The CMS Tumbler

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

2022 Dues Are Due!

Next Meeting:
April 14, 2022
7:00 p.m.

American Legion Hall
25406 97th Pl S
Kent, WA

Rock Bingo Night!
More information of Page 6.

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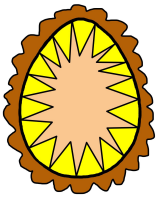
Connect with us!
Website: https://www.cascademineralogicalsociety.org
Club Facebook: https://www.facebook.com/CasMinSoc/
Facebook Groups: https://www.facebook.com/groups/1168207926650075
Show Facebook: https://www.facebook.com/cascadegemandmineralshow
Instagram: https://www.instagram.com/cascaderockclub/
YouTube Channel (Please like and subscribe):
https://www.youtube.com/channel/UCaGlJxaWFAtV_JjgZRm9ESA

This month remember
to wish a
Happy Birthday to
Trent Burroughs on April 5
Penny Hohn on April 7
Kathy Hartzell on April 13
Vicki Stearns on April 15
Mark Hohn on April 17
Majorie Medlin on April 17
Dexter Dillon on April 25
Lillian Oliver on April 25
Lori Pederson on April 29
Zachary Martin on April 30
and also remember
to wish a
Happy Anniversary to
Richard & Jennifer Russell on April 23 (28 years)



New Club Mailing Address:
Cascade Mineralogical Soc.
C/O 1207 N Landing Way #1051
Renton, WA 98057

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

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

2022 Elected Officers

Title *Name*	*Phone*	*E-mail*
President Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
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Treasurer Travis King	615-972-3532	travismking@outlook.com
Secretary Pete Williams	425-228-5063	petewill02@gmail.com
Director 1 – At Large Kathy Hartzell	253-277-0327	k.hartzell@yahoo.com
(Shared Position) Garry Hartzell	425-681-7162	santacruz1@yahoo.com
Director 2 - Field Trips Roger Danneman	425-228-8781	roger.danneman@gmail.com
Director 3 – Programs Paul Ahnberg	941-704-2063	runhikebird@icloud.com
Director 4- At Large Richard Russell	253-736-3693	richru1@yahoo.com
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Federation Representative Michael Blanton	425-271-8757	mblanton41@hotmail.com
Federation Representative Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Mineral Council Diana Horsfall	425-226-3154	dianahorsfall@comcast.net
Mineral Council Jacquie Pattie	425-226-3154	dianahorsfall@comcast.net

2022 Show Committee Chairs

Cascade Show Chairman James Starke	206-496-5368	james.a.starke@gmail.com
Cascade Show Co-Chair #1 Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Cascade Show Co-Chair #2		
Show Treasurer Pete Williams	425-228-5063	petewill02@gmail.com
Show Silent Auction Michael Blanton	425-271-8757	mblanton41@hotmail.com
Show Raffle Case & Donations		
Show Demonstrators		
Show Load In/Out		
Show Display Case Presenters		
Show Kids Activities		
Show Road Signs		
Show Event Volunteer Recruit		
Show Refreshments for Vendors & Volunteers		
Spinning Wheel Angie & Brian Bayer	253-569-0245	Text to her number (no email)

2022 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
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Shop Reservations Diana Horsfall	425-226-3154	dianahorsfall@comcast.net
Public Relations Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Refreshment Angie & Brian Bayer	253-569-0245	Text to her number (no email)
Raffle Master Roger Pullen	206-387-3214	Phone calls only. No email or texting.
Show & Tell Michael Blanton	425-271-8757	mblanton41@hotmail.com
Webmaster Gina Manso	425-281-3502	ginamanso51@gmail.com
Facebook Groups Roger Danneman	425-228-8781	roger.danneman@gmail.com
Instagram Gina Manso	425-281-3502	ginamanso51@gmail.com
All Other Social Media Kat Koch	425-765-5408	president@cascademineralogicalsociety.org

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2022 CMS Dues are $25 per year per family
Pay online, by mail, or at our meetings.
New Mailing Address: Cascade Mineralogical Soc., C/O 1207 N Landing Way #1051, Renton, WA 98057

You can pay your dues via credit card!! We now accept all cards through our website or at the meeting.
You can renew your membership or enroll as a new member and pay your dues all in one shot online. You will find it under the “Membership” tab on our website. http://www.cascademineralogicalsociety.org

The object of the Society shall be to stimulate interest in the study of the earth sciences, lapidary arts and related subjects.
This Society is affiliated with the American Federation of Mineralogical Societies; the Northwest Federation of Mineralogical Societies; and the Washington State Mineral Council.

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

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

April

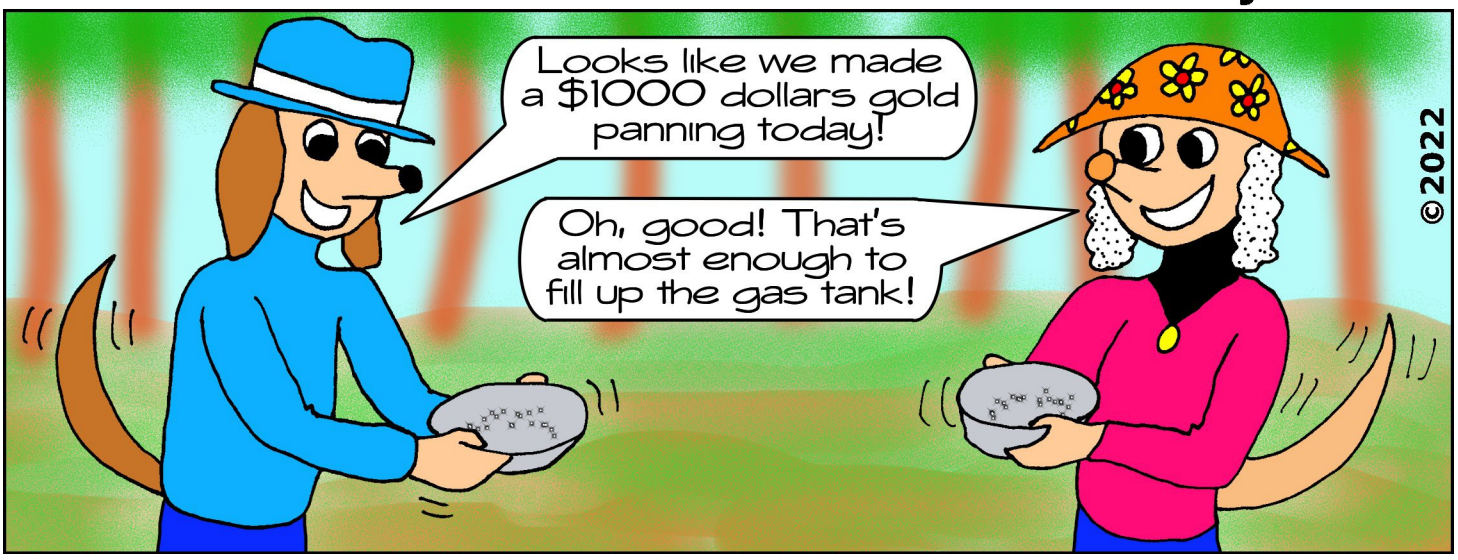
Sun	Mon	Tue	Wed	Thur	Fri	Sat
	**Have you paid your 2022 dues yet?**				1	2
3	4	5	6	7	8	9
10	11 Board Meeting 7:00 pm	12	13	14 General Meeting 7:00 pm	15	16
17	18	19	20	21	22	23 Saddle Mtn Trip
24 Bonus Trip	25	26	27	28	29	30

CMS Show Committee Meeting:…Monday, April 11……6:30 pm to 7:00 pm
CMS Board Meeting:……Monday, April 11……7:00 pm to 8:00 pm
CMS General Meeting:……2nd Thursday, April 14……7:00 pm to 9:00 pm

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

More Field Trip info can be found on Page 15
More Show info can be found on Page 16

Mr. & Mrs. Rockhound 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 association's purpose is to promote and ensure the rights of amateur fossil and mineral collecting, recreational prospecting, and mining. The use of public and private lands for educational and recreational purposes. They also carry the voice of all amateur collectors and hobbyists to our elected officials, government regulators, and public land managers. http://amlands.org
The front page also has a lot of current news, rockhounding restrictions or lack of, etc. http://amlands.org
ALAA also publishes a quarterly newsletter. To keep up on the news and lobby efforts on our behalf, check out http://amlands.org/

Washington State Mineral Council: The Washington State Mineral Council is dedicated to the location and conservation of rock and mineral sites of interest to the rockhounds of Washington state. https://mineralcouncil.wordpress.com/
You can find local rock and gems shows and planned field trips. It's a great resource if you want to plan on an outing.
Also check out “Misc. News” for all the latest updates on collecting sites around Washington. https://mineralcouncil.wordpress.com/news-updates/
When the weather is good, they have regular monthly field trips. So take advantage of these great outdoor rockhounding adventures! The field trip details are under “Field Trips” on the left side of the side. Check out the link for additional information for the time and place to meet and the field trip leader.
You can find all this information and a whole lot more about what is happening in our state at https://mineralcouncil.wordpress.com/

Rockhounding Code of Ethics

I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.
I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.
I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
I will use no firearms or blasting material in collecting areas.
I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.
I will leave all gates as found.
I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.
I will discard no burning material - matches, cigarettes, etc.
I will fill all excavation holes which may be dangerous to livestock.
I will not contaminate wells, creeks, or other water supplies.
I will cause no willful damage to collecting material and will take home only what I can reasonably use.
I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
I will cooperate with field-trip leaders and those in designated authority in all collecting areas.
I will report to my club or federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
I will appreciate and protect our heritage of natural resources.
I will observe the "Golden Rule", will use Good Outdoor Manners and will at all times conduct myself in a manner which will add to the stature and Public Image of Rockhounds everywhere.

from the AFMS website

A Rockhound Is Someone Who...

...would rather go to the Tucson Gem and Mineral Show than visit Hawaii or even Paris!
...coordinates her clothes to match the rocks in her gemstone pendant. from Breccia, 3/22

CMS Show Committee & Board Meeting Minutes March 7, 2022

by Pete Williams, 2022 Secretary

Attendees:
President – Kat Koch *Vice President – Linda Jorza*
Treasurer – Travis King *Secretary – Pete Williams*
Show Chair – James Starke *Federation – Mike Blanton* *Mineral Council – Diana Horsefall*
Directors – Roger Daneman; Rich Russell; Paul Ahnberg; Kathy and Gary Hertzel

Show Committee meeting called to order: 6:35

So far 21 booths have been sold. Flyers about our show were passed out at the Issaquah show last weekend. The Puyallup Club show in the trees is scheduled for the same weekend as our clubs. This may result in getting fewer vendors to sign on. Two vendors from our last show have decided to do the Puyallup Show instead of ours. We are considering putting down a deposit for our 2023 show for the 3rd week in September, which is the same weekend as our previous shows. Gina has begun posting our show on social media. We have also ordered 3000 more flyers for advertising.

There is a need for someone to coordinate the raffle for the show. This includes setup, calling numbers at the show, and distribution of items won. Donations are requested from the vendors as well as quality items from our storage. The show budget and actuals to date was also reviewed. The show cases, especially the federation cases, need to be repaired.

Board Meeting called to order at 7:10

Kat sent out the financial report for the month of February. Expenses were low that month. We now have 60 family memberships. The program for the April meeting will be rock bingo. Attendees are asked to bring 2-3 wrapped rocks each for prizes. There will be a 50-cent charge per player. The schools are on Spring break so we should get lots of kids. Members can bring friends and neighbors kids as well. The program for the May meeting will be Joan from Jerry's Rock Show giving a presentation on the Iran salt domes. The next field trip in Saturday March 19.

We are looking for material for the silent auction and tumbled rocks for the spinning wheel. Members are asked to please donate what they can.

Meeting adjourned at 7:26.

CMS General Meeting Minutes March 10, 2022

by Pete Williams, 2022 Secretary

Meeting called to order at 7:10.

Kat welcomed everyone back to this first in-person meeting of 2022. Anyone interested in receiving a copy of the club financials can email Kat. There are now 60 family memberships paid so far this year. A reminder was given that the annual club picnic will be on Saturday July 16 this year due to the show being in August. Volunteers are needed for the show. A sign-up sheet is available. There will be one booth set up for members at a reduced price per linear foot.

The March field trip will be to Baker Lake/Swift Creek on the 19th. The program for the April meeting will be rock bingo. People are asked to bring 2-3 wrapped rocks. There will be a 50-cent charge. Everyone will come away with some rocks. Since school will be out bring your kids and friends and neighbors kids too. The program for the May meeting will be Joan from Jerry's Rock Shop talking about the Iran salt domes. Jim Cerenzie will do a presentation on his field trips for the June meeting. Jim has a YouTube channel called vug meister.

Program: Roger Daneman gave a presentation on polishing rocks.

Meeting adjourned at 8:14 followed by show and tell and the raffle.

From the Top of the Rock Pile....

by Kat Koch, 2022 President

We have several members who cannot attend our meetings and have asked for them to be live-streamed. Zach Pratt, a new member, has volunteered to get this going for us. Zach plans on doing a test run at the April meeting to work out all the kinks. The plan is for the May General meeting to be live-streamed on YouTube. At the May meeting, Joan from Jerry's Rock and Gem Shop will be speaking on the colorful salt domes of Iran.

You will be able to watch our meetings live as they are going on or at a more convenient time for you. In addition, they will be permanently available on our YouTube channel.

The channel is Cascade Mineralogical Society. Be sure to like and subscribe.
https://www.youtube.com/results?search_query=cascade+mineralogical+society

Now I am looking for someone to volunteer to take pictures at our monthly meeting, including the Show 'n Tell portion. Then write a short article with photos for our Tumbler each month. If you are hesitant about your writing abilities, I would be more than happy to proofread your article before submitting it to Keith, our editor. The publication deadline is the 18th of each month.

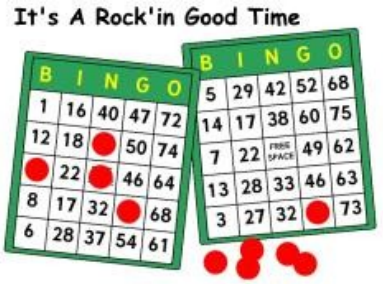
James Starke, our Show Chairman, is hard at work getting our Gem Show off the ground. It will be held at the Green River College gym on August 20 & 21, 2022. We need a load of volunteers for this event. James will have a sign-up sheet listing the positions he needs help on at the meeting. So be prepared to step up and volunteer.

In March, we are not only resuming in-person meetings, we are also resuming the field trips on March 19th. If you

have not renewed your membership for 2022, go grab your credit card now and “git 'er done.” Go to our website, or you can use this link https://www.cascademineralogicalsociety.org/manage-cms-account/#myaccount

We continue to get new members every month. So if you are a new member, please be sure to come up and introduce yourselves at our meeting.

General Meeting – April 14th – Thursday @ 7 pm



Let's plan ahead as the Kent school district is out on spring break.

Rock Bingo Night!

Guests are more than welcome to join in on the fun. Bring your Young Tumblers and their friends to play Rock Bingo as there is no school the following day!

Guests are welcome! So please bring your children and friends, grandchildren and friends. Even bring your adult friends that enjoy Bingo. The more, the merrier!

Everyone is requested to bring 2 or 3 wrapped items (rocks, slabs, minerals, fossils, or a lapidary item) as bingo prizes. Everyone is guaranteed to win.

It's .50 cents per person for the entire night, and each person can play up to 6 games at a time.

General Meeting – May 12th – Thursday @ 7 pm

Topic: Joan and Glenn from Jerry's Rock and Gem Shop, in Kent, will be with us. Joan is going to speak on the very colorful salt domes of Iran. Glenn does the technical stuff, following along on his laptop with the visuals.

Show 'n Tell: Show something you bought at Jerry's Rock Shop, some other rock shop, or a rock and gem show.

General Meeting – June 9th – Thursday @ 7 pm


Green River Rail Crossing

Topic: Our member, Zach Pratt, will be giving a presentation on the history of the Green River and what can be found in the river. Zach is also a member of the Black Diamond Historical Society.

Show 'n Tell: Something you have collected from a river, stream, or beach.

General Meeting – July 9th – Thursday @ 7 pm

Annual Potluck Picnic in the Park & Auction

Please note we have changed our annual picnic from a Sunday to a Saturday to accommodate our members that attend religious services. Our potluck picnic is held at the Lake Wildnerness Arboretum, Maple Valley. It is on Saturday, July 9th; setup time is 11 am, and lunch is at noon.

The Arboretum provides a beautiful shaded spot on the lawn, picnic tables, and free parking. You will need to bring a potluck dish or food item, your own table settings, and plates. Also, it would be much appreciated if you would like to donate something to the auction. All funds raised from the auction help cover the club costs and keep our dues low.

Following lunch and having enjoyed some "rock talk," we will hold our annual summer club auction. It is an excellent opportunity to pick up some great bargains. Our Young Tumblers can also spend the "Rock Bucks" they have collected throughout the year.

The Arboretum is next to Lake Wilderness Beach. So you can take the family swimming afterward.

New for Members Only – New Texting Service

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

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

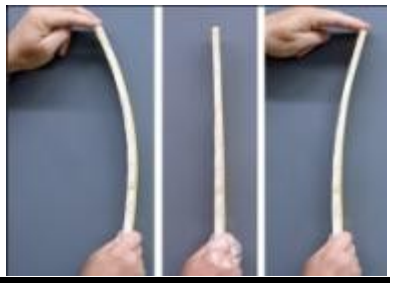
If you are not receiving a text reminder and you would like to. To register, send a text to (888) 731-1000. In the body of the text, type the word rocks. Or scan the QR code with your smartphone, select "Send SMS," it will auto-insert the word *rocks*. Now hit send.

No matter how you are registered, you will receive a confirmation that you are registered. If you do not receive a confirmation, try to register again.

If you continue to have trouble registering, please send a message via our website and click on the "Contact Us!" tab.

The only stipulation is that you must be a club member.

Rocks That Bend by Kat Koch, Cascade Mineralogical Society, Kent, WA



Did you know that some rocks and minerals bend? I sure didn't until I got in a discussion with my husband. I consider him a walking-talking encyclopedia on rocks and minerals.

I thought this would be a great article after researching the bendable rocks and minerals list that we jotted down.

Itacolumite: This is a naturally occurring porous, yellow sandstone that is flexible when cut into thin strips. Itacolumite was first used in 1822 to describe a new type of quartzite rock found at Minas Gerais, Brazil. Subsequently, Itacolumite has been located in North Carolina, US, and Kaliana Village, India. In India, Itacolumite is found in association with diamonds.

The flexibility of the rocks is due to the porous characteristic and the interlocking junctions between the quartz sand grains. The porosity allows interspatial movement, while the hinge-like joints by which the particles are connected hold them together despite the displacement.

Biotite and Muscovite Mica: Both minerals are unique and resemble "stiff" cellophane that is very flaky. If the mica specimen sheet is very thin, it is almost transparent and will bend.

The International Mineralogical Association regarded Biotite as a mineral species until 1998 when its status was changed to a mineral group. However, the term biotite is still used to describe unanalyzed dark micas. It can be transparent to opaque, have a vitreous to pearly luster, and is usually black.

In 1847, J.F.L. Hausmann named Biotite in honor of the French physicist Jean-Baptiste Biot, who performed early research into the many optical properties of mica.

Muscovite is often known as common mica, isinglass, or potash mica. In the 1890s, these types of mica were used for windows on pot-bellied stoves as it is heat resistant.

It is a hydrated phyllosilicate mineral of aluminum and potassium. It has a highly perfect basal cleavage yielding remarkably thin sheets with a pearly luster and often highly elastic. Sheets of muscovite 16.5 feet × 10 feet have been found in Nellore, India.

Biotite is often called "black mica," and Muscovite is called "white mica" – both form in the same rocks and sometimes side by side.

The Romans were the first to use mica strips to cover window openings. Mica windows were also the earliest form of windows in the United States. Because these thin sheets were transparent, they were called isinglass windows. In the 1890s, mica was used to make isinglass curtains for lanterns, stoves, and house windows.

Molybdenite: This is the most frequent molybdenum-bearing mineral and was named after that element. In 1778, Molybdenum was discovered to be a separate element. It was thought that Molybdenite was graphite or lead ore. The word molybdous means "lead" in ancient Greek.

Molybdenite is exceptionally soft with a metallic luster and is superficially almost identical to graphite. However, it is impossible to distinguish between the two minerals positively without scientific equipment. Molybdenite marks paper in much the same way as graphite. Its distinguishing feature from graphite is its higher specific gravity and its tendency to occur in a matrix.

According to Mineral.net, “Molybdenite occurs in lustrous, metallic-looking crystals that can be easily moved and bent out of shape. It also has perfect cleavage in one direction and is often flaky, allowing thin crystals to be 'peeled' similar to the micas.”

Mountain Leather: Other early popular names for the leather-like varieties of asbestos are mountain paper, mountain wood, or mountain cork. Asbestos is another silicate crystal that forms in fibers that can be bent.

There are two general classes of asbestos—chrysotile and amphibole. Chrysotile asbestos has long, curly, and flexible fibers, and amphibole have brittle and rod or needle-shaped fibers.

Minerals that are known to form "mountain leather" are saponite, sepiolite, actinolite, chrysotile, palygorskite, tremolite, or zeolite.

This mineral has been mined all around the world. In the U.S., the Libby Mine in Montana extracted hundreds of

tons of vermiculite ore contaminated with asbestos to processing plants throughout the country. Between 1940 and 1979, asbestos was used heavily in construction, ship building, automotive industries, plus hundreds of additional products. Asbestos is not a health problem unless the fibers are disturbed and released into the air.

Bibliography: Quora, Springer Nature Switzerland AG. Part of Springer Nature, Wikipedia, Mindat.org, Mineral.net, Classroom.com, Minerals.net, Lung Cancer Center, Pennsylvania Dept. of Health.

Why did the prospector make his mother carry his ore samples?
He thought it was the mother lode.

from Breccia, 3/22

Field Trip Report for March 19 - Swift Creek / Baker Lake by Roger Danneman, 2022 Field Trip Guide

Turned out to be a pretty nice outing at Swift Creek / Baker Lake on Sat. It rained on the drive there and rained slush on my drive out at 3:30, but the 4+ hours we were collecting only had a few sprinkles. The hills in the area were covered with new snow above about 1500 feet. The creek is at 800 foot elevation. We had 16 people in 9 vehicles on this trip. A pair of large down trees challenged our access to the downstream part of the river, but we all managed to either climb over them or go around them through the brush. There was a lot of storm and winter damage in the area judging by the trees and branches that were down. The stream has had some high flow turbulent activity that has stirred up the gravel this winter and quite a few nice large agates were found by the group from just surface collecting. I only have pictures of the material I collected, but it's typical of what the group found. I had never heard the term Baker Blues before, but a couple of members asked if the agates were Baker Blues. If there is such a thing, then the found agates are them.


Our next trip is to Saddle Mountain on Saturday, April 23rd, for petrified wood with a bonus trip the next day to an area by the Columbia River near Pasco for Carnelian agate. The Pasco site is surface collecting and not a dig. I've booked myself a hotel room at the Baymont in Kennewick, but I'm letting everyone that wants to make it an overnight trip take care of their own accommodations. I'll set a time and rendezvous point near the site for us to meet.

A Pilot's Life & Mission During WWII—Dependent Upon the Gem Cutter by Jennifer Haley, AFMS Historian

I am finding really wonderful stories in old copies of The Mineralogist for future articles for you. The magazine was publishing long before the AFMS was founded. What is so special about the old publications are the stories about federation news and news of mineralogy at the time. Once I find an interesting history topic, I then go looking for more information on the subject, if there is any to find. As Rockhounds and Mineralogists, we have quite a remarkable history that we can feel very proud to be a part of.

During WWII, there were hundreds of experienced mineral collectors who, although too old to qualify for military service, played a highly important role for the security of our country. They cut quartz crystals for frequency control in communication instruments and radar.

Sapphires were cut to make precision instruments used in airplanes, bombers and battleships. A pilots lives and the success of their missions depended upon the lapidary skills of the gem cutter. Quartz and sapphires were essential to the war effort.

In a bomber, there were about one-hundred sapphires in the plane's instruments. In a battleship, there were about four thousand sapphire bearings.

In 1940, America was completely dependent on Europe for sapphires. When the war came, an American company, Linde Air Products, created the synthetic sapphire. The creation of synthetic sapphires was vital to the war effort. The stones were only used for the war effort and not for jewelry. Quartz crystal was used for frequency control in radio transmission, radar and other precision devices. The quality of the quartz crystal mines in Arkansas was considered finer than Brazil's, and the mines in Arkansas came under federal control during the war.

Gemstones, minerals, and the gem cutter have always played important roles throughout history, all around the world. No wonder mankind holds cutters and their stones in admiration.

from AFMS Newsletter, 2/22

Apache Gold by Jim Fox

Apache Gold is the trade name given to a lovely and elegant black and shiny metallic gold rock found in the United Verde Mine in Jerome, Arizona. The black host rock is a Chlorite Shist and the shiny gold color is the high-grade copper ore Chalcopyrite (sometimes known as Fool's Gold). The name Apache Gold is a reference to the Apache Indians who lived in Arizona and the gold refers to the color of the Chalcopyrite. The name Chalcopyrite is a combination from the Greek word "khalkos" meaning "copper" and "pyrite" meaning "strike fire" and is composed mainly of a copper iron sulfide. Some chalcopyrite ores contain traces of gold or silver (just enough to pay for the refining costs). This Chalcopyrite is often mistaken for Gold because of it's richer, and more buttery yellow color. One definite way to distinguish them is by their streak color. Gold has a streak color of yellow whereas chalcopyrite has a streak color of green-tinged black. Shist is a common coarse-grained rock. Most are mica schist, but graphite and chlorite schist are also common. This Chlorite Shist has a Mohs hardness of 5.

from Breccia, 3/22

Farewell To Pat Morgan by Dick Morgan

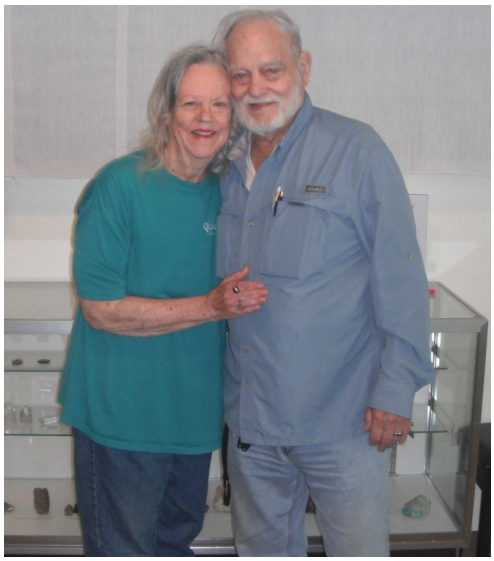
This is the most difficult eulogy I have ever had to write. To tell others that the person that made life worth living has passed on.

She had a smile for everyone, a unique sense of humor, as shown by her “Green Draggin Awards”, and always ready to help out when an extra hand was needed.

She enjoyed cooking for the club outings and cooking for the shop and meetings. She enjoyed very much the summer rock group outings where she would wander for hours picking up “pretty rocks”.

Pat will be missed as she made my life complete.

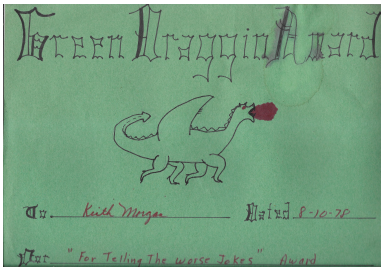
1978 rock trip at the Oregon Sunstone site and Succor Creek, Oregon



Pat & Dick showing off rocks and minerals at Bonney Lake Elementary School and in front of a rock display at the Bonney Lake Senior Center.

Some Rockhounding Rememberences of Patricia Morgan by Keith Alan Morgan

Patrica Morgan passed away on March 2, 2022. She had been a member of the club since the 1970s when the club was still known as the Boeing Employees' Mineralogical Society. Her style of rockhounding was to wander around picking up pretty rocks. Sometimes she would carry a camera and snap pictures of other members on the field trips. She liked jewelry, but didn't make it herself. She liked crystals, especially amethyst.

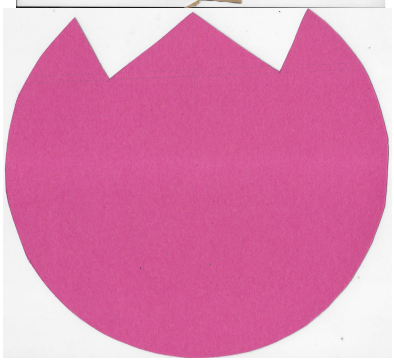


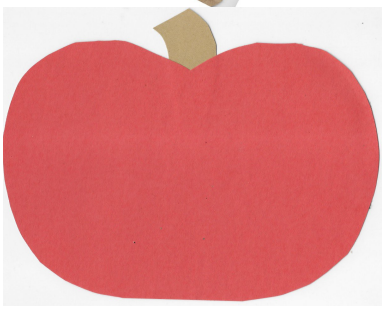
At the club picnics her lasagna was a big favorite. Such a favorite that one year at the club Christmas party she was asked why she didn't bring a lasagna, so she began bringing lasagna to the Christmas parties, as well.

In the '80s when the club was having two-week rock trips during the summer she created the Green Draggin Awards, humorous awards that 'honored' a funny, or otherwise

notable, event that happened to that person during the trip.

I think when my dad was president of the club she was the refreshment chairwoman. I do remember helping her make month appropriate decorations to hang up for the meetings with the names of the Cookie Pushers written down on them. Some blanks have been scanned to show what they looked like.





When I started regularly producing comics for The Tumbler in the late '80s, I would sometimes run the comics past my parents and mom was my 'general audience', if she got the joke I knew anybody would get the joke. One time I was having trouble coming up with a punchline for a comic, so I wrote what I wanted to say, and printed out a copy, my mom read the comic and laughed. I did not change a word.

One year we got a device to vacuum seal food for later use and she would make lasagna, vacuum-seal pieces and bring them along in an ice chest and she would heat them up in a pot of boiling water, so we could have cooked lasagna out in the middle of nowhere. She also sealed up alcohol so she and my dad could have cocktails at dinner.

She tended to get cold easily so she would wear a coat or sweater. When talking about one hot trip she mentioned that she had to take off her sweater to which, Norman Steele, a normally staid member of the group said, "*You* took off your sweater?!?"

One of the first times we went rockhounding in rattlesnake country we were all a little nervous because of the cicadas making a rattle-like noise, and as she was walking a rabbit jumped out of the bushes in front of her and she screamed. My dad ran over and said, "Did you see the ears on that rabbit!?" And she responded, "I'm having a heart attack and you're noticing the ears on a rabbit!?!" Rabbit jokes became a bit of a running gag after that.

She will be missed.

How Do You Become a Rockhound?

Buy a large bag of marbles and carry it with you whenever you go looking for rocks. Every time you pick up a rock and put it in your pocket, take out one of the marbles from the bag and throw it over your left shoulder.

Any time you see one of your marbles, pick it up along with the rock nearest to it - the rock goes in your pocket, the marble into the marble bag.

When you have finally lost all of your marbles, you are a rockhound!

from Breccia, 4/22

Life Before The Cambrian Explosion by Larry Johnson

The oldest sedimentary rocks are the Isua formation of west Greenland. These rocks have been dated at 3.75 billion years old and they are too metamorphosed to preserve the remains of living creatures. But organic activity produces

a chemical signature. There are two common isotopes of carbon 12 c and 13 c. Photosynthesis uses the lighter 12 c in its metabolic process and raises the ratio of 12 c to 13 c indicating that organic activity had taken place; if the carbon was inorganic the ratio would be the same. These rocks in Greenland could possibly retain a chemical signature of that organic activity.

The next oldest unmetamorphosed sediments 3.5 to 3.6 billion years old are found in Africa and Australia. These consist of stromatolites and actual cells. For the next 2.4 billion years after the Isua all organisms were simple celled creatures of the simplest or (prokaryotic) design, these have no organelles, no nucleus, no paired chromosomes, no mitochondria, and no chloroplasts. The first (eukaryotic) cells start to appear in the fossil record about 1.4 billion years ago. These are vastly more complex than (prokaryotic) cells.

The Precambrian does contain a record of one fauna of multicellular microorganisms in the Torridoian sediments of North West Scotland (these are fresh water lake deposits). This pushes multicellular organisms back to a billion years ago. This fills in the gap between single cells and multicellular animals of the Ediacara fauna. They have been classified as (bicellum brasieri) they are spherical in form with two different types of cells.

There has been much speculation about what caused the explosion of multicellular life at the base of the Cambrian. Previous to the Cambrian and for much of the earth's history oxygen levels were low and only simple forms existed, but with the rise in oxygen levels more complex forms evolved. It may be possible to fit the Cambrian events into the broader picture of the evolving atmosphere (that is the rise in oxygen levels). Also, in the late Precambrian Era was wide spread glaciation that spread even into the tropical latitudes about 650 mya. This event lowered sea level and the cold climate may have had effects dramatic enough to cause an extinction event. Melting of the ice caps would have produced worldwide marine flooding and favored evolution of new animal designs and possibly boosted oxygen levels.

All this set the stage for the Cambrian explosion. Just below the base of the Cambrian studies have found numerous minute shelled fossils and tracks and trails of larger creatures, then with in a span of 10 million years, all the major groups of complex animal life appear and no new animal phyla are known to have originated since the early Cambrian.

Sources: Extinction and evolution, Niles Eldredge; Nature News; Rock Dust Editor, (Harlan Hoogeterp)

via A.F.M.S. Newsletter, 10/21; from Rock Dust, 9/21

What Is That Rock? Is It Fluorite? by Prof. Philip R. Kesten, Ph.D., Department of Physics, Santa Clara University

If you're a rock collector, even if you've only been at it for a short time, you have learned how to identify crystal and mineral specimens. You might test the (Mohs) hardness of the specimen, which can be a dead giveaway in the identification of a mineral. (You can remember the Mohs hardness scale using the mnemonic "The Girls Can Flirt And Other Queer Things Can Do" … from a Mohs hardness of 1 to hardness 10, that is talc, gypsum, calcite, fluorite, apatite, orthoclase (feldspar), quartz, topaz, corundum, and diamond.) You might also test the streak color of a specimen by rubbing it against a plate of unglazed porcelain. Because the color of the streak that a particular mineral leaves is always the same regardless of any variations in apparent color of a stone, a streak test can also be a dead giveaway in the identification of a specimen.

But if you are collector, you likely look first at the shape and color of a mineral or crystal in order to identify it. Bright yellow, with crystals that have four sides and that come to a point? Sulfur! Gray in color, with six-sided crystals that come to a point? Smokey quartz! A deep blue, spectacularly star-shaped crystal formed by six four-sided pyramids back-to-back? That's cumengeite – perhaps you are lucky enough to have a specimen in your collection. And how about that distinctively purple crystal of fluorite?

Wait! You have a specimen of fluorite, but it is not purple? Not a surprise. Fluorite is found in a variety of colors. Purple, yes, but also light and dark blue, and light and dark green. Yellow and white fluorites are also not uncommon.

Let us spend a moment considering what gives rise to the colors of the rocks we collect. (And, really, what gives rise to the colors of everything.)

Visible light is a mixture of every color in the rainbow. (You can remember the colors in the rainbow using the mnemonic "ROY G. BIV" … Red, Orange, Yellow, Green, Blue, Indigo, Violet. These are the colors in the order that you see them in a rainbow, and also in order from the lowest to the highest energy carried by a photon – a packet of light – of that color. Although, sorry, Roy G. Biv is not the name of a famous scientist.) When light strikes the surface of an object that it cannot penetrate, photons of some colors get absorbed and some get reflected… and whatever colors are reflected determine how we see the object. When light strikes a piece of azurite, for example, mostly blueish photons are reflected, while photons of most other colors are absorbed.

The color of light bouncing off that azurite and heading toward your eyes is therefore mostly blue. Azurite is blue. When light passes through an object, something similar happens – some colors of light are absorbed and others are absorbed.

Consider a crystal of ruby. Ruby, a variety of corundum, is composed of aluminum oxide (Al_2O_3) molecules – two atoms of the element aluminum bonded together with three atoms of oxygen. Aluminum oxide molecules cannot absorb the energy carried by most photons, so when light passes into a ruby crystal, most photons – most colors of light – pass straight through. The energy carried by reddish light, however, is just right to make those molecules wiggle, which means that light of those colors gets absorbed. Because the molecules cannot hold on to the red-light energy for long, it is quickly re-emitted. Re-emitted in a random direction – reddish light is scattered by repeated absorption and re-emission. Rubies are red.

So now to fluorite! Molecules of calcium fluoride - two fluorine atoms bonded to a calcium atom – are the building

blocks of fluorite. Millions of years ago, as calcium fluoride molecules accumulated in hydrothermal veins in Earth's crust, the heated, liquid environment enabled those molecules to connect to each other in regular, organized, lattice structures… crystals!

Pure crystals of calcium fluoride are not purple, however. Nor are they blue or green or yellow. A pure fluorite crystal is transparent and colorless. Yes, fluorite displays a wide variety of colors. Purple, blue, green, and yellow fluorite is common. Clear, white, brown, black, and even an orange variety of fluorite can be found. And yes, a variety of fluorite – rainbow fluorite – exhibits a whole rainbow of colors in a single rock, often in bands. What gives fluorite its rainbow of colors? Impurities and imperfections.

The variety of colors we see in specimens of fluorite results from impurities – small amounts of atoms that are neither calcium nor fluorine that snuck into the calcium fluoride molecules as the rock was forming millions of years ago. Colors can also arise when structural defects occur in the connecting of the CaF_2 molecules to each other, for example, when excessive heating pushes some fluorine atom pairs out of their normal positions in that lattice of molecules.

When a pair of fluorine atoms is pushed out of position, one of the electrons in those atoms gets left behind. The nature of that electron enables it to absorb a specific amount of energy, the energy that happens to be carried by purple light. The electrons cannot hold onto the absorbed energy for long, however, so that energy, in the form of purple light, is re-emitted. Re-emitted in a random direction, so purple light passing into the crystal is scattered off in all directions. Light coming out of the fluorite crystal is purple. Fluorite looks purple.

When manganese atoms replace calcium atoms at the centers of some calcium fluoride molecules (while the crystal was forming), these impurities scatter orange light. A small amount of yttrium makes fluorite blue, a bit of cerium gives fluorite a yellow-green color, and samarium gives rise to highly prized green fluorites. And when atoms of the rare-earth element europium replace some of the calcium atoms in a fluorite crystal, it makes the stone glow (fluoresce) when illuminated with ultraviolet light. (Did you guess? That is where “fluorite” got its name!)

As a collector, you almost certainly seek out specimens of all and every mineral. But given the wide variety colors with which they present, you might enjoy having a special “sub”-collection of just fluorites. (I have a shelf in one of my display cases devoted just to fluorite!) And we haven’t even touched on the other fascinating aspect of fluorite, the different and varied shapes of its crystals. Perhaps we can explore that in another issue.

from Breccia, 4/22

Young Richard’s Almanac by Dick Morgan

One of the strange things about war, it brings out the best in some of the general population, such as charity and volunteering, and the worst in others, such as atrocities committed on women and children.

Fulgurites by Mark Nelson

Sometimes referred to as petrified lightning, fulgurites are irregularly shaped tubes formed by fusion when lightning strikes sand. Stemming from the Latin word fulgur, meaning lightning, fulgurites are generally found in quartz sand. Most people have never seen a fulgurite, and many that have probably did not realize what it was at the time. Their shape mimics the path of the lightning bolt as it disperses into the ground.

They may be elongated and knobby hollow cones, or they may be elaborately branched networks. The tubes are usually small in diameter, and are lined with thin and shining, lightning-formed glass. Although most of those found are only a few inches in length, some have been found which are thirty feet or more in length. Small pebbles in the sand frequently cling to the fulgurites. Some fulgurites are no larger in diameter than a soda straw, and others have the diameter of a good sized carrot.

All lightning strikes that hit the ground are capable of forming fulgurites. A temperature of 1800 degrees Celsius is required to instantaneously melt sand and form a fulgurite (most lightning strikes have a temperature of 2500 degrees Celsius). Fulgurites have been found worldwide, but are relatively rare.

Two types of fulgurites have been recognized: sand and rock fulgurites. Sand fulgurites are the most common and are generally found in beach or desert regions containing clean (free of fine-grained silt or clay), dry sand. They resemble roots or branching tube-like structures that have a rough surface, covered with partially melted sand grains. Sand fulgurite tubes have a glassy interior, due to rapid cooling and solidification of the sand after the lightning strike. The size and length of a fulgurite depends on the strength of the lightning strike and the thickness of the sand bed. Many sand fulgurites average 1 or 2 inches in diameter and can be up to 30 inches long. Sand fulgurites have been found in deserts and on top of some of the higher mountain summits.

Rock fulgurites are found as veins or branching channels on a rock surface or lining preexisting fractures within the host rock. Mountain peaks are natural lightning rods that are repeatedly blasted by lightning strikes during severe weather. When one is found there may be others near it, or it may be the only one present. Fulgurites are fragile and should be dug out with extreme care and patience.

Coatings or crusts of glass formed on rocks from a lightning strike are called exogenic, or rock fulgurites.

These fulgurites represent the most common type that I have found at club rock and mineral shows and at Quartzsite. The lightening penetrated the sand as a jagged strike, with a mass of up to an inch, and fused the sand around this mass of energy. So, the next time you go hiking, rock collecting or exploring be on the lookout for fulgurites!

Sources: Fulgurites, by J. C. Zeitner, Lapidary Journal, April 4, 1982; Carl Ege, Survey Notes, v. 37 no. 1, January 2005, Utah Geological Survey.

via Delvings, 4/22; from Rockonteur, 3/22

Young Tumblers News

Space Rocks by Keith Alan Morgan

Rocks in space, from space, or created by a collision with a space rock. Words go up, down, left, right and diagonal.

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

Asteroid
Bolide
Comet
Chondrite
Meteor
Moon
Pallasite
Planet
Tektite

Mary Ellen Jasper is actually a 2 billion year old stromatolite fossil from the Mesabi Iron Range of Northern Minnessota. First discovered at the Mary Ellen Pit, where taconite, a lower grade iron ore, was mined from the Proterozoic Biwabik Iron Formation. This stromatolite formed columnar colonies and has been given the name Collenia undosa. It is a trace fossil of the photosynthetic bacteria that produced oxygen, which precipitated iron from the ocean to form banded iron formations worldwide, and produced the earth's oxygen rich atmosphere.

from Delvings, 4/22

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).

April 16 **Racehorse Creek** – Meet at Mt Baker Hwy 10 miles from I-5 before 9:00 - Fossils & Morel Mushrooms

April 23-24 *All Rockhounds Pow Wow* - **Saddle Mountain** – Meet at the Mattawa Buckshot Boat Launch before 8:00 am - Petrified Wood - Bring digging & light hard rock tools
Larry Vess vessel3755@gmail.com or (253) 473-3908

Trip Difficulty Rating Scale

Vehicle Access And Parking

1 - 2: vehicle access and parking to include busses, RV's, handicap vehicles, handicap parking available.
3 - 4: vehicle access and parking good for most vehicles and RV's, no specific handicap parking
5: 2 wheel, vehicle parking on rough terrain or trail end
6: 2 wheel access or parking on roads, dirt or gravel, limited parking areas, car pooling may be recommended
7: difficult access by 2 wheel drive, high clearance required (2 wheel SUVs, trucks)
8: 4 x 4 or high clearance with positraction or all wheel slip prevention equipped vehicles.
9: 4 x 4 required due to unknown and possibly difficult roads and trails. Possible inclement weather causing changing road conditions on approach or return
10: 4 x 4 required, high clearance necessary, experienced 4 x 4 driver. Recovery equipment required, basic survival supplies aboard each vehicle

Collection Or Viewing Site

1 - 2: flat ground or paved handicap access to and at site
3 - 4: flat ground, unpaved sections, handicap access with some help
5: 1/4 to 1/2 mile trail to site with moderate difficulty
6: 1/4 to 1/2 mile with trails on hill sides, or through brush and creek beds
7: 1/2 mile or more to site, difficult trails and ravines or water crossings. Potential exploration for additional sites
8: difficult trails, difficult access to sites, or difficult collecting conditions at the site. Unknown trail or collecting conditions at other unknown sites in the area. Exploration trips for additional sites in rough terrain
9: experienced and equipped expedition participants only
10: experienced, and equipped, and physically fit participants only

from Breccia, 3/22

A metamorphic rock is a type of rock which has been changed by extreme heat and pressure. Its name is from 'morph' (meaning form), and 'meta' (meaning change).

The original rock gets heated (temperatures greater than 150 to 200 °C) and pressured (1500 bars). This causes profound physical and/or chemical change. The original rock may be sedimentary rock, igneous rock or another older metamorphic rock.

from The Hard Rock News, 4/22

Paleontologists studying fossils of fish killed by fragments of the asteroid that killed the dinosaurs have determined that the asteroid struck during springtime of the northern hemisphere.

Don't Forget To Show Your Membership Card

You can pick up your membership card at the in-person March meeting. If it's not picked up it will be mailed to you.
The following businesses are loyal supporters of our rock club.
Show your membership card at the following stores and get a 10% discount on all purchases.

Jerry's Rock Shop – 804 W Valley Hwy, Kent, WA 98032
Minerals, rough or polished rocks, lapidary machines, lapidary supplies, polishing grit, fossils, rock hounding tools, beautiful display specimens, jewelry, and much more.
Jerry is a great supporter of our club. They make it possible to have nice door prizes at our meetings.

Blackjack Metal Detectors and Mining Equipment – 101 Park Ave N, Renton, WA 98057
They sell beautiful mineral specimens, fossils, books, metal detecting and gold panning equipment and supplies.
Chris Holden is a CMS member!

Fossil Cleaning Tips

In most cases, when a fossil is cleaned, the surface is usually left with a dull or chalky look, even if you're careful. This is caused by the abrasion of the tool against the fossil's surface.

In an effort to make the fossil look better, some collectors use the quick method, and cover their specimens with clear plastic sprays to bring out the details and lessen the scratchy appearance. These collections are easy to recognize because every specimen looks as if it is wet or dipped in plastic. The trouble with this method is that it puts an unnatural, glossy appearance on the fossil, as well as the matrix, giving your specimen poor contract.

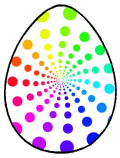
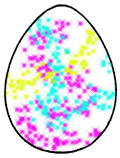
In their natural state, fossils are not usually glossy, and professional museum preparatory will tell you that making a fossil something it never was, is poor practice. Clear sprays have a tendency to become cloudy over time, and the temptation to spruce up the collection by re-spraying specimens becomes a habit, which only puts more cloudy layers on the specimen. These coatings make photographing fossils difficult, they are very hard to remove and will sometimes render specimens useless for scientific study.

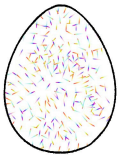
A simple and common sense way to get around these problems is to use an alcohol soluble, clear shellac. Just mix two part shellac to eight parts alcohol, the ratio can vary slightly to suit personal tastes. This mixture will leave a pleasing, natural matte finish.

When using this method, make sure the fossil is clean of dust. With a small artist's brush, carefully coat only the fossil with the diluted shellac. This will reveal the specimen's actual color and allow the fossil to stand out against the natural matrix, giving excellent contrast. The more attention you give to coating delicate structures, the more beautiful the specimen will be. If you accidentally use too much, or if it is on the matrix, just dip the brush in alcohol and whisk the coating away. It dries in seconds.

Make no doubt about it, fossil collecting has become very sophisticated in recent years, and collections quickly prepared by obsolete or improper methods are now readily noticed by other collectors. For a good book on fossil preparation, I recommend The Practical Paleontologist by Steve Parker and Raymond L. Berner, Printed by Simon and Schuster.

via Breccia, 3/21; from Maps Digest, 7/9/95




Shows

April 1-3
Gem Faire-Puyallup
Washington State Fairgrounds
110 9th Ave SW
Puyallup, WA

April 9 & 10: Saturday 9 am - 5 pm; Sunday 9 am - 4 pm
North Central Washington Prospectors, *21st Annual Gold Treasure and More Show*
The Fairgrounds
Cashmere, WA

April 10: Sunday 10 am - 3 pm
Rockhounds Downsizing Sale
Carl Gipson Center
3025 Lombard Ave
Everett, WA

April 22-24: Friday 10 am - 4 pm; Saturday 10 am - 5 pm; Sunday 10 am - 4 pm
Yakima Rock & Mineral Club, *59th Parade of Gems*
Central Washington State Fair Ground
Modern Living Building
1301 South Fair Avenue
Yakima, WA