

The CMS Tumbler

October
2022

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

Next Meeting:
October 13, 2022
7:00 p.m.

American Legion Hall
25406 97th Pl S
Kent, WA

The Program is speaker
Madeleine Lucas on Pacific
Northwest Earthquakes

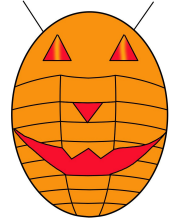
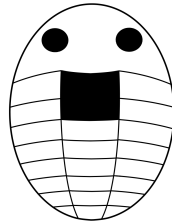
The Show & Tell
Theme is a
sedimentary rock

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Connect with us!

Website: <https://www.cascademineralsociety.org>
Club Facebook: <https://www.facebook.com/CasMinSoc/>
Facebook Groups: <https://www.facebook.com/groups/1168207926650075>
Show Facebook: <https://www.facebook.com/cascadegemandmineralshow>
Instagram: <https://www.instagram.com/cascaderockclub/>
YouTube Channel (Please like and subscribe):
https://www.youtube.com/channel/UCaGIJxaWFatV_JjgZRm9ESA



This month remember
to wish a

Happy Birthday to
Kat Koch on October 4

Charles Benedict on October 6
Keith Alan Morgan on October 11



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Tips, suggestions, recipes and experiments printed in this newsletter are the experiences and/or opinions of the individuals submitting them. We are not responsible for their authenticity, safety, or reliability. Caution and safety should always be practiced when trying out any new idea.

New Club Mailing Address:
Cascade Mineralogical Soc.
c/o 25838 W. Lake Wilderness Dr. SE
Maple Valley, WA 98038

Keith Alan Morgan, Editor
3802 W Tapps Dr. E
Lake Tapps, WA 98391

Postal, or Email, Exchange
Bulletins are welcome.
Email preferred.
greenrockdraggin@yahoo.com

2022 Elected Officers

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Show Load In/Out Zach Pratt	253-600-8520	zachpratt25@gmail.com
Show Display Case Presenters Garry & Kathy Hartzell	253-277-0329	k.hartzell@yahoo.com; santacruz1@yahoo.com
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Show Event Volunteer Recruit Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Show Refreshments for Vendors & Volunteers		
Spinning Wheel Angie & Brian Bayer	253-569-0245	Text to her number (no email)

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Raffle Master Roger Pullen	206-387-3214	Phone calls only. No email or texting.
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2022 CMS Dues are \$25 per year per family

Pay online, by mail, or at our meetings.

New Mailing Address: Cascade Mineralogical Soc., c/o 25838 W. Lake 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 the word "Tumbler" and subject in the Subject Line. The deadline is the 20th of each month.

October

Sun	Mon	Tue	Wed	Thur	Fri	Sat
						1
2	3	4	5	6	7	8
9	10 Board Meeting 7:00 pm	11	12	13 General Meeting 7:00 pm	14	15 Red Top Trip
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

CMS Show Committee Meeting:....Monday, October 10.....6:30 pm to 7:00 pm
 CMS Board Meeting:.....Monday, October 10.....7:00 pm to 8:00 pm
 CMS General Meeting:.....2nd Thursday, October 13.....7:00 pm to 9:00 pm

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 14
 More Show info can be found on Page 16



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. 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>



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

The association's purpose 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 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 local rock and gems shows and planned field trips. It's a great resource if you want to plan on an outing.

Also check out "Misc. News" for all the latest updates on collecting sites around Washington.

<https://mineralcouncil.wordpress.com/news-updates/>

When the weather is good, they have regular monthly field trips. So take advantage of these great outdoor rockhounding adventures! The field trip details are under "Field Trips" on the left side of the site. Check out the link for additional information for the time and place to meet and the field trip leader.

You can find all this information and a whole lot more about what is happening in our state at <https://mineralcouncil.wordpress.com/>



Rockhounding Code of Ethics

I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.

I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.

I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.

I will use no firearms or blasting material in collecting areas.

I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.

I will leave all gates as found.

I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.

I will discard no burning material - matches, cigarettes, etc.

I will fill all excavation holes which may be dangerous to livestock.

I will not contaminate wells, creeks, or other water supplies.

I will cause no willful damage to collecting material and will take home only what I can reasonably use.

I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.

I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.

I will cooperate with field-trip leaders and those in designated authority in all collecting areas.

I will report to my club or federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.

I will appreciate and protect our heritage of natural resources.

I will observe the "Golden Rule", will use Good Outdoor Manners and will at all times conduct myself in a manner which will add to the stature and Public Image of Rockhounds everywhere.

from the AFMS website

Our meetings are now on YouTube. The meeting will be available, at the latest, on Sunday night following the meeting. Don't forget to "Like" and "Subscribe"! [YouTube Link](#)



CMS Show Committee & Board Meeting Minutes September 5, 2022

by Pete Williams, 2022 Secretary

Attendees: President – Kat Koch; Vice President – Linda Jorza; Secretary – Pete Williams; Directors – Roger Daneman; Rich Russell; Paul Ahnberg; Kathy and Gary Hertzal; Federation – Mike Blanton; Mineral Council – Diana Horsefall; Treasurer – Charles Benedict; Past President – Malcom Wheeler; Peggy Shashy

Show Committee meeting called to order: 6:35

The show was a success. The estimated attendance was 2300 on Saturday and 600 on Sunday. Our last show in 2019 had an attendance of about 2000. There were 39 vendors. They indicated they did ok. Sales were big on Sunday. We had 43 volunteers which was a great turnout. One volunteer was from the West Seattle club. We had 1 vendor cancel leaving 2 unsold booths. It was a late cancellation with no time to backfill.

Kat mentioned we have 3 major decisions to make for upcoming shows. 1. Keep the show in the college gym or return to the student union building. Some vendors preferred that location. 2. Do we want fewer vendors in the gym to allow more space for displays. 3. Would we want to hold an NFMS show sometime in the future.

We also need to decide if we will have a co-op booth next year. Also, one of the vendors is willing to do all our online advertising if we give her the same 3 booths as this year. She does online advertising for major shows currently. We also need a show chairperson.

Some feedback from the committee included: the need for signage for the co-op booth and other club areas; better signage for the vendors; more demonstrators; more slabs for the silent auction; having someone explain the display cases; having a rock swap area; getting one business license for the co-op area.

Board Meeting

On January 2024 our club will be 75 years old. We will need to do something special to celebrate. We picked up 13 new members at the show and right after. The program in October will be a speaker on Pacific NW earthquakes. In November the program will be a speaker on gold in Washington state.

We have always used some of the profit from the show to give grants to 2 students. There is no geology department at the college. This year we will need to look into possibly giving the grant to a teacher for supplies.

Meeting adjourned at 8:54

CMS General Meeting Minutes September 8, 2022

by Pete Williams, 2022 Secretary

Meeting called to order at 7:19

There were about a dozen new members at the meeting. We no longer have a videographer so no meeting videos on Youtube. We got 13 new members from the show. Now we have 104 family memberships and 212 members.

The show will net about \$4000 when all expenses are in. The vendors complemented the show and want to return next year. There were 39 vendors and 63 booths.

The Christmas party and auction will be held on December 4. The field trip Saturday is to Crystal Mountain. The NW Federation show will be on Sept.30, and Oct. 1-2. Our club will donate a bucket of rocks to the silent auction.

Program: A timeline of members significant rockhounding events. Kat read off some of the members inputs.

Meeting Adjourned: 8:06 followed by show and tell and the raffle.

From the Top of the Rock Pile... by Kat Koch, 2022 CMS President

Our Cascade Gem & Mineral Show was a huge success! Thank you to all of you that volunteered to help at the show. There were 43 volunteers! Our volunteers also included members of the West Seattle Club and family members. I am very thankful for every one of you that pitched in. The show would not have gone so well without your help.

We had many compliments from the vendors on how they were treated and how organized we were. Everyone said they would be back next year.

Our show for next year is on September 16 & 17, 2023. The 3rd weekend of September is our regular weekend. So mark your calendars!

The club is looking for a Treasurer. Someone to pay the club bills, deposit money, book the room for our meetings, send out membership cards, and fill out various forms for the club. You must attend the meetings in case someone wants to join the club or renew their membership and collect any income from the meeting. It is an easy bookkeeping job, but you must be timely in getting it done.

Welcome
New Members



We have 13 new members that joined at the show or right afterward online.

We continue to get new members every month. So if you are a new member, please be sure to come up and introduce yourself at our meeting. We all look forward to meeting every one of you.

I hope to see all of you at our October meeting.

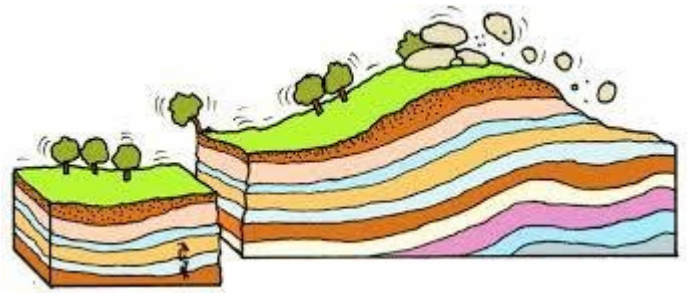
General Meeting - October 13th

Topic: Backstory of PNW earthquakes

Speaker: Madeleine Lucas, Rockin' Out, Department of Earth and Space Sciences, University of Washington

If you've ever wondered about the science behind the earthquakes, we feel here in the Pacific Northwest, then shake a leg and be sure to attend the October meeting where Madeleine from Rockin' Out will be on hand to share the interesting backstory on Pacific Northwest earthquakes with us.

Show 'n Tell: A sediment rock



General Meeting - November 19th

Topic: Gold!!

Speaker: Chris Holden, NAMA Board Member and CMS Member

Chris Holden from Black Jack's Metal Detectors will be talking about gold, gold, GOLD!

How it came to be in Washington and where and how to find it.

Join us to claim your seat and enjoy this glittery topic.

Show 'n Tell: Gold or Pyrite



HOLIDAY PARTY!

Our Holiday Party is Sunday, December 4th. Potluck, the election of officers, and club auction to follow.

The setup is at 11:30 am. Dinner is at noon.

The club provides turkey and ham.

This is a potluck, so please bring vegetables, dessert, rolls, or drinks.

Also, bring your own table setting.

The Ubiquitous Mineral by Jo Borucki

Ubiquitous! I like that word. Its sound just rolls off my tongue when I say it. It means present, appearing or found everywhere, and that describe calcite to a "T". Calcite is everywhere. It is probably in your mineral collection. It is in sedimentary, metamorphic, and igneous rocks. It is found in bodies of water and shorelines as the shells for many mollusks such as scallops, oysters, and clams. Bird eggshells are composed substantially of calcite. So next time you eat scallops, oysters, or clams or crack an egg, thank calcite for protecting your food.

It is in art forms such as marble sculptures. Pearls are primarily made of calcite and are prized for jewelry. Extinct trilobite compound eye lenses were composed of clear calcite crystals a quarter of a billion years ago. Stalactites and stalagmites in caves are composed of calcite. There is even military research to use calcite to create a cloak of invisibility, perhaps like the one that Harry Potter had. It may even have played its role in the formation of life as a catalyst for necessary biological reactions.

A property of calcite is birefringence. This means that the ray of light that is shown into the calcite is split by polarization into two rays that take slightly different paths and so a double image results when a piece of calcite crystal is placed on top of an object. If you have a calcite crystal, try setting it on an image to see if you get a double image. Shine a light on it from different directions and see if the image changes in any way.

Another property is fluorescence. Calcite glows in the dark when exposed to ultraviolet light. As soon as the light source is removed, the calcite stops glowing. If you have a calcite crystal and a UV light source, try this. Marine organisms often have shells of calcite so put some oyster, clam, or scallop shells under a UV lamp and get two benefits; one from having them as dinner and one as entertainment after you eat.

Phosphorescence results when a substance such as calcite absorbs the light of a shorter wavelength (radiation energy) and reemits (glows) as a longer wavelength after the light source is removed. For example, many years ago, my daughter pasted phosphorescent stars on the ceiling in her bedroom. Even today, I can lie down on that bed when the room is dark and enjoy a starry ceiling gleaming above me. I checked though, and the phosphorescing stars are not coated with calcite, they probably are coated with zinc sulfide which also has phosphorescent properties.

References

Calcite - Wikipedia

<https://mineralexpert.org/article/calcite-mineral-master-of-shapes>

Scam Alert! by Kat Koch, CMS President

If anyone receives an email or text message asking you to purchase gift cards or make a payment on behalf of the club, DON'T DO IT!

The are no circumstances where anyone from the Board, our club, the NFMS, or AFMS would ask you to do this. It just won't happen.

I am putting this in the Tumbler because such requests are now being sent not only by email but also by text. They are coming from "board members" of our club, NFMS and AFMS.

Do not reply to any texts or emails. They are 100% SCAM and phishing for info off your device when you reply.



Our Club Show Report and Pictures by Kat Koch

Our 2022 Cascade Mineral show was held with flying colors.

We had 39 vendors, and many expressed to several board members that they really appreciated how well they were treated. It was nice to hear as I think we had a fantastic group of vendors. I sincerely hope we see them all next year.

Approximately 3,000 people attended our show. This was a substantial increase since our last show in 2019.

I also want to thank all our volunteers. This show would not have done as well without each of you helping out.

I also want to thank John and Dave Cornell and Terri Gerard for picking up a large rock donation. All three of them spent a few days washing and cleaning everything so it could be sold at the silent auction. The 3 of them also personally donated many great items for the auction. I know Fred Funk and a couple of other members also donated a few items. The auction income exceeded our projections for the show!!! Thank you to everyone that donated items.

Rich Russell again donated a faceted necklace he did to the Raffle Prize case. Rich is so generous with his talent and time. His donated work is a major fundraiser for all our club auctions. Thank you so very much, Rich! Also, thank you to his wife, Jennifer, for distributing the raffle prizes to the winners that were not present on Sunday's drawing.

Here are a few photos from the show.





Young Richard's Almanac by Dick Morgan

As you age you get pain that slows you down, but your mind appears to age slower than muscles so you are prone to mishaps and falls so take advantage of any aid you can find.

The elderly on fixed incomes know that even with a reduced appetite the raise in the cost of living bites harder on the income.

A study has shown that a Triceratops skull would break under the impact of ramming its horns into another animal, so it probably swung its head from side to side to slash the skin of an attacker.

September Field Trip Report by Roger Danneman, Field Trip Guide

We had a beautiful day at Crystal Mtn. (north of Ellensburg) for our Sept. 10th field trip. The air was a little hazy from wildfire smoke, but it didn't bother us that much, although the next day my throat was feeling the effects. Still, some beautiful views looking out over First Creek, the Stuart range, the Teanaway valley to the west and the Kittitas valley to the south. Our group was comprised of 13 vehicles, 22 people, and 4 dogs. For a few people it was their first field trip and we all had a blast. A variety of agate, jasper, and crystal/geode fragments were collected from the 2 sites that we visited. It's the first time we've taken a trip here and I'll plan to put it on the schedule for next year. Special thanks to Phillip T. and John and Dave C. for helping to manage the group.

The next planned trip is to Redtop on Oct. 15th.

Attendees: Phillip T. and dog Tito, Peggy S, Paul A. and guest Kalun, Kate T. and son, Gina M., Julie M., Ann S. and dog Tess, Loren M., John C., Dave C., Kamera M. and dog Gracie, Nik B., Chris W., Chris V. and guest, and new member Larry C. and son, and of course me.



Pitch Lake, Trinidad by Kat Koch

Pitch Lake, which is the world's largest natural deposit of asphalt, is located outside the city of La Brea in

southwest Trinidad. The Lake is around 100 acres, about 250 feet deep, and estimated to contain 10 million tons of asphalt/pitch.

First called 'piche,' the Amerindians believed, "Their winged God created it as punishment. They were celebrating a victory over a rival tribe when they got carried away in their celebration. They proceeded to cook and eat sacred hummingbirds, which they believed possessed the souls of their departed ancestors. The winged God immediately had a lake swallow the entire tribe as punishment."

Numerous Amerindian artifacts have been unearthed on-site, including a bench carved in the shape of an animal (with the carver's name still clearly visible). You can see some of these artifacts at an on-site museum. In addition, the rib bone, thigh bone, and tooth of a giant sloth belonging to a mastodon have been found, thus indicating prehistoric life in Trinidad and Tobago.

In 1595, the Amerindians showed Sir Walter Raleigh the Lake, although he claimed to have 'discovered' the pitch lake in his search for El Dorado. Raleigh found immediate use for the asphalt to caulk his ship and referred to the pitch as "most excellent... It melteth not with the sun as the pitch of Norway."

In 1792, the Spanish started to refine the pitch and called it 'Tierra de Brea,' meaning land of the pitch – the name eventually became the city of La Brea, where the Lake is located.

In 1887, an American businessman, Amzi Barber, known as "The Asphalt King," secured a 42-year monopoly right from the British Government for Pitch Lake for his company, Barber Asphalt Paving Company. From this source, some of the first asphalt roads were paved in Washington D.C., New York City, and other Eastern U.S. cities.

In 1978, Lake Asphalt of Trinidad and Tobago Limited was incorporated with the intention to extract and process asphalt from the Lake. The Lake Asphalt Company currently produces a wide range of products, with asphalt from the Lake being the base ingredient. Some of the products are an anti-corrosive black paint, seam sealant, under-body automobile coating, a pipe and metal guard, and bitumen emulsion. It is a major supplier of asphalt products to the world market.

The popular scientific opinion is that The Pitch Lake is related to deep faults in subduction plates under the Caribbean Plate, related to Barbados Arc. The sources of the Lake have not been extensively studied, but the opinion is that the Lake is at the convergence of two faults.

A recent study connected to the European Space Agency discovered living microbes beneath the asphalt's surface. In addition, they have found similarities between the Pitch Lake and similar lakes on the surface of Titan, one of Saturn's moons. So although Pitch Lake may look like an oversized, bumpy parking lot, some scientists believe it might one day reveal whether or not Titan can support life.

The scientists also think that one day Pitch Lake may help answer the question of whether or not life exists on other planets!

The world's 2nd largest pitch lake is Lake Bermudez, also known as Lake Guanoco, located in Estado Sucre, Venezuela. This pitch lake has an area of about 1,100 acres and is more extensive than Pitch Lake by surface area but much smaller in volume. Lake Bermudez depth varies between 4.9 feet and 6.6 feet. For centuries the local indigenous populations has used the asphalt from the Lake. The Warao people have used it to waterproof canoes.

In 1890, a U.S. company, with permission of the Venezuelan government, began to extract pitch commercially, but it soon created controversy and internal conflict within the country. Asphalt mining in the Lake was stopped in 1934 and has not resumed.

Bibliography: Amusing Planet, Wikipedia, Explorers Web, World Atlas



Garni Gorge, Armenia by Kat Koch

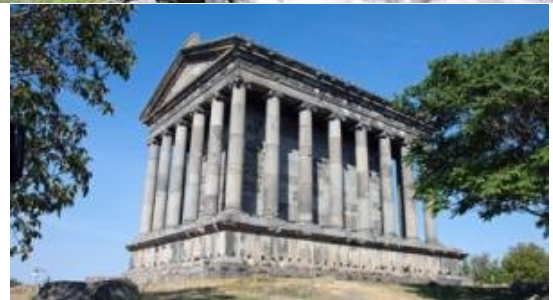
The Garni Gorge is a beautiful green valley situated approximately 14.5 miles east and below the village of Yerevan, Armenia. The Goght River carved out the canyon, leaving a gorge lined with magnificent, orderly, and well-preserved basalt columns. Many visitors at first think the rock columns are man-made. You also wonder why the walls don't collapse.

The basalt columns are called the "Symphony of the Stones."

At the top of the gorge is the pagan Garni Temple, which dates back to the first century AD and has been well preserved. Researchers believe Roman Emperor Nero built the temple and it is most likely the easternmost Greco-Roman temple in the world. The pagan temple was initially constructed to worship the Greek gods, although this changed in 301 AD when Armenia adopted Christianity.

The valley, the basalt cliffs, and the temple are all easily accessible by paved roads. If you choose to, you can drive over a centuries old cobblestone road or an 11th-century medieval bridge. Also, a hearty hike can hike up to the temple from the valley floor via an extremely steep trail.

Bibliography: Atlas Obscura, Caucasian Challenge, Wikipedia, Armeniapedia, YouTube.



Sundogs by Kat Koch

With a polar vortex comes extreme cold and record-breaking temperatures that frequently results in a phenomenon known as Sundogs.

No one knows precisely how this phenomenon got its name. However, according to Greek mythology, 'the god Zeus walked his dogs across the sky and that the bright "false suns" on either side were his dogs.'

Sun dogs are atmospheric optical phenomena of bright spots that flank the sun to the left and right. They appear most often when the sun is near the horizon. The "false suns" are at the same altitude above the horizon as the sun and sit within 22 degrees in the halo. Sun dogs are a red color on the side nearest the sun, shifting from orange to blue on the outside. They can also appear anywhere in the world.

Bibliography: World Atlas, Chicago Tribune, Time Magazine, Wikipedia.



Uncovered: The Truth about Opal Formation by Amy Middleton

The secret of how opals formed in Australia's Red Centre could shed light on the landscape on Mars. New research has explained the mysterious formation of opals, found in abundance in Australia's red center, and the information could shed light on the environment on Mars.

Australia produces over 90 per cent of the world's precious opals, but before now scientists have never been able to explain precisely how the gemstones formed.

"Before this we did not know [opal's] origin, why it forms at such shallow depths or why it can be found in central Australia and almost nowhere else on Earth," says lead researcher Professor Patrice Rey, a geologist at the University of Sydney.

Opals formed by acidic weathering Patrice says the findings, published this week in the Australian Journal of Earth Sciences, reveal that opals formed during "an extraordinary episode of acidic weathering, during the drying out of the central Australian landscape."

Between 100 million and 97 million years ago, a vast sea that covered 60 per cent of Australia – from Coober Pedy in South Australia to the Gulf of Carpentaria in northern Australia – began retreating.

This drying out of Australia's center increased the acidity levels at shallow depth, releasing silica through the weathering of sandstone. Further weathering then lowered the acidity to a level at which precious opal can form in the silica-rich gel.

Australia's Red Centre similar to Mars Central Australia is believed to be the only place on earth where acidic weathering of this scale has ever taken place, although similar conditions have been observed on the surface of Mars. Non-precious opal deposits were discovered on the Red Planet by NASA in 2008.

"If you look at Mars and the Red Centre, they share similar characteristics," says Patrice. "Similar rocks went through similar weathering processes, so potentially precious opals might exist there."

Patrice says central Australia offers a "unique natural laboratory", where researchers can study biological processes that could potentially be present on Mars.

Mike Snow, a minerals expert at the South Australian Museum, says the findings are compelling, and may well provide a glimpse into the landscape on Mars.

"The landscapes of Mars and the [Red] Centre both have large amounts of red oxidized iron," says Mike. "This is part of the opal story."

"Perhaps opal may well occur on Mars if it is similar to the Great Artesian Basin."

via Breccia, 4/22; from Breccia, 6/13

Corundum by Dave Jacobson

This month we will take a look at corundum, Al₂O₃, aluminum oxide. Two of the more famous gemstones are varieties corundum. Ruby is the red variety. All other colored gem grade material is sapphire. It is not until about 1800 that ruby and sapphire were recognized as corundum. Prior to that red spinel and garnet were also considered ruby. Some non-gem grade material is called emery is used as an abrasive. Some associated minerals are calcite, zoisite, feldspars, micas and garnet. Corundum is found in many locations in the world such as Burma; Sri Lanka, Tanzania and other African localities; India; the Middle East and Southeast Asia.

Corundum is found in a variety of deposits such as metamorphic rock, pegmatite's and nepheline syenites. The rock is typically lacking or poor in silicon oxide, which if present would combine to form another mineral. Corundum is also found in alluvial deposits. Many of the facet grade rubies and sapphires are mined in alluvial deposits.

Corundum is the second hardest mineral on the Mohs scale, although diamond the hardest mineral is four times harder than corundum. This due to the strong and short oxygen-aluminum bonds which pull the oxygen and aluminum atoms close together. This makes a tightly bonded structure that results in a hard, dense mineral. Corundum is in the trigonal crystal system. The crystals are typically tapered hexagonal prisms. They are often tabular. The crystal ends are frequently marked with triangular striations. Colors are as follows: Ruby is intense red due to chromium. Blue sapphire is due to iron and titanium trace elements. Colors other than blue are called fancy sapphires. Padparadscha is orange due to chromium plus ferric iron. Alexandrite-like is due to vanadium. Yellow is due to ferric iron (or defects). Green is due to ferrous plus ferric iron (and defects). Colorless is pure, no trace elements. Hardness is 9. Specific gravity is 3.9 to 4.1. Streak is white.

Corundum takes it's name from the Tamil word kuruntam which is derived from the Sanskrit kuruvinda meaning "ruby".

I used the following reference materials in preparing this article:

A Field Guide to Rocks And Minerals by Frederick H. Pough.

Mineralogy for Amateurs by John Sinkankus.

Simon & Schuster's Guide to Rocks And Minerals.

Gemstones Of The World by Walter Schumann.

The Audubon Society Field Guide To North American Rocks And Minerals by Charles W. Chesterman.

Gems, Crystals, & Minerals by Anna S. Sofianides & George E. Harlow

Amethyst Galleries Mineral Gallery on the internet at <http://mineral.galleries.com>.

via The Quarry, 5/21; from Canaveral Moonstone, 5/21

Young Tumblers News

State Miscellaneous by Keith Alan Morgan

The final part of the Official State puzzles is material that has a variety of designations, unlike the previously used Rocks, Minerals, and Gemstones. This puzzle is also a bit of an experiment as most of these have more than one word, but I thought running them in a straight line would be too easy. So each word will be going it's own direction. For instance Petrified might go left to right, while Wood might be diagonal. Let me know if this approach works or not.

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

Agatized Coral - Florida State Stone
Black Hills Gold - South Dakota Official Jewelry
Blue Granite - South Carolina Official Stone
Emerald - North Carolina Official State Precious Stone
Granite - Massachusetts Building And Monument Stone
Hourglass Selenite Crystal - Oklahoma Official Crystal
Salem Limestone - Indiana Official Stone
Star Garnet - Idaho Official State Stone, Or Gem
Petoskey Stone - Michigan State Stone
Petrified Palmwood - Texas State Stone
Petrified Wood - Mississippi State Stone
Silver - Texas Precious Metal

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.

Some information from the Washington State Mineral Council webpage (<https://mineralcouncil.wordpress.com>).

October 15 *Cascade Mineralogical Society - Red Top* - Saturday - Agate, jasper, and crystal
Roger Danneman roger.danneman@gmail.com 425-757-3506 cell and text

October 15 *Skykomish - Money Creek* – Meet at Camp Hwy 2 before 9:00 - Picture Jasper – Bring rock & crack hammers

Ludwigite

If you're looking for an interesting new mineral specimen, Ludwigite just might be for you. Predominantly found in Germany, there are also several sites in Utah where it can be found.

Ludwigite is a magnesium-iron borate mineral: Mg_2FeBO_5 . It has a Mohs scale hardness of 5.5, a specific gravity of 3.8, and an orthorhombic crystalline form.

Ludwigite typically occurs in magnesian iron skarn and other high temperature contact metamorphic deposits. It occurs in association with magnetite, forsterite, clinohumite and the borates vonsenite and szaibelyite. It forms a solid solution series with the iron(II)-iron(III) borate mineral vonsenite.

It was first described in 1874 for an occurrence in Ocna de Fier, Banat Mountains, Caraş-Severin County, Romania and named for Ernst Ludwig (1842–1915), an Austrian chemist at the University of Vienna. A rare mineral, two forms are also found in Utah.

Ludwigite is a relatively rare magnesium iron borate mineral that is rarely mentioned in the gem trade. Although there are opaque black, metallic faceted Ludwigite gems available as curiosities for collectors of the unusual, the most common occurrence of Ludwigite as a gem is as dark, olive-green Ludwigite inclusions in Peridot from Pakistan. These gems can be so densely included with the fine, fibrous, dark green Ludwigite needles that a normally bright green Peridot can be very dark green.

Named in honor of Ernst Ludwig (19 January 1842, Freudenthal, Austrian Silesia - 14 October 1915 Vienna), Professor of Chemistry, University of Vienna. He worked in the areas of mineral chemistry, mineral water analysis, food chemistry and forensic chemistry. He first analyzed the material.

Physically, it looks almost like a silky version of coal with white crystal inclusions. It is often dark green to black, fibrous, and opaque. The varieties found in Utah are predominately black and have two forms. In Southern Utah the mineral has white crystalline stars.

from Golden Spike News. 5/22

Sapphire

Sapphire is the modern birthstone for September, both in the United States and Britain. Long before the gemstone became the modern September birthstone, sapphire was the planetary stone for Libra, while blue sapphire is a zodiac stone for Virgo, both zodiac signs falling partly in the month of September. The September birthstone is sapphire, a gem that's been cherished for thousands of years. Although the term sapphire usually refers to the blue variety of corundum (ruby is the red variety), this birthstone comes in a rainbow of other colors. Sapphires have been long associated with royalty and romance and are also said to symbolize fidelity and the soul. "Sapphire" comes from the Greek word sappheiros and blue sapphire is one of the most popular colored stones.

The September birthstone was reputed to have healing powers as well. Medieval Europeans believed that sapphire cured plague boils and diseases of the eye. The sapphire birthstone was also thought to be an antidote to poison.

Kashmir, Myanmar (formerly Burma) and Sri Lanka are three historically important sources for the September birthstone. Significant quantities of the September birthstone have also been found in Australia, Thailand, Cambodia, Madagascar and the United States (Montana), among other countries in Asia and Africa.

Sapphires were discovered in Kashmir around 1881 when a landslide high in the Himalayas exposed a large pocket of velvety "cornflower" blue crystals. As the spectacular sapphires began to appear farther south, the Maharaja of Kashmir – and his army – took control of the new locality. From 1882 to 1887, thousands of large, beautiful crystals were recovered. The stones faceted from these crystals established Kashmir sapphire's reputation as one of the world's most coveted gems. Production has been sporadic since then, but auction houses occasionally sell fine pieces of Kashmir sapphire jewelry.

Some famous sapphires are the Star of India, a beautiful star sapphire, weighing in at 563.35 carats, the Star of India is one of the largest sapphires in the world, with a unique star shape that appears on both sides. A beautiful faceted version at 466 carats, the Blue Giant of the Orient is the largest faceted sapphire in the world. In 1907, it disappeared under mysterious circumstances and only resurfaced this century.

from Golden Spike News, 9/21

Empty space in a geode can be a beautiful thing, but empty space on a page means the editor couldn't find some short filler.

NFMS Needs Your Canceled Postage Stamps

Every year the NFMS collects postage stamps from its member clubs. They have a stamp company that buys them, and in turn, these funds are donated to cancer research. Every year NFMS donates around \$6,000.

On letters that you receive, tear the corner with the stamp off. Be careful not to damage the stamp. Place the stamps in a plastic baggie and bring them to the meeting. Our member, Mike Blanton, collects the stamps and turns them over to the NFMS at the regional rock and gem show. You can give them to Mike as often as you want throughout the year.

Collecting the stamps is another way we rockhounds give back to Our community.



Don't Forget To Show Your Membership Card At These Retailers

The following businesses are loyal supporters of our rock club. Show your membership card at the following stores and get a 10% discount on most purchases.

Jerry's Rock Shop – 804 W Valley Hwy, Kent, WA 98032

Minerals, rough or polished rocks, lapidary machines, lapidary supplies, polishing grit, fossils, rock hounding tools, beautiful display specimens, jewelry, and much more. *Please be aware there are a few items they can't offer the 10% discount on.*

Jerry is a great supporter of our club. They make it possible to have nice door prizes at our meetings.

Blackjack Metal Detectors and Mining Equipment – 101 Park Ave N, Renton, WA 98057

They sell beautiful mineral specimens, fossils, books, metal detecting and gold panning equipment and supplies. Chris Holden is a CMS member!

New for Members Only – New Texting Service

We are busy and often forget that CMS has an upcoming meeting or event. Therefore, we have a texting service to remind members of CMS meetings and events.

Everyone is automatically entered into this service. You can opt out anytime by responding with STOP.



For quick access, you can scan the following codes.



Access CMS Club Instagram page



Access our CMS YouTube channel



Access our CMSclub website for the latest on meetings and club events



Access CMS Facebook Groups

Agates

A process which took nature hundreds, thousands, or perhaps millions of years to complete cannot be covered in a few words, but let's take a simplified look at their creation.

First came the raw materials—silica (silicon dioxide (SiO₂)). This compound is a combination of silicon and oxygen and is a major rock builder in the earth's crust, being second only to the compound water in abundance. With silica so common, gems should be everywhere, but their formation depend-ed upon conditions and this is where our story begins.

About 400 million years ago the Pacific Northwest began to rise from the sea. In a succession of volcanic upheavals, a landmass rich in silica was created. Occasionally these lavas cooled so rapidly they formed a volcanic glass—obsidian. Generally however, volcanic masses cooled slowly, tended to crystallize and were porous, eventually breaking down to release minute particles of silica. This free silica in turn, was dissolved by acids in percolating ground water, then transported and finally deposited as concentrated liquids in subsurface cavities. Experts differ on how the liquids eventually became solids, however the following basic silica forms were the result.

Crystalline— Silica deposited in obvious crystal forms and known as quartz or rock crystal.

Opaline—Silica form similar to chalcedony, but totally noncrystalline, more porous and containing small added amounts of free water (3 to 14 percent) held within its structure rather than its chemistry. Gem opals are of this form.

Cryptocrystalline—Silica deposits of microscopically fine-grained, almost non-crystalline masses known as chalcedony. Chalcedony characterizes agate and jasper.

Each of the silica forms occurred within cavities of previously formed rock and are termed secondary deposits. How each formed however, depended largely on where it formed. Individual gemstones, when found in gravel bars or loose soil, are usually a long way from their birthplace, having rolled and tumbled with the eroding forces. Generally the surface landmass of their origin has long since crumbled and vanished. Some gems, however, are still embedded where they developed and show that each basic type resulted from its own characteristic surroundings.

Agate: The result of chalcedony which filled empty gas pockets or cracks in otherwise solid rock, forming as nodules or seams. Since only limited amounts of foreign materials were included, the stone is fairly pure and ranges from clear to translucent when held to the light. Not all agates formed this way, with the two exceptions being thunder eggs and fossils.

Recognizing and Testing Agate: The mineral world has many look-alikes, but not all have gemstone quality. To avoid filling your pockets with excess rock, three simple test can be made.

Luster: Look for even textured, non-granular material ranging from clear (glasslike) through translucent (semi-clear) to opaque (blocking out light). Rough specimens may have a glassy, waxy, pearly, or even dull appearance and can be better judged when wet. Agate: Waxy, clear to near opaque. Jasper: Waxy to dull and opaque. Opal: Pear-like, clear to opaque.

Fracture: Broken edges are usually conchoidal (cupped, shell-like fractures as on a chunk of glass). Water-worn pebbles often show curved crescent-like surface markings. An exception to this is opal, which tends to be brittle and more angular in fracture.

Hardness: Part of the reason these are termed gemstones is in their ability to polish well and withstand abrasion. They rank between 7 to 7.5 on the Mohs hardness scale.

Probably no gemstone is known in a greater variety of colors and patterns than agates. And like fingerprints, no two of these are ever exactly the same. Recurring agate characteristics however, have been given appropriate names such as: White or Milk, Turtle-back, Coated, Snakeskin, Blue, Amethystine, Carnelian, Sard, Polka Dot, Sunset, Enhydro or Water Agate, Fortification, Iris or Rainbow Agate, Banded, Sardonyx, Grape, Eye or Orbicular Agate, Tube or Pipe, Angel Wing, Dendritic, Moss, Plume, Flower, Sagenite, and Ellensberg Blue.

from Breccia, 3/21



Shows

September 30 - October 1 & 2: Friday & Saturday 10 am – 6 pm; Sunday 10 am – 5 pm
NFMS & Portland Regional Gem & Mineral, 41st Show
Wingspan Event and Conference Center
At the Westside Commons
801 NE 34th Avenue, Hillsboro, Oregon

October 1 – 2: Saturday and Sunday 10 am – 5 pm
Marysville Rock and Gem Club
The Evergreen State Fairgrounds Display Bldg #500
14405 179th Ave, SE, Monroe, WA