

# Next Meeting: Canceled

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This month remember to wish a Happy Birthday to Kat Koch on October 4 Lillia Agadjanyan on October 11 Keith Alan Morgan on October 11 Andrew Lengenfelder on October 14 Hailie Epley on October 26 Jessica Stuart on October 28 Brandon Harper on October 29 Fred Thompson on October 30 and also remember to wish a Happy Anniversary to Marlene & Mr. Frost on October 6 (13 years) Alex & Page Lane on October 8 Anders & Bridget Black on October 10 Joyce Gjerde & Robert Hagstrom on October 16 Andrew & Faye Lengenfelder on October 17



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The monthly newsletter of the Cascade Mineralogical Society, Inc., Kent, Washington

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2020 CMS Dues are \$25 per year per family

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Pay online, by mail, or at our meetings.

Mailing Address: Charles Benedict, 25838 W Lk Wilderness Dr SE, Maple Valley WA 98038

You can pay your dues via credit card!! We now accept all cards through our website or at the meeting.

You can renew your membership or enroll as a new member and pay your dues all in one shot online. You will find it under the "Membership" tab on our website. http://www.cascademineralogicalsociety.org

The object of the Society shall be to stimulate interest in the study of the earth sciences, lapidary arts and related subjects.

This Society is affiliated with the American Federation of Mineralogical Societies; the Northwest Federation of Mineralogical Societies; and the Washington State Mineral Council.

Every member of the club should be receiving a copy of the Northwest Newsletter. If you are not receiving a copy contact Mike Blanton in person or by telephone at (425) 271 -8757 or by computer at mblanton41@hotmail.com

To get information to the Tumbler via the Internet send it to greenrockdraggin@yahoo.com Please put Tumbler and subject in the Subject Line. The deadline is the 20th of each month.

The Tumble	Page 3 October				C	October 2020	
Sun	Mon	Tue	Wed	Thur	Fri	Sat	
((*)	THE CLUB IS CAN	MEETING CELED!		1	2	<b>3</b> Red Top Trip?	
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	
18	19	20	21	22	23	<b>24</b> Little Naches Trip?	
25	26	27	28	29	30	31	

CMS Show Committee Meeting:...Canceled CMS Board Meeting:....Canceled CMS General Meeting:....Canceled

Lapidary Class Hours:.....By appointment, call to set a time & day for your lesson (425) 226-3154 Lapidary Shop Hours:.....Most Tuesdays...... 2:00 pm to 5:00 p, call ahead (425) 226-3154 Lapidary Shop Hours:.....3rd Saturday...... by appointment only (call a few days ahead to set time)

More Field Trip info can be found on Page 11 More Show info can be found on Page 12



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The Tumbler

CMS Board Meeting Minutes September 9, 2020 Attendance:

President Kat Koch Treasurer Charles Benedict Federation Mike Blanton Director Roger Danneman Meeting called to order 6:42. Vice President Merriann Fu Secretary Pete Williams Past President Bob Pattie Director Rich Russell

The Board has not met for several months now due to the pandemic. Kat set up a Zoom meeting and most of the officers were able to attend virtually. We have had 12 new members join in July and August with 5 others to join at the first meeting back. There are \$830 in expenses estimated for the balance of the year, although some may be payable in January. Most of the income is from the new members. We should come close to breaking even this year. We will continue to pay dues to the NFMS for lifetime members.

There was a discussion on if we should move the club website to a less expensive host. This would also require a change in the type of software used. This would result in the hosting to move from our current webmaster, Mark, to Kat. Kat had begun building the new website, but with everything else she has going on now it did not seem prudent to make the shift at this time. The board voted to keep the current website.

Another discussion was around selling a spare 14 inch saw not currently in working condition. It will be offered for sale to a current club member for \$800. Another decision was around holding a Christmas party and auction this year. Although it is unlikely the decision was put off another month.

Meeting adjourned at 7:42.

#### CMS General Meeting Minutes September 10, 2020

Canceled.

#### From the Top of the Rock Pile... by Kat Koch, CMS President

I feel like I am in the movie "Ground Hog Day." There will be no October general club meeting.

We have booked the club Holiday Party for Sunday, December 6th, but that is up in the air too. The Board will make a final decision sometime in October on whether or not to have this year's dinner and auction. So check the website or your email account for the latest updates on meetings.

Our monthly field trips are continuing. As our summer wanes and we move towards fall please take advantage of our field trips. As long as we continue to have good weather Roger plans to have monthly field trips. You can find details on our club field trip for October in this month's newsletter or on our website. The website also has Roger's planned future trips.

I am also very happy and such good news that in July, August and September we have had 14 new members sign up online and pay their dues! We have had an additional 5 members sign up online and will pay their dues at our next general meeting. I would like to welcome our new members and I am looking forward to meeting each of you once our meetings resume.

I hope everyone is staying healthy. Be sure to take good care of yourselves and wear a face mask when going out. I know we are all looking forward to seeing another again.

### Young Richard's Almanac 🖉

I once gave a geode to a principal that I volunteered to help.

The label on the gift stated: This is a child's head, the void is the place that you have to fill with knowledge.



# by Dick Morgan

by Pete Williams, 2020 Secretary

### Our Club is a Member of these Federations and Associations:



AFMS: The AFMS governs our Northwest Federation. http://amfed.org/index.html The bulletins are published quarterly. September's bulletin is now posted on their website. You can find the news bulletins at http://amfed.org/news/default.htm



NFMS: The Northwest Federation is our home federation. To keep up on the goings on in our own backyard. http://northwestfederation.org/

The link for the news bulletins is http://northwestfederation.org/Newsletters.asp

There doesn't seem to be any new issues posted. I do know they have been without a bulletin editor for a couple of years now. The website doesn't show where, when or if there is a planned 2021 show.

Due to the Covid-19 there are presently no shows or mid-year meetings planned.



ALAA: The American Lands Access Association, Inc. represents the rockhounding interests of 325 gem and mineral clubs/societies in 47 States and the District of Columbia.

The purpose of the association is to promote and ensure the rights of amateur fossil and mineral collecting, recreational prospecting and mining. The use of public and private lands for educational and recreational purposes. They also carry the voice of all amateur collectors and hobbyists to our elected officials, government regulators and public land managers. http://amlands.org

The front page always shows the Fee Free Days for National Parks and Monuments. There are no free davs in October. This upcoming Veterans Day, November 11th, is a free day.

The front page also has a lot of current news, rockhounding restrictions or lack of, etc. http://amlands.org ALAA also publishes a quarterly newsletter. To keep up on the news and lobby efforts on our behalf check out http://amlands.org/



Washington State Mineral Council: The Washington State Mineral Council is dedicated to the location and conservation of rock and mineral sites of interest to the rockhounds of Washington state.

https://mineralcouncil.wordpress.com/

You can find a database of local rock and gems shows and field trips. It's a great resource if you want to plan on outing.

Their monthly field trips are also on again. So take advantage of these great outdoor rockhounding

adventures!

Also check out "Misc. News" for all the latest updates on collecting sites around Washington. https://mineralcouncil.wordpress.com/news-updates/

details.

Marysville has a trip on October 24th to Money Creek, Skykomish. Check out the link below for additional

You can find all this information and a whole lot more about what is happening in our state at https://mineralcouncil.wordpress.com/. The field trip details are under "Field Trips for 2020."

### Inquiring Minds Want to Know? by Kat Koch

I would like to write an article for the Tumbler on what each of you have been doing to keep yourselves busy. It can be anything from field trips, rock polishing, lapidary projects, cooking, sewing, gardening, rebuilding machinery, painting, any art project, reading, honey do's, house repairs, exercising, sorting your sock drawer, you get the idea. Maybe you are one of the lucky few still working. If so, let me know about that too.

Take a cellphone (or camera) picture or two or three and then write a few words. Be sure to include your name. Send it to me via text (number on newsletter contact page) or email to president@cascademineralogicalsociety.org

### Surfite by Kat Koch

Surfite is basically the slag made from the excess resin spray drippings of surfboards. When hardened this material can be cut and polished and turned into jewelry. The hardened resin is made up of colorful layers and takes a very good polish.

Fordite is no longer being created as more efficient methods of painting cars have reduced the amount of excess paint buildup to practically nothing. So the creative minds have turned to the surfboard Industry.





#### The Graffiti Highway Is Now History by Kat Koch

Centralia, PA is a famous ghost town. An uncontrollable underground coal mine fire started in 1962 and has been raging for 58 years.

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Around 1890 Centralia was a boomtown that had 14 mines (carbon-dense anthracite coal) in the area and a population of 2,800. As the mines gradually closed the population had shrunk to about 1,400 people in 1962. Today the population is less around 5 people with almost of them senior citizens.

Extreme heat from the fire had opened fissures in the ground and was leaking dangerous levels of smoke, carbon monoxide and hot billowing steam. The government issued a forced evacuation in 1981 because of the growing number of ground fissures. The underground fire is estimated to be around 400 acres.

Pennsylvania State Route 61 through the town of Centralia has been closed since 1993 due to damage and toxic condition caused by the underground fire. Eventually a new highway 61 was rebuilt to be east.

Through the years tag artists have been coming to this section of the old road and spray painting all types of graffiti: Inspirational, off color, happy, sad and colorful. This section of highway continues to emit gases and hot steam plus cracked and split open. The area has also been featured in a few PBS programs, TV specials, researched by several well-known authors for books, writers for documentaries and etc.

The section of the abandoned highway 61 now sits on private property owned by Fox Coal Company.

For some hard to understand reason, during the current pandemic more people than usual have been coming to this 1 mile section of highway. They have been large, rowdy crowds. Some holding tailgate parties, setting fires, racing up and down the highway on dirt bikes, camping and in the end leaving loads of trash behind. People were also vandalizing the town, setting fires, spray painting the cemetery and destroying the remaining buildings. On several occasions the fire department have been called plus the police to intervene and clear the area on the road and in town.

All of this activity has caused a huge liability to the property owners. In April 2020 a contractor was hired to cover the road with gravel and dirt.

The Graffiti Road is now part of history.

Bibliography: Atlas Obscura, Wikipedia, Fox News, Daily Mail UK, Reddit/AbandonedPorn

#### Yooperlite? by Kat Koch

The people of Michigan's Upper Peninsula are often called "yoopers." This is not the story about the residents of this area but of a relatively new find of incredible ultraviolet fluorescing stones named Yooperlites®.

Erik Rintamaki is an avid agate hunter and regularly combs the beaches of Lake Superior. The agates were getting harder and harder to find. Someone suggested that he use an ultraviolet flashlight to hunt for them at night. On the spur of the moment he bought a cheap 3 LED long wave UF flashlight on eBay.

One morning in June 2017, with his new flashlight in hand, he headed to the beach at 4 am. With 5 trips he had found only about a half dozen agates. In the fall of 2017 he upgraded to a 100 LED UV torch and that's when the beach just lit up. There were glowing rocks everywhere and they were not agates.

Erik had discovered a nondescript gray rock that glowed a bright yellow. The largest rock he has found is 5 pounds!

Erik researched the rocks and found it was a mineral never before seen in Michigan. He sent rock samples for testing to Michigan Technological University and Saskatoon University. The rocks tested as Syenite rocks that are rich in fluorescent Sodalite. The universities theorize that the rocks have been brought down from

the Coldwell Alkaline Complex in Ontario, Canada by glaciers.

Erik decided to name them in honor of the location in which they are found, on the beaches of Michigan's Upper Peninsula. Erik named and trademarked the rocks as Yooperlites®. He now conducts night picking tours. The prime beach area for collecting is from Whitefish Point to Grand Marais. It's reported that they have also been found on Lake Michigan near the Chicago area and also near the Point Betsie Area.

In 1976 a book was written on 187 valid mineral species known to occur in Michigan. Today there are about 383 known minerals in Michigan. Syenite clasts are not that rare in Michigan and can be found along many Lake Superior beaches as well as in gravel pits within Upper Michigan's interior. Collectors and scientists think maybe these rocks had been previously been misidentified as granite and dismissed as not interesting.











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October 2020

All you future rockhounds and current collectors go out and discover new rocks and minerals. Think of new and innovative ways to search for minerals and rocks. You just may find some undiscovered new treasure.

Bibliography: YouTube – several channels, Yooperlites.com, WXYZ Detroit, Facebook.com/Yooperlites

#### **Geology Gag**

Why should you never expect perfection from a Geologist? Because they all have their faults. from The Gem And Mineral Society Of Lynchburg Newsletter, 6/20

#### Berlin - Ichthyosaur State Park, Nevada by Bob Avakian

First off, the "Berlin - Ichthyosaur State Park" is a bit isolated. Of course "isolated" fits most of Nevada away from major interstates. The park is near Gabbs which is about 35 miles south of US 50 on Nevada 315 which is paved. To get to the park you will need to go east over an excellent, (if it has not rained), dirt road. But be warry of technology.

Google Maps and Garmin routed us on a dirt road passing through the old mining town of Ophir. Obviously neither company had ever sent anyone to actually drive the road. About 3 miles after passing an abandoned cemetery, a true omen and the road degenerated to a very rough four wheel drive track. After changing our route we eventually arrived at lone, the town nearest the park. A sign declares it "The Town Too Tough to Die" however it is on life support and looks like hospice gave up and pulled out years ago. Not even an abandoned gas station.

About 5 miles south, the park entrance is a wide, well maintained dirt road up the side of a mountain. And that means it is cooler than the flats below. The well arranged campground has an ample supply of clean, drinkable water and the ever present pit toilets with plenty of toilet paper. In August the overnight temperature was in the 60's; just fine for camping. Unless you camp, you need to make this a day trip as the motel at Gabbs, is considered somewhat unreliable.

The outcrop is in a building designed to allow lots of natural light. It looks like the paleontologists just went on break except for the lack of tools, knapsacks, toilet paper (to wrap the bones, folks) and food wrappers. There are some 16 individual animals exposed. The ranger pointed out each individual, talked about the history and behaviors of ichthyosaurs and readily answered our questions. The critters here run towards the big end of the family as the wall outside the building shows. There are far more individuals exposed up the canyon, but we did not go looking. Collecting is of course, prohibited.

The town of Berlin is billed as one of the best preserved gold mine ghost towns in the state and is possibly in better shape than one. On weekends there is a ranger guided mine tour. At all times a self-guided tour takes you through the town, ore processing plant and cemetery. A view across the plains below reminds you of how isolated people used to be in the old mining towns of the West.

Is it worth it? If you like massive fossils, the vast and lonely beauty of Central Nevada, the old mine dumps and the occasional burro, antelope or goat, the trip is one for you.

via Golden Spike News, 8/20; from T-Town Rockhound, 10/17

#### **Dendritic Or Plume Agate?**

Agates with inclusions are some of the rarest and most beautiful agates in the world. These inclusions may be sagenitic, plume, dendritic, or moss. They are of the quartz variety, cryptocrystalline, formula: SiO2 silicon dioxide with hardness of 6.5-7 on the MOHS scale.

Dendrites, moss, plume, and similar inclusions have added interest and value to gemstone for about as long as man has been aware of the beauty and gem potential of such "rock." But apparently up to now, man has been dependent on inclusions formed in nature. The process by which they developed in nature has been only vaguely understood and thought to require long periods of time, even in the geological concept of time. Any means, therefore, of making the formation of inclusions in gemstone is automatically of more than passing interest.

It is not uncommon to see agates from West Texas labeled as "dendritic," yet you see Montana agate labeled as "plume" agate. Some find dendritic agates may not show a trace of dendrites when the agate is candled by passing light through it. It seems that microcrystal of chalcedony has fiber-optic properties such that light passes in just one direction. I have seen some Montana agates that were cut and the slabs appear clear and devoid of plumes in one direction and were loaded with plumes in the other. Clarity is no sign that Montana agates will not have plumes. Some of the finer plumes come in some unlikely odd-looking nodules, yet often the flat nodules will have the finer dendrites. These can also be found in the spaces between parallel bands of onyx variety of Montana agates.

There is a fundamental difference between plume and dendrites.

The plumes are characterized by feathery inclusions made up of metallic sulfide minerals, usually marcasite or pyrite. Other sulfides like cinnabar, orpiment, and Realgar have been seen to form plumes. It is known that minerals crystallize out of magma or lava in a given order: olivine – pyrozene – amphibole – biotite; followed by feldspars, quartz, etc. The final product to crystalize is the sulfide minerals. These can crystalize in vugs formed by gasses in the magma or lava. The plumes are the first. After the lava flows have been extruded, the highly explosive volcanic eruptions or rhylitic lavas can deposit welded tuffs or ignimbrites over the andesitic rocks. The tuffs are excellent sources for silica. As tuffs are



weathered, the silica is leached from them and in turn is deposited in the vugs that contain the late stage plumes that crystallized in the vugs in rocks formed by previous eruptions. The plumes were first, then the agate was formed around it.

Dendrites are formed by oxide minerals, such as limonite, pyrolusite, and a host of other manganese and iron minerals. The dendrites form when the agate spends some time with the minerals. The dendrites are laid down in space between the bands of the agate, which are there first, and so the dendrites form within the agate. Dendritic agates have fern-like patterns in them, including matter deposited during agatebuilding. This includes sagenitic growths (radial mineral crystals) and chunks of entrapped debris, such as sand, ash, or mud.

Dendritic agate can be tricky to cut because the dendrite inclusions occur at various depths in the rough stone. The lapidary needs to cut the material to expose the most interesting patterns.

Cutting nodules of plume agate to reveal plumes is not difficult if one remembers to cut only in the longest, flattest direction—just as one would slice a biscuit. The rind can be tumbled off these agates to get a view of what is inside or how it lays, or candle the agate by holding it above an electrical light. One method is to block up the agate in plaster or simply glue it to a board with Elmer's Glue or a similar adhesive. Use a magic marker to make lines to which the cut is parallel. via Rock Talk Newsletter, 6/20; from The Clackamette Gem, 12/15

#### Ventura "Beach Opal": Crafting the Poor Man's Doublet by Jim Brace-Thompson

During the coronavirus pandemic, I've turned to collecting and crafting stones from Ventura beaches. While my focus has been on jasper and travertine pebbles that most commonly wash up on our shores, I've been entranced by the rainbow colors shining up from the interiors of common mussel shells. Many are dry, dull and white, but the nacre of mussels fresh from the sea shines iridescently bright and vivid. I've wondered, "What, if anything, might be done with this?"

Drawing on Oxnard Gem & Mineral Society classes for crafting opal triplets, I thought, "Why not craft a doublet from this beautiful shell to produce an 'opal' of sorts?"

In keeping with my goal of using locally sourced material, I chose to experiment with beach glass as a cap, but one problem was obvious from the start. The nacre on a mussel shell's interior is concave; that is, it curves inward like a bowl. We lapidaries are more used to working with material that is either flat or convex (domes outward). How to cap a concave surface? Flat lapping was not an option given the fickle, razor-thin layers of nacre.

I was helped by my decision to use a beach glass cap. Beach glass is most often a remnant of a curved bottle. As I stood pondering on the beach with a mussel shell in one hand, I dropped a bit of beach glass inside it. Lo and behold, their curves proved to be a match made in heaven!

Back home, I used my Coffey's Tiny Trim ultrathin-blade saw specially made for working with opal or for making small, fine cuts in faceting rough. I trimmed down a mussel shell, seeking an interior spot with especially promising color and a more or less flat surface. I moved to my Genie a couple of times to grind the surface of my beach glass with the 220 and 280 wheels so that it fit the shell and to smooth the surface but leave it rough enough to grip a glued seam.

When I was comfortable with the fit between mussel shell and beach glass, I mixed a small batch of epoxy beneath a heat lamp and joined the two pieces, letting it sit for 24 hours for a secure bond. From there, it was a simply a matter of grinding, shaping and doming as you would with any stone.

I'm happy with the initial result, but I still have work to do to perfect the ultimate Ventura "beach opal." The surface of my mussel was ribbed, and those ribs clearly show. And there was a slight gap between mussel and beach glass, as evidenced by unsightly bubbles in the epoxy joining them. But the results from this trial run are promising enough to get me out for still more trials, seeking ever better mussel shells on the beach and developing ever better techniques in the workshop.

Is this opal? Definitely not! Am I being deceitful and conniving in calling it such? Definitely so! Will the poor man's opal doublet catch on? We'll see!

from Rockhound Rambling, 7/20

#### Spain's Giant Geode

In 1999, the Geode of Pulpí, measuring 24' X 6' was discovered in the abandoned Mina Rica (the Rich Mine) in Almería, Spain. Its walls are covered with huge gypsum crystals of great purity and transparency. Unlike the giant crystals of Naica, Mexico (an active hydrothermal system) Pulpi's is a fossilized environment.

Dr. García-Ruiz and co-authors have studied the geology, have carefully mapped the cave's footprint and hold informed tours since August 2019. They say the crystals at Pulpi began forming 6 million years ago as the Mediterranean basin dried up. Both "karst" [water drip] and volcanic hot water intrusion had a hand in growth.

Most of the sequence occurred at around 20 degrees Celsius (68 deg. F.), at a shallow depth where seasonal temperature changes can be felt. This created a phenomenon known as Ostwald Ripening where huge crystals can grow enormous by absorbing the material of many smaller crystals, which disappear at the expense of the fewer, large ones. Other large pocket geodes fill Rica as well.

Age estimations show most of the final forms settling into their places by 2 million years ago, with the last details done by 60K ago. Protecting the deposit, a special system devised by the Almeria University monitors tour count, temperature, humidity and CO2. The Almeria hills were mined for galena lead throughout known history. Mina Rica began in 1840 but was abandoned in the 1930's during Spain's "civil war". It was lucky to be overlooked until the modern era when science could save it for everyone.

## Young Tumbler News

### Easy Crystals You Can Grow Instantly

Most crystals take days or weeks to form. Use this technique if you have a sunny day and want crystals FAST!

Crystal Spike Materials

You only need a few basic materials for this project. While black construction paper is recommended, any dark, heavy-bodied paper will work. The paper needs to be porous enough to absorb enough liquid to produce visible crystals.

Black construction paper

- •Pie or cake pan
- •Warm water
- •Epsom salt
- Scissors

Grow the Crystals

1.First, a sunny day isn't required, but it will help! You want rapid evaporation of the water to form the crystals, so select a warm, dry place to grow crystals (sunny porch or window is great).

2.Use the scissors to cut black (or another dark color) construction paper so that it will fit in the bottom of the pan.

3.Add 1 tablespoon of Epsom salt to 1/4 cup warm water. Stir until the salt is dissolved.

4.Put the construction paper in the pan and pour the salt solution over the paper.

5.Put the pan in the place you have selected for crystal-growing. As the water evaporates, you'll see lots of spiky crystals.

6.Have fun! Use a magnifying glass to see your creations up-close.

Useful Tips

1. This is one of the fastest, least toxic methods of growing crystals. You can substitute regular table salt in place of Epsom, but the resulting the crystals won't be as exciting.

2.Wash your hands after handling Epsom salts. Don't drink the solution and avoid spilling it on yourself.

3.Experiment with adding water colors or food color to the salt solution.

#### Youth Rock Quiz by Kay Jurgens

1. I am black, and am burned for industry. \_ 2. I could be yellow or blue, but my colorless form is popular in wedding rings. 3. I am soft, the Native Americans carved me and smoked with me. \_\_\_\_\_ 4. I am sometimes found as concretions, and look rust-colored. 5. I am found in Nebraska, and am pinkish in color. \_ \_ \_ \_ \_ 6. I form in layers, and can be fairly colorless. I have been used for windows. 7. I am nature's form of glass. 8. I am different rocks molded together. 9. I am mined in Mexico, and can display many colors. I am a woman's name. \_ \_ \_ 10. I can be many colors, and am the birthstone for November. 11. I am often red, and the color of people's lips. \_\_\_\_\_
12. I am green, and I sometimes have swirls in my patterns. \_\_\_\_\_ 13. I have bands, and could be from Brazil or the prairie. 14. I am blue, and am often found with malachite. 15. I am hollow, and may have crystals inside. 16. I can be found in Oregon, and have agate inside of me that can form stars. \_\_\_\_\_\_ 17. I once was a tree, but now I am fossilized. \_\_\_\_\_\_ 18. I am the purple form of quartz. 18. I am the purple form of quartz. \_\_\_\_\_
 19. My common name is "Fool's Gold". 20. I am metallic and have as many colors as a peacock. \_\_\_\_\_ 21. I produce a double image and cleave rather easily. 23. I am a green gemstone and Dorothy came to my city. 24. I look like the skin of a wild cat. \_\_\_\_\_ 25. I am an agate named after a lake. \_\_\_\_\_ 26. I am an agate named after something on the north side of a tree. 27. I have the same name as something you wash your hands with. Word Choices: Iron Ore - Mica - Obsidian - Conglomerate - Opal - Topaz - Moss Agate - Azurite - Agate -Fluorite - Pipe Stone - Thunder Egg - Petrified Wood – Quartzite – Pyrite – Ruby – Malachite - Optical Calcite - Amethyst – Geode - Leopardskin Jasper - Peacock Ore - Emerald - Soap Stone - Diamond - Lake Superior Agate - Coal



## Young Tumbler News

#### Youth Rock Quiz Answers

- 1. Coal 6. Mica
- 11. Ruby
- 16. Thunder egg

2. Diamond

7. Obsidian

22. Fluorite

12. Malachite

17. Petrified wood

- 21. Optical calcite
- 25. Lake Superior agate

- 3. Pipe stone 8. Conglomerate 13. Agate 18. Amethvst 23. Emerald 26. Moss agate
- 4. Iron ore 9. Opal 14. Azurite 19. Pvrite 24. Leopardskin jasper 27. Soap stone

5. Quartzite 10. Topaz 15. Geode 20. Peacock ore via Pick & Shovel, 7/20; from Pick & Shovel, 3/97

**Gastroliths** by Maureen Helm

Dinosaur bones and trace fossils can be found throughout the West and Southwest, including Arizona. Trace fossils are evidence of how an animal behaved and their activities, such as where they went or what they ate. Trace fossils often are found separate from the organisms which created them, so knowing exactly how they were caused can be difficult or even impossible. They do, however, help scientists decipher the life of these creatures.

Trace fossils can be placed into three categories: (1) tracks, toothmarks and trails; (2) burrows and borings; and (3) gastroliths and coprolites. They also include imprints of skin, fur, and feathers, which are rare.

A gastrolith, also called a stomach stone or gizzard stone, is a rock held inside a gastrointestinal tract. The name comes from two Greek words, "gastro", meaning stomach, and "lith," meaning stone. In animals lacking proper grinding teeth, such as birds, crocodiles, alligators, seals, and sea lions, the gastroliths are ingested to help grind up food. In some aquatic species the rocks are swallowed to aide with buoyancy. Gastroliths can pass through the digestive system and frequently need replaced. Gastroliths associated with dinosaurs can weigh a pound or slightly more.

In 1906, George Reber Weiland noted the presence of worn and polished quartz pebbles within the remains of plesiosaurs and sauropod dinosaurs and deduced that these stones were gastroliths. In 1907, Burnam Brown was among the first paleontologists to recognize that dinosaurs used gastroliths in their digestive systems to aid in the grinding of food. To prove that a stone is a gastrolith that a dinosaur used in digestion, geologists generally require solid evidence. First, the stone must be unlike rocks in the immediate geological area and generally high in silica. Second, it should be rounded and polished due to the dinosaur's gizzard acting as a rock tumbler with other rocks and fibrous objects. Finally, the stone much be found with the bones of the dinosaur that ingested it, or at least in a sediment layer dating from the time of dinosaurs.

This last criterion causes problems with identification since smooth stone found without context can be contributed to the action of wind or water. There are several ways to distinguish gastroliths from stones that have been worn by the elements. Gastroliths are highly polished on the higher surfaces with little or no polish in depressions or crevices. More highly polished gastroliths often contain long, microscopic rilles (craters) which are thought to be a result of contact with stomach acid. Many gastroliths became scattered when the animal died and then entered a stream or beach environment, so they show the wear signs of both the digestive tract and water action. It is believed that the most highly polished gastroliths may have been swallowed repeatedly by other dinosaurs.

Information that can be gleaned from gastroliths is important in providing data about the lives of dinosaurs. Paleontologists are researching new methods of identifying gastroliths that are found in the absence of dinosaur remains. Because the number of suspected gastroliths is large, verifying their identity is an important step to tracing them back to their original source and understanding the lives, behaviors, and migration patterns of dinosaurs.

from Rock Talk Newsletter, 6/20

Q. What happens to limestone if you put it in the Dead Sea? A. It gets wet.

Q. What do you call an Irish gem that's a fake? A. A sham rock.

Q. What do you do with a dead element?

- A. Barium
- Q. What rock group has four men that don't sing?
- A. Mount Rushmore.

Q. What is a rock's favorite magazine?

A. Rolling Stone

#### **Field Trips**

The club or clubs sponsoring the field trips are shown in italics. When known I have listed a phone number and contact person for each sponsoring club below the listed trips. If you are not a member of the sponsoring club, you should phone and ask permission to go on their field trip.

Information from the Washington State Mineral Council webpage (http://www.mineralcouncil.org).

<u>October 24</u> Marysville Rock Club - Money Creek Skykomish – Meet at the Money Creek Campground before 9 am -<u>Picture Jasper</u> – Bring digging & R. Bar pick Ed Lehman wsmced@hotmail.com h# (425) 334-6282 c# (425) 760-2786

#### **Red Top Field Trip** by Roger Danneman

On Saturday, September 19th we went up to our Red Top dig site on the SW side of Red Top Mountain near Cle Elum. It was a rainy morning on the west side of the Cascades, but a gorgeous day on the east side. Thankfully the smoky air had cleaned out and temps were in the upper 50s to 60. 6 of us met at the Mineral Springs store off of Hwy 97 and drove up Blue Creek Road to our dig site. The previous day's rain had cleaned off a bunch of agate/jasper in the tailings that could easily be picked up. All of us found plenty of material to take home, digging and collecting from tailing piles, including a few crystal plates.



Our dig site.

Jasper and agate from dig site.

Meadow where more geodes are found.

#### Revised Field Trip Schedule for remainder of 2020.

<u>October 3rd</u> - Going to Red Top. Hwy 410 is said to be closed for weeks, so no trip to Little Naches this date. However, the weather is forecasted to be gorgeous, so I still want to keep a trip on the schedule. Red Top gives you two options from the same road:

1). Our dig site for agate/jasper close to the road, or

2). A 4/10 mile hike up Indian Creek Trail to the meadow just below the agate beds loop. More geodes found here. October 24th - Hoping Hwy 410 is open by then to go over to Little Naches. Getting late in the season, so snow is a possibility.

November 7th - Crystal Mountain north of Ellensburg or First Creek (2 mile hike).

Contact Roger Danneman (roger.danneman@gmail.com hm # 425-228-8781 or cell # 425-757-3506) when planning to attend a field trip, as information may change due to weather, road conditions, or wild fires.

#### Ammolite

Ammolite is an opal-like organic gemstone found primarily along the eastern slopes of the Rocky Mountains of North America. It is made of the fossilized shells of ammonites. It is one of few biogenic gemstones; others include amber and pearl. In 1981, ammolite was given official gemstone status.

An iridescent opal-like play of color is shown in fine specimens, mostly in shades of green and red; however all the spectral colors are possible. The iridescent color of ammolite comes from interference with the light that rebounds from stacked layers of thin aragonite platelets.

Chromatic shift is how the colors vary with the angle of viewing and the angle of light striking the gemstone. The brightness of colors and their iridescence is essentially dependent on how well-preserved the nacreous shell is, and how fine and orderly the layers of aragonite are.

The Blackfeet tribe know ammolite as iniskim, meaning "buffalo stone", and have long believed it to possess amuletic powers; specifically, the gem is believed to aid in the buffalo hunt, by drawing the buffalo within tracking distance. The Blackfeet also believe ammolite to possess healing powers and incorporate the gem into their medicine bundles for use in ceremonies.





#### How To Build A Shortwave Lamp by Robert Winsor

I have had several requests lately for information about how to make a shortwave lamp. This article serves as one method which can be used to build one, but there are many variations that can be made to this plan.

The heart of the shortwave lamp is a simple fluorescent lamp. Many types will work, but some may be more convenient than others. For example, one possible starting point is to purchase a fluorescent "trouble light". These are automotive type lamps with a cord built-in and have compact fluorescent bulbs inside. Another type of lamp that can be made to work is a desk lamp. Whatever lamp is chosen is likely to work, but keep in mind that the bulb type should be one that emits a lot of light in a small area. For example, compact fluorescent lamps have "U" shaped bulbs so that this is accomplished.

The next step is to remove the bulb. Notice on the bulb there is a designation of the bulb type. Common types are the 9 watt, the 13 watt, and the 18 watt. The bulb needs to be replaced with the same bulb type, but rather than using a bulb that emits soft white light, you want to purchase a germicidal UV bulb. These are commonly available via mail order (e.g. http://www.bulbs.com). The light fixture is now capable of emitting shortwave UV (SWUV) light, and prolonged exposure will result in sunburns. You should never look into the light without wearing safety glasses-the same type you use to protect your eyes from flying debris (they also block SWUV).

Any "window" on the fluorescent fixture needs to be removed or altered. In its place needs to be a shortwave UV filter. Replacement filters for many commercial SWUV lamps can be obtained from this site: <a href="https://www.uvsystems.com/">www.uvsystems.com/</a>>

Follow the links to Products, then the link to UV filters. Pick one with dimensions that will match your lamp (i.e. a 2" X 5" size is a good choice). A housing needs to be constructed to hold the bulb, ballast, and filter together and block the visible light emission. This can be done a number of ways, but if you start with a "trouble light," much of the work is already done. You only need to make a new window. Most windows are plastic, so altering them is easy. Make an undersized cutout in the window where the UV filter will be placed, and using epoxy or a hot glue gun, bond the filter to the window over the cutout. Then use a coating of primer paint and then flat black paint to cover the rest of the window to prevent visible light from escaping.

Using this technique and some planning and elbow grease, you can construct a SWUV lamp for about \$130-\$150 in parts, about half to a third what you would pay for it retail.

via Breccia, 7/20; from Gem Cutters News, 6/08

#### **Igneous Textures**

Igneous textures are used by geologists in determining the mode of origin igneous rocks and are used in rock classification. There are six main types of textures; phaneritic, aphanitic, porphyritic, glassy, pyroclastic and pegmatitic.

Aphanitic (a = not, phaner = visible) rocks in contrast to phaneritic rocks, typically form from lava which crystallize rapidly on or near Earth's surface. Because extrusive rocks make contact with the atmosphere they cool quickly, so the minerals do not have time to form large crystals. The individual crystals in an aphanitic igneous rock are not distinguishable to the naked eye. Examples of aphanitic igneous rock include basalt, andesite and rhyolite.

Glassy or vitreous textures occur during some volcanic eruptions when the lava is quenched so rapidly that crystallization cannot occur. The result is a natural amorphous glass with few or no crystals. Examples include obsidian and pumice.

Pegmatitic texture occurs during magma cooling when some minerals may grow so large that they become massive (the size ranges from a few centimetres to several metres). This is typical of pegmatites.

Phaneritic (phaner = visible) textures are typical of intrusive igneous rocks, these rocks crystallized slowly below Earth's surface. As magma cools slowly the minerals have time to grow and form large crystals. The minerals in a phaneritic igneous rock are sufficiently large to see each individual crystal with the naked eye. Examples of phaneritic igneous rocks are gabbro, diorite and granite.

Porphyritic textures develop when conditions during cooling of a magma change relatively quickly. The earlier formed minerals will have formed slowly and remain as large crystals, whereas, sudden cooling causes the rapid crystallization of the remainder of the melt into a fine grained (aphanitic) matrix. The result is an aphanitic rock with some larger crystals (phenocrysts) imbedded within its matrix. Porphyritic texture also occurs when magma crystallizes below a volcano but is erupted before completing crystallization thus forcing the remaining lava to crystallize more rapidly with much smaller crystals.

Pyroclastic (pyro = igneous, clastic = fragment) textures occur when explosive eruptions blast the lava into the air resulting in fragmental, typically glassy material which fall as volcanic ash, lapilli and volcanic bombs.

The time that the magma is allowed to cool will then determine whether the rock will be pegmatite (produced by extremely slow cooling producing very large crystals), phaneritic (produced by slow cooling that produces visible crystals), aphanitic (intermediate cooling times that produce microscopic crystals), or glassy in texture (a product of rapid cooling without crystal formation). When magmas experience differential cooling conditions, they produce porphyritic rock, a mixture of crystal sizes and exhibit either a phaneritic or aphanitic groundmass.

Sources: http://science.jrank.org/pages/1003/Bowen-s-Reaction-Series.html; https://en.wikipedia.org/wiki/Igneous\_textures