

The CMS Tumbler

August
2021

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

Club Picnic:
August 8, 2021
12:00 noon - Set-up
12:30 p.m - Eating

Lake Wilderness Arboretum
Lake Wilderness Park
22520 SE 248th
Maple Valley, WA

The Picnic takes the place of the
August General Meeting.

Bring a favorite meal for pot luck.

Bring plates, utensils, and cups.

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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

Jennifer Gust on August 8

Travis King on August 11

Terri Cornell on August 13

John Wright on August 14

Erica Petty on August 16

Megan Petty on August 16

Cortney Donovan on August 18

Michael Stevenson on August 22

Luke Balcom on August 25

Paul Stewart on August 27

and also remember

to wish a

Happy Anniversary to

Jonathan & Tami Fraser on August 8

Isaac & Merriann Fu on August 9

Scott & Lauri Miles on August 12

Robert Merriman & Nan Li on August 25 (11 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
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	Meriann 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
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
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2021 Show Committee Chairs

Cascade Show	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Cascade Show	Co-Chair		
Cascade Show	Treasurer Pete Williams	425-228-5063	petewill02@gmail.com
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
Field Trip	Roger Danneman	425-228-8781	roger.danneman@gmail.com
Health & Welfare	Bev Williams	425-228-5063	britbev1957@outlook.com
Library	Bob Pattie	425-226-3154	bobpattie@comcast.net
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Refreshment	Angie Bayer	253-631-3840	angiemc61@msn.net
Raffle/Display	Roger Pullen	206-387-3214	None
Shop Operations	Bob Pattie	425-226-3154	bobpattie@comcast.net
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

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.

Sun	Mon	Tue	Wed	Thur	Fri	Sat
1	2	3	4	5	6	7
8 Club Picnic	9	10	11	12	13 Puyallup Show	14 Puyallup Show
15 Puyallup Show	16	17	18	19	20	21 Salmon Creek Trip
22	23	24	25	26	27 SWMS Show	28 SWMS Show
29	30	31	The picnic takes the place of the regular meeting!			

CMS Board Meeting:.....Canceled

CMS Picnic:.....2nd Sunday, August 8..... 12:00 Noon set-up, 12:30 pm 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

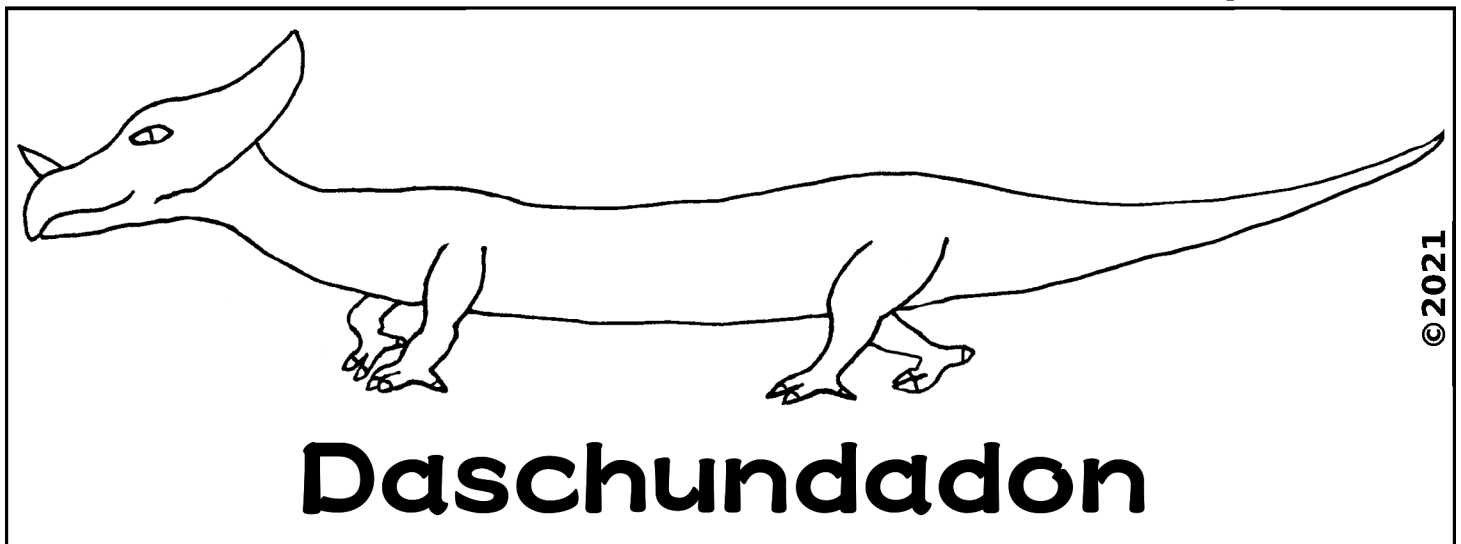
Lapidary Shop Hours:.....3rd Saturday..... by appointment only (call a few days ahead to set time)

More Field Trip info can be found on Page 15

More Show info can be found on Page 16

Undiscovered Dinosaurs

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

To polish soft stones that undercut, mix a small amount of tin oxide and cerium oxide in the palm of your hand, rub briskly and gently. It takes longer, but it is worth it.

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

CMS Board Meeting Minutes July 5, 2021

by Pete Williams, 2021 Secretary

*Attendance:**President Kat Koch**Treasurer Charles Benedict**Secretary Pete Williams**Past President Bob Pattie**Director Rich Russell**Director Roger Danneman**Federation Mike Blanton**Guest Diana Horsfall*

Meeting called to order 7:14

The Treasurer reported the club is doing well with several new members and renewals last month. There are now 75 family memberships or about 115 members.

A discussion was had on what the club should provide, if anything, at the upcoming August picnic. This will likely be store bought deserts and/or beverages. A poll will be taken at the general meeting.

Kat signed up our club to participate with a booth at Maple Valley Days on October 9-10 and the Gem Fair in Puyallup on November 12-14. We will need club members to help run the booths. Let Kat know if you can help.

A speaker has been arranged for the November general meeting. Ideas for other months programs are needed. Please send to Kat.

Meeting adjourned at 7:48.

CMS General Meeting Minutes July 8, 2021

by Pete Williams, 2021 Secretary

Meeting called to order at 7:14

Our club's annual picnic will be on August 8 at the Lake Wilderness arboretum. Attendees will bring their own picnic lunch. The club will provide beverages and store-bought desserts.

Ideas for meeting topics for September and October are needed. Please provide any ideas for a speaker or videos to Kat or the other officers. The November meeting will have a speaker from the PNW Mineral Research Institute.

The next field trip will be July 17 to Greenwater. The club will have a booth at the Maple Valley Days on October 9-10 and at the Gem Fair on November 12-14. We need members to help out for a few hours at each event.

The program consisted of rock bingo. It was a fun night with everyone winning a few rock treasures.

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

About 30 people were playing Rock Bingo at our July meeting. It was so much fun! Everyone went home a winner. I want to thank Rich for putting everything together for the meeting. Thank you to our Bingo callers, Rich and Merriann. I must also say thank you to our members for donating such great prizes.

August Meeting: Our annual picnic and auction. Details elsewhere in this Tumbler news bulletin.

We have a club booth at the Maple Valley Days, Lake Wilderness Park. October 9th and 10th. I need volunteers to cover this event. Saturday hours are 9:45 am to 6:15 pm. Sunday hours are 9:45 am and 5:30 pm.

We also have a club booth at the Gem Faire, Puyallup Fairgrounds. November 12th through 14th. I need volunteers to cover this event. Friday hours are noon to 6:15 pm, Saturday hours are 9:45 am to 6:15 pm, Sunday 9:45 am and 4:30 pm.

At both events, the club will have our spinning wheel there and two display cases. The kids get to spin the wheel for free and receive a polished rock. These are fun events as the kids are always so happy with big smiles when they receive a polished rock to keep. The people that stop by the booth talk to them about our great club, its activities, answer questions and hand out membership information. Volunteers are needed for so email or call me if you would like to cover either event. My contact information is in our monthly Tumbler news bulletin. You can also contact me through the contact page on our website. I will email you the schedule for both events. You can fill in which event and when you would like to volunteer.

We continue to have about 5 new members every month. I want to welcome each of you to our great rock club. I apologize if I missed introducing myself to you. Please feel free to come up and say hello.



Welcome
New Members

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 calendar year only to \$15 per family or individual.

As of October, our dues will go back up to \$25 per family or individual. Our membership is on a calendar basis. If new members join anytime from October thru December, your membership will be good through December 2022. All renewals are at \$25 per family for the 2022 calendar year.

Our club now has in-person general meetings. Our regular membership meeting is on the 2nd Thursday of each month at 7 pm. The only exceptions are the months of August and December.



You can find the meeting 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.

Annual Picnic & Auction, Sunday, August 8, 2021

Mark your calendars now for our annual picnic and auction at the Lake Wilderness Arboretum, Maple Valley. It is on Sunday, August 8th with setup at noon. Enjoy a picnic lunch together at 12:30 pm.

You bring your picnic lunch and the club provides drinks and a limited selection of store-bought desserts.

If you attend church and are a little late - that's okay too.

Bring a picnic lunch for your family and the club will provide a selection of drinks and a few store-bought desserts.

The Arboretum supplies picnic tables. Following lunch, we will hold a club auction. The auction is a great opportunity to pick up some good bargains. Be sure to check our website for additional details and information.

All kids attending will get \$3 in Rock Bucks. The kids can spend their "Rock Bucks" (that they have accumulated during the year) on auction items they would like to buy.

Guests are always welcome. After our picnic and auction, Lake Wilderness beach and playground is a short drive from where we hold our picnic. Bring the family and enjoy and the entire day at Lake Wilderness.

Lake Wilderness Arboretum address and pictures of Lake Wilderness Park are on our website.



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 the number (888) 731-1000. In the body of the text 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, try to register again.

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. Our first goal is 30 registered members and we are 80% to this goal. Our next goal will be 50 members with another prize drawing. The drawing is for just the text service registrants. So hop to it and enroll in this reminder service. Register now and get in the drawing!



Our Club Needs Your Help

Our rock club is your rock club. The success of our club is built on our volunteers as we are a 100% volunteer organization.

A few volunteers can't do all the work as our club is steadily growing. Our club is fast becoming a large club. If you can't commit to one of the positions below, please consider volunteering whenever there is a call for help to cover a specific event.

Presently we need help in the following areas:

Upcoming Special Events

We have a club booth at the Maple Valley Days, Lake Wilderness Park. October 9th and 10th. I need volunteers to

cover this event. A few time slots are covered, but I need several more people.

Saturday hours are 9:45 am to 6:15 pm. Sunday hours are 9:45 am and 5:30 pm.

We also have a club booth at the Gem Faire, Puyallup Fairgrounds. A few time slots are covered, but I still need a lot more people for this event.

November 12th through 14th. I need volunteers to cover this event. Friday hours are noon to 6:15 pm, Saturday hours are 9:45 am to 6:15 pm, Sunday 9:45 am and 4:30 pm.

Call me at 425-765-5408 or email me at talkingkat2 at yahoo dot com. I will let you know the times I need to cover.

We need a gem Show Chairman!

The Board wants to hold our Gem and Mineral Show in 2022. Depending on where we can find a venue, we would like to have the show in August, September, or the first half of October 2022.

The club has all the notes from the previous three years. They show all the detail to put together a show. We also have all the supplies from the prior years. Several members have already committed to being committee heads.

All we need is a Show Chairman. You do not need any experience in producing an event like this. All you need is good supervisory skills to oversee and to make sure all the bases are covered. Please seriously think of volunteering to lead our way to our 2022 Gem and Mineral Show.

Volunteer to be on our Board of Directors

Our entire Board, except for one position, is up for reelection this December. The term is for 2-years, 2022 and 2023. Nominations will be held in November 2021 and the election at our Holiday dinner in December 2021.

President

Vice President – Right-hand to President. You will help cover all the bases and conduct the meetings if the President is unable to.

Treasurer – Keeps track of our income and expenses. Pays club bills and makes meeting venue reservations. Knowledge of simple bookkeeping helpful.

Secretary – Records our Board and general meetings. Submits a report each month to the Tumbler editor.

Gem and Mineral Show Chairman (presently vacant) - Oversee the production of the show.

Director 1 – Field Trip Guide

Director 2 – Helps where needed

Director 4 (New Director 1 year fill-in position) – Program Director

Volunteer positions that are voting members:

2 Federation Representatives - Reports on NFMS news and attends NFMS regional shows to votes on behalf of our club at the NFMS meetings.

WA Mineral Council Representative - Attends WA Council meetings and reports back to the club.

In December 2022, the following positions will be up for election for 2-year term:

Director 3 – Helps where needed

Director 4 – Program Director

Please seriously consider volunteering for a board position. There will be a few vacant positions this election. The Board is always looking for new ideas and input for our club. The Board meets once a month via Zoom on the Monday before the club meeting at 7 pm. In the future, the Board may resume in-person meetings at Wendy's in Kent.

If you are interested in a Board position, please let Pete or Kat know.



Colors From Around The World Series: Part 3 by Kat Koch

Ah-Shi-Sle-Pah Wilderness Study Area, Bloomfield, New Mexico

A little-known region of fantastically eroded rocks. Located in the high desert of northwest New Mexico it is generally flat sandy, and uninhabited land drained by shallow washes that eventually meet the San Juan River. Some of the lands are part of the Navajo Indian Reservation, and other areas are used for oil and gas drilling, but most of the area is

empty.

The Ah-Shi-Sle-Pah Wilderness Study Area is located on 6,563 acres of public Bureau of Land Management land. It's a hidden wonder of weathered rock formations, often referred to as hoodoos (pale, mushroom-shaped rock formations), tent rocks, fairy chimneys, earth pyramids, or mushrooms. These rock formations loom above the rocky terrain.

Geologically, the area is comprised of layers of sandstone, shale, mudstone, and bituminous coal that were deposited 75 million years ago during the late Cretaceous era. A whopping 75,000 millennia of wind, water, and ice weathering, and eroding the layers are responsible for the surreal and alienesque landscape. This unusual landscape feels like a martian planet with its muted colors and striking geology.

Because of its geologic age and climate, the area is rich in animal and plant fossils. The remains of prehistoric crocodiles, turtles, fish, and dinosaurs are sprinkled throughout the land. You'll also see petrified wood, including numerous upright tree stumps with roots.

While it's somewhat challenging to get there, visitors are rewarded with a tranquil, dreamlike, environment that is easy to navigate. A network of dirt roads crisscross the desert, many in good condition except after recent rainfall when some become impassable. Although the formations extend for six miles along the Ah-Shi-Sle-Pah Wash, the most accessible and picturesque formations are within one to two miles of the parking area. They can be seen within half a day of easy walking along the generally flat terrain.

Pamukkale, River Menderes Valley, Turkey

Pamukkale (Cotton Castle) has been drawing visitors to its thermal springs since the time of Classical Antiquity (8th century BC and the 6th century AD). The ancient Greco-Roman city of Hierapolis (Holy City) was built on top of the travertine formation. The formation is in total about 8,860 ft long, 1,970 ft wide, and 525 ft high. It can be seen from the hills on the opposite side of the valley in the town of Denizli, 12.5 miles away.

Pamukkale's terraces are made of travertine, a sedimentary rock deposited by mineral water from the hot springs. The surface of the shimmering, snow-white limestone, has been shaped over millennia by calcite-rich springs. Dripping slowly down the mountainside, mineral-rich waters collect in and cascade down the mineral terraces, into pools below. Legend has it that the formations are solidified cotton (the area's principal crop) that giants left out to dry.

There are 17 hot springs in the area with temperatures ranging from 95°F to 212°F. The water that emerges from the spring is transported 1,050 ft to the head of the travertine terraces and deposits calcium carbonate on a section of the formation 200 to 230 ft long and 79 ft to 98 ft wide. When the water, supersaturated with calcium carbonate, reaches the surface, carbon dioxide de-gasses it and deposits calcium carbonate. The water deposits the calcium carbonate as a soft gel which eventually crystallizes into travertine.

The underground volcanic activity which causes the hot springs also forced carbon dioxide into a cave, which was called Plutonium, which here means "place of the god Pluto". This cave was used for religious purposes by priests who found ways to appear immune to the suffocating gas.

Hierapolis-Pamukkale is recognized as a World Heritage Site in 1988. It is a tourist attraction with controlled access due to its status and natural beauty.

Rainbow Eucalyptus

Eucalyptus deglupta is so colorful that it's known as the Rainbow Eucalyptus. When this incredible tree sheds its bark, it almost looks like a colored pencil being sharpened. This makes for an unforgettable spectacle.

The rainbow eucalyptus is a tall tree that is unique in that it's the only eucalyptus to live in the rainforest and only one of four species found outside of Australia. It is the only eucalyptus tree to grow in the rainforest. Rainbow Eucalyptus is also the only eucalyptus tree indigenous to the northern hemisphere. Its found mainly in the Philippines, New Guinea, and Indonesia, where it can soar up to 250 feet in the air. While its height is impressive, it's the tree's multicolor bark that makes it stand out.

As the Rainbow Eucalyptus sheds, it first reveals a bright green inner bark. Over time, this ages into different colors—blue, purple, orange,



and maroon. The colorful striations are created because the tree doesn't shed all at once. Slowly, over time, different layers fall off, while other exposed areas have already begun aging.

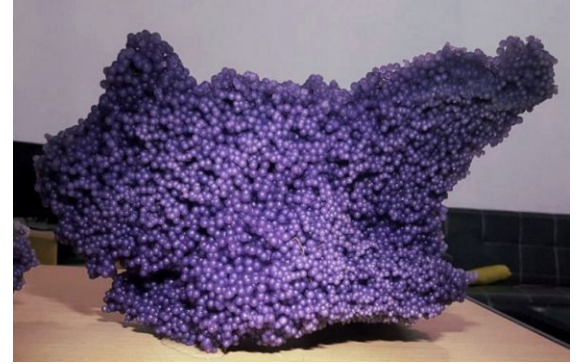
Grape Agate, Indonesia

Grape Agate is the common name for Botryoidal Purple Chalcedony, tiny spherical crystals. The name reflects their purple color and how they occur in clusters that resemble bunches of grapes.

Grape Agate is chalcedony and Amethyst is quartz so the two minerals are not related.

These crystals are found exclusively in Indonesia, more specifically in the Mamuju area of the western Sulawesi coast. Colors can range from deep purple to pale or white hues. It's even possible to find green examples.

Bibliography: Wikipedia, Americansouthwest.net, Memphis Tours, YouTube, One Earth.Org, My Modern Met, Geology.com, Geology In



The Legend of Bootlegger Ed Gardner by Kat Koch

The French Canadian fur traders were among the first white men to come to the Pend d'Oreille area, northeastern corner of Washington state. They called the area and local Indians the "Pend d'Oreille," meaning dangling earrings. Historians believe the Pend d'Oreille and Kalispel tribes wore shell earrings obtained in a trade with the coastal Indians. The beautiful Pend Oreille River runs through a trench valley between the Selkirk Mountains. It flows for 130 miles out of Lake Pend Oreille, Idaho. At the Idaho and Washington border, it turns north into Canada and joins the Columbia River.

In the late 1890s, Ed Gardner was a bootlegger with several stills in northern Pend Oreille (pronounced Pond-a-RAY) County. Mr. Gardner was a short, stocky man who had a reputation for being a sharpshooter and "the best bootlegger."

According to legend around 1899, at the age of about 30, Ed was out riding looking for a place to store his stills and supplies. As he was riding, the ground gave way under the weight of him and his horse. Ed had inadvertently stumbled into a sinkhole that exposed a magnificent limestone cave. He stored his moonshine in the cave for several years as it had a constant temperature of 39°F. Mr. Gardner lost his deed to the cave and adjacent lands in a poker game with William Crawford. Mr. W. H. Crawford was a Metaline Falls merchant.

At the age of 69, around January 3, 1937, Ed Gardner shot himself in the head. He had said he would choose his own time to die. He was sick with ulcers and, when he could not stand the pain anymore, he did choose his time to die.

The story of the cave doesn't end here.

This legend on how Crawford obtained the cave and surrounding land in a poker game is not correct. According to a history written by the great-granddaughter of Ed Gardner, the Gardner Cave never belonged to Ed Gardner. William H. "Billy" Crawford obtained the cave and surrounding land through a federal land grant on July 14, 1921. Mr. Crawford, a bachelor and prominent businessman, operated a general mercantile store in Metaline. Later he opened stores in Newport and Metaline Falls. After logging the white pine and cedar, on October 21, 1921, for a token fee of one dollar, he deeded 20 acres, which included the cave, to the State of Washington to establish a park. The land was accepted by the state on November 10, 1921, creating Crawford State Park (the only state park in Pend Oreille County). He also gave an additional 120 acres to be used for the future expansion of the park.

Around 500 million years ago, much of North America was covered by the ocean. Sea creatures died, their shells settled to the bottom, forming a limestone ooze that eventually turned into a rock called Metaline Limestone. The Metaline Limestone is about 1 mile thick. As mountains were forming between 70 to 100 million years ago, this rock was folded and faults formed. The acid that was formed when rainwater absorbed the carbon dioxide eventually created the cave passage. You can find stalactites, stalagmites, soda straws, and columns. Rimstone pools and flowstone were created by calcite deposits as water flows over walls and other surfaces.

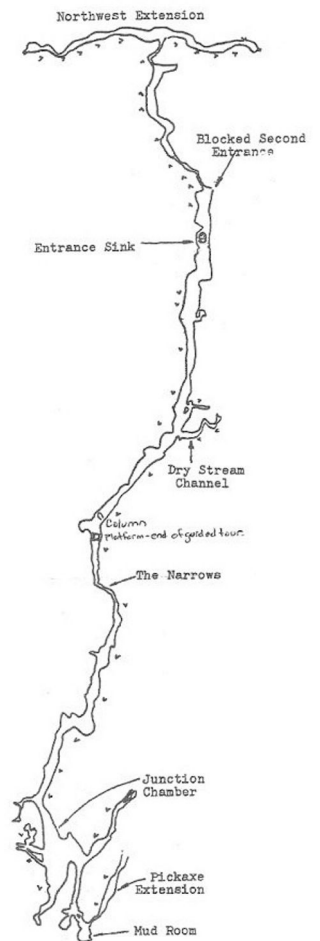
In the earlier years, the cave was vandalized, graffitied, and camped in. As you go through the cave you can still see remnants of this previous activity.

By most accounts, Gardner Cave is the largest limestone cave in the state of Washington. The cave starts at about 90 feet below the surface, is 2,072 ft long with a slope of 295 feet.

If you are in the Metaline Falls area (2 hours north of Spokane) collecting trilobites, Gardner Cave is only 13 miles further north.

Summer Park Hours: Park is open from May through September from 9 am to 6 pm. Closed Tuesdays and Wednesdays.

Winter: Park closed October through April.



Summer Cave Tours: Cave is open from May 15th through September. Cave Tours scheduled at 10 am, Noon, 2 pm, and 4 pm, except Tuesdays and Wednesdays.

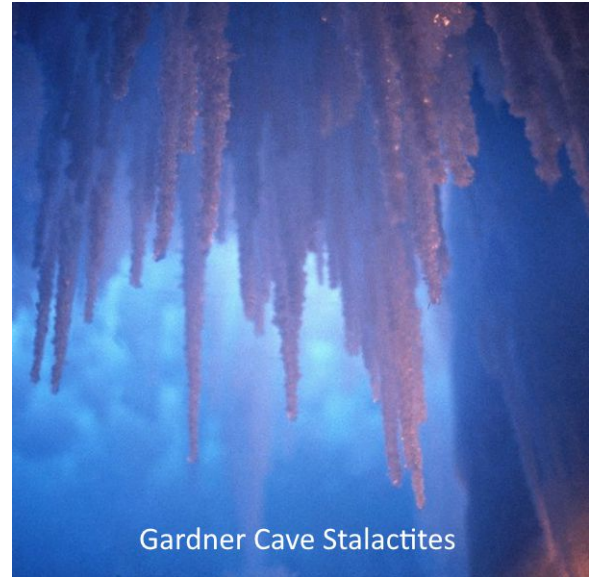
Bibliography: Washington Trails Association, Nostalgia Magazine, Wikipedia, Wikimedia Commons (photos), Washington State Parks, Cozy Cabins & RV, Washington Rocks! (book).



7.8 Ton Column - Gardner Cave



Gardner Cave



Gardner Cave Stalactites

Young Richard's Almanac by Dick Morgan

The first teacher for any child is their parents, as they watch and learn, so remember that you are their first example on how they should be.

Editor's Note by Keith Alan Morgan

Apologies to Mike Blanton whom I left off front page birthday and anniversaries list last issue. He completed another orbit of the sun on July 2.

Carving Is Not Just For Gems

Since prehistoric times, man, Paleo and Neolithic, has hammered out tools of stone to cut wood, to kill animals and to work skins. The idea probably came from desperate throwing of stones to down something good to eat. But early man was observant, of necessity, and recognized that stones were broken naturally into sizes and shapes that answered his needs. The first lapidary, breaking stones himself, to the sizes and shapes he wanted, set the stage for everyone who works stone. He made sharper ax heads, lighter arrowheads and sturdier scrapers, but he recognized the beauty of the stone as well as its utility. If a tribe's medicine man wanted fetishes, the lapidary became a stone carver. Then his wife, tired of braiding or tying pretty stones into necklace forms, probably asked for a hole drilled into a pretty rock or two she had picked up while digging shellfish, he became a bead maker. Some of the pretty river stones, already naturally sculpted and polished, were easily carved into amulets and seals. The Stone Age people learned to differentiate stones and developed techniques for working them. Stone adornments excavated at Shar-i-Sokhta in eastern Iran are dated back to 2,800 BC. Soft stones included alabaster, limestone, and lapis lazuli, while hard stones were carnelian and rock crystal. That stones tumbled in a gravelly stream were prettier, and thus the value of polishing with a harder stone may have been noted. The cabochon was probably the first formally recognized man made shape, a simple cabochon being a rounded convex top with a flattened back. The shape is suitable for agate, jade, cat's eye stone and moonstones, harder to work but beautiful when finished. A double cabochon has a rounded back, lower in height than the front; it is commonly used for star stones because it may increase the distinctness of the star and the extra carat weight is a definite plus to the Ceylon native cutters who cut most of the world's star stones since a pale stone may have its color deepened by doubling. A hollow cabochon is where the back of the stone is concave, it is used where the color is too dark as with many garnets. The hollow allows more light to show through. The lentil cut is a rather shallow double cabochon with the top and back of even height, used for many years for small moonstones. The lapidary has moved from just stone carving into carving gems.

via Golden Spike News, 1/21; via Golden Spike News, 2/08; from PGGGS Petrograph 2/05

To achieve a good pre-polish, try this little trick. When you come to the 600 grit paper, apply pumice to the paper, then proceed as usual. This enables you to attain the ultimate high shine on the final polish.

via Breccia, 2/21; from Alaska Pebble Patter

Word Safety by Ellery Borow, AFMS Safety Chair

What does one do when they hear someone shout, "No, Stop!" Doesn't everyone stop, look around and assess the situation? So, what might one do when they hear someone shout, "Crumbles!" if a quarry rock face suddenly crumbles? Words can have safety meanings. Crumbles just does not have it.

What about words such as "Person overboard!", "Fire!", "Flood!", "Help!", "Run!", "Watch Out!"... Shout "Hamburger!" and see what happens besides people showing up with plates and appetites. Some might shout back "Where?" or "It's about time!"

Perhaps there is a class on word safety. I don't know of one. Though words used during duress or emergency has potential for a class.

The ideal situation would be that there never be a need for words needed in an emergency-- would that people not wander near working faces or well beyond the drop zone of falling material; people stayed off dangerous/loose rock slopes; people did not collect under overhangs; people heeded warning labels of chemistries for rock cleaning solutions; people minded safety protocols for torch handling. Safety is many things--a situation, a knowledge, a balance of activity gone wrong, a rule, a reaction. Knowing the right word usually comes naturally.

Professionals use words, well trained words. Professionals practice strategy, practice dangerous situations, prepare for emergencies and the right words to say. The average person does not. The average person rarely has the opportunity to rehearse in real life situations, and rarely has the means to practice responding to the unexpected.

A well-placed scream is effective in the movies. It certainly alerts the people in the area that something is amiss. In real life, it does much the same and still remains rather unspecific. It could be uttered in non-emergency situations as well. At least it draws attention. And that, in and of itself, might work.

There are many other words of safety. They reside in lecture language, warning label laments, tag talk, instruction manuals, pit protocols, quarry questions, fine print points, prescriptions pronouncements, flag fancies, tape barrier signs. etc. Would be that those words preceded and prevented the need for shouted expletives and warnings. It is up to us to use the words wisely, know the use and misuse of words and how they can help us be safe. Would that words not be uttered as in emergency because the emergency never occurred. But if an emergency should occur, that you have on hand the right words to bring about as safe a solution as possible.

One of the things that can be practiced is word safety. All the best words to you and yours. Be safe, please. Your safety matters.

from AFMS Newsletter, 4/21

A Clue In Predicting Tsunamis by Rose Alene McArthur

According to BBC News, an important characteristic of large tsunamis is a wedge shaped build up of debris over the fault site on the ocean floor. As subduction plates slowly move, a wedge of rock and mud can collect on the ocean floor.

Dan McKenzie and James Jackson explain in *Earth and Planetary Science Letters* that an "accretionary prism" formation "will be violently pushed upward and outward, turning the energy of the plate into the energy of the ejected rock" when a swift slip occurs along the fault.

This is likened to the situation of having something wedge shaped on the floor and jumping on it. It shoots the wedge sideways!

In studying the large tsunamis of the last twenty years they found the above noted similar characteristics, but earthquake itself was not necessarily large enough every time that it caused alarm before the tsunami.

If this turns out to be a consistent feature, studying the ocean floor for these debris wedges might make it much easier to predict tsunamis in the future.

via West Seattle Petroglyphs, 6-7/21; from Boulder Buster, 9/12

How to Get That Super Glossy Polish On Jade by Lloyd Parma

I have made a discovery that I want to share with you. I have tried it on 15 different pieces of jade including Polar Jade from Canada and from Alaska, and the results were the same every time, a shine so smooth and reflective that you'd swear that it did not look real. It even worked with Burma Jadeite (6.5—7 Mohs hardness scale). So, if it works with jadeite, it may solve many of your other polishing needs as it did mine.

If you want that ultra glassy polished surface that will make you the envy of all gem and mineral societies, pre-polish your jade with a 3-micron diamond disk, with water. For polishing, on a leather lap, use Linde A polish (a 0.3 micron alumina powder that is a 99.98% pure aluminum oxide with a 0 Mohs hardness). Get one of your old master laps or put an 8, 180, 94 360 diamond lap upside down on the machine with the leather pad on top of that. Wet down the leather just a little and put some Linde A on it. You do not need a high speed for this. You will have a mirror finish in just 30 seconds.

You can buy one ounce of Linde A from Arrowhead Lapidary and Supply, 1-866-929-8575 or 1-866-929-8575 (ask for Lou) for \$8.00 + s/h. It is a little pricey compared to tin oxide (4 oz. for \$4.74), but it will give you that same polish on labradorite, which has the same hardness as nephrite (6 -6 1/2 Mohs).

I would venture to say that once you use Linde A, you will say that you have been on top of the mountain and have seen the light. You may never again return to those other oxides. I cannot attest to other versions of Linde A sold by other companies, but the one I purchased from Arrowhead was the one that gave me success.

via Breccia, 7/21; from SRGMS Mineralog 04/09

Young Tumblers News

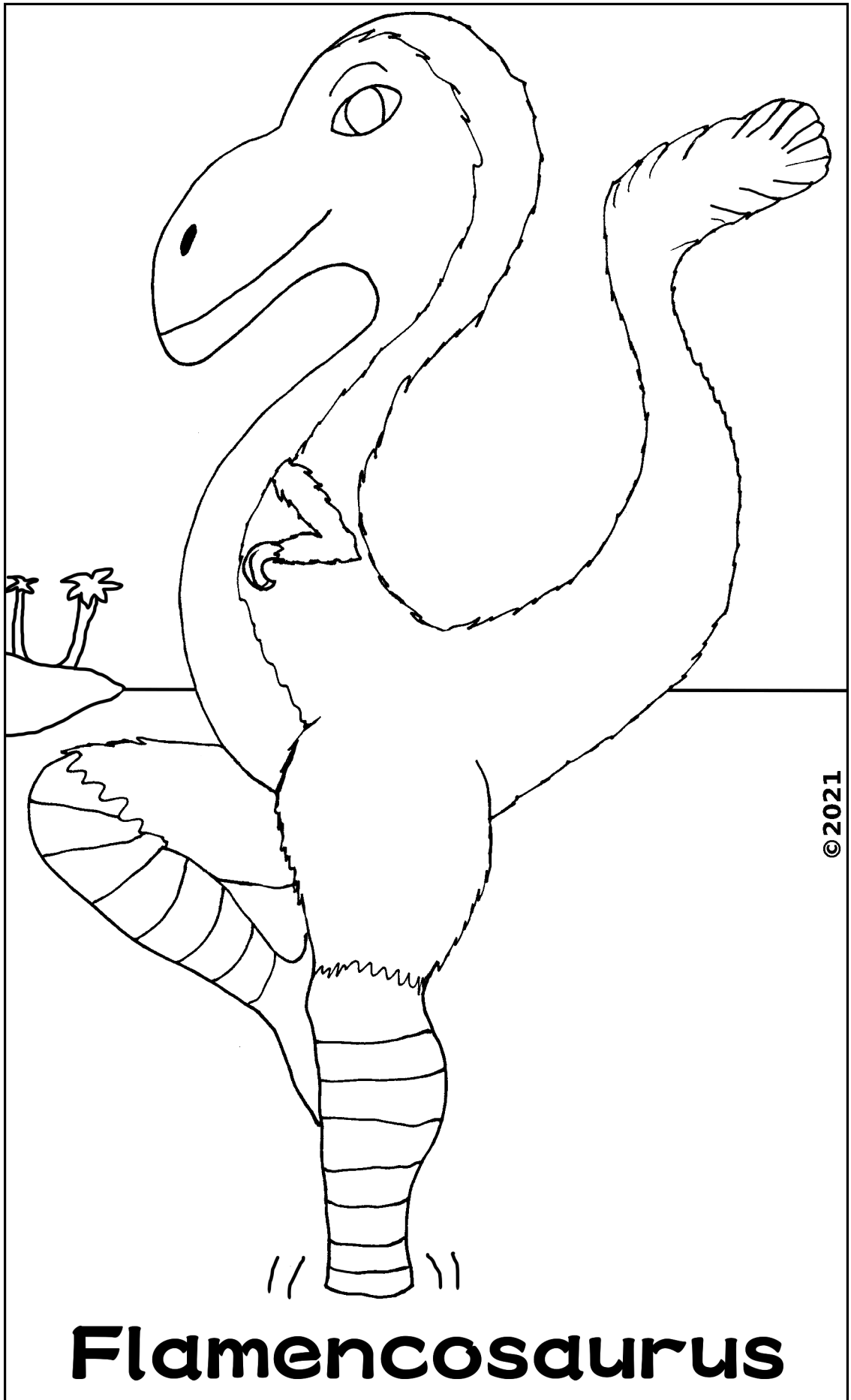
Color The Cartoon by Keith Alan Morgan

Hey, kids, color the cartoon, bring it to the next meeting and get 1 rock buck. Have fun!

When I was a kid, it was believed that we would never know the colors of dinosaurs, but some scientists studying what gives beetles their colors, realized that some of these color elements could survive the fossilization process. So by putting some fossil skin or feather samples under a microscope they can sometimes tell what colors a dinosaur might be, some coloring elements don't survive so these color estimates are not necessarily perfect, but it's a lot more accurate than just guessing.

While the accuracy is a good thing, it can sometimes be a bit disappointing. Artists used to color archeopteryx brightly, with blues, reds and yellows, like a parrot, but now we know it was black, like a crow or raven. Ah, well.

Ichnites is the scientific word for fossil footprints. Since they are usually found separately from the creature that made the footprint(s), they are given their own scientific name to identify them.



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Flamencosaururus

Edible Rock Recipes

Igneous Rocks

- 1 can evaporated milk (6 oz.)
- 1-1/2 cups sugar
- 1/4 teaspoon salt
- 1/2 cup chopped nuts
- 1-1/4 cups tiny marshmallows
- 1-1/2 cups chocolate chips
- 1 teaspoon vanilla

1. Grease and 8x8 or 9x9 inch pan.
2. Combine evaporated milk with sugar and salt in a saucepan. Bring to a boil. Reduce heat and simmer, stirring for 5-9 minutes.
3. Remove from heat. Add remaining ingredients and stir gently.
4. Pour into prepared pan. Let cool. (Refrigerate)
5. 1 pan (8x8) makes 30 1-inch squares.

Metamorphic Rocks

- 1/2 cup shortening or margarine
- 1 cup brown sugar
- 1/2 teaspoon vanilla
- 1/2 cup chopped nuts
- 1/2 cup well-drained crushed pineapple
- 1 egg, beaten
- 1 cup whole-wheat flour
- 1 cup flour
- 1 teaspoon soda
- 1 teaspoon salt

1. Cream the shortening and the sugar.
 2. Add the beaten egg and vanilla.
 3. Add the dry ingredients and mix.
 4. Stir in the fruit and the nuts.
 5. Drop by teaspoonful onto cookie sheet.
 6. Bake for 7 minutes at 375* degrees.
- Note: Chocolate chips; coconut, wheat germ, etc. can also be added.

Sedimentary Rocks

Bottom:

- 1-1/4 cups crushed cereal
- 1-1/4 tablespoons sugar
- 1/2 cup margarine

1. Melt the margarine.
2. Mix with the cereal and the sugar.
3. Press into and 8x8 or 9x9 pan.

Top:

- 1 cup chocolate or butterscotch chips
- 1-1/4 cups coconut
- 1 cup chopped nuts
- 1 can sweetened condensed milk (14oz.)

1. Sprinkle the chips over cereal layer.
2. Sprinkle the coconut over chips.
3. Sprinkle the nuts over coconut
4. Pour condensed milk over the layers.
5. Bake for 25 minutes at 325* degrees.

via Golden Spike News, 5/21; via the May 2010 GSGM Newsletter; via the Dec/Jan 2010 Rock-it, 12/09-1/10; from The Calgary Lapidary Journal

American Federation of Mineralogical Societies (AFMS) Contest Winners 2021

The AFMS has 7 regions within the USA.
 Our club belongs to the Northwest Federation of Mineralogical Societies (NFMS).
 This year our club won in several categories at the NFMS contest level.
 The winners from the 7 regions then submitted to the AFMS for the national contest.
 So the contest at this level is national.

We did very well at the national level!!!!



2nd Place Small Bulletin – *The CMS Tumbler* – Keith Morgan - Cascade Mineralogical Society, Kent, WA
3rd Place Adult Articles – *New Evidence When Humans Came to North America* – Katherine Koch
Honorable Mention Adult Articles on Rockhounding – *Recent Government Activities* – Bob Pattie
Honorable Mention Special Adult Article – *Silverton Colorado – A Silver Mining Town and My Family History* – Katherine Koch
2nd Place Drawn or Special Features – *Cabbing Shapes and Stuff Puzzle* – Keith Morgan
3rd Place Drawn or Special Features - *This Rock Is Amazing Cartoon* - Keith Morgan
Honorable Mention Website – *Cascade Mineralogical Society, Kent, WA* - Mark Hohn

Thank you to everyone for helping to make our club so great!!

Opal by D. W. Webb Varnum

There are three types of Opal—precious opal (e.g. black, boulder), common opal (opaque, splintery), and fire opal (red, orange, yellow), all composed of $\text{SiO}_2 \cdot n\text{H}_2\text{O}$. It has a white streak and a conchoidal or sometimes a splintery fracture, a Mohs hardness of 5.5-6.5 and a specific gravity of 1.9-2.3. It is brittle and transparent to translucent with a vitreous, waxy, greasy, or dull luster. Precious Opal is best known for its variety of color which can flash red, yellow, orange, green, blue in a white, black, or brown background. It is most often found in altering volcanic tuffs, basalt and deep water sediments formed at low temperature and pressure. The gem variety has considerable value as a semi-precious gemstone. Opal is found in several places in Australia, Brazil, Peru, Mexico, and the US. Fire opal has been found in Oregon and Louisiana, in addition to Mexico, and black opal occurs in Nevada. There are several mines in northern Nevada where collectors can dig for a fee, and opal has also been found in the Tonopah region.

Opal is the birthstone for October, and if we are lucky enough to have an opal, there are steps to take to safeguard it. If our opal is a solid stone, it will not be damaged by water, but it can be fragile, so avoid activities where it might be knocked. Opal for jewelry is frequently used as a doublet or triplet, and those stones can be damaged by prolonged exposure to water. Clean an opal with a soft cloth and mild detergent. If your opal becomes dull, take it to a professional for polishing. To store your opal, protect it from contact with other jewelry by keeping it in a cloth bag. If it is to be stored for a length of time, "place our opal in cotton wool with a few drops of water, then into a sealed plastic bag just to be safe. The water is not intended to soak into the stone (as opal is impervious) but will prevent water coming out of the stone if it is exposed to very low humidity environments."

Sources, Mindat, Gemdat, Opals Down Under, and personal knowledge

via The Quarry, 10/20; from The Conglomerate October, 2020

Basanite is a low-silica igneous rock (NOT to be confused with bassanite, a calcium sulfate mineral). It appears early in the alkaline magma series and basanites are found wherever alkaline magma is erupted. Together with basalts, they are produced by hotspot volcanism.

from Rocky Trails, 3-4/21

Arenophiles is the fancy way of saying "sand collector."

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>).

August 15-16 *PVGM* - Greenwater (Sat BBQ) - Enumclaw Ranger St. 9am - Agate, Jasper, Opal & Wood – Bring digging & light hard rock tools
Dennis Bachchelor (360) 870-8741

August 21 *Cascade Mineralogical Society* - Field Trip to **Salmon Creek** for carnelian agate/jasper
Roger Danneman roger.danneman@gmail.com; 425-228-8781 hm or 425-757-3506 cell.

July Field Trip Report by Roger Danneman

On July 17th we went up to the Greenwater area for black agate, jasper, and common opal. There were 25 people in 13 vehicles. We had good weather - overcast and about 60-65 degrees. The black agate site is on an unmarked spur road off of 7222 and goes deep into the woods 1 1/2 miles having a couple of Y intersections. So we unfortunately had a couple of vehicles that got separated and lost the group. I'm going to have to be more proactive in implementing and explaining a signaling method using light flashing up the "wagon train" so that this doesn't happen again. I'll also bring a pair of cobra radios to use between the lead car and the caboose. We did manage to recollect the "lost souls" further up the hill on the way to the 2nd site.

Anyway, the black agate site was very productive. Everyone found some nice material. Some of my haul is colorful, which I haven't had a chance to cut and polish yet, but looks like a combination of agate and jasper with black, gold, and red. Quite a bit of opal was dug by the group as well. I'm planning on going here again in Sept. for the folks that didn't make it this trip.

The 2nd site was up near the top of FR70 by Government Meadows. The spur road has been gated as of this year and now requires a 1/2 mile walk to the dig sites. We had about 6 or 7 vehicles that continued up. I collected a little bit of the red opal, some of the grey, and found a few pieces of petrified wood and everyone got their fill of opal.

On August 21st I plan to take a group to Salmon Creek near Toledo, WA. Details will be coming via e-mail 1 week before trip.



When using chrome oxide for polishing jade, mix it with half water and half vinegar.

via Breccia, 2/21; from Rockhound's Bag

A little graphite mixed with chrome oxide and applied to ordinary muslin buffs makes a wonderful jade polishing agent. It works, also on some hard-to-polish agate.

via Breccia, 2/21; from The Agatizer

Sales

August 6 & 7: Friday & Saturday 9:00 am to 3:00 pm
Rockhound "Pre-Estate" Blowout Sale
Mel's Shop
12224 42nd Ave NE
Marysville, WA

August 21: Saturday 9 am - 5 pm
Shelton Rock and Mineral Society, 11th Annual Tailgate Rock Sale and Swap Meet
Mason County Recreational Area
2100 E Johns Prairie Rd
Shelton, WA

Shows

August 6 – 8: Friday & Saturday 10 pm – 5 pm; Sunday 10 am - 4 pm
Far West Lapidary & Gem Society, Annual Gem and Mineral Show
The Mill Casino
3201 Tremont St
North Bend, Oregon

August 13 – 15: Friday – Sunday 10 am – 6 pm
Puyallup Valley Gem & Mineral Club, 2nd Gem Show In The Trees
Tacoma Sportsmen's Club
16409 Canyon Road East
Puyallup, WA

August 13 – 15: Friday 10 am - 5 pm; Saturday 9 am – 5 pm; Sunday 9 am – 3 pm
Mt Hood Rock Club Annual, Rock and Gem Show
Jackson Armory
6255 NE Cornfoot Road
Portland Oregon

August 20 – 22: Friday - Sunday 9 am – 5 pm
Willamette Agate & Mineral Society, Annual Rock and Gem Show
Polk County Fairgrounds
520 S. Pacific Hwy
Rickreall, Oregon

August 27 & 28: Friday & Saturday 10am – 5pm
Southern Washington Mineralogical Society, 55th Annual Show
Silver Lake Grange
3104 Spirit Lake Hwy
Exit #49 off I-5; 5 miles up Spirit Lake Hwy
Castle Rock WA

Internet Addies

Schoolyard Geology
<https://www.usgs.gov/science-support/osqi/yes/resources-teachers/school-yard-geology>

The Bureau of Land Management's Mineral & Land Records System
<https://mlrs.blm.gov/s/>

After lapping flat stones, such as cut thunder-eggs, with 600 grit, wash them and leave them under a heat lamp or 100 watt bulb for about five minutes. When the stones are warm, polish them on a felt wheel with tin oxide. By preheating, the polishing is almost instant. Otherwise the felt wheel has to heat the stone before the polishing action begins. A few tablespoons of oxalic acid crystals in your final tumbling polish will give your stones an extra luster.
via Hard Rock News, 8/21; via Breccia, 2/21; from San Fernando Valley Mineral and Gem Society, 1975

Hope you can make the picnic!