

The CMS Tumbler

December
2021

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

Christmas Party:
December 12, 2021
Set-up 11 a.m
Eating 12 Noon

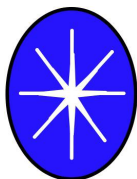
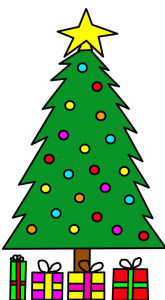
American Legion Hall
25406 97th PI S
Kent, WA

Bring a favorite dish to
share. The club will
provide turkey and ham.

We will be electing new
officers for the new year.
We will have an
auction of material.

Table of Contents

Calendar.....	3
Cartoon.....	3
Board Minutes.....	5
General Minutes.....	5
From the Top of the Rock Pile.....	5
NFMS Needs Help.....	6
Central Oregon.....	7
Bottomless Lakes State Park.....	10
Crystal Mountain.....	11
Opals.....	11
Field Trip Report.....	15
Young Richard's Almanac.....	15



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

Elijah Fu on December 2
Israel Sandoval Perez on December 6
Nan Li on December 8
Rose Loperman on December 10
Forrest Morris on December 12
John Cornell on December 14
Jennifer Jean Dillon on December 15
Ron Jacobson on December 15
Savina Barraza on December 16
Lauren Vitellaro on December 21
Shirley Wright on December 26
Connie O'Neill on December 27
Beverley Williams on December 29
Samina Barraza on December 30
Garry Hartzell on December 31

and also remember to wish a Happy Anniversary to

DaKota & Savannah Vincent on December 19
Mark & Penny Hohn on December 27
Peter & Beverley Williams on December 29 (39 years)
Philip & Becky Trepanier on December 30 (33 years)

Except where otherwise noted, material from The Tumbler may be reprinted for non-commercial purposes, provided that the author(s) and source are acknowledged.

For commercial use, the author(s) must be contacted for permission; if no contact information is given, contact them via the editor.

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.

CMS Club Address
25838 W LK 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

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@gmail.com
Director	Richard Russell	253-736-3693	richru1@yahoo.com
Past President			
Show Chairman	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Federation Representative	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Federation Representative	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Mineral Council	Diana Horsfall	206-818-9507	dianahorsfall@comcast.net
Mineral Council			

2021 Show Committee Chairs

Cascade Show	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Cascade Show	Co-Chair		
Cascade Show	Treasurer	Pete Williams	petewill02@gmail.com
Cascade Show	Silent Auction	Michael Blanton	mblanton41@hotmail.com
Cascade Show	Raffle Donations	Michael Blanton	mblanton41@hotmail.com
Cascade Show	Demonstrators	Richard Russell	richru1@yahoo.com

2021 Committee Chairs

Club Historian			
Donations	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Field Trip	Roger Danneman	425-228-8781	Roger.Danneman@gmail.com
Health & Welfare	Bev Williams	425-228-5063	britbev1957@outlook.com
Library			
Meeting Programs	Miriann Fu	253-236-5593	merriannf@gmail.com
Membership	Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org
Newsletter - Tumbler	Editor Keith Alan Morgan	253-316-9935	greenrockdraggin@yahoo.com
Open Shop	Instructors		
Public Relations	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Refreshment	Angie Bayer	253-631-3840	angiemc61@msn.net
Raffle/Display	Roger Pullen	206-387-3214	None
Shop Operations			
Show & Tell	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Social Media	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Webmaster	Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org

2022 CMS Dues are \$25 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.

December

Sun	Mon	Tue	Wed	Thur	Fri	Sat
Remember, we are having the Christmas Party instead of the General Meeting.			1	2	3	4
5	6	7	8	9	10	11
12 Christmas Party Set-up 11 am Eating 12 noon	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	
						

CMS Christmas Party:.....2nd Sunday, December 12.....11:00 am (set-up) 12:00 noon (eating)

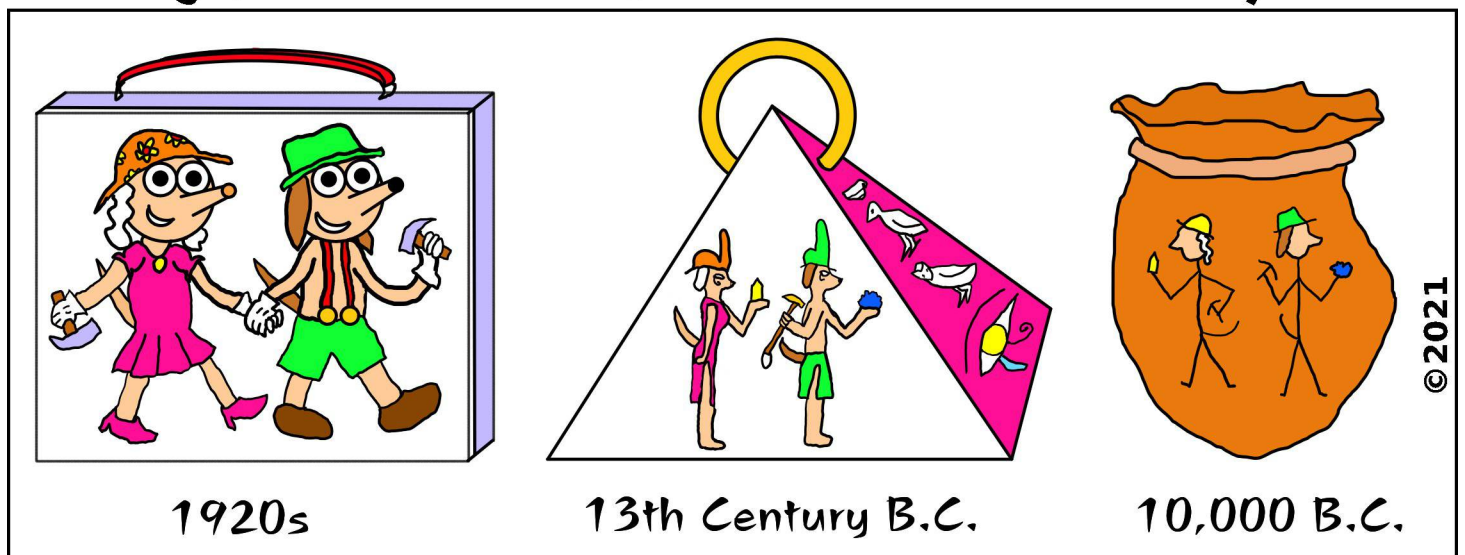
Lapidary Class Hours:.....By appointment, call to set a time & day for your lesson (425) 226-3154

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)

Dating Old Lunch Boxes

by KAM



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

The Heart Mountain Detachment is the largest subaerial (above sea level) landslide currently known. It occurred 49 million years ago near Yellowstone and moved 3,500 square kilometers of land, which is larger than the state of Rhode Island.

CMS Board Meeting Minutes November 8, 2021

by Pete Williams, 2021 Secretary

*Attendance:**President Kat Koch**Vice President Merriann Fu**Secretary Pete Williams**Treasurer Charles Benedict**Director Rich Russell**Director Roger Danneman**Federation Mike Blanton**Guests James Starke, Travis King, Linda Jorza*

Meeting called to order 7:11

Dr. Boggs from Marblemount will be the speaker at the November meeting. The Board agreed to provide a \$50 stipend to help cover his transportation cost.

There were 4 new members last month and 1 so far this month. Kat will extend the text services to all members unless they decide to opt out.

A discuss was held on the club's goal of having a permanent shop for all members to use. This will likely have to be a government building that is no longer in use that could be rented out. Kat's idea was to move \$4500 from the show account to a separate shop account. Another was to request donations on the club website. These were tabled for future discussions.

The Gem Faire is this weekend. There are 2 open spots left in need of volunteers. Kat will bring a bag of polished rocks from Jerry's Rock Shop. There will be free passes available at the general meeting.

Diana has been mailing the Tumbler for the last few months. James volunteered to take it over and print and mail the 15 copies.

The club's annual Christmas Party will be held on December 12. It will be held in our monthly meeting room with set up at 11:00 and dinner at noon. Election of officers will be held followed by an auction. The board voted unanimously to have a potluck. Rich will bring the turkey and Kat the ham.

The current plan is to hold our 2022 show at the Green River College gym. The college cannot confirm this yet as the gym has not yet reopened due to COVID. We should consider having a backup plan.

Meeting adjourned at 8:06

CMS General Meeting Minutes November 11, 2021

by Pete Williams, 2021 Secretary

Meeting called to order at 7:10. Minutes approved as written.

Kat announced the passing of Bob Pattie. Bob was a member of our club for over 50 years. He was also active for almost as long with the Mineral Council. He was a great resource of knowledge and will be greatly missed.

Jerry's Rock shop in Kent donated a bag of polished rocks that will be used at the spinning wheel at the club booth at the Gem Faire. Jerrys provides a 10% discount to club members for purchases at their shop. Black Jack's Metal Detectors in Renton also provides a 10% discount to club members.

The club continues to grow with 96 family memberships. The November field trip was cancelled due to weather. The club's annual Christmas dinner will be held on December 12 from 11:00-3:00. Set up will be at 11:00 followed by dinner at noon, election of officers, and an auction. Members can bring donations of material for the auction if interested.

Program: Dr. Boggs presentation on the Golden Horn Batholith in the North Cascades and the North Cascades Mineralogical Research Institute and Museum.

Meeting adjourned at 8:09 followed by show and tell and the raffle.

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

The Gem Faire in early November went very well. It was good to see some version of normalcy. I enjoyed all the people, visiting with the vendors, seeing the bright lights and sparkles. Our booth spinning wheel gave out a whole bucket + of polished rocks. It was more than I expected as this was an event that children don't usually attend.

I suppose it's because more families are attending as there are more and more rock and mineral vendors with each Gem Faire event.

Several vendors came to our booth and asked if we were having a Gem Show in 2022. I told them we sure are! We just haven't confirmed the location yet. It was very encouraging to see the vendors seeking us out and asking. I also was able to add two new prospective vendors to our list.

Once we have passed the holidays, it's going to be crunch time. It will be showtime! We can't put on a gem show with just the board volunteering. To produce the show, we will be looking for many volunteers. So please be prepared to help at some level.

I don't know if the new November members found out about us at the Gem Faire or not, but we have had five (5) new families join our club.

I want to welcome each of you to our rock club. Please feel free to come up and say hello at the holiday dinner.



Welcome
New Members

General Meeting - Annual Holiday Party - December 12th, Sunday by Kat Koch, President

The 2021 holidays are coming upon us very fast!

This year I am so happy to say the club is having our annual potluck dinner, the election of officers, and club auction.

Mark Your Calendars Now! Sunday, December 12th, the setup is at 11 am, and dinner is at noon. Our dinner will be at our regular meeting place, American Legion Hall, Kent.

The club supplies roasted turkey and baked ham.

Members provide a side dish

of their choice. Of course, you can always bring a store-bought dessert, drinks, dinner rolls and butter, cranberry sauce, or something from the grocery deli counter if you don't cook.

Just be sure to bring your own silverware and plate.

If, for some reason, you can't bring anything, please plan on joining us anyway.

We would rather see you than not see you. It's always enjoyable to sit and talk with each other and enjoy the season together.

It is also the club's opportunity to say thank you for being a member this past year.

Following dinner we have the election of officers and then the auction.

Our club auctions are where we auction off club stock and member donations. This is the place to pickup great bargains. Please feel free bring a donation to be auctioned off. All proceeds from our club auctions go to cover expenses and to keep our annual dues low.



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.

To register for this reminder service, send a text to **(888) 731-1000**. In the body of the text, type 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, try to register again.

So be sure to take advantage of this service. The only stipulation is that you must be a club member.

James was the winner of our first drawing. Our next goal will be 50; we presently have 33 registered for our final prize drawing.

This drawing is for just the text service registrants.

Okay members, we need only 17 more members to register for our next drawing. So hop to it and enroll in this reminder service. **Register now and get in the final drawing!**

This contest is coming to an end soon. If we don't reach our goal of 50 members, there will not be a drawing.

Text Reminder



Northwest Federation Needs Volunteers by Kat Koch

I volunteer for the Federation as bulletin aids chairman. It only takes about 2 weeks of my time around the beginning of the year.

A lot of the positions the Federation needs help with are easy and not time-consuming. If you want to be more active in the NFMS, you can choose a more significant time commitment position. Everything can be done from home on your computer and sometimes via Zoom.

So please consider helping where you can.

You can email me or text me if you are interested in filling a position, and I will pass it along.

The following email came from Judi Allison, NFMS Secretary.



Hi Folks,

As you know, the NFMS has a number of vacancies in its committees. Some of these positions take only a small amount of time, others more, but all are rewarding. Since no one knows everyone in the Federation, but each of you knows the members in your clubs, please help us by passing on names of those you think might be interested in a position.

These positions need folks to fill them, even though they do not take a significant amount of work:

- Endowment Fund Committee Chairperson and Secretary only meet 2-3 times a year via Zoom.
- The Rules and Awards committee is active during the annual meetings. Must attend NFMS shows.
- All American/Education encourages clubs to create a "Yearbook" of their club's activities which might win an



award.

- The Website Chairperson encourages those whose club has a website to enter the contest.

The following two positions require more time and work, but both of these are essential for keeping our Federation members informed:

- Historian
- Newsletter Editor

I am asking each of you to simply pass on the names of those in your clubs which are great volunteers. We will do the rest. Of course, everyone has the right to say no to any requests, but we can't ask folks if we don't know who they are. Again, please help. And thanks in advance.

Judi Allison, NFMS Secretary

Central Oregon by Dick Kleinknecht, Geology, University of Washington, Seattle, WA

Gary, Debbie, and I spent a few days in the Redmond (A), Prineville (B), John Day Fossil Beds (C), and Bend (D) area in Central Oregon. Ron intended to accompany us, but he got sick the day before we left and couldn't make it. The Worldmark Eagle Crest time-share we stayed at was a little west of Redmond, which sits at 3,000+ feet above sea level (Bend, at 3600+), so the region is appropriately known as the "high desert".



There weren't many sedimentary rocks to be seen, although several beds do exist in the area. These beds, however, were laid down around 2.6 mya or less, and were not involved in the early formation of the terrain. Virtually all we saw were tuff (compressed ash) and basalt in one form or another, a situation giving away the region's volcanic origins. Starting around 40 – 50 million years ago (mya), an extreme volcanic episode, lasting intermittently for millions of years, covered a good fraction of the area with very deep ash. The ash layer compressed the bottom portion, and further volcanic action produced a series of thick lava layers on top of the ash, which further compressed all the ash into a type of rock called tuff, which is a somewhat loosely packed and porous stone.

Lava cools fastest on the external surfaces of a flow and slowest internally or at the bottom. As internal lava slowly cools, it can form vertical fractures as it shrinks, creating columns of cooled lava, called "columnar" basalt. The relatively rapid cooling of the surface layer gives rise to a somewhat less solid, or less rigid, rock that weathers and erodes more easily, giving the appearance of broken rock, although it is still basalt lava. We saw in several places a thick volcanic tuff layer with a large lava flow atop it. The lava directly above the tuff was columnar basalt, while the rock above the columnar basalt appeared to be weathered and broken up rocks.

This simplified scheme occurred in a few places, although to differing degrees in different areas due to air movement patterns which carried the ash here or there. Some lava flows were atop earlier lava flows. Our first day began with a trip to the Redmond Chamber of Commerce for advice, and the next stop was the Peter Skene Ogden State Park, where the Crooked River Gorge intersects highway 97 nine



miles north of Redmond. The 300-foot-deep chasm was carved by the Crooked River and was an impassible barrier to early travelers. The left image (previous page) shows a railway bridge constructed in 1910. A bridge for highway traffic was built just upstream in 1926 and was replaced by a new bridge (right photo) in 2000. The old bridge was kept for foot traffic, and the State Park was created beside the old bridge. I took the two photos while standing in the middle of the old bridge.

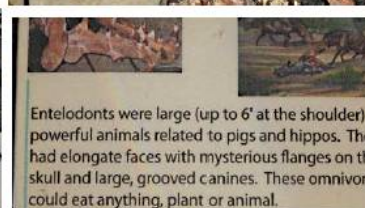
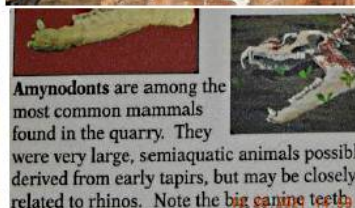
Our next stop was a short distance away to the Smith Rock State Park. These rocks are volcanic tuff and were deposited as ash around 29.5 mya. A very large caldera was formed when rock collapsed into a deep lava chamber. The collapse was accompanied by a huge volume of debris and ash, forming much of today's thick layer of tuff at the Park region. About a half million years ago flows of basalt covered the region, although much has eroded away since then. The Crooked River runs through the area, carrying away silt and sand that has fallen from the cliff face.

Yet-to-be eroded spires form an impressive sight along the river. The dark tower behind, or inside, the river bend is rhyolite, a fine-grained granite-like rock that was intruded up through a fissure into the tuff, and therefore is not a proper member of the Smith Rocks. The two images below show a continuation from the above to its right.



We then went to the Prineville Chamber of Commerce, and from there decided to set out on our last jaunt of the day going to the John Day Fossil Beds, about an hour and a half due east of Prineville. As it was late in the day, and it takes 2-3 days to see the fossil beds, we decided to go straight to the Visitor Center and look at the terrain as we drove.

The fossil beds don't contain dinosaur fossils, as all non-avian dinosaurs went extinct 66 mya. The Age of Dinosaurs lasted from about 245 – 66 mya, and their demise gave way to the Age of Mammals, the Age we live in now. The fossil beds were formed, like all else in this part of Central Oregon, 40+ mya (sub-features may have formed more recently) and sport a sizeable collection of mammal fossils, many species having no modern descendant we know of. Four exhibits are shown below.



No ID Tag

Paleontologists and their ilk have been studying fossils for nearly three centuries and by now have a pretty good handle on all mechanisms that can produce different kinds of fossils. Whatever fossilizes must be made of the right "stuff" - only hard body parts need apply. Soft-bodied animals do not fossilize and leave no trace of their body after death. Also,

the critter must die in an environment conducive to preservation. Fossilization on land is rare since land cadavers are usually eaten by scavengers and uneaten remains are destroyed by erosion. Burial under sediments must be somewhat rapid, so there is a very limited opportunity for a plant or animal to be fossilized – and then we must find them millions of years later! Our fossil collection is strongly biased in that it is not close to being representative of all species who have gone before us. For these, and many more, reasons, paleontologists have estimated about 1% of all species ever existing have left a fossil record. We do not and will never know about the remaining 99%.

Speaking of fossils, the Paisley Caves are in South Central Oregon, about 125 miles south of Bend. Dennis Jenkins, an Oregon State University archeologist found a coprolite (fancy word for “turd”) there, which was age-dated to 14,300 years ago and was claimed to be of human origin. It stands as one of the oldest objects made by humans found in the Americas.

As we were leaving the Visitor Center, Gary looked up and called my attention to the hills right beside us. The hills are made of tuff, but there is a dark “hat” on top of one peak. The hat is all that is left of a lava flow that completely covered the immediate region until nweathering and erosion ate into it, taking away almost all the basalt and a good bit of underlying tuff. You can see the vegetation (or lack thereof, if you are used to flora west of the Cascades) existing in the high desert: sagebrush, rabbit brush, and bunch grass for the most part.

The next day we went to Prineville, then headed south for a 45-mile drive along the Crooked River Highway, which followed the Crooked River through the valley it carved out, then went to Bend on a 35-mile drive across some very flat desert terrain.

Three pictures below are representative. The left-most shows an old, abandoned house amid the typical flora, including a few Juniper trees. The center shows the Crooked River inside its carved-out valley, and the right-most shows a prominent basalt “nose” jutting out from the canyon wall, again with a thin juniper forest.



The river is small and slow moving, although October shows it at its smallest and slowest of the year. The fact that such a small stream carved out such a wide, deep, and long (45 miles) canyon speaks to the power of deep time. A little bit each year times millions of years equals a lot.

The larger, right-hand image is shown to illustrate a Feature (columnar basalt) mentioned on the first page of this write-up. Slower, interior cooling of a basalt flow allows vertical fractures to occur, giving rise to a stand of columns, usually hexagonal in shape. Lava on the upper layer of the flow cools a bit faster as it is more exposed to the elements, causing a break-up due to weathering. Places marked with an “A” identify columnar basalt, while the crumbled rocks directly above the columns are the weathered surface rocks in that layer. There are several layers in the picture, each laying on top of a previous lava flow. The columnar feature of these rocks can be found in igneous rock other than basalt.

That night Debbie and I celebrated the conclusion of our sojourn by each consuming a monstrously huge slab of mud pie, while Gary sat in silent amazement.

PS - Here is a nice picture (next page) of Smith Rocks that didn't make it into the narrative portion.





Bottomless Lakes State Park, Roswell, New Mexico by Kat Koch

When we hear Roswell, New Mexico, most of us think of a crashed flying saucer and space aliens or Roswell's TV series.

Well, there is more much more to New Mexico besides Roswell. New Mexico is one of 20 states with a UNESCO World Heritage Site and only one of eight states with more than one. Excluding sites shared between states, New Mexico has the most World Heritage Sites in the country, with three exclusively within its territory.

This article is about New Mexico's first state park, Bottomless Lakes State Park, established in 1937. It is hidden in the desert about 15 miles southeast of Roswell. This park consists of nine cenotes (suh-noh-tees) along the eastern cliffs or escarpment of the Pecos River valley. (The cliffs are the remains of an ancient limestone reef, similar to the limestone mountains around Carlsbad Caverns, 80 miles to the south.) Caves formed within the limestone, and as the Pecos River eroded the escarpment, the caves eventually collapsed, leaving nine deep, almost circular lakes known as cenotes.

According to local legend, the name comes from when a group of vaqueros (cowboys) were exploring the Wild West and came across nine lakes in New Mexico. They were curious about the lakes and how deep they were. So they cut giant pieces of rope to measure the depth of the lakes. No luck. They then tied several more pieces together, and they still couldn't reach the bottom. They couldn't even see the bottom.

Locals told tales of missing objects in the lakes, only to wash up later in the Carlsbad Caverns or the Gulf of Mexico. Others warn of dangerous underwater currents that suck up swimmers and divers, never to be seen again. Some tell stories about a giant turtle monster who patrols the bottom of the lake.

They gave the place the quite forbidding name of Bottomless Lakes State Park, but this is not exactly true.

The park's nine lakes are not lakes or bottomless. Instead, they are cenotes filled with water and range in depth from 17 to 90 feet deep. Underwater plants cause the lake's unique blue-green color that makes the water bodies look endless.

Anybody can visit eight of the nine lakes, but only one, Lake Lea, allows swimming. Lake Lea comprises three cenotes 40, 60, and 90 feet deep with a total surface area of around 15 acres, making it perfect for scuba divers. At the lake's bottom, divers can view a large group of springs below the lakes' surface (daily flow 2,500,000 US gallons) or spot endangered fish species.

The lakes are filled with underwater springs and rainwater. They are emptied by evaporation and can become quite brackish by the end of the summer except for Lake Lea.

Pasture Lake is the shallowest at 17 feet. Devil's Inkwell is the smallest lake and has a very dark algae color. The ninth lake, Dimmitt Lake, is located on private property owned by Fin and Feather Club.

Do you know the difference between a sinkhole and a cenote?

At first glance, they may seem similar, but they are entirely different.

A sinkhole appears in soil, and a cenote appears in rock.

What is the difference between soil and rock?

Soil: UNCONSOLIDATED material. Most commonly made of a mixture of organic remains, clay, and rock particles.

Rock: CONSOLIDATED material. Most commonly made of crystals or grains of one or more minerals.

Needed to form a sinkhole:

- Deep soil.

- Abundant water from torrential rains, groundwater flow, or broken pipes in cities.

- A short time: It can be formed over months, days, or even hours.

Needed to form a cenote:

- A cave is formed through a process known as karstification. It is where sedimentary rocks, mainly limestone, go through a chemical and physical dissolution process over millions of years, which form the cave void.

- Underground water erodes the top of the cave. Underground water or rainwater then fills Cenotes.

- Very long time: The ceiling of a cave no longer supports its weight, and it collapses, forming a cenote. Although



the collapse event was rapid, its formation took hundreds of thousands of years.

Bibliography: Wikipedia, Merriam-Webster Dictionary, Atlas Obscura, Travel+ Leisure, New Mexico -Energy, Minerals and Natural Resources Department

Crystal Mountain, White Desert, Egypt by Kat Koch

The Crystal Mountain lies between the Bahariya and Farafra oases, in the very northern area of the White Desert, Egypt. The crystals were discovered when a road was being built between the two oases. Unfortunately, the discovery was done by accident and was partially destroyed by the road crews. Until then, only a very few local people were aware of the crystal beds.

The Crystal Mountain is located on the very edge of the White Desert. Arriving on the road from the south, the black iron and basalt pebbles (Black Desert) give way to the sand-blown chalk formations which loom on either side of the road.

It can be a surprise if you visit Crystal Mountain Egypt with the expectation of seeing a giant mountain rising out of the desert. On the contrary, this is a ridge that forms between Bahariya Oasis and Farafra Oasis in the western desert of Egypt. This ridge includes a unique structure. It is made entirely of quartz and calcite crystals that combine to create a striking area standing up out of the desert.

The reason for its name has to do with the Arabic term for formation. It is the same word that we translate into English as the mountain. So that means the actual name is Crystal Formation, although that is not its common name.

The area is what geologists call an exhumed cave. A cave complete with stalagmites and stalactites that have been thrust upwards by earth movement and with time has lost its roof to erosion and has almost weathered entirely away. The calcite and quartz crystals developed in paleo caves of Khoman chalk.



It is a subvolcanic vault, which emerged probably during the Oligocene age. The visible layers are the White Desert limestone of the Khoman Formation (Late Cretaceous age), a younger coal seam, and hydrothermal impregnated reddish to brownish ferruginous layers. The barite strata are sharply broken or brecciated with each other and folded.

The White Desert became a national park in 2002.

A side note. The Black Desert is located just to the south of the White Desert. The area was made a natural reserve in 2010 after a giant dinosaur skeleton was discovered on its border.

Bibliography: German Geologist Norbert Brügge, Geology In, Memphis Tours, Wikipedia, Egypt Tours, Our Egypt.



Opals by Kat Koch

Precious opals are multi-colored. These opals are tiny spheres of silica arranged in a regular pattern, with water between the spheres. The small spheres diffract white light, breaking it up into the colors of the spectrum. This process is called 'opalescence.' Larger spheres provide all colors, smaller ones only blues and greens. Predominantly red-colored opals are very rare as they only occur where larger silica spheres are deposited.

In common opal, the tiny spheres are randomly arranged.

White opals have delicate, pale colors on a lighter background. Black opals (rare and valuable) have a dark background and colors ranging from greens, blues, purples to brilliant red. Boulder opals are cut with their natural host

rock on the back.

4,000 BC:

Discoveries in Northern African show that common opals were used to make tools as early as 4000 BC.

250 BC:

Precious opals were rare and very valuable in antiquity. In Europe, as early as 250 BC, it was a gem prized by Roman royalty. At the time, the only known source was beyond the Roman frontier in Cervenica, Slovakia.

These Dubnik Opal Mines are still active. One of the most famous opals ever discovered was found in the Dubnik mine, named Trojan Fire. The jewel once adorned Napoleon's wife, Empress Josephine. The world's largest opal was also discovered in the Dubnik mine. The Harlequin opal was found in 1775 and contained 2,970 carats.

1849:

In 1849, the German geologist Johannes Menge made the first discovery of precious opals in Australia near Angaston, SA (South Australia). Several articles contradict this. Some reports say it was common opals he discovered.

The Queensland Boulder Opal and Lightning Ridge fields attracted miners in the 1880s.

Today the town of Coober Pedy, SA, is the primary source of precious opals. Coober Pedy is approximately 835 miles northwest of Angaston.

In July 1993, Australia designated the opal as their national gemstone of Australia.

1905:

In 1905 precious opals were first discovered in the Virgin Valley area located in northwestern Nevada. The opal field lies along an area approximately 5 miles wide and 10 miles long in outcroppings along the walls and slopes of Virgin Creek Valley. High-quality precious opal emitting a multihued rainbow of color is found replacing wood or other plant material in this remote location. The largest producing mines of Virgin Valley are the famous Rainbow Ridge, Royal Peacock, Bonanza, Opal Queen, and WRT Stonetree/Black Beautymines.

1994:

In 1994 Ethiopia reported that precious opals were discovered in the Menz Giske District, North Shewa Province. The opals found were mainly in the form of nodules, were of volcanic origin, and were found predominantly within weathered layers of rhyolite.

Nevada is outstanding and colorful black opal. The state contains some very vibrant precious opal beds and has produced some spectacular and very valuable specimens. The Virgin Valley opal beds in northwest Humboldt County are perhaps the most famous gemstone locality in Nevada.

The largest black opal (rough) is in the Smithsonian, known as the "Roebbling opal," which came out of the the Rainbow Ridge Mine in 1917 and weighed 2,585 carats (517.0 g; 18.24 oz). The largest polished black opal is in the Smithsonian Museum comes from the Royal Peacock opal mine (found in 1970), weighed 160 carats (32 g; 1.1 oz), known as the "Black Peacock."

Sad to say, with such rich deposits of precious opals, in 1987, sandstone was designated Nevada's state rock.

Bibliography: Wikipedia, Australian Government – Geoscience Australia/Education, Las Vegas Review-Journal, Geology In, Geo Facts – India, Atlas Obscura



Safety Matters - The Signs by Ellery Borow, AFMS Safety Chair

Signs? Safety means different things to different people. Safety can mean locking the doors, keeping a medical kit handy, or reading the instructions before using your new "rock destructo" tool. One of the issues with safety is reading the signs of a situation before it becomes a full-blown problem. If one sees a worn cord on one's lapidary equipment, a mushroom head developing on a chisel, a broken guard on a slab saw, or a tripping hazard at a gem show - those would be safety matter "signs".

Goggles hard to see through? Clean them or replace them. Mushroom head on a chisel? Grind off the damaged

part. Worn electrical cord? Replace it. Those are relatively easy issues to address. If one sees a potential problem and addresses it before it become an active problem, one has correctly read the signs. What about the signs of someone's medical problems while participating in the hobby? Would one recognize the signs of a medical problem?

What if there were a member's diabetic sugar level problem, a dehydration issue on a dig, a sun burn from a member's being too focused on hole digging, heat stroke, or heart attack at a club activity? It is not likely everyone in a club will want to be an expert in all matters of medical emergency but a smattering of knowledge and being aware of certain signs can be a good thing.

Here are some common medical safety matters--heart attack, dehydration, heat exhaustion, heat stroke, poisoning, concussion, shock. To give any complete and comprehensive descriptions of these conditions is beyond the scope of this column. However, some basic knowledge may be beneficial.

- Heart attack--For one reason or another heart cannot do its job. Symptoms: Time of essence, severe pain or discomfort in chest region, often radiating to arms/neck, sometimes denied / dismissed because can feel like indigestion, if not breathing initiate CPR, seek medical attention ASAP.

- Dehydration--Insufficient water consumption. Symptoms: thirsty. Drink water.

- Heat exhaustion—Symptoms: weakness, faintness, sometimes headache and nausea, skin pale, wet, and clammy from perspiring. Move to cooler but not chilly place, lay down, drink fluids if tolerated. Follow-up care suggested.

- Heat stroke--more serious than heat exhaustion. Symptoms: mental confusion, staggering walk, delirium, skin flushed, dry, and hot. Person may mention being hot. Move to cooler but not chilly place, lay down with head elevated, sponge body with cool water. Seek medical attention.

- Poisoning--Can be by inhalation, ingestion, absorption or injection (bites). Symptoms: many and varied. Observe the situation and seek medical assistance immediately. If by ingestion of known source follow directions on container and seek medical assistance immediately.

- Concussion--Injury to head. Symptoms: depends upon nature of injury, may have loss of consciousness, breathing or vision issues, inability to move certain body parts, headache, nausea, vomiting. Seek medical attention.

- Shock--A response to severe or sometime slight injuries including fright, severe burns, circulatory issues, blood loss, pain. Symptoms: altered consciousness; skin pale, moist, cool; rapid breathing and pulse; irritability or restlessness. Treat base cause then lay down feet elevated except with head injury, keep warm and airway clear, offer water. Seek medical attention.

Sometimes the signs are confusing or not easy to ascertain, but they are still worth noting. Rockhounding is a hobby where it is still best when all end their day safe, healthy and happy--a hobby where being part of the rock collecting family and knowing the signs is good thing.

The above is not meant to profess or prescribe current medical solutions. It is meant to convey the understanding that many medical emergencies have solutions that need quick action and club knowledge of solutions may be a part of a successful outcome. There is a huge number of emergency medical and survival guides. The American Red Cross (copyright) had a substantial number of up-to-date health and safety publications. Please encourage your club's safety committee to stay current with health and safety practices. Please consider encouraging an interest in safety being practiced by every club member. Your safety matters.

from the AFMS Newsletter, 11/21

Pat Morgan News by Keith Alan Morgan

People have asked about my mom and it's been a bit of a roller coaster, so here it is. January 1, 2020 she broke her hip. She was in the hospital for a while, then she was sent to a rehabilitation facility in Puyallup to relearn how to walk. Unfortunately she was in this facility when the lockdown occurred so we weren't able to visit her. After months of this she got moved to another facility, even farther away and not as easy to get to. We got to see her on Mother's Day 2021. She seemed fine, but still not back to walking yet. I've included a photo I took of her and my dad then.

Then the state had the heat wave at the end of June/early July and the day before their anniversary my dad got a call that she was in the hospital for both a stroke and a heat stroke. We all got to visit her because of "compassionate care", i.e. they didn't think she'd make it. Fortunately she defied their expectations and survived. She wasn't talking much because they had given her a strong pain killer and she was going in and out of sleep, but she seemed to react to our voices. After they revised their assessment of her condition they moved her to another room (so other serious patients could use the first room, if needed) a nurse came in and told us she'd tested positive for covid, so all but one of us had to leave. Later on it was determined that she did not have a stroke, but also it wasn't heat stroke she had had so they classified it as sun stroke. I'm not sure what the difference is between heat stroke and sun stroke, but yeah, that was quite the emotional roller coaster.

Later it was discovered that the facility she was staying at wasn't even trying to teach her how to walk again. Apparently she now has someone to help her walk again and my dad has seen her a few times and he thought she was doing well.



Young Tumblers News

Ing Is The Thing by Keith Alan Morgan

Rockhound words ending in "ing". Parts in parentheses not part of the search. (Yes, I know there is no E in Trading, but using TRAD just looked weird.) Look up, down, forward, backward, and diagonal.

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

Brag(ging)
Buy(ing)
Cab(bing)
Carry(ing)
Collect(ing)
Cut(ting)
Dig(ging)

Display(ing)
Facet(ing)
Find(ing)
Gift(ing)
Grind(ing)
Hunt(ing)
Paint(ing)

Pick(ing)
Polish(ing)
Rockhound(ing)
Sell(ing)
Show(ing)
Trade(ing)
Wire Wrap(ping)

Copper was first used in coins and ornaments starting around 8000 B.C.

from USGS Twitter, 11/23/21

The largest landslide in recorded history was the landslide that happened when Mt. St. Helens erupted in 1980.

Field Trip Report by Roger Danneman

We were lucky and got a day in between the Pineapple Express storms for our last scheduled field trip of the year. No ice or snow on the pass, so that was also a relief. 16 people and 1 sweet dog joined me for the 2 mile hike into First Creek on Nov. 13th. Welcome to several new members who joined the very week of the trip. Temperatures were in the low to mid 40s and no rain, so it was comfortable for hiking and digging. Some very nice finds were made. A lot of excitement with each one. I'll let the pictures speak to those. Afterwards I stopped at Thorp for some apples and then Cle Elum for gas and then 10 miles down the road I hit hard rain. Very thankful that it waited.

Probably the next chance to make nice finds will be at the Christmas party on Sunday Dec. 12th. Check the Web site and/or the Tumbler for details, but as of this writing, the Board voted to have the traditional pot luck and auction. So game on.

Typically my scheduled field trips begin in March with Baker Lake and Swift Creek. Sometime in January I'll have the schedule on the Web site. Cheers and happy holidays everyone.

To summarize for 2021, we had 9 field trips and only the March and April trips had less than ideal weather. So I'm grateful for that. We also didn't have to change any of our sites due to fire danger or road closures, even though 2 of our sites were closed much of the summer. So the planning worked well and I anticipate the same rotation for 2022. The only difference I expect, will be in August, because of our scheduled Rock and Gem show, that I won't be scheduling a trip for August. I continue to look for new sites, but I won't put a new site on the schedule unless it's been prospected and proven first, is big enough for a group to spread out, is accessible, and has plentiful material. So that being said, I wish all of us to have a prosperous and healthy 2022.



Young Richard's Almanac by Dick Morgan

Your actual personality is tempered with your sense of humor and any sarcastic intents you tend to interject, but in time it is rendered with the truth you learned from your actual life and the friendships you formed. Your lifemate may help you along the way.

Member News by Keith Alan Morgan

Mark Hohn, our membership chair and webmaster, has caught covid. Last I heard he was having trouble breathing, but hopefully he will get better.

Kat wanted me to remind people that the club dues are good until December 31, 2022.

Hope everyone is doing well and hope to see you at the Christmas Party!

Earth Bound by Michele Smith

I see a lot of beautiful things when I walk along a trail,
Once my eyes landed on a piece of perfect shale,

I picked it up and checked it out to see how it cleaves,
There! Perfect natural planes, beneath the dirt and leaves

Then what do I do with this heavy found rock I want?
Why I add it to my pack load and continue on my jaunt.

I gazed at an amethyst geode, seven or eight feet tall,
Purple crystals nestling with clear quartz, and that's not all.

Some rocks are rough dull agate, then tumbled round and round,
Shaped into gorgeous cabochons and worn as homage to the ground.

I pick up wave shaped sandstone along the ocean beach,
Embedded shell fossils, nature drilled holes, hear nature teach,

And next to my front door, I have a meteorite specimen,
Heavy in my hand and heart, becomes my own space medicine.

If I used this as a weapon, while practicing self-control,
Would I have to be licensed for meteorite control?

We rock-hounds have rock gardens, mounding at our feet,
You can rearrange them and they love both cold and heat.

But as I add rock borders I see through my children's eyes,
They worry about how to dump these rocks when their mother dies,

And now that I think of it, someday I know I will be dead,
And an honest eulogy will proclaim that I had rocks in my head.
from Breccia, 9/21

Merry Christmas and Happy Holidays!

