shoulder girdle and forelimb**



**The stone that enveloped the fossil was taken out of the ground in two chunks, using a concrete saw, hammer and chisels**

The team held a permit to collect the fossil and determine its place within the Cedar Mesa Sandstone at CANY to estimate its geologic age and context,' Petrified Forest National Park wrote in a Facebook post.

The discovery was made after a '13 mile round trip hike,' Petrified Forest National Park added in the Facebook post.

The stone that enveloped the fossil was taken out of the ground in two chunks, using a concrete saw, hammer and chisels, Marsh added.



**The discovery was made after a '13 mile round trip hike' at Canyonlands National Park in Utah**

After the paleontologists have determined the identity, exact age and context of the fossil, it will be sent to museums for exhibit.

'This is an incredibly rare specimen from of the Pennsylvanian/Permian of Utah, where any kind of fossil is important, much less an articulated skeleton,' Marsh explained.

'It really goes to show what kind of fossil resources are hidden in our National Parks waiting to be discovered and shared with the public.'

Earth's largest mass extinction event occurred during the Permian Period 252 million years ago.

A study [published](#) in April found that it took ten times longer on land than it did in the water.

In the oceans, the event took approximately 100,000 years to kill off most life.

However, on land, it took almost a million years to kill of land-dwelling species.

Ultimately, this event, known as the Great Dying, resulted in the extinction of 97 percent of all living species.

The Great Dying is widely considered one of 'the most most devastating incidents of mass extinction in Earth's history,' according to the [National Park Service](#).

The Permian Period ranged from 298.9 million years ago to roughly 251.9 million years ago, a span of 47 million years.

### WHAT WAS THE PERMIAN MASS EXTINCTION?

248 million years ago the Permian period ended and the Triassic period began.

The Permian mass extinction has been nicknamed the 'The Great Dying' as nearly all life on Earth was exterminated.

A staggering 96 per cent of all life on the planet was destroyed.

All life on Earth today is descended from that existing four percent of species'.

The cause of the mass extinction remains unclear to scientists, although it is thought to have lasted anywhere between 20,000 years to millions years.

Several different events triggering the total collapse of several ecosystems. It is thought that it was a period of time with lots of volcanic activity which may have contributed to the extinction.

The eruptions may have depleted the ozone layer - which protects the planet from damaging UV radiation.

This high-energy form of radiation can cause significant damage to living things.

### The Choate Chromite Mine Hike

by Ralph Gamba

Photos by Mary Cramer and Ralph Gamba

Geology. Mining. Chemistry. History. Ecology. Native American history. Hiking. Even stories of murder and hangings. All were part of the 2 ½ hour Mine Hike at the Soldiers Delight Natural Environment Area (NEA) near Owings Mills, MD.

Johnny Johnsson, a geologist with Vulcan in Hanover PA led the tour and hike. Mr. Johnsson is also a mining historian who has researched mining in Maryland. His paper "Maryland's Choate Chromite Mine, 1830-1920" was published the Mining History Journal and is available on the Web. The Baltimore Sun did a story on Mr. Johnsson's Choate Mine history work.

The Choate Mine began operations in the early 1800's and was worked for chromite as late as 1920. This deposit and the chromite deposit at Bare Hill outside of Baltimore, MD made Maryland the world's largest producer of chromium at that time.

Mary C. and Ralph G. joined with 12 others and tour guide Johnny Johnsson at 2 PM on Sunday, October 31 for a presentation on the Choate Mine and the Soldiers Delight Serpentine Barrens.

Our first stop the display room in the Soldiers Delight visitor's center. The guide demonstrated a typical mining cart which hauled the ore from the mine. Our guide showed charts explaining the formation of the serpentine containing the chromite.

Also in the display room were sample of the minerals found at Soldiers Delight: chromite, serpentine, talc, picrolite and magnesite.



Serpentine from Soldiers Delight

We then walked to the parking lot and our guide displayed a detonating box. He allowed anyone who wanted to push the plunger, but it must be preceded by yelling "Fire in the hole."

We then took a short hike to the Choate Mine trailhead and our guide explained the ecology of the area and why it is called a serpentine barren. The serpentine easily crumbles forming a poor quality soil. This, along with the heavy metals in the serpentine, prohibited the growth of many common plants. Some rare and endangered plants do live in Soldiers Delight.

At the parking lot to the Choate mine trailhead our guide told the history of Soldiers Delight, including theories to the origin of the name Soldiers Delight. The stories included a story of murder and

hanging – appropriate for Halloween. He also told of how Native Americans used fire to hunt in Soldiers Delight.

We next headed up the short trail to the Choate mine. Our guide showed places on the trail where the chromite had weathered out of the serpentine.

At the mine, we learned about the history of the Choate Mine and the uses and chemistry of chromium. Our guide explained how Mr. Isaac Tyson started mining chromite at Bare Hill near Baltimore and started to acquire the rights to the chromite mines at Soldiers Delight. Mr. Tyson established the chromium industry in the United States.

Our guide opened the gate leading to the Choate Mine where he demonstrated mine lighting artifacts. He even lit a carbide lamp.



Choate Mine entrance.



Geologist and mining historian, Johnny Johnsson, demonstrating mining techniques at the entrance of the Choate Mine.

Our guide explained how the miners mined the ore, including how the miners made the hole for the explosive, a brief history of the explosives and fuses used in the era. He also mentioned that besides the hard rock mining, the chromite sand that eroded from the serpentine was also mined.

Our guide passed out a gold pans and spoons and showed allowed us to dig the dirt around the path to the mine for the chromite sand. We all filled out pan with dirt and hiked back to the visitor's center.

In back of the visitor's center was a tank of water where we panned for the chromite. Our guide also demonstrated a buddle, a sluice that separated the chromite from the lighter tailings. We placed gravel in a screen and poured water over the gravel and shook the screen. This allowed the small particles containing the

chromite sand to fall through the screen and into the sluice. A slow stream of water would remove the lighter sand particles leaving the heavier chromite.

After the demonstration, our guide provided plastic bags to those who wanted to keep any of the chromite sand. He also had glass vials available for purchase.



Chromite Sand from Soldiers Delight

The tour is free but donations accepted that would go to Soldiers Delight NEA. The center holds the tour periodically – once or twice a year. People interested in rocks and minerals, local history, or local ecology, will enjoy this entertaining and informative tour. We even get to keep a small piece of Maryland history.

<https://www.usatoday.com/story/news/nation/2021/11/12/rare-mineral-davemaoite-found-diamond-mine-orapa/8584989002/>

**This mineral shouldn't exist on Earth's surface, but researchers found it inside a diamond**

**Gabriela Miranda**

**USA TODAY**

Researchers discovered a mineral that shouldn't exist on Earth's surface but was found inside a diamond.

The mineral, Davemaoite, was found inside a diamond from an African mine. It was last dug up decades ago in Botswana at the Orapa mine, the world's largest open-pit diamond mine.



Oliver Tschauner, a geochemist at the University of Nevada, Las Vegas, and his

colleagues studied Davemaoite and other minerals trapped in deep-Earth diamonds, according to the findings published in Science. Tschauner named the mineral after Ho-kwang 'Dave' Mao, a scientist who made many pioneering discoveries in high-pressure geochemistry and geophysics.

Davemaoite is mostly calcium silicate, but it can have radioactive isotopes of uranium, thorium and potassium, which generate a lot of heat in the lower portion of Earth's mantle, according to the journal.

Davemaoite is part of the group of minerals that helps manage how heat moves and cycles through the deep Earth.

Usually, Davemaoite can exist only in high pressures found in the lower mantle, but the mineral survived inside specks found in the diamond.

"It's the strength of the diamond that keeps the inclusions at high pressure," Tschauner told Live Science.

The International Mineralogical Association approved Davemaoite's name last year and hailed it as the second high-pressure mineral named after Mao.

Davemaoite is one of three main minerals in Earth's lower mantle and makes up 5% to 7% of the material in the mantle, Tschauner told Live Science.

**32 DIFFERENT MATERIALS FOUND IN VIRGINIA**

E L L E N S B U R G B L U E C  
 P A N Y B L I I H E G A S R H  
 A K I L O E U V B F S T O D A  
 R E G L S I E C I T R W C S L  
 G S G E T D D R M E L Y O G C  
 L U I B W D E O S E O I L G E  
 A P D W A E N E Y U R A D E D  
 D E G O N T D S N I G O W R O  
 Y R I S A T R G S U R N A E N  
 I I B N L I I H N C M Y T D Y  
 O D A F D T T A S M R Z E N E  
 R R X G E K E S W I C K R U M  
 T D E T A I C C E R B U Q H U  
 O E S O R O G N I M A L F T L  
 B U L L C A N Y O N M O S S P

Thanks to Teddi Silver of the Delaware Mineralogical Society for the idea of using "AGATES" (from her October 2021 newsletter) as the theme of November's Word Search!

**BIG DIGGIN**  
**BLUE DENDRITE**  
**BOSTWANA**  
**BOTROIYDAL GRAPE**  
**BRECCIATED**  
**BULL CANYON MOSS**  
**CHALCEDONY**  
**COLD WATER**

**CROWLEYS RIDGE**  
**DESERT**  
**ELLENSBURG BLUE**  
**FIRE**  
**FLAMINGO ROSE**  
**KESWICK**  
**LAGUNA**  
**LAKE SUPERIOR**

**IRIS**  
**MONTANA**  
**ONYZ**  
**PLUME**  
**SAGE HILL**  
**SOWBELLY**  
**THUNDEREGGS**  
**YOUNGITE**





**The Southern Maryland Rock and Mineral Club**  
Meetings take place on the 4<sup>th</sup> Tuesday of each month at  
7:00pm  
Held at the OLD WALDORF SCHOOL  
Next to the Waldorf JayCees Hall  
3074 Crain Highway, Waldorf, MD 20601  
North of the RT 301 / RT 5 intersection  
We're on the web: [SMRMC.ORG](http://SMRMC.ORG)

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**ITEMS WANTED/FOR SALE**

**For Sale** – Virginia Unakite slabs (approx ¼ inch thick) – \$0.50 per square inch (this is half off regular price). Call Dave (240) 427-7062

