

The CMS Tumbler

July
2021



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

Next Meeting:
July 8, 2021
7:00 p.m.

American Legion Hall
25406 97th Pl S
Kent, WA

The Program is
Rock Bingo.
More info on page 6.

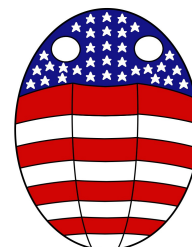
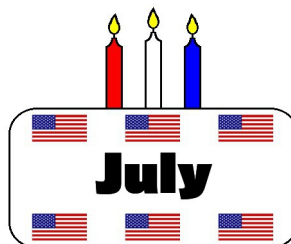
Connect with us!

Website: <https://www.cascademineralogicalsociety.org>
Club Facebook: <https://www.facebook.com/CasMinSoc/>
Show Facebook: <https://www.facebook.com/cascadegemandmineralshow>
Instagram: <https://www.instagram.com/cascadegemandmineralshow/>

This month remember
to wish a
Happy Birthday to
Mary Patndge on July 4
Richard Russell on July 5
Virginia Bird on July 18
Robert Waddell on July 20
Roger Pullen on July 30
Lauren Walker on July 30
Brian Oliver on July 31
and also remember
to wish a
Happy Anniversary to
Dick & Patricia Morgan on July 14 (59 years)

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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.

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Maple Valley, WA. 98038

Keith Alan Morgan, Editor
3802 W Tapps Dr. E
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Postal, or Email, Exchange
Bulletins are welcome.
Email preferred.
greenrockdraggin@yahoo.com

2021 Elected Officers

<i>Title</i>	<i>Name</i>	<i>Phone</i>	<i>E-mail</i>
President	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Vice President	Merriann Fu	253-236-5593	merriannf@gmail.com
Treasurer	Charles Benedict	425-306-0465	charlesbenedict@comcast.net
Secretary	Pete Williams	425-228-5063	petewill02@gmail.com
Director	Roger Pullen	206-387-3214	None
Director	Roger Danneman	425-228-8781	roger.danneman@q.com
Director	Richard Russell	253-736-3693	richru1@yahoo.com
Past President	Bob Pattie	425-226-3154	bobpattie@comcast.net
Show Chairman	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
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2021 Show Committee Chairs

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Cascade Show	Silent Auction Michael Blanton	425-271-8757	mblanton41@hotmail.com
Cascade Show	Raffle Donations Michael Blanton	425-271-8757	mblanton41@hotmail.com
Cascade Show	Demonstrators Richard Russell	253-736-3693	richru1@yahoo.com

2021 Committee Chairs

Club Historian			
Donations	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
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Raffle/Display	Roger Pullen	206-387-3214	None
Shop Operations	Bob Pattie	425-226-3154	bobpattie@comcast.net
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Social Media	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Webmaster	Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org

2021 CMS Dues are \$15 per year per family

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.

July

Sun	Mon	Tue	Wed	Thur	Fri	Sat
				1	2	3
4 Have a safe & happy 4th!	5 Board Meeting 7:00 pm	6	7	8 General Meeting 7:00 pm	9	10
11	12	13	14	15	16	17 Greenwater Field Trip <i>Darrington Rock Show</i>
18 <i>Darrington Rock Show</i>	19	20	21	22	23 WAMS Show	24 WAMS Show
25 WAMS Show	26	27	28	29	30	31

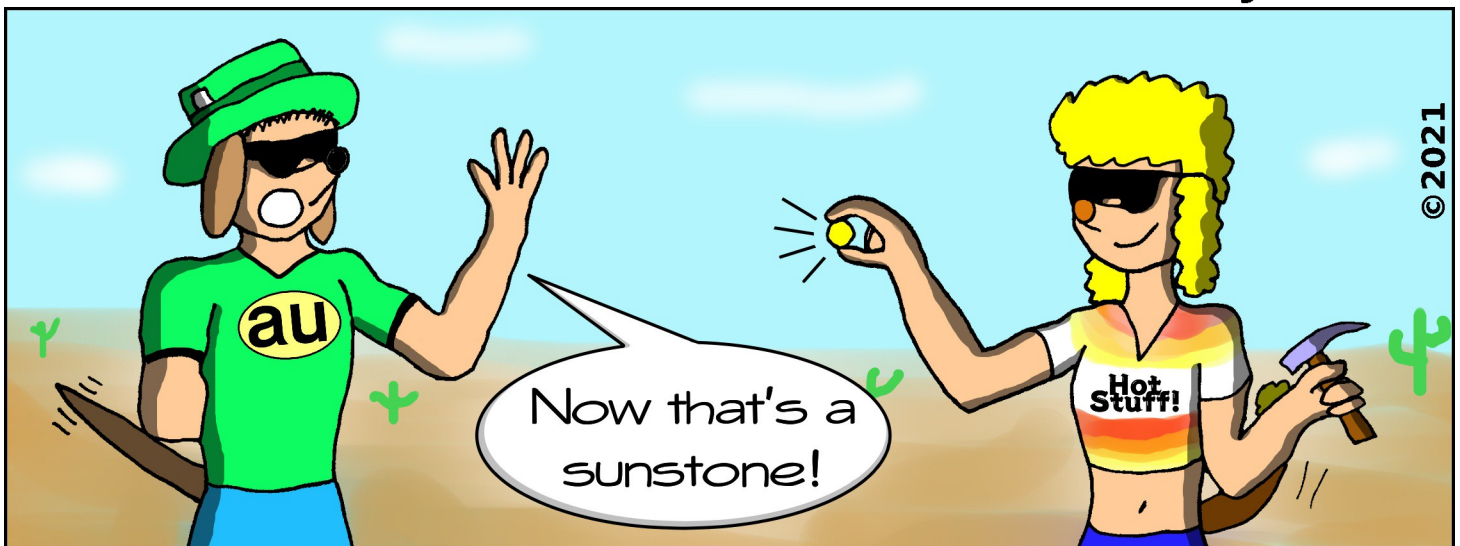
CMS Show Committee Meeting:.....Monday, July 5.....6:30 pm to 7:00 pm
 CMS Board Meeting:.....Monday, July 5.....7:00 pm to 8:00 pm
 CMS General Meeting:.....2nd Thursday, July 8.....7:00 pm to 9:00 pm

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 11
 More Show info can be found on Page 12

Son of Mr. & Mrs. Rockhound

by KAM



The Tumbler has received One-Time Rights to publish this cartoon

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 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 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.

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 details for 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

Note on Turquoise: A touch of ammonia will brighten the polish on turquoise. Apply it, dry it and then buff the stone lightly.

via Breccia, 2/21; from Gems

CMS Board Meeting Minutes June 7, 2021

by Kat Koch

Kat brought the meeting to order at 7 pm.

Not present: Charles Benedict, Roger Pullen

Charley: No financial report as Charley was on vacation.

Kat reported: There have been 4 new sign up for the texting service since our last meeting. We now have 69 family memberships. If we figure about 1 ½ people per membership that 104 active members. We have several families with kids sign up so it will be interesting how many young people we have. We have also had 7 new members per month since the last Board meeting.

I have checked out a few areas to have a show. I can't find anything that fits the bill. Besides I can't be the show chairman this year as she is going to be gone on vacation.

Board discussion: Should we have a potluck or a picnic where everyone brings their own. Or just hold our regular meeting at the American Legion Hall and have an auction. It was decided a picnic lunch and auction following. Charley needs to verify the date and time with Lake Wilderness Arboretum.

Kat signed up for a club courtesy booth at the Gem Faire from, November 6 thru 8. She asked for volunteers to help with manning the booth. We will need the spinning wheel and some polished rocks for the event. Will need additional volunteers.

Kat informed us she is getting on overload. I need someone to take over planning for a speaker or meeting content each month. I have a few ideas that might help out. Rich volunteered to do Bingo at our July meeting.

It was confirmed that we needed the projector, screen, show 'n tell supplies, and raffle supplies at the meeting. Everything was accounted for and who was bringing what.

No additional old or new items to discuss.

Meeting adjourned at 7:40 pm.

CMS General Meeting Minutes June 10, 2021

by Kat Koch

Minutes from CMS June general meeting. June 10th at 7 pm. Held at the American Legion Hall, Kent.

Kat called the meeting to order. She introduced board members then asked new members to stand and introduce themselves. Kat gave out Rock Bucks to the kids and explained how the kids can earn the bucks and what they are used for. Next month's meeting will be July 8th we will be playing Rock Bingo, every player will win a rock, the club will supply some of the rocks and each member that intends to play is to bring 3 rocks wrapped for prizes. August meeting will be the club picnic, it will be held on August 8th at Lake Wilderness Arboretum, setup 11am. Lunch at 12 noon., picnic tables will be set up, it is a bring your own food and drink, and after visiting there will be a auction.

Charlie gave a treasurer's report and had copies of a balance sheet if anyone was interested.

Diana gave Bob's report for the U.S. Department of Interior and Agriculture fiscal year 2022 allocations. The report has been sent to Keith and will be printed in the next bulletin.

Kat encouraged the members to give Bob a call and schedule shop time with him.

Roger Danneman gave a field trip report June 12 was a field trip to Little Natchez meeting at the Enumclaw ranger station at 8:00. The next two field trips will be July Greenwater and August Salmon Creek. Contact Roger for more details. His contact info is in the Tumbler. Roger brought in rocks from the last field trip and samples of what the rock we will collect at Little Natchez.

Kat reminded everyone about the new service we have to sign up for text reminders for meetings, once we have 30 signed up she will do a drawing for a door prize and also when we have 50 sign up.

Tonight's program was a video of the Volcano erupting in Iceland and a slide show of Picture Rocks.

We then had Show 'n Tell where everyone brought lapidary item they made, bought or were given during the last 16 months.

From the Top of the Rock Pile by Kat Koch, 2021 CMS President

Boy was it good to see everyone after 16 months of no in-person meetings! We had a good turnout. I estimate we had 30 people. 27 members signed in but I think there were about 3 additional people who didn't make it to the sign-in table. I would like to remind everyone to sign in at the front door. You get a door prize ticket for the drawing later in the meeting plus for insurance purposes, we need a headcount and the names of those who attended our meeting.

Our club hands out "Rock Bucks" to our young tumblers at every meeting. If they attend they get \$2 in Rock Bucks. If you also bring something and tell us about your item during Show 'n Tell you receive a total of \$5 in Rock Bucks for being at the meeting. Our young tumblers can use these Rock Bucks at all our club auctions. They can take part in the bidding process and if they win they can purchase the item(s) using these Rock Bucks.

We continue to have about 5 new members every month. I want to welcome each of you to our great rock club. I tried to get around and meet our new members at the last meeting. I apologize if I missed introducing myself to you. I will try to do so at our July meeting.

Don't forget to mark your calendar for our next meeting on Thursday, July 8th at 7 pm.

We will be playing "Rock Bingo." We always have fun playing bingo and everyone goes home a winner. Bingo details are in



Welcome
New Members

this Tumbler and on the website.

I would also like to point out our annual club picnic is being held on Sunday, August 8th at the Lake Wilderness Arboretum. Setup is at 11 am and lunch is at noon. We will have an auction following lunch. Check August's Tumbler or the website for more information on this event.

Time is Running Out - Lower Dues for 2021

2021 club membership dues are \$15 for a family or individual!

The Board has approved a temporary reduction in our dues for 2021 only to \$15 per family or individual.

As of October, our dues will go back up to \$25 per family or individual.

Our club now has in-person general meetings. Our general meetings are held on the 2nd Thursdays of each month at 7 pm. You can find the address on our website. www.cascademineralogicalsociety.org

From our website, you can use a credit card to renew your membership. You can also mail a check to CMS, c/o Charles Benedict, 25838 W. Lake Wilderness Dr. SE, Maple Valley WA 98038.

**Join/Renew
Today**

General Meeting, Thursday, July 8, 2021

Our next meeting is on June 10th at 7 pm at the American Legion Hall, Kent.

We will have a fun-filled evening of "Rock Bingo." Everyone is asked to bring 3 wrapped rocks (rough or polished), crystal, slab, fossil, or lapidary items for each person that intends on playing bingo. There will be a charge of \$1 per family and each person can play up to 3 cards. We always have a lot of fun and everyone goes home a winner.

There will be no Show 'n Tell at this meeting.

All kids attending will get \$3 in Rock Bucks.

If you are trying to find our meeting location for the first time, search American Legion Hall, S 252nd St Kent, WA 98030 (no building number) using Google GPS. Bing GPS doesn't list it correctly no matter how you enter the address.

For our in-person meetings, the club has obtained sanitizers to sanitize the tables, chairs, and hands.

**MARK YOUR
CALENDAR**

New for Members Only – New Texting Service

You can now sign up for club text reminders for our upcoming meetings and events.

We are all busy and often forget CMS has an upcoming meeting or event.

Go to our website and in the lower right corner and you can register for this service. If you are unable to go to our website you can send a text to the number (888) 731-1000 and in the body put the word rocks. Or scan the QR code with your smartphone, select "Send SMS," it will auto-insert the word rocks. Now hit send.

No matter how you register you should receive a confirmation back that you are registered. If you do not receive a confirmation then try registering again.

NOTE: If you have already registered you do not need to do anything further. The telephone number and QR code are just newly added features.

So be sure to take advantage of this service. The only stipulation is that you must be a club member. There will be a random drawing for a nice prize after 30 members have registered for the text messaging reminders. We are 60% to our first goal of 30 registered members. Our next goal will be 50 members. The drawing is for just the text service registrants. So hop to it and enroll in this reminder service. So register now and get in the drawing!

**Text
Reminder**



Congratulations Mark Hohn, CMS Webmaster! by Kat Koch

Mark Hohn, CMS Webmaster, has received an Honorable Mention in the 2021 AFMS Website Competition!

This is the 2nd time Mark has received an Honorable Mention for our club website from the AFMS Website Competition.

Mark is also our Membership Chairman.

Thank you for all your hard work throughout the years. You are a very valuable and appreciated club member.



Why did the rockhound bring milk jugs on a rock trip?

He just wanted a couple of quartz.

U.S. Department of Interior and Agriculture proposed The Great American Outdoors Act's Fiscal year 2022 allocations by Bob Pattie

These allocations of \$2.8 billion in projects, grants, and programs were authorized in the Great American Outdoors Act (GAOA) to support economies, outdoor recreation, and access to public lands. The GAOA updated and signed into law in 2020 and it mandates that \$900 million per year for Land and Water Conservation Fund (LWCF) and up to \$1.9 billion per year from 2021 to 2025 for the National Parks and Public Land Legacy Restoration Fund (LRF). This Act requires Congress to provide funding or an amount equal to 50% of all energy development revenues due and payable to the U.S. government from oil, gas, coal, or alternative or renewable energy development on federal land and water in the preceding fiscal year. The following departments will get a given portion of these funds: Bureau of Indian (BOI), Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS).

The National Parks and Public Land Legacy Restoration Fund (LRF) was established to address the maintenance backlog of the NPS, FWS, BLM, and the BOI

One of the examples of the type of project would be the rehabilitate of Hurricane Ride Day Lodge in the Olympic National Park. *"This project will rehabilitate the Hurricane Ridge Day Lodge (HRDL). The project will improve the electrical and plumbing systems, fire detection and notification systems, and the elevator to meet current code. The roof will be replaced and structurally improved, windows, doors, exterior wall covering and floor coverings will be replaced, and interior walls will be repainted. The restrooms, interior and exterior access routes, and parking will be improved to comply with the Architectural Barriers Act Accessibility Standards. Extensive concrete work and modification of the unisex restroom adjacent to the main level entry will be completed to provide two restrooms and rehabilitation of the three lower level restrooms. Component renewal of the heating and ventilation system and the underground fuel storage tank that serves the system will be completed."* The estimate price of this project would be \$7,079,000.

The Land and Water Conservation Fund (LWCF) was established to support the protection of Federal Public and Waters – including national parks, forest, wildlife refuges, and public lands recreation areas – and to provide recreation opportunities to all Americans. Many of these projects are for acquisition and/or access to land for recreation. *"The LWCF has a broad-based coalition of support and oversight, including the National Parks Conservation Association, Environment America, The Wilderness Society, the Land Trust Alliance, the Nature Conservancy, the National Wildlife Federation, and The Conservation Fund."*

These processes have been used for many years (since the 1960's) and have served the organizations well and my comment to more related to the LWCF and the acquiring more land while we haven't been able to provide the maintenance of what we have today.

The source of this information was from the following:

President Biden's Budget Invests \$2.8 Billion to Support Economies, Outdoor Recreation and Access to Public Lands *U.S. Department of the Interior sent this bulletin at 06/03/2021 03:27 PM EDT.*

U.S. Department of the Interior, Office of the Budget, Great American Outdoors Act (GAOA) [Great American Outdoors Act \(GAOA\)](#) | [U.S. Department of the Interior \(doi.gov\)](#)

Great American Outdoors Act

From Wikipedia, the free encyclopedia

Tumbling Apache Tears

Use several successive stages of fine grit grinding, then normal polishing technique. It is necessary to fine-grind at a slow speed, so as to grind smooth without creating more cracks by fast tumbling. A filler, such as cork granules or small leather chips may be added to carry the polish, but slow speed is vitally important.

via Breccia, 2/21; via San Fernando Valley Mineral and Gem Society, 1975; from Lapidary Journal

Colors From Around The World Series: Part 2 by Kat Koch

The Morning Glory Pool, Yellowstone National Park, Wyoming

Named in 1889, by the wife of the Assistant Park Superintendent, as it resembled the morning glory flower. The hot mineralized water is home to several different species of distinctly colored bacteria which give the pool its beautiful colors.

On a few rare occasions, the Morning Glory Pool has erupted as a geyser, usually following an earthquake or other nearby seismic activity. Several entryways have been clogged due to objects being thrown in by tourists, reducing the hot water supply, and in turn, altering the overall appearance of the pool. Several attempts by park officials to artificially induce eruptions to clear the pool of debris and clear blocked entryways have been met with mixed results.

An interpretive sign, placed near the pool by the park service, discusses the damage caused by ignorance and vandalism and suggests that Morning Glory is becoming a "Faded Glory."



The Zhangye Cliffs, The Zhangye National Geopark, Qilian Mountains, Gansu, China

These cliffs are often called the Rainbow Mountains.

They are cretaceous sandstones and siltstones that were deposited in China before the Himalayan Mountains were formed. The sand and silt was deposited with iron and trace minerals that provided it with the key ingredient to form the colors we see today.



What was once layered horizontally like a layer cake. Sandstones, siltstones, iron, and trace minerals were deposited in the area before the Himalayan Mountains were formed. The flat stratigraphy was disrupted by the tectonic Indian Plate colliding into the Eurasian Plate approximately 55 million years ago. The result was the land was tilted by the same later tectonic plate movement that was responsible for creating parts of the Himalayan Mountains. This process uplifted the land and exposed sedimentary rocks that were otherwise hidden well below the surface of the earth. Wind, rain, and time then sculpted extraordinary shapes, including towers, pillars, and ravines, with varying colors, patterns, and sizes. This caused the striking variation in colors seen across the Zhangye Cliffs (Rainbow Mountains). It covers an area of 124 sq miles.

It has been voted by Chinese media outlets as one of the most beautiful landforms in China. The site was also named a UNESCO World Heritage Site in 2009 and is the destination for many Chinese and international tourists.

Panjin Beach, Dawa County, Panjin, Liaoning, China

This very unusual beach is located in Dawa County, Panjin, Liaoning, China, and is famous for its landscape featuring the red plant of *Suaeda Salsa*. The *Suaeda Salsa* is one of the few species of plant that can live in highly alkaline soil. Its growth cycle starts in April when it is colored light red, while the color of the mature species is deep red. It is based in the biggest wetland and reed marsh in the world. The landscape is composed of shallow seas and tide-lands fed by the Shuangtaizi River.



Panjin Shuangtaizi River mouth is a state-level nature protection area that preserves the most complete ecosystem and the biggest wetland in the world. More than 260 kinds of birds and 399 kinds of wild animals live in it. It was promoted to the state-level nature protection area in 1988 and has applied to join the International person and biosphere protectorate network.

Spotted Lake, Similkameen Valley, British Columbia, Canada

Spotted Lake is a saline endorheic alkali lake located northwest of Osoyoos in the eastern Similkameen Valley, British Columbia, Canada, accessed via Highway 3. An endorheic basin is a drainage basin that normally retains water and allows no outflow to other external bodies of water, such as rivers or oceans, but drainage converges instead into lakes or swamps, permanent or seasonal.

When Spotted Lake is filled with water it isn't much to see. The saline lake looks a lot like others of its kind and is pretty like all lakes are. But the real beauty of the Spotted Lake comes after most of its water evaporates.

Typically this occurs in the summertime, leaving behind small, multi-shaped pools of mineral-rich water that give the lake its name. These pools, filled with highly concentrated magnesium sulfate and other minerals, can range in color from light greens to pale grays and everything in between. What sets the pools off, though, are the narrow land bridges between each one that is built by hardened minerals. These help to achieve the spotted effect, as they section off pools with varying levels of things like calcium, silver, titanium, and sodium sulfates. The color is based on the minerals contained within the individual pools.



Originally known to the First Nations of the Okanagan Valley as Kliluk, Spotted Lake has been revered for centuries as a sacred site thought to provide therapeutic waters. During World War 1, the minerals of Spotted Lake were used in manufacturing ammunition. Later, the area was privately owned for about 40 years. In 1979, they attempted to create interest in a spa at the lake. The First Nations responded with an effort to buy the lake, then in October 2001, struck

a deal by purchasing 54.4 acres of land for a total of \$720,000, and contributed about 20% of the cost. The Indian Affairs Department paid the remainder.

What Is The Deepest Hole Ever Dug On Earth? by Kat Koch

I remember as a child my older sister and her friends tried to dig a hole in our backyard to see if they could get to China. They were able to dig a hole large enough and quite deep for all her friends to fit in and continue to dig from inside it. It was halted and filled in by the parents as they were afraid the walls were going to cave in.

I smile and chuckle as this was the same group of friends that glued chicken feathers to their arms and jumped off the roof of the chicken coop to see if they could fly.

Needless to say, my sister and her friends never made it to China or found success in flying off the chicken coop roof.

Now as we get serious here, have you ever wondered what the deepest hole ever dug on Earth is?

We would all like to know what is inside the Earth. Digging a hole straight down would seem to be the most effective way to study the Earth's interior. Many holes have been dug for both research and commercial purposes. However, by digging, we have only scratched the surface of our Earth - literally.

The Earth is like an egg and we haven't even succeeded in boring through the shell. The Earth does have a shell, called the crust. The Earth's crust is broken into many smaller plates that slide very slowly over a more mobile or 'plastic' material called the asthenosphere.

There have been 3 serious attempts at digging a deep hole to find out what lies beneath our feet.

The deepest hole dug within the USA is the Bertha Rogers, an exploratory gas well in Washita County, Oklahoma. The drilling was started in October 1972 and it took a little over a year and a half to reach 31,440 feet in April 1974. During drilling, the well encountered enormous pressure – almost 25,000 psi. No commercial hydrocarbons were found before drilling hit a molten sulfur deposit. The well was plugged at 13,200 feet and became a natural gas producer. The Bertha Rogers hole ceased production of natural gas in July 1997 and has since been plugged and abandoned.



A well-known effort to pierce the Earth was Project Mohole which they began digging in 1961. It was an attempt to drill through the Earth's crust in the Pacific Ocean off the coast of Mexico where the crust is shallow. In 1966 funds ran out and the project closed. The goal was to reach a discontinuity between the upper mantle and the Earth's crust called the Mohorovicic discontinuity - commonly termed the "Moho." The project fell quite short of the Moho, reaching only 601ft below the seafloor in 12,000 feet of water. Where they were digging, the Moho is a depth of 16,000 ft deep, so the team fell about 4,000 feet short of their goal. However, valuable core samples were obtained and a lot was learned about deep sea-drilling.

The deepest hole by far is one on the Kola Peninsula in Russia near the Norway border, referred to as the "Kola Super Deep Borehole." It was drilled for research purposes beginning in May 1970. After five years, the Kola well had reached about 23,000 feet. Work continued until the project was abandoned in 1989 because the drill became stuck in rock at just over 40,200 feet or 7.6 miles deep. That is the current record for a depth reached by humans. The project cost over \$100 million, which is about \$2,500 per foot. That is expensive digging!



The project was officially terminated in 1995, due to the dissolution of the Soviet Union, and the site has since been abandoned. In 2008 the Russian InfoCentre announced that the borehole was to be destroyed. The site is still visited by curious sightseers, who have reported that the structure over the borehole has been destroyed or removed.

The scientific information learned from the Kola Super Deep Borehole was surprising.

It was a lot hotter at this depth than expected. They projected it would be about 212°F and instead it was 370°F.

There's a lot of water down there. Hot mineralized water was found almost everywhere along the drill path. Everyone figured that the granite would be as dry as a stone. Who says you can't get water from a rock?

The Earth has gas. Unexpectedly, helium, hydrogen, nitrogen, and even carbon dioxide (from microbes) were found all along the borehole.

There is no basalt under the continent's granite. This was a huge surprise. Seismic suggested that at 29,520 feet the granite would give way to basalt. It doesn't. The seismic anomaly that suggested basalt was caused by metamorphosed granite instead.



There was the detection of microscopic plankton fossils at approximately 21,980 feet below the surface. Usually, fossils can be found in limestone and silica deposits, but these "microfossils" were encased in organic compounds that remained surprisingly intact despite the extreme pressures and temperatures of the surrounding rock.

Given the present technology and if they could find the funds, geologists would like to try to go deeper for core samples, but digging such holes requires much patience, money, technology, and luck. The structure of the deep Earth is studied today by more indirect means. Perhaps the most effective method has been from studying earthquake or seismic waves as they move from one sensing station to another. These natural waves allow us to see inside the Earth as they react to various layers, much as x-rays or MRIs allow us to view inside the human body.

June Field Trip Report by Roger Danneman

On June 12th we went to the Little Naches area. We had a group of 16. It was a perfect weather day of mid-60s and partly cloudy skies. Such a beautiful scenic drive skirting Mt. Rainier and going over Chinook Pass. Earlier rainfall had softened the ground at our dig sites. We spent about 2 1/2 hours digging at the thunderegg site and about 2 hours at the lilypad jasper site. I pointed out the leaf fossil mud stone on the way so folks could hit that last if they chose to do so. I collected about a 1/2 bucket of thundereggs, many already broken in half, much of which will go into my tumbler. But when they're already broken, it makes it easier to choose the nicer blue chalcedony filled nodules and leave the pale ones behind. I also collected a 1/2 bucket of the lilypad. Everyone was finding some decent material and I'm glad that we went early in the season this year to avoid any fire closures and extreme heat. This area will probably continue to be a June trip for us.





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 (<https://mineralcouncil.wordpress.com>).

July 17

Cascade Mineralogical Society - Greenwater – agate, jasper, & common opal
 Roger Danneman roger.danneman@gmail.com; 425-228-8781 hm or 425-757-3506 cell

Next trip is scheduled for July 17th at Greenwater for agate, jasper, and common opal. Details will be sent to the CMS Field Trip distribution list the weekend before the trip. If you're not getting my e-mails, then you're not in my list. So contact me if you wish to be added. Roger.Danneman@gmail.com

Shop News by Diana Horsfall

We had 2 members, Dakota on Sunday and Becky on Tuesday, who came out to learn and use the shop this month. I would like to thank Roger Danneman for coming over and helping me when my dad had a health issue and was unable to go out to the shop.

Young Richard's Almanac by Dick Morgan

Never reject a person for superficial reasons, as the only way to know someone is to talk to them. Only by talking can you truly learn about them. Looks can change, but the inner person usually remains the same.

Shows

July 17 – 18: Friday – Wednesday 10 am – 5 pm
Darrington Rock & Gem Club, *Rock and Gem Show and Sale*
Field trip Saturday at 11 am for travertine & picture jasper
Mansford Grange
1265 Railroad Avenue
Darrington, WA, (behind IGA)

July 23 – 25: Friday & Saturday 9 am – 6 pm; Sunday 9 am – 5 pm
Washington Agate and Mineral Society, *Rock and Gem show during Tenino Oregon Trail Days*
Tenino City Park
On Park Avenue (next to the Quarry House and swimming pool)
Tenino WA 98589

Other Polishing Tips

Have you ever had trouble trying to figure out just where you were sanding or polishing on a cab or facet??? Try using a waterproof felt pen — coat the area — sand or polish a little and you'll know exactly where you are!

After polishing geodes on your flat lap, an easy way to remove the polish from those beautiful crystals is to just use your dental water pick.

When desiring a very high polish on your tumbled stones, use a quarter pound chunk of soluble rouge, the kind used by silver smiths, which comes in half-pound bars. Cut the bar in half and put it into the tumbler with the usual amount of water and your choice of regular polishing compound. It will greatly improve the luster

via Breccia, 2/21; via San Fernando Valley Mineral and Gem Society, 1975; from Rockhound's Rag

Squeezing the Most Slabs Out of Your Rock by John Cook & Ron Wise, Workshop Stewards, Ventura (CA) GMS

We often find great surprises inside a rock when we clamp it into the big workshop slab saw and slice away. But sometimes, we can get only a couple of slabs until the rock grows too small for the vice to grip, and we end up with a couple of fat "butt ends." You could just flat-lap them and be happy with two nice paperweights. Still ... they've got wonderful color and pattern, and you know for sure there are two, three, or more slabs that could be had in order to produce fantastic cabochons. What to do?

Go to a lumberyard and get yourself a 2X4. Cut off an end about as long as your rock. It's best not to go any smaller than 4 inches in length so that it's easy to handle and clamp into the saw. Use a quicksetting epoxy (like JB Weld's 5-minute epoxy) and glue the flat side of your butt end to the face of the 2X4 segment, allowing for some clearance on the bottom. Use just a small amount of glue, or you will have problems getting the rock off the wood after all is said and done.

It doesn't take long for quick-setting epoxy to bond, so you could glue the same day as you cut, but letting the glue set for at least 24 hours is best. This helps ensure a firm bond as the saw blade begins to cut into the rock and as oil spills over both wood and rock.

You now have a rock that can be securely set and clamped into the saw via the piece of 2X4. Start cutting and see how many slabs you can produce from your butt end. To remove the last slab from the wood after cutting, place the wood and slab in a bucket of hot water with Dawn detergent and let the wood absorb water overnight. The slab and wood should come apart easily. If it doesn't, try again with boiling water. Don't try to chip the slab off with a hammer and chisel, or you may fracture and split your slab.

To provide an example of how well this works, we had one fist-size Ventura Beach cobble of "catsup and mustard" jasper that produced just a single slab before the vice could no longer grip the cobble. After gluing the two butt ends to small pieces of 2X4, we ended up with no fewer than 10 slabs suitable for producing any number of cabochons!

via AFMS Newsletter, 6/21; from Rockhound Rambling, 11 & 12/20

Which Will Undercut?

Try the following procedure to get a better polish on materials that will generally "under-cut", such as sagenite, moss agate, plume, porous wood and wood with iron. First, completely cover the slice with water in a flat pan with some detergent, and shake of Comet, elevating the slice in the water on a small object, such as a jar ring. Start the rocks in lukewarm water and gradually bring to a slow boil. Boll for 10 minutes keeping the slice well covered with water at all times. Remove from heat and leave in pan until the water reaches room temperature. Fast changes in temperature may fracture the slice. Shape stone and work through the fine sanding stage, clean well and spray with a coat or two of clear plastic. Let it dry, fine sand again lightly, then polish. The plastic fills in the porous spots, enabling the surface to take a polish. This thin coat over the iron content in picture wood almost eliminates the shiny iron streaks in the wood.

via Breccia, 2/21; via San Fernando Valley Mineral and Gem Society, 1975; from The Agatizer