

# The CMS Tumbler

November 2021

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

Next Meeting: November 11, 2021 7:00 p.m.

American Legion Hall 25406 97th PI S Kent, WA

The Program is Dr. Boggs on the Golden Horn Batholith

The Show & Tell Theme is bring a rock from either Washington, Oregon, Idaho, or Alaska

## **Table of Contents**

Calendar	3
Cartoon	
Board Minutes	5
General Minutes	5
From the Top of the Rock Pile	5
Misc. Club News	5 & 6
Member Obituary	7
Colors Around the World 6	
Crystal Mtn, White Desert	10
October Field Trip Report	14
Field Trips	15
Young Tumblers	15

Connect with us! Website: https://www.cascademineralogicalsociety.org Club Facebook: https://www.facebook.com/CasMinSoc/ Show Facebook: https://www.facebook.com/cascadegemandmineralshow Instagram: https://www.instagram.com/cascadegemandmineralshow/

> This month remember to wish a Happy Birthday to **Robin Santos on November 4** Paul Vitellaro on November 4 Amaris Barraza-Tucker on November 8 Nesiyanah Barraza-Tucker on November 8 Herman Gelbach on November 12 Malcolm B. Wheeler on November 14 Tim Patndge on November 15 Chuck McMurtray on November 19 Paul Wasley on November 19 Peggy Shashy on November 23 Tami Fraser on November 25 Paris Tucker on November 25 **Dian Davis on November 28** and also remember to wish a Happy Anniversary to Samina Barraza & Paris Tucker on November 11 (7 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.

CMS Club Address 25838 W LK Wilderness Dr. SE. Maple Valley, WA. 98038 Keith Alan Morgan, Editor 3802 W Tapps Dr. E Lake Tapps, WA 98391 Postal, or Email, Exchange Bulletins are welcome. Email preferred. greenrockdraggin@yahoo.com

The Tumbler	Page 2	November 2021							
	2021 Elected Officers	•							
Title Name	Phone	E-mail							
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@gmail.com							
Director Richard Russell	253-736-3693	richru1@yahoo.com							
Past President									
Show Chairman Kat Koch	425-765-5408	president@cascademineralogicalsociety.org							
Federation Representative Michael Blanton	425-271-8757	mblanton41@hotmail.com							
Federation Representative Kat Koch	425-765-5408	president@cascademineralogicalsociety.org							
Mineral Council Diana Horstall	206-818-9507	diananorstall@comcast.net							
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	n 425-271-8757	mblanton41@hotmail.com							
Cascade Show Demonstrators Richard Russell	253-736-3693	richru1@yahoo.com							
Club Historian									
Donations Kat Koch	125 765 5408	president@cascademineralogicalsociety.org							
Field Trin Roger Danneman	425-705-5400	Roger Danneman@gmail.com							
Health & Welfare Bey Williams	425-228-5063	hrithev1957@outlook.com							
Library	420-220-0000								
Meeting Programs Miriann Fu	253-236-5593	merriannf@gmail.com							
Membership Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org							
Newsletter - Tumbler Editor Keith Alan Morgan	253-316-9935	greenrockdraggin@vahoo.com							
Open Shop Instructors		3. · · · · · · · · · · · · · · · · · · ·							
Public Relations Kat Koch	425-765-5408	president@cascademineralogicalsociety.org							
Refreshment Angie Bayer	253-631-3840	angiemc61@msn.net							
Raffle/Display Roger Pullen	206-387-3214	None							
Shop Operations									
Show & Tell Michael Blanton	425-271-8757	mblanton41@hotmail.com							
Social Media Kat Koch	425-765-5408	president@cascademineralogicalsociety.org							
Webmaster Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org							

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.

The Tumbler	he Tumbler Page 3 November			Page 3 November					
Sun	Mon	Tue	Wed	Thur	Fri	Sat			
	1	2	3	4	5	6			
7	<b>8</b> Board Meeting 7:00 pm	9	10	<b>11</b> General Meeting 7:00 pm	12	13			
14	15	16	17	18	19	20			
21	22	23	24	<b>25</b> Thanksgiving	26	27			
28	29	30	Gobble gobble gobble!			22 Contraction			

CMS Show Committee Meeting:...Monday, November 8......6:30 pm to 7:00 pm CMS Board Meeting:.....Monday, November 8......7:00 pm to 8:00 pm CMS General Meeting:.....2nd Thursday, November 11......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



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

Page 4

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 side. 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

You like to examine the rocks in your driveway.







## CMS Board Meeting Minutes October 11, 2021

Attendance:

The Tumbler

President Kat Koch Secretary Pete Williams Director Rich Russell Federation Mike Blanton Meeting called to order 7:04 Vice President Merriann Fu Past President Bob Pattie Director Roger Danneman Mineral Council Diana Horsfall

There were 5 new members last month for a total of 91 family memberships. Travis King volunteered to run for Treasurer. The club booth at Maple Valley Days was cancelled due to the rainy weather. There were no refunds of booth fees. More volunteers are needed to staff our booth at the Gem Faire in November. The program for the October meeting will be 2 videos on cleaning oil off of slabs and stabilizing soft rocks.

We will make a decision next month on the December 12 Christmas party if it should be a potluck, purchasing food, or other alternatives depending on the COVID situation at the time. Dues for next year will be \$25. Any paid from October on will be for the full year of 2022.

Our show next year is scheduled to be at Green River College again. Kat is exploring alternatives if that should fall through. Still looking for a permanent facility for a club shop. One possibility is to write to the Kent City Council to see if there are any vacant buildings we could use paying only for utilities and possibly additional insurance.

A work party will be held on October 23 at 10:30 at Bob's house to winterize the shop. Volunteers are needed. Meeting adjourned at 7:36

## CMS General Meeting Minutes October 14, 2021

Meeting called to order at 7:21. Minutes approved as written.

by Pete Williams, 2021 Secretary

by Pete Williams, 2021 Secretary

The treasurer reported that in September we paid 3 months rent for our meeting space and for the December 12 Christmas party.

Club membership now stands at 91 families. Election of officers will be held in December. All positions are open for candidates except one director position. A few more volunteers are needed for the Germ Faire on November 12-14. A signup sheet was available. James Berg-Bradley volunteered to be a candidate for the show chair position. There will be a work party on October 23 at 10:30 at Bob's house to prepare the shop for winter. Volunteers are needed. The October field trip this coming Saturday will be to Red Top. There will be 2 dig sites. The November field trip will be to First Creek.

**Program:** Videos on how to clean saw oil from slabs and how to stabilize soft rocks.

Meeting adjourned at 8:12 followed by show and tell and the raffle.

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

Everything is going well with our club.

I am looking forward to putting the year 2021 in the rear view mirror. It feels good to be taking baby steps towards some sense of normalcy.

I am also looking forward to the upcoming club elections and having some new people on the board with new ideas.

If everything goes as planned we will resume our Cascade Gem & Mineral Show in August 2022. Planning is getting underway as it is only 9  $\frac{1}{2}$  months away.

I feel like there is nothing but sunshine on the horizon!

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

General Meeting – Thursday – Nov 11th, 2021, @ 7 pm

Dr. Russell Calvin Boggs will be speaking at our meeting. He is the founder and curator of the North Cascades Mineralogical Research Institute and Museum.

Dr. Boggs will talk about the minerals of the Golden Horn Batholith at Washington Pass (Highway 20) in the North Cascades.

He will also give a brief talk on the plans for the North Cascades Mineralogical Research Institute.

The North Cascades Mineralogical Research Institute and Museum is a non-profit corporation to promote mineralogical research, operate a mineralogical research lab (XRD, petrographic microscope, and Electron Microprobe), and operate a mineralogical museum primarily related to the Pacific Northwest.

Mark your calendars and plan on attending. I would like to give him a warm welcome as Dr. Boggs will be traveling from Marblemount during the peak traffic time to speak to us.

Show 'n Tell: A rock, mineral, or fossil you have in your collection from Washington, Oregon, Idaho, or Alaska.







## Fa

## New for Members Only – New Texting Service

You can now sign up for club text reminders for our upcoming meetings and events. We are all busy and often forget CMS has an upcoming meeting or event.

To register for this reminder service, send a text to (888) 731-1000. In the body of the text, type the word <u>rocks</u>. 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.



We had the drawing at our September meeting as we had reached our first goal of 30 registered members. Our winner was James Berg-Bradley. He selected a set of polished Saddle Mountain petrified wood bookends.

There will be another prize drawing once we have registered 50 members. It is exclusively for text service registrants.

Okay members, we need only 19 more members to register for our next drawing. So hop to it and enroll in this reminder service. Register now and get in on the final 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 also have a club booth at the Gem Faire, Puyallup Fairgrounds. There are 2-time slots left to be covered. We will have the spinning wheel for the kids to win free polished rocks. Also, tell people about our club and answer questions about our hobby. There will be literature to hand out and two display cases for viewing.

Friday, November 12th - 2 people from 3 pm to 6:15 pm.

Sunday, November 14th - 2 people from 9:45 am to 1:30 pm.

If you would like to volunteer, please call or text Kat and let me know what time slot you are interested in. My contact info is in any issue of the Tumbler.

#### 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.

You can choose to nominate yourself for any Board position. We are seeking volunteers with new ideas on how to meet the needs of our members. We now have a candidate for each position except the Director 2 position. The Board would like to have more than a single candidate for each position so that members have a choice on who to elect. So seriously think about putting your name on the ballot. Contact Pete Williams or Kat Koch if you would like to run in a particular position. Their contact info is in the Tumbler.

President (2 years) <u>Vice President</u> – Right-hand to President. (2 years) <u>Treasurer</u> (2 years) <u>Secretary</u> (2 years) <u>Gem and Mineral Show Chairman</u> (1 year) <u>Director 1</u> – Field Trip Guide (2 years) <u>Director 2</u> – Helps were needed (1-year fill-in position) *Need a candidate for this position!* <u>Director 4</u> – Programs (1-year fill-in position)









#### Member Obituary by Dick Morgan

It is with a sad heart to have to report that Bob Pattie has passed away. For many years he was foremost in supporting our rock club and its leadership, and helped lead the club as it transitioned from the Boeing Employees' Mineralogical Society to the Cascade Mineralogical Society. He helped in the set-up of our yearly shows and a volunteer as our Mineral Council Representative. He was a hard-working member of the shop and gave our current shop a location to be used.

He held all the major office positions in the club, many more than once.

I dealt with Bob at Boeing and found that he was an informed member of finance. We worked in a helpful manner for over twenty years. He was very knowledgeable of the workings of the company.

He was very interested in educating children and gave many informative talks to children of the club and to classrooms. He will be missed.

#### Robert (Bob) Pattie (1937-2021) by Diana Horsfall

Bob's family and extended family were always first in his life, but his second love was rocks. Bob started rockhounding at a young age, on the first day of school he had pockets full of rocks. He has enjoyed picking up rocks ever since. Bob joined the Boeing Rock Club in 1971 shortly after going to work for Boeing. He then Helped in the transferring of Boeing club to the Cascade Mineralogical Society that we have today. Bob held many offices with the club though out the years and stayed as active as he could until the end. He loved to talk and in handy when he would visit 3rd graders at the local elementary schools and talk about rocks, sharing rocks he had collected that the kids could touch and look at and then giving them a piece of petrified wood to take home. He



enjoyed planning presentations on different subjects, Coal in our state, differences in mountains and how they are made, what is rockhounding, just to name a few. He loved to talk about rock and if you came over to the house, he would tell stories about the rocks in the garden.

#### Thank You by Diana Horsfall

I want to thank the volunteers that came to the house for the work party for the shop. I know dad was up there smiling down on us for the great turnout and hard work we got done. I finally found his list of what he wanted done and we did it all. Thank you again.

## To Cab Or Not To Cab by Vicki Hathaway

It is usually true that, when lapidaries cut slabs, we do so with the intention of cutting them into even smaller pieces and making cabochons of various sizes. Sometimes, however, the slab must stand alone. When beauty is in the whole, cutting it up yields nothing. Take the slab of a Utah septarian nodule for example. It just doesn't lend itself to being cut up into smaller pieces. Sure, it would be possible to make some very nice cabs from the golden crystal parts, but destroying the slab for just a couple of cabs would be a shame. This is especially true when usable broken pieces of the crystal formations are usually lying all over the area in which the nodules are found.

Septarian slabs aren't the only ones that deserve to be saved. Slabs of crystal-lined geodes are also desirable as display pieces, and they are seen at shows and in shops all the time. Often, they have a bit of rind, a nice band of agate, and a center of clear crystal. The crystals often surround a void in the geodes center. The slab as a whole is more interesting than a cab cut from a small section of it.

Although many thunder egg slabs may yield very nice unusual cabs with interesting patterns and colors, many others will be better displayed whole. There are many other types of rocks that are beautifully displayed as slabs, but I think you get the idea. Now, if I have convinced you to throw yourselves on these beauties and save them from the horror of the trim saw, the next step is to decide what to do with them. Just allowing them to lay on a table at a rock show or in a box at a shop is not the answer. A simple napkin holder would be a better use, as it allows the larger pattern to be displayed. All that is needed are a couple of slabs, a piece of wood or stone for a base, and a little epoxy or cyanoacrylate. Such items make a nice addition to the kitchen, and they work well as gifts.

If you don't happen to be a napkin holder person, how about some bookends? using stone for bookends is a very old, very simple, lapidary exercise. Usually, this involves cutting a big heavy rock in half and placing one half on each end of a row of books. There is certainly nothing wrong with this, but it does not address our main purpose here: that of finding a lapidary use for slabs other than making cabochons. Slabs can be used very creatively for bookends by utilizing those inexpensive metal bookends found in office supply and stationary stores. Glue your slab to the vertical face of the bookend. If you wish, you can also glue a decorative piece of wood or stone to the outside tab to fancy it up a bit. These bookends come in different sized vertical faces, so you can get one to fit the size of the slab you are using. These make very pretty bookends, and they don't take up nearly as much shelf space as the large stone types.

via Golden Spike News, 5/21; via The Clackamette Gem, 1/14; from Rock Chips, 10/13

#### Page 8

#### November 2021

## Colors From Around The World Series: Part 6 by Kat Koch

Sulfur Crystals With White Aragonite Crystals, Cozzo Disi Mine, Agrigento, Sicily, Italy

No, this is not a stack of Lemon Bars for tonight's dessert.

These awesome specimens are Sulfur Crystals rimmed with white Aragonite Crystals. It was found at Cozzo Disi Mine, Agrigento, Sicily, Italy.

The village of Casteltermini, Agrigento province, was founded in 1629 by Baron Gian Vincenzo Maria Termini Ferreri who set up the first town center. After the discovery of the huge historic sulfur mine, Cozzo Disi, in the mid-1800s it became a very popular industrial center.

The Cozzo Disi Mine is one of the most famous among the numerous sulfur mines in the Agrigento province. It is one of the most important mines in Italy that has now been turned into a museum.

Sulfur is the tenth most common element by mass in the universe and the fifth most common on Earth. Being abundant in native form, sulfur was known in ancient times, was used in ancient India, ancient Greece, China, and Egypt. Historically and in literature sulfur is also called brimstone, which means "burning stone".



#### Benagil Sea Cave, Lagoa, Portugal

Southern Portugal's Algarve coast is renowned for its spectacular shores and abundant sunshine. At Benagil beach, near the town of Benagil, a fantastic cave is carved into the coastal rocks.

Erosion has not only hit the cave at the base of the cliff, but erosion has also taken place at the top where rainfall has caused the softer segments of limestone to erode and collapse. This beautifully shaped skylight often referred to as "the eye", allows the sunlight to flood inside.

The sea cave is formed by three openings: two arches of about 165 feet which overlook the ocean and a third circular ceiling opening (the skylight) with a diameter of about 65.6 feet perfectly situated at the top. The skylight allows the natural sun rays to beam through and light up the cave.

The area above the skylight opening has been fenced off for safety purposes and you are no longer allowed above the cave.

The Benagil Sea Cave is best accessed by boat or kayak.

The Atlantic Ocean has worked the Algarve coast for a very long time. The result is a generous gathering of surreally textured rock stacks, weathered pinnacles, and more of these cavernous limestone 'rooms' carpeted by soft sand and surrounded by turquoise waters.

Like much of the Algarve coast, the coast around Benagil is made up of Miocene limestone sitting on much older rocks from the Mesozoic era, when dinosaurs ruled the Earth. The Algarve Basin between Cabo de São Vicente and Faro was part of a region caught in the epicenter when the supercontinent of Pangea began to split up, and warm, shallow seas slowly crept in. Over time, the limestone built up, with the layers that make up the Benagil Sea Cave forming about 20 million years ago.



Like other karst formations around the world, the cliffs surrounding Benagil have been subjected to a series of weathering processes – from rainwater coursing through the soft limestone to waves washing up and around harder rocks to form stacks. Eventually, caves like Benagil will likely collapse completely, as the Earth's unending geological march continues.

#### Hoggar Mountains, Algeria

The Hoggar Mountains are a highland region in the central Sahara, southern Algeria, along the Tropic of Cancer, North Africa. The mountains cover an area of approximately 212,000 square miles.

This mountainous region is located about 930 mi south of the capital, Algiers. The area is a largely a rocky desert with huge orange sand dunes. The average elevation of Hoggar Mountains is more than 3,000 feet above sea level. The mountains are primarily composed of metamorphic rock approximately 2 billion years old, although there are areas where more recent volcanic activity has laid down a much newer rock. Several of the more dramatic peaks are the result of sand and weather wearing away extinct volcano domes, leaving behind the more resistant material that plugged the volcanic



#### cores.

It looks as though the enormous orange sand dunes are winning. But plenty of rough-hewn volcanic rock formations are standing tall amid the sands. Most of these are spiky pillars, while some have eroded into huge round boulders. A wider view of the area reveals the real bosses of this arid land are the Hoggar Mountains themselves. Mount Tahat, 9,541 feet is not only the highest peak in that range, but also the tallest in all of Algeria.

Within the Hoggar there is evidence of a prehistoric settlement. Rock paintings have been found dating to 6000





#### Kelimutu Crater Lakes, Indonesia

Mount Kelimutu, one of hundreds of volcanoes in Indonesia, is unique in that it is topped with three crater lakes of

drastically different colors. It's located east of Jakarta, in the Lesser Sunda Islands, on the Island East Nusa Tenggara, Indonesia.

Tiwu Ata Mbupu ("Lake of Old People") sits apart from the other two and appears deep blue or even black. Tiwu Nuwa Muri Koo Fai ("Lake of Maidens") is separated from Tiwu Ata Polo ("Enchanted Lake") by a shared crater wall.

Science says the changing colors of Kelimutu's summit lakes are caused by volcanic vents that release steam and gases, producing upwelling in the lakes and bringing denser, mineral-rich water from their bottoms to their surfaces.

NASA Earth Observatory explained:

All of the lakes contain relatively high concentrations of zinc and lead.

While minerals play a part in the coloring, another key factor is the amount of oxygen present in the water. Like your



blood, these lake waters appear bluer (or greener) when low in oxygen. When they are oxygen-rich, they appear blood red or even cola black.

According to Indonesia Travel:

A few years ago, the lakes were white, turquoise and red. In November 2009, they were black, turquoise, and a Coca-Cola brown. And again in July 2010, the lakes were resplendent in various shades of green.

Bibliography: Wikipedia, Mindat, Sicily – Italy, Another Magazine, My Best Place, Tourist Link, Reddit, Facebook, Asean Record World, NASA Earth Observatory, Indonesia Travel, Earth Sky, Lake Scientist.

#### Page 10

## Crystal Mountain, White Desert, Egypt by Kat Koch

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

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

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

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

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

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

The White Desert was declared a national park in 2002.

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

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



The Lapidary Arts and Crafts movement of our hobby has long been a joy in our lives. For all of us, no matter what our age, the fascinating world of rocks and minerals draws us to a life-long adventure, to explore and discover more of their beauty. Our companionship with rocks and minerals is like a constant friend. We always feel good when we are around them, and we have such a good time working with them.

If you are looking for inspiration and new ideas, it's there more than ever. It used to be, you could only find a sewing fabric in a brown river-pebble design, which was really wonderful at the time because that's all there was. Now, there are quilting cottons and upholstery fabrics in gorgeous patterns of agate, geode and many others to sooth our rockhounding souls. If you are into dinosaurs, or know someone who is, there are new fabric designs in those themes too.

People who love to bake and are into cake decorating in rockhound themes are making spectacular cakes with amethyst geode crevices, and 3D dinosaur cookies.

Mail order catalogs are selling more rock-themed décor, as people are leaning towards bringing the outdoors into the habitats of their homes and offices. Some hotels are rethinking their interior design look, and leaning towards installing giant natural quartz-point chandeliers, and decorating their halls and guest rooms with geode wall sconces and polished geode slabs within frames.

Sometimes something new and exciting happens when you least expect it, especially during times like the pandemic we've been experiencing. What I have been observing during lockdown, through reading mainstream news









#### Page 11

articles and listening to reports of rock and gem shows, is that there is a momentum growing within the United States. People are turning to the landscapes and geology of public lands to find a new feeling of kinship in their lives. More people are finding that connection in a personal exploration in the curiosity of the historical mysteries and uses of rocks and gems, often referred to as the metaphysical.

The timing couldn't be better for us as societies to experience a new resurgence in the number of people discovering there are rock and gem clubs. Just imagine what it will be like for a family or a person who has always picked up a rock from the ground as a memento of their vacation or camping trip, to discover there are rock clubs with interesting programs, wonderful people and field trips. Imagine the excitement those guests and children will feel when they find out the rock they picked up has quite a story to tell based on its geology.

And imagine what it will be like for a person who is exploring the metaphysical aspect of rocks and gems to discover there are clubs with friendly members, and guided field trips where they can find their own special stone and learn about it in geology terms.

Get your welcoming society doors ready for when people can begin to meet together again. People are not only looking for the connection your societies have to offer, they are also craving it more than ever. You just have to work on letting them know you are here.

from A.F.M.S. Newsletter, 6/21

## Inhibiting Corrosion on Metallic Stones and Artwork by Noel H. Runyan

Many artists and rock hounds have tried to inhibit corrosion or tarnishing of specimens by coating them with lacquer or acrylic paints. Unfortunately, most of these coatings may discolor with exposure, and their glossy appearance may be undesirable.

#### Preventing Corrosion with Benzotriazole (BTA)

As an alternative, BTA coatings are invisible, clear, do not discolor, and do not peal or flake off. According to the literature, BTA has been successfully used to inhibit corrosion on copper, copper alloys, zinc, nickel and iron.

I have had very good results using BTA on copper. A few years ago, after cleaning copper parts with Brasso, I was disappointed to find that they were significantly tarnished only six months later. So, I once again cleaned the pieces with steel wool, washed them with ammonia, followed by vinegar, followed by a baking powder solution to neutralize and finally a cleaning with isopropyl or ethyl alcohol solvents.

When dry, I dipped the copper parts in a solution of 1 gram of BTA dissolved in a half gallon of dis-tilled water. After a few minutes, I gently wiped the surfaces dry with a soft cloth. The BTA has kept the copper completely tarnish free for a year and a half, so far. The BTA forms an extremely thin and clear, molecule-thick coating on the metal surface. For metal surfaces that will be subject to mechanical rubbing or wear, I have additionally coated some of the BTA-treated surfaces with an overcoat of Everbrite ProtectaClear.

Another alternative clear coating recommended by some artists is Incralac, a lacquer for copper and brass that has some Benzotriazole already mixed in to discourage tarnish under the lacquer.

#### Protecting Meteorites

I found an interesting corrosion prevention treatment reported in an article, "Galvanic Cleaning of Meteorites" by Ray Pickard, of the Bathurst Observatory, Australia, in August 2005 (http://www.meteoritemarket.com/Galvanic.pdf). This interesting approach is similar to cleaning silverware by loosely wrapping a specimen in aluminum foil and immersing it in a solution of sodium carbonate (but not baking soda). This galvanic cleaning approach appears to work well on iron specimens that are exhibiting green weeping from ferric chloride.

#### Ammonia Treatment of Iron Stones

According to reports from some rock hounds, stones with green-weeping ferric chloride problems may have the ferric chloride deposits converted into iron oxide by treating the stones with ammonium hydroxide. This can work for some iron meteorites. It would be safest to try exposing the iron specimens to ammonia fumes first, before trying to directly soak them in liquid ammonium hydroxide.

#### Sealing the Surface of Specimens

Some folks report successfully limiting meteorite corrosion by "sealing" the surface with oils or plastic coatings. I would encourage folks to consider using water glass (either sodium or potassium silicate) to seal or passivate meteorites, metallic stones, or metal artworks. Water glass will not discolor with age or exposure to sunlight.

Normally, when water glass is dip or brush coated on rocks or metal objects, it will seal the surface after it dries. However the silicate coating that results is in a form that is still fairly water soluble and is vulnerable to exposure to moisture.

If you have ever used water glass to glue stones together or onto dop sticks, you know that the glue can be soaked in water to soften it and break the bonding. To avoid this softening, you can force the water glass to dry in a polymerized form that stays hard and does not soften or dissolve when exposed to water.

To make the water glass dry in this more desirable polymerized form, you can add a mild acid catalyst such as a little citric acid. A variety of other household acids can be used as an alternative catalytic additive. You can mix a little acid into the water glass before coating the specimen, or paint the acid over the still-wet surface of a specimen that has already been coated in unadulterated water glass.

#### Stabilizing Stones with Water Glass

I'm also now doing some research and some experiments on the use of water glass to stabilize soft, porous or cracked stones. My literature searches show that some folks have found that water glass can be infused and polymerized

in certain stones successfully. When I finish my experiments with water glass, I will be glad to share my findings in another newsletter article.

from Breccia, 1/21

## Geologic Classification of Gold Deposits by Steve Mulqueen

#### Introduction

Gold has been in demand by human civilizations since the beginning of time. All of the miners who have worked gold deposits have developed an understanding of how the natural deposits formed and the best ways to extract and to process the ores. Gold can occur in the Earth's crust in a variety of geologic settings. Listed below are some of the types of deposits from which gold can be found. This list is based upon a considerable amount of hard work, over thousands of years of mining, to determine the detailed geology as it relates to the nature of gold occurrences. The precious metal can be visible at the surface and occur in abundance within a rock unit. Gold can be well hidden and only detectable through chemical assay or testing with electronic instruments.

#### Igneous rocks containing gold, both intrusive and extrusive rock types

- 1. Porphyry intrusive structures including dikes, sills and stocks.
- 2. Pegmatite granites.
- 3. Coarse-grained granitic deposits other than pegmatites.
- 4. Volcanic rock units such as rhyolite plugs.
- 5. Selective minerals containing gold within an igneous rock unit.

#### Carbonatites and carbonatite-related rocks containing gold

Igneous rocks containing calcium carbonate or other carbonate minerals occurring as plugs, dikes, sills, veins and within brecciated rock units.

#### Skarn deposits containing gold

Gold occurrences in a contact metamorphic geologic setting.

#### Hydrothermal emplacement

Acidic hydrothermal liquids, gases or vapors rising through a basic carbonate host rock forcing the precipitation and deposition of gold from the hot fluids from an acid/base reaction.

#### Fractured rocks and fault zones containing gold

Occurring as quartz veins, lodes, mineralized breccia pipes, sheeted zones, saddle reefs and irregular silicified deposits in the form of gold with silver and/or silver with gold.

#### Sedimentary rock units containing gold

Occurring as bedded deposits with veins, nuggets or high-grade zones.

#### Disseminated deposits of gold

Gold/silver deposits within sedimentary rocks, volcanic and plutonic igneous rocks; occurring as disseminated and stockwork deposits. Huge deposits containing low-grade concentrations of gold that may average +/- 0.05 ounces/ton of the precious metal.

#### Quartz-pebble conglomerate rock units containing gold nuggets

Rich placer deposits that were discovered and worked during the Gold Rush of California beginning in the mid-1800s consisted of older alluvial stream terraces composed of solid conglomerate rock units containing gold nuggets. The Klondike Gold Rush of 1896-1899 in the Yukon Territory of Canada was centered around the occurrence of hardconsolidated quartz-pebble conglomerate rock units containing gold nuggets.

#### Quartzite rock units containing gold

A specific type of metamorphic rock containing native gold.

#### Alluvial placer gold deposits

Includes stream accumulations of unconsolidated sand/gravel deposits containing nuggets, flakes and small grains of native gold.

#### Eluvial placer gold deposits

Includes in situ weathering and the concentration of gold formed by natural processes in sedimentary deposits and

soils.

#### Metamorphic belts containing gold

Orogenic lode gold deposits in metamorphic rock units. The Homestake ore deposit near Lead, South Dakota is

one of the best examples of this type of gold occurrence.

#### Metaconglomerate rock units containing gold

Gold can also occur in coarse-grained conglomerate rock units that have undergone intense heat, high pressure and solid-state recrystallization during metamorphism.

#### Marine sands containing fine gold

Including beach, nearshore, and deep offshore environments. The beach and offshore deposits along the Bering Sea of Alaska contain sands with gold occurring in low concentrations.

#### Naturally occurring liquids containing gold in small concentrations

Geothermal power plant fluids including condensable steam vapors, deep sea hydrothermal vents, brine accumulations in porous lakebed, or groundwater in volcanic tuff deposits.

#### Conclusion

An important part of the rich mining history of California is related to man's quest for gold. The term "gold" can spark an interest from just about anyone. The bright colored metal is a naturally occurring substance that has been sought as far back as the earliest civilizations. The search for and the extraction of the precious metal has taken on great efforts by those seeking to just earn a living or to strike it rich. Miners have gained knowledge on the metal's occurrences just by working the deposits and observing the geology with every new exposure. Gold can be found in many unusual and unconventional settings in remote regions of the world. The economy that we appreciate today is related in part to the mining industry and especially to gold mining ventures. Those who have spent long weekends panning or sluicing for the metal have learned about its occurrences, through plenty of hard work. It has been said that, "For every dime's worth of gold that has been extracted, there is a dollar's worth remaining in the Earth".

Sources

Yannopoulos, J. C., The Extractive Metallurgy of Gold, 1st edition, Springer Publishing.

from Rockhound Ramblings, 5/21

## A Mountain Treasure: The Barites of Cerro Warihuyn by Ana Papadopoulos

Where the sky meets the Earth in a place high up on a mountain in the Peruvian Andes, a discovery was made which brought to the surface a most beautiful and sparkling treasure. This sparkling treasure turned out to be Barite from Cerro Warihuyn. Cerro Warihuyn lies near Miraflores in the Province of Huamalies in the region of Huanuco, Peru. This locality was previously unknown until around 2005 when these Barites began to appear on the market. While Barite is found in many places including the United States, The U.K., Morocco, Italy, and Spain, just to name a few, I decided to focus on the Barites from Cerro Warihuyn because they were the gateway for me to collecting Barite.

Barite is a nonmetallic barium sulfide mineral with the formula BaSO4. It is the main source of the element Barium, which has various industrial applications due to its high specific gravity of 4.5. It is used in x-ray shielding, a pigment in paints, and as a weighted filler in paper, cloth and rubber. However, the majority is used as a weighting agent for drilling mud used primarily in the oil and gas industry. Luckily for the collector, the Barites from Cerro Warihuyn are primarily mined for the specimen market.

The name Barite derives from the Greek word "barys" which means "heavy". This heaviness is a distinguishing feature of Barite. When you pick it up, the seemingly delicate crystals fool you into thinking it is a light mineral, but it is in fact quite heavy for a nonmetallic mineral.

It is this delicate appearance that originally attracted me to the Barites from Cerro Warihuyn. They are found in a variety of colors ranging from nearly colorless to grayish blue or grayish green, to golden yellow, to a more amber color. Barite crystallizes in the orthorhombic system and the Barite crystals of Cerro Warihuyn are typically tabular or bladed and vary in thickness; some with the transparency of glass. In addition to being translucent to transparent, the crystals exhibit fluorescence and phosphorescence. Also, they are commonly associated with Dolomite and Rhodochrosite. The transparency of some of the crystals would make for excellent gemstones but, unfortunately, Barite is too brittle and has a Mohs hardness of 2.5-3.5 making it unsuitable material for gemstones.

Despite their somewhat fragile nature, the Barites from Cerro Warihuyn are truly special. They are a great choice for collectors of all levels since they are still generally affordable and their insolubility makes them relatively safe to handle. Their shape, color and form are a feast for the eye and are truly mountain treasures.

from Breccia, 9/21

Mix a tablespoon full of Crisco with the same amount of Linde and apply it to a Felt Polishing Wheel or lap. Its viscosity prevents the powder from flinging off or traveling to the edge of the lap.

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

#### October Field Trip Report by Roger Danneman, Field Trip Chairman

On Oct. 16th we went to Red Top again and it was another gorgeous day. Clear blue skies and temps in the 60s. We had 26 people in 13 vehicles. 22 made the hike up hill to the meadow while 4 did the lower dig. A few of us did both.

I found a few nice agate nodules in the Meadow dig and some very nice agate and jasper in the lower dig site. Our next field trip is scheduled for November 6th at First Creek. This is a 2 mile hike on a good road bed with a few ups and downs. Jogging carts or wagons work well to carry the load. Mostly we find agate nodules, crystal plates, and geodes (whole or fragments) here. This is probably our last field trip for 2021, unless we get some nice late November or early December weather. Trip info goes out a week before the trip.



## **Carbon Dating Gets An Astronomical Assist**

Carbon dating techniques can now measure the amount of Carbon-14 for individual tree rings. The usual amount of variation of Carbon-14 per year is normally very low, but can go up significantly because of supernovas. So knowing when the light of a supernova reached earth can be used to help more accurately date historic items.

## **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).

- <u>November 6</u> Cascade Mineralogical Society - Field Trip to First Creek - for <u>agate/jasper/geodes</u> Roger Danneman roger.danneman@gmail.com; 425-228-8781 hm or 425-757-3506 cell.
- <u>November 13</u> Darrington Rock Club Blanchard Hill Meet at I-5 Exit 240 Gas Mart before 9 am <u>Dalmation stone &</u> <u>Chert</u> - Bring hard rock tools Ed Lehman wsmced@hotmail.com h# (425) 334-6282 c# (425) 760-2786

## **Young Tumblers News**

**Fossil Finds** by Keith Alan Morgan Some of the items that fossil hunters find. Look up, down, forward, backward, and diagonal.

V	Α	L	С	G	S	Κ	Ι	Ν	R	Η	Ρ
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Armor Casts Claws Clubs Coprolites Eggs Footprints Impressions Limbs Plates Ribs Scales Shells Skin Skulls Spikes Teeth Vertebrae

## How To Make Seasonal Snow Globes

You will need:

• Plastic or ceramic figurines appropriate for the season such as flags, shamrocks, bunnies, or for Christmas season, synthetic evergreen tips)

- Glass jar with lid
- Oil-based enamel paint (optional)
- Sandpaper
- Clear-drying epoxy
- Distilled water
- Glitter
- Glycerin

Sand the inside of the lid until the surface is rough. With clear-drying epoxy, adhere the figurine to the inside of the lid, and let the epoxy dry.

Fill the jar almost to the top with distilled water; add a pinch of glitter and a dash of glycerin (available at drugstores) to keep the glitter from falling too quickly. Don't add too much, or the glitter will stick to the bottom of the jar when it's flipped. Screw on the lid tightly, being careful not to dislodge the figurine. Turn the jar over and back again -- and let it glitter.

You can paint the jar lid with the enamel paint if you want to disguise its provenance.

Almost any jar works for this project, but one with a diameter at least half its height may work best: baby-food, pimiento, small pickle and olive jars are good choices. Look for plastic or ceramic figurines (metal ones are prone to rust) at flea markets and hobby or model-railroad shops. Synthetic evergreen tips are available at many floral-supply stores. Photos may be plasticized and inserted.

Although Snow Globes are usually associated with the Christmas season, they may be purposed for many other uses—Easter, St. Patrick's Day, Valentine's Day, Flag Day, 4th of July, Hallowe'en, Thanksgiving, Photos, preserved (or plastic) flowers, and so on.

via AFMS Newsletter, 11/20; original source unknown

## You Know That You Are A Rockhound If...

The sign says, "Falling Rock", and you pull over to wait.

from Breccia, 9/21

#### Halite by Dave Jacobson

This month I am writing about a mineral we all should be familiar with, halite, NaCl, Sodium Chloride, also known as rock salt. Halite is a member of the halide group of minerals. Halite is formed as an evaporate mineral in ancient, dry, salt lakebeds. It is also found in sedimentary deposits on bedrock where ancient saline bodies of water have evaporated. These sedimentary halite deposits are plastic and in the gulf coast states such as Texas and Louisiana have pushed up the overlaying sediment due to tectonic forces (pressure and heat) forming salt domes trapping minerals such as sulphur, gypsum and anhydrite. Salt domes can also form traps for petroleum deposits. "In a salt dome, a cylinder or cone-shaped formations of salt pushes up through sedimentary rocks, causing the rocks to arch and fracture in its path. Petroleum may accumulate above or along the sides of such a formation." The sedimentary deposits are also mined for the salt. Halite is found all over the world. There are large deposits at Stassfurt, Germany; Wieliczka, Poland; Cardona, Spain and Salzkammergut, Austria. In the UAS there are major deposits in New York, Michigan, Kansas, New Mexico, Utah and Searles Lake, California.

Halite is in the isometric crystal system. Crystals typically grow in cubes. It also grows in an interesting shape called a hopper crystal. Envision a cube with steps into the cube from the outer edges, forming a stepped hopper. Most commonly it is found as massive material. It can also be granular and fibrous. Halite can be colorless, white, red, yellow, orange, pink, green, blue, violet and gray. Hardness is 2–2.5. Specific Gravity is 2.1. Streak is white. It is salty to taste, but I don't recommend you go around tasting minerals as some can be harmful. Some minerals that resemble halite are poisonous. Some specimens fluoresce red under short wave UV

Halite takes its name from the Greek, hals meaning "salt.

Halite is an industrial mineral, which has many uses. Some are table salt and salt licks for livestock. Rock salt is used for deicing roads in northern climates. It is also a source of both sodium and chlorine which are used in the chemical industry.

The following reference materials were used in preparing this article: A Field Guide to Rocks And Minerals by Frederick H. Pough. Mineralogy For Amateurs by John Sinkankus. Simon & Schusters Guide to Rocks And Minerals. The Audubon Society Field Guide to North American Rocks And Minerals Ultraviolet Guide To Minerals by Sterling Gleason Amethyst Galleries Mineral Gallery on the Internet at http:// mineral.galleries.com. http://www.minerals.net/mineral/halides/ halite/halite.htm