

# The CMS Tumbler

December  
2022

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

**Next Meeting:**  
**December 4, 2022**  
**Setup 11:30 a.m.**  
**Dinner 12 noon**

**American Legion Hall**  
**25406 97th Pl S**  
**Kent, WA**

**We will have an auction.**

**More information**  
**on page 7**

### Table of Contents

Calendar.....	5
Cartoon.....	5
Board Minutes.....	6
General Minutes.....	6
From the Top of the Rock Pile.....	6
Oldest Art.....	9
Oldest Jewelry.....	10
Pinolite.....	10
Young Richard's Almanac.....	11
Young Tumblers News.....	13
Field Trip Report.....	14
Shows.....	16

### Connect with us!

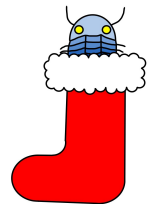
Website: <https://www.cascademineralsociety.org>  
Club Facebook: <https://www.facebook.com/CasMinSoc/>  
Facebook Groups: <https://www.facebook.com/groups/1168207926650075>  
Show Facebook: <https://www.facebook.com/cascadegemandmineralshow>  
Instagram: <https://www.instagram.com/cascaderockclub/>  
YouTube Channel (Please like and subscribe):  
[https://www.youtube.com/channel/UCaGIJxaWFAtV\\_JjgZRm9ESA](https://www.youtube.com/channel/UCaGIJxaWFAtV_JjgZRm9ESA)

This month remember to wish a Happy Birthday to

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

and also remember to wish a Happy Anniversary to

*DaKota & Savannah Vincent on December 19*  
*Mark & Penny Hohn on December 27*  
*Peter & Beverley Williams on December 29 (40 years)*  
*Philip & Becky Trepanier on December 30 (34 years)*



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

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

Tips, suggestions, recipes and experiments printed in this newsletter are the experiences and/or opinions of the individuals submitting them. We are not responsible for their authenticity, safety, or reliability. Caution and safety should always be practiced when trying out any new idea.

**New Club Mailing Address:**  
**Cascade Mineralogical Soc.**  
**c/o 25838 W. Lake 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](mailto:greenrockdraggin@yahoo.com)

**2022 Elected Officers**

President Kat Koch	425-765-5408	president@cascademineralsociety.org
Vice President Linda Jorza	206-478-1642	ljorza@gmail.com
Treasurer Charles Benedict	425-306-0456	charlesbenedict@comcast.net
Secretary Pete Williams	425-228-5063	petewill02@gmail.com
Director 1 – At Large Kathy Hartzell	253-277-0329	k.hartzell@yahoo.com
(Shared Position) Garry Hartzell	253-277-0329	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
Past President Malcolm Wheeler Sr.	253-569-5185	facetguru@aol.com
Show Chairman Kat Koch	425-765-5408	president@cascademineralsociety.org
Federation Representative Michael Blanton	425-271-8757	mblanton41@hotmail.com
Federation Representative Kat Koch	425-765-5408	president@cascademineralsociety.org
Mineral Council Diana Horsfall	425-226-3154	dianahorsfall@comcast.net

**2023 Show Committee Chairs**

Cascade Show Chairman		
Show Treasurer Pete Williams	425-228-5063	petewill02@gmail.com
Show Silent Auction (shared) Richard Russell	253-736-3693	richru1@yahoo.com
Show Silent Auction (shared) Noelle Barnes	206-914-0514	noelleb@outlook.com
Pre-Show Raffle Case & Donation Requests Kat Koch	425-765-5408	president@cascademineralsociety.org
Show Raffle Case Display Terri Gerard	206-437-0240	eyeballgraphics2002@yahoo.com
Raffle Prize Distribution		
Show Demonstrators Richard Russell	253-736-3693	richru1@yahoo.com
Show Load In/Out		
Show Display Case Presenters		
Show Road Signs		
Show Event Volunteer Recruiter		
Show Refreshments for Vendors & Volunteers Angie & Brian Bayer	253-569-0245	Text to her number (no email)
Spinning Wheel Angie & Brian Bayer	253-569-0245	Text to her number (no email)
Show Website Kat Koch	425-765-5408	vendorchair@cascademineralsociety.org
Show Vendor Chairman Kat Koch	425-765-5408	vendorchair@cascademineralsociety.org

**2022 Committee Chairs**

Club Historian		
Donations Kat Koch	425-765-5408	president@cascademineralsociety.org
Field Trip Roger Danneman	425-228-8781	Roger.Danneman@gmail.com
Health & Welfare Bev Williams	425-228-5063	britbev1957@outlook.com
Library Diana Horsfall	425-226-3154	dianahorsfall@comcast.net
Meeting Greeters Angie & Brian Bayer	253-569-0245	Text to her number (no email)
Meeting Programs Paul Arhnberg	941-704-2063	runhikebird@icloud.com
Membership Charles Benedict	425-306-0456	charlesbenedict@comcast.net
Newsletter - Tumbler Editor Keith Alan Morgan	253-316-9935	greenrockdraggin@yahoo.com
Shop Instructors (Temp) Roger Danneman	425-228-8781	roger.danneman@gmail.com
Shop Reservations Diana Horsfall	425-226-3154	dianahorsfall@comcast.net
Public Relations Kat Koch	425-765-5408	president@cascademineralsociety.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 Group Roger Danneman	425-228-8781	Roger.Danneman@gmail.com
Facebook Club Page Gina Manso	425-281-3502	ginamanso51@gmail.com
Instagram Gina Manso	425-281-3502	ginamanso51@gmail.com
All Other Social Media Kat Koch	425-765-5408	president@cascademineralsociety.org
West Seattle Timebank Volunteers Linda Jorza	206-478-1642	ljorza@gmail.com

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 25838 W. Lake 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.cascademineralsociety.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](mailto:mblanton41@hotmail.com)

## 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 site. 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

Our meetings are now on YouTube. The meeting will be available, at the latest, on Sunday night following the meeting. Don't forget to "Like" and "Subscribe"! [YouTube Link](#)



To get information to the Tumbler via the Internet send it to [greenrockdraggin@yahoo.com](mailto:greenrockdraggin@yahoo.com) Please put the word "Tumbler" and subject in the Subject Line. The deadline is the 20th of each month.

### NFMS Needs Your Canceled Postage Stamps

Every year the NFMS collects postage stamps from its member clubs. They have a stamp company that buys them, and in turn, these funds are donated to cancer research. Every year NFMS donates around \$5,000.

On letters that you receive, tear the corner with the stamp off. Try to leave about 1/4" of the envelope around the stamp. Be careful not to damage the stamp. Place the stamps in a plastic baggie and bring them to the meeting. Our member, Mike Blanton, collects the stamps and turns them over to the NFMS at the regional rock and gem show. You can give them to Mike as often as you want throughout the year.

Collecting the stamps is another way we rockhounds give back to our community.



### Don't Forget To Show Your Membership Card At These Retailers

The following businesses are loyal supporters of our rock club. Show your membership card at the following stores and get a 10% discount on most 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. *Please be aware there are a few items they can't offer the 10% discount on.*

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!

### 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.



# Scan Me

For quick access, you can scan the following codes.



Access CMS Club Instagram page



Access our CMS YouTube channel



Access our CMSclub website for the latest on meetings and club events



Access CMS Facebook Groups

# December

Sun	Mon	Tue	Wed	Thur	Fri	Sat
The Christmas party takes the place of the regular meeting!				1	2	3
4 Xmas Party 12 Noon	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

CMS Christmas Party:.....1st Sunday, December 4.....setup 11:30 am, eating 12:00 noon

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)



## CMS Board Meeting Minutes November 7, 2022

by Pete Williams, 2022 Secretary

*Attendees: Kat Koch; Linda Jorza; Pete Williams; Roger Daneman; Rich Russell; Paul Ahnberg; Kathy and Gary Hertzelt; Mike Blanton; Diana Horsefall; Charles Benedict; Peggy Shashy; Ananda Cooley*

The financials look healthy. We now have 112 families and 240 members. The American Legion is raising the monthly room rental from \$40 to \$75 and the Christmas party room rental from \$175 to \$300. These increases are needed because they no longer have a volunteer to clean the rooms.

Kat is going to approach the Kent City Council to see if they have space we can use for meetings and a shop. A discussion was held on if there is a need to increase our liability insurance to cover automobiles. The decision was that it was not necessary. We will need to raise the number of members covered by the insurance due to our increase in memberships.

An idea was discussed to run an ad on Facebook for \$100 to try to increase membership. The Board decided to potentially have members post the info about the club on their own Facebook pages and to explore Meetup to advertise regular meetings or other events. Meetup would not be used for field trips.

The show profit was about \$3900 or lower than previous years. The college is requesting payment for something larger than the original invoice. They have not yet cashed the check for the original invoice. Kat is trying to connect with the college to understand the increase.

The raffle income at meetings has been quite low. An idea to increase income would be having a 50/50 raffle. No decision was made on this. Next summer will be the 75th anniversary of when Boeing employees met to discuss the forming of our club. Few clubs have been around for that long. Kat would like to celebrate our 75th anniversary at the club show next September.

The program for the November meeting will be Chris Holden from Black Jack Metal Detectors making a presentation on gold and mining. The candidates up for election at the December party will be for directors – Rich Russell; Gary and Kathy Hertzelt; for Treasurer – Ananda Cooley. The open show chair position will be broken out into 3 positions – show chair, co-chair 1 and co-chair 2. The candidate for co-chair 1 is Peggy Shashy. The other 2 show positions are open.

## CMS General Meeting Minutes November 10, 2022

by Pete Williams, 2022 Secretary

Minutes were approved as written.

Our club won several awards from the American Federation of Mineralogical Societies (AFMS). This is the national organization consisting of 7 regional organizations. Our club is part of the Northwest Federation. Our club Tumbler editor, Keith Morgan, won several awards – 1st place for drawn feature; 5th place for newsletter; and 1st place for kids drawn feature. Roger Daneman received honorable mention for his article on a field trip.

The Christmas party will be on Sunday 12/4 with set-up at 11:30 and dinner at noon. There will be an election of officers for 2 director positions – Rich Russell and Gary and Kathy Hertzelt; Treasurer – Ananda Cooley; Show chair – open; co-chair 1 – Peggy Shashy; co-chair 2 – open. There will be a door prize of a beautiful mineral specimen drawn after the dinner as well as an auction. Attendees should let Angie know what they are going to bring to the potluck dinner. The club will provide a turkey and ham.

The next field trip will be Saturday November 12 to First Creek.

Jennifer Russell requested attendees at the Christmas party bring non-perishable food to be donated to a food bank.

**Program:** Chris Holden from Black Jack Metal Detectors doing a presentation on gold and mining.

**Meeting Adjourned:** 8:38 followed by show and tell and the raffle.

## From the Top of the Rock Pile... by Kat Koch, CMS President 2022

Life is one big rock pile. You are the rockhound. Build your rock pile with the things you love!

As we close out 2022, I reflect on our club during the past year.

Our treasury accounts in both the club and show accounts are in good financial health. We continue to run the club annually without touching our savings account.

Once again, we produced a successful Cascade Gem and Mineral Show. The show profit was added to our indoor lapidary workshop fund. The gem show is our only opportunity to add substantially to this fund. We even had 45 club members volunteer to help run the show over the three days. As far as I can remember, this is far more members volunteering for the show than we have ever had. We could not have done the show without you. To each of you, I say **Thank You!**



Keith (The Tumbler Editor) and Roger (Field Trip Guide) continued to put a lot of time and effort into their respective volunteer positions, month after month. AFM even recognized them this year - Job well done! Again, I thank you for everything you do to make our club successful.

Welcome to all our new members in 2022, and I also appreciate all the members that renewed their membership! Our family memberships have reached an all-time high – as of

*Welcome*  
New Members

November 24th the club membership is at 115 families! Also, remember if you joined our club (or renewed your membership) after October 1st, your membership is good until **January 1st, 2024.**

Going into 2023, we need a Show Chairperson for our 2023 Cascade Gem and Mineral Show, being held September 16 & 17, 2023. The venue has been booked, we have a 1<sup>st</sup> Co-Chairperson, and many major show areas already have volunteers committed to covering them. Now we need a coordinator – that's the Show Chairperson. I have copious notes on what needs to be coordinated. I am very willing to work closely with the Show Chairperson; to guide them, share my knowledge, and give you my two cents when you ask for it.



### General Meeting – Sunday, December 4th

### Holiday Potluck Dinner, Board Officer Elections, Auction

**Setup: 11:30 am and Dinner: Noon**

As always, the club provides turkey and ham.

But this year, we are organizing our Holiday Potluck Dinner differently.



Angie is keeping a list of what people are bringing for the Potluck Dinner. This way, there will be a better variety of dishes and fewer duplicates. We usually have around 40 to 45 members and guests attending. Kids of any age are always welcome.

Once you decide what you will bring, talk to Angie or text your name and dish or item to her cell number, 253-569-0245. She doesn't have email. We already have enough mashed potatoes and gravy.



*Something else that will be new this year. There will be a nice FREE mineral specimen for a door prize drawing!* You can only win if you are present at the holiday dinner and a CMS member.

This year bringing your place setting is optional, as the club will have a supply of paper plates and plastic silverware.

Dinner is a great time to visit with one another. It's an excellent opportunity to enjoy each other's company and get to know each other.

After dinner, we hold the election of board officers for the coming year.

Winding up the afternoon, we will hold our annual holiday auction. The auction is a great time to pick up some fantastic bargains. The kids can also spend the "Rock Bucks" they have collected during the year. They can spend them on items they want, just like real cash.

Donations of auction items are appreciated. The proceeds we receive from club auctions help pay the bills and not have to raise our annual dues.



## General Meeting – Thursday, January 12th

*Topic: Thunder Eggs*

This January, we'll storm into the year's presentations with a crowd favorite - Thunder Eggs!

We'll begin with some interesting Thunder Egg science - how they're formed, what they're made of, where they're found, etc. - and then we'll jump into a fun Show-n-Tell where we share some of our favorite Thunder Egg specimens from our personal collections.

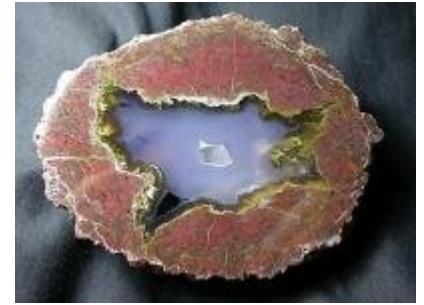
Members will vote on their favorite Thunder Eggs.

The door prize winners will be awarded to the 1st, 2nd, and 3rd place Thunder Egg owners.

**Show 'n Tell:** Bring a few of your favorite Thunder Eggs to share, along with your favorite Thunder Egg stories and cutting/polishing advice.

**Myth:** The Thunder egg was believed by the Pacific Northwest Native Americans to be thunderous rock eggs thrown across the valley between Mount Hood and Mount Jefferson in Oregon by the warring Thunder Gods whenever they became angry with or jealous of each other. Hence, the English version of the Indian name is "thunder eggs."

We'll see you there!



## Looking For Volunteers

We really need a Show Chairman asap!

**Show Chair:** We need a Show Chairman for next year, September 16 & 17, 2023. This job is primarily coordinating everything. I have compiled a recipe for producing the show – very detailed notes. You can accomplish the job entirely from home on a computer or laptop. The only thing that can't be done from home is if you want to visit the college and see the venue.

The Board has decided to make the position of Show Chairman a progressive position. Show Chairman, 1st Co-Chair, and 2nd Co-Chair. Each year the person would move up a job, so by the time they reach Show Chairman, they have two years of experience under their belt.

*Show Chairman – Open – Need a volunteer*

*1st Co-Chair – Peggy Shashy*

*2nd Co-Chair – Open – Need a volunteer*

*It's essential to have a Show Chair volunteer by January as we need to have flyers printed and distributed and the website up to the book vendors.*

Kat will write the website to sell booth spaces and find and book the vendors.

Nicole Barnes and Rich Russell will handle the silent auction, raffle, and display cases.

There are also several other volunteer positions that members have committed to doing next year.

**Videographer:** Needed at our general meetings: A volunteer to videotape our meetings. Up to you if you want to edit the video or not. We have free editing software to post the video to our YouTube club channel. We meet on Thursday, and the video needs to be uploaded by the following Sunday.

**Historian:** Copies of the Tumbler, pictures from club events and club officers, and other memorabilia from the club. Put everything except Tumbler issues in a scrapbook. The club will reimburse you for any expenses in order to preserve our history. In addition, various members have older content they can provide you.

If you decide you can help out, text or call Kat Koch. Contact info is on page 2 of this Tumbler issue.



## Time to Grab a Bargain!

Our club membership runs on a calendar year but now is the time to grab a bargain.

For anyone that joins CMS between October 1st and December 31st, your membership will be good until **January 1st, 2024!** So, if any of your friends or guests are sitting on the fence about joining our great club – now is the time to become a member. Go to our website ([www.cascademineralogicalsociety.org](http://www.cascademineralogicalsociety.org)), and you can become a member using your credit card. This also applies to current members renewing their membership between now and December 31st.

Some of the perks of being a club member are:

*Monthly club meetings. Educational and entertaining meetings.*

*Great field trips every month. I know a lot of members join just for the field trips. They are a great family outing.*

*Discount at Jerry's Rock Shop, Kent, and Blackjack's, Renton. Just show your membership card.*

*Kids that attend our meetings receive "Rock Bucks." If they bring something for Show 'n Tell, they will receive even more "Rock Bucks." They can use these "Rock Bucks" to buy raffle tickets at our meetings or items at our club auctions.*





*We also have a free door prize drawing for adults and kids at every meeting.  
Two times a year, we have club auctions. It's a great time to pick up great bargains.  
Lapidary shop. Open spring through fall.  
Receive our monthly award-winning club news bulletin, The Tumbler.  
Classes  
Opportunity to be a part of our club's Cascade Gem and Mineral Show.  
Learn about the hobby of collecting minerals, fossils, and rocks.  
Make new friends with people that have similar interests.*

## Oldest Known Works Of Art by Kat Koch Cascade Mineralogical Society

Until recently, the oldest known piece of art is estimated to be 52,000 years old or more!

You would first imagine it was from some European country like France or Spain. Guess again. It is a hand stencil found in the 1950s at the Maros Cave sites, Sulawesi Island, Borneo, Indonesia. Around 1,500 hand prints have been found in 30 caves in the area. The Maros paintings consist of stenciled outlines of human hands and paintings of primitive fruit-eating pigs called babirusas, aka pig-deer. Scientists have estimated these cave paintings to be around 39,500 years old. With the new dating method, this cave art can be 52,000 years old or more!

The first paintings made by human hands were outlines of human hands. These limestone cave paintings show that Europe wasn't the only region the creative brilliance originated; early settlers of Asia were creating art at the same time as well. It is often assumed that Europe was the center of the earliest human creativity. The verified rock art dates from the Maros Caves show that about this same time, on the other side of the world, people were creating pictures of animals as remarkable as those in the Ice Age caves of France and Spain.

Since around 2010, a new method of dating cave popcorn was developed: Uranium-series dating. This method is based on another radioactive isotope and generally works like Radiocarbon dating does, but it dates calcite. The geological process of calcification occurs in caves that create stalagmites and stalactites, but it also makes cave popcorn on the walls. These popcorn calcite nodules sometimes grow over cave paintings, so samples were taken from these nodules. The data obtained is for the calcite only and shows that the underlying drawing is older. In theory, it gives the latest possible date that a painting might have been created before it was covered by calcite – this dating method can only be used on art with calcite nodules.

In 2018, researchers published the discovery of the oldest cave paintings found to date in the caves of La Pasiega, Maltravieso, and Ardales, Spain. These paintings were made by Neanderthals at least 64,000 years ago.

Also in 2018, archaeologists found a ½ inch smooth flake of silcrete (dated at approximately 73,000 years old) covered in red scratch-like markings (not pictures or paintings) made with ocher. The silcrete mineral is formed when sand and gravel cement themselves together. Ocher is a hardened, iron-rich material that can leave a red pigment. International archaeologists are calling it the earliest known human markings in history. This flake predates the previous earliest known cave art—found in Spain and Indonesia by 30,000 years. This discovery significantly pushes back the time line for ancient Homo sapiens and the emergence of "behaviorally modern" activities.

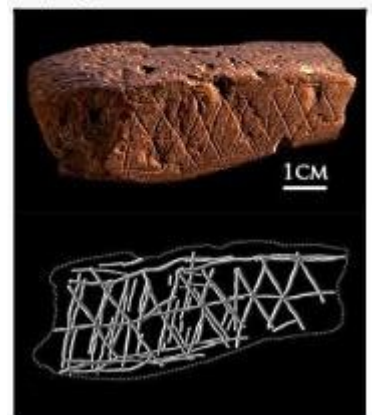


The silcrete flake of stone was found in Blombos Cave, overlooking the Indian Ocean, which is approximately 185 miles east of Cape Town, South Africa. The flake was found in a dense cache of artifacts that early Homo sapiens left behind. The Blombos Cave is nestled inside the face of a cliff overlooking the Indian Ocean. The cave seems to have given small groups of humans a place to rest for brief periods before they head out to hunt and gather food.

Caves help protect and preserve the art on their walls and artifact deposits, making them rich historical records for archaeologists to study. And because humans added to cave art and artifacts over time, many



Claimed "Oldest known drawing by human hands", discovered in Blombos Cave in South Africa. Estimated to be 73,000 years old.<sup>[50]</sup>



caves have layers—it depicts the human evolution of artistic expression and tools.

*Bibliography: The Atlantic, The New Scientist, Novo Scriptorium, Wikipedia, National Geographic, Society of Spanish Researchers in the United Kingdom, History Stories.*

### The World's Oldest Jewelry by Kat Koch, Cascade Mineralogical Society

Today both males and females adorn themselves with jewelry of various types. But do we ever think about how long humans have been doing this? It has been discovered that human beings have been wearing necklaces, bracelets, earrings, and other forms of jewelry for a lot longer time than archaeologists and anthropologists ever theorized.

Steven Kuhn, a University of Arizona anthropologist, working with researchers from Morocco's National Institute of Archaeological Sciences and Heritage in Rabat, Morocco, led several excavations from 2014 through 2018 at Bizmoune Cave, which is located 10 miles inland from Essaouira, on Morocco's Atlantic coast.

During these digs, the scientists uncovered 33 ancient sea snail shell beads that had been modified. These seashell beads have been dated between 142,000 and 150,000 years old, making them the oldest jewelry and tools found anywhere in the world. The small jewelry beads were about a half-inch (about 12 mm) wide and had round holes carved through their centers. The shell beads showed signs of being frequently used because of the interior wear, suggesting they had been strung and worn as a bracelet or necklace.

These *Tritia Gibbosula* mollusk shells are small sea snails with richly colored pearly shells. During the period that the cave was inhabited, the coastline was some 30 miles from the coast, so it is improbable that these seashells ended up in the cave by chance. The cave contents were dated using Uranium-series dating by measuring certain radioactive isotopes in the surrounding strata to establish the age of the seashells and tools.

These are not only beautiful pieces of jewelry; this new cave find has dramatically impacted human history.

*Bibliography: Don Hitchcock - donsmaps.com, Smithsonian Magazine, Ancient Origins, Artnet News, Guinness World Records*



### The Newest Treasure of British Columbia by Kat Koch, Cascade Mineralogical Society

In the summer of 2018, British Columbia can now boast that they have found over a 1 billion pound deposit of pinolite. For around 145 years, only found this rare and precious stone in one place in the world; the eastern Alps, near Hohentauern, Austria.

Pinolite (aka pinolith, pinolithstein, or märbelstein) was discovered in 1873 in Austria's Lower Tauern mountain range. During WWII, Germany and the Axis troops extensively mined the Austrian pinolite for its rich manganese content. Manganese is essential for producing iron and steel to manufacture weapons, trains, tanks, planes, ships, and submarines. After the war, the mining operations continued up until 1991, at which time the land was sold. An estimated 5.5 million tons of pinolite was extracted from the mountain range from 1904 to 1991. Most of this pinolite was melted down, which made the current pieces of pinolite more valuable. The new owners, as of 2013, have restarted the mine, and this beautiful mineral is again being found for sale.

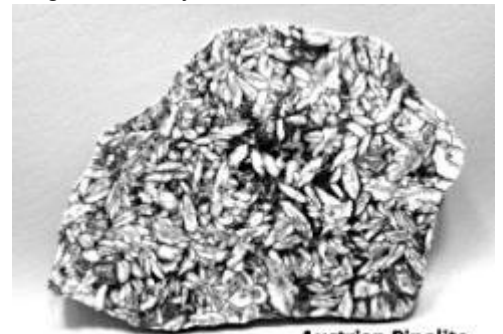
Pinolite got its name because the pattern resembles pine needles. Pinolite is a black-and-white metamorphic rock composed of light gray to almost black dolomite, white magnesite grains looking like pine kernels, and graphite. Generally, pinolite has a Mohs hardness of 4 to 4.5. Pinolite should be considered a fragile stone. The magnesite crystals are often soft, can easily cleave, and are vulnerable to abrasion. Small amounts of pinolite are used to make beads, spheres, tumbled stones, cabochons, and other small lapidary items.

The Canadian pinolith rock formation was in a report issued in the 1990s. Then, 15 years later, in the summer of 2018, the pinolith was found by accident in the mountains of British Columbia, Canada by a group of gold miners. The discovery was a historic and exhilarating find in the mineral collector and geology world.

The Canadian pinolite differs slightly from the Austrian variety as it contains minor traces of additional minerals, Quartz, Zircon, Apatite, Titanite, and possibly Muscovite. Also, the presence of pyrite provides a unique gold color in stones that have been oxidized.

Radiometric dating estimates of the Canadian mineral show it was formed around 500 million years ago. It is a placer stone that was once part of the main outcropping of Pinolite, eroded by a glacier, and brought down the local valley. So it has been in mother nature's rock tumbler for 1,000s of years.

The Geochemistry Dept., University of British Columbia, Okanagan, ran a few tests on the pinolite. Researchers were surprised by the discovery of zircons in the formation. The



Austrian Pinolite



Canadian Pinolite

formation's age is estimated to be over 544 million years old. CPC believes their stone is different from the Austrian Pinolite in many ways. Such as, the formation is believed to be older. They have also identified six pattern differences and sometimes the presence of pyrite and zircons. The growth process to create pinolith is known to have happened only in one other place on earth, and that is in Austria.

Some people see a similarity between Pinolith, Chinese Writing Stone and some specimens of the Chinese Chrysanthemum Stone.



Chinese Writing Stone (left picture) is an igneous rock found in China and California, USA. It is composed of black basalt with white feldspar inclusions.

Chinese Chrysanthemum Stone (right picture) is made of celestite crystals found in dark gray or black limestone boulders. Celestite crystals are a strontium sulfide mineral.



*Bibliography: Gem Rock International, Crystal Council, Mindat.org, Geology.com, Geology In.*

### Young Richard's Almanac by Dick Morgan

While in the hospital for three days made me think of the things that the staff do to take care of us patients. The whole group of doctors and nurses was great and friendly, explaining everything that was happening very thoroughly.

Remember that these medical personnel deserve a word of thanks for their dedication and service.

The smile of a person shows friendship and lights up their face and always brings a smile to you.

The problem with having to wear masks meant you had to see if their eyes were smiling, but as the eyes are the window to the soul it is easy to do.

The mask mandate is mostly over so real smiles are returning.

### The Cost of Safety by Ellery Borow, AFMS Safety Chair

What is the cost of being safe? Visited several stores recently and looked at the safety kits. They all looked quite nice in decorative plastic cases, metal with sealed lids, and cardboard boxes which held various assortments of basic supplies such as bandages, gauze, safety pins, ointments, swabs, adhesive tape, safety scissors, and a guide book of some sort.

Safety kits sometime focus on target situations—kits for car or boat travel, kits for the great outdoors, or kits for home safety. One can also find specific medications for insect bites and stings, burns, abrasions, sun burns and so on.

The prices for most safety kits ranged from \$4.95 to over \$60.00 for the more complete kits in airtight sealed metal boxes with sturdy plastic carrying handles. In practice we have seen tool boxes, shoe boxes, paper and plastic bags, as well as "official" safety kits being used to transport safety supplies in the shop, home, car or field trip. The main point is that a safety kit can be had for very little money. For such little outlay how can one afford not to have a safety kit available? With such affordability why not have a safety kit in the kitchen, shop, car, truck, office, hike, basement, and meeting place?

Considering the modest cost of safety kits, it is handy to have several. Some injuries respond favorably to quick attention. Having safety kits nearby can be advantageous. Take a burn for example—most people will immediately place a burn under cool water for a moment. Burns however can be deep so it is usually more effective to keep the area of the burn immersed in cool water for 3, 5, 10 or even 20 minutes to mitigate the worst of the effects of a burn. Though one should still seek professional medical attention if a burn is severe.

There is a power with having a safety kit at hand when needed. The power, among other things, is in saving money. Having a first aid booklet, knowing the procedures in the booklet (rather than getting familiar with them after the accident) and being familiar with the contents of the safety kit has the potential to save money. That said, it is still best to prevent an injury before it occurs, rather than have to treat it afterward.

We replace the brake pads on a car before they fail, we repair a roof leak before the damage becomes an issue, we paint the wood before natural elements damage it, we prune the dead branch before it falls on the house. We are used to preventing damage before it occurs—we should try to do the same with our personal well-being. A safety kit can help with that.

Keeping with the car example—fixing the brakes can be far cheaper than being in a traffic accident later. Wearing safety goggles, gloves, study shoes, and otherwise being well prepared for a field trip can be well worth the cost of safety equipment and kit. The prices of being safe are many and varied—and well worth the alternative of being injured.

Please consider keeping a safety kit nearby because—Your safety matters. from AFMS Newsletter, 10/22

When writing out the scientific name of an animal the genus name is capitalized, but the species name is not. For example *Homo sapiens* is correct, not *Homo Sapiens*, or *Tyrannosaurus rex*, not *Tyrannosaurus Rex*.

### When Is Aragonite Not Aragonite? by Prof. Philip R. Kesten, Ph.D., Department of Physics, Santa Clara University

On a rockhounding trip to the Corocoro Mining District in Bolivia, you have the good fortune to find a spectacular

crystal specimen. It is long and hexagonal with a flat, terminated end. Aragonite! Aragonite, a crystalline form of calcium carbonate - a calcium atom (Ca) connected to a carbon atom (C) and three oxygen atoms (O) - is often found in this region.

But this specimen doesn't look quite like the aragonite with which you're familiar, so you make some tests. The crystal you found has a hardness of 2.5, somewhat lower than the known hardness of aragonite. You drag the crystal across your porcelain streak plate – the streak it leaves is red, not white as you would expect for aragonite. And the specific gravity of this specimen is almost 9, three times higher than the specific gravity of aragonite. (Specific gravity is a measure of the density of the rock, that is, how much mass is packed into a given volume. If you don't know how to measure specific gravity, I provide some easy instructions below.) Wrong hardness, wrong streak color, wrong specific gravity - is this crystal aragonite? Not likely.

Is there a mineral that does have a hardness of 2.5 and a specific gravity of 9, and that leaves a red streak? Yes – copper! But native copper occurs only rarely in crystalline forms, and even then, the crystals are either cubic or octahedral, not hexagonal. So, no, the specimen you found is neither aragonite nor a crystal of copper. No – what you have found is a pseudomorph of aragonite, a crystal that formed as aragonite but in which, over millions of years, the calcium atoms in the calcium carbonate molecules have been replaced by copper atoms. You have found a “copper after aragonite” pseudomorph. For you fans of ancient Greek, “pseudomorph” comes to us from the Greek ψεύδος (pseudos) meaning “false” and μορφή (morphé) meaning “shape.”

Some minerals are more susceptible than others to the replacement process by which a pseudomorph is created. Aragonite is one, although copper after aragonite is a rarity. (If you have really found a crystal of copper after aragonite, you are one lucky duck! Even a small specimen of this pseudomorph sells for hundreds of dollars.) A far more common pseudomorph of aragonite is calcite after aragonite.

Strictly speaking, copper after aragonite and calcite after aragonite are substitution or infiltration pseudomorphs. A substitution pseudomorph forms when one mineral is replaced by another while the original mineral's crystalline form is preserved. Because of the substitution, however, the resulting pseudomorph has the color, hardness, and specific gravity (and other properties) of the new mineral. Atoms in pyrite, the FeS<sub>2</sub> molecules of which are an iron (Fe) atom bonded to two sulfur (S) atoms, are also relatively commonly replaced. Pseudomorphs of pyrite retain the distinctive look of pyrite, of course, but none of its other properties. Can you guess what atomic substitutions have occurred to form limonite after pyrite, goethite after pyrite, and hematite after pyrite, all common pseudomorphs? The molecules in limonite are FeO (O is oxygen), molecules in goethite are FeO<sub>2</sub>H (H is hydrogen), and molecules in hematite are Fe<sub>2</sub>O<sub>3</sub>. (Hint: the iron atoms in FeS<sub>2</sub> remain during the process of forming the pseudomorph.)

Another group of common pseudomorphs form from glauberite, a mineral easily identified by its intertwined, plate-like, rhombic crystals. Pseudomorphs of glauberite are among my favorites! Glauberite is relatively soluble, so when subjected to water, the molecules that form glauberite can, over time, dissolve away to be replaced by gypsum, or calcite, or selenite, ... or a good number of other minerals. Gypsum after glauberite and calcite after glauberite pseudomorphs are particularly common and easy to acquire.

Because glauberite is soluble, it is also common for the surfaces of a glauberite crystal to dissolve, allowing molecules of another mineral to attach themselves to those surfaces. In this way a glauberite crystal can become encrusted with that second mineral. When the rest of the glauberite dissolves away, what's left is a hollow cast composed of the second mineral but in the shape of the original glauberite crystals. This is an aptly named cast pseudomorph, often referred to as an epimorph. (The Greek word ἐπί (epí) means “on top of.”) A common epimorph forms when the mineral prehnite coats a crystal of laumontite. Often the encrusting of the laumontite is not complete, leaving a hollow, partial shell of prehnite.

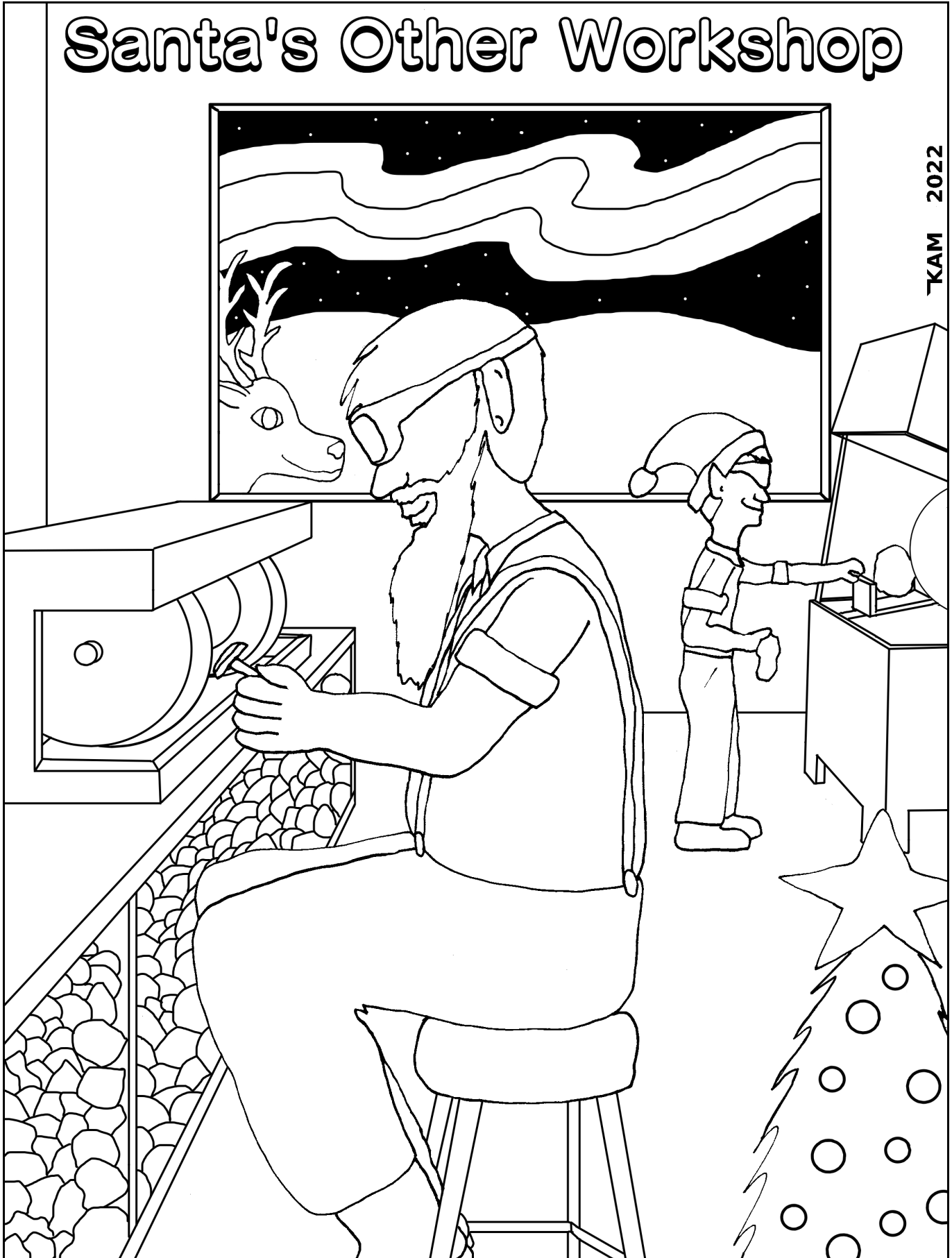
Technically, the term pseudomorph refers to one substance forming in the shape of another, either by molecules of one replacing molecules of the other or by one substance encrusting another. But a “substance” does not have to be a mineral – petrified wood, for example, is considered a pseudomorph. Millions of years ago, imagine a tree falling over into a primordial swamp. Buried, eventually, beneath layers of mud and perhaps ash from ancient volcanoes, and therefore without oxygen to envelope it, the wood could not decay... so the voids left behind as the wood broke down became filled with silicates. Silicates... that's rock! Rock in the form of the original, living tree. We could call this a silicate after wood pseudomorph. (But to be clear, no one calls petrified wood by this name!) And in the same way, fossils of dinosaur bones are technically pseudomorphs... made of the stone that replaced the biological material in the bones of creatures that lived millions of years ago. Stone, but still in the shape of those bones. The same is true of fossils of brachiopods and ammonites.

And finally, as promised, here is an easy way to measure the specific gravity of a specimen. (Or of anything.) First, specific gravity is the density – the mass per volume – of an object relative to the mass per volume of water. To find the specific gravity of a rock specimen, then, you need to measure its mass (or weight) and its volume. Find a cylindrical container, preferably one not too much wider than the sample to be measured, and a kitchen scale. Set your scale to read out in grams and find the weight *W* of the specimen. (Just to be persnickety, grams are a measure of mass, not weight. But your scale has been set to convert from weight to mass.) Carefully measure the diameter in centimeters of the cylinder, partially fill it with water, and measure the height *H* in centimeters that the water level goes up when you submerge your sample. The volume *V* of your sample is equal to the volume of the water it displaces, that is, *V* is equal to  $\pi \times (D/2) \times (D/2) \times H$  in cubic centimeters (cm<sup>3</sup>). You can now compute the specific gravity, which is equal to  $(W / V) / (1 \text{ g/cm}^3)$ , where 1 g/cm<sup>3</sup> is the density of water at 4 °C. (And yes, dividing by 1 is just as easy as it looks!)

So... when is aragonite not aragonite? When it is a pseudomorph! Consider adding some pseudomorphs to your collection. from Breccia, 5/22

# Young Tumblers News Coloring Page

## Santa's Other Workshop



TAM 2022

## The Chicken Mine

When the Bay Area was more rural, people raised poultry and those chickens, ducks, geese, and turkeys were rockhounding sites!

The September 1954 issue of the Breccia, "Did You Know Department", disclosed that "A new source of minerals has been found", that a Mr. Grengig was able to identify 14 different minerals in the gizzards of fowl that he had butchered. Included and identifiable minerals included garnet, magnetite, native copper, quartz, calcite, mica, and gold. Yes, there was gold in them thar chickens!

from Breccia, 11/22

---

## November Field Trip Report by Roger Danneman, Field Trip Guide

On Sat. Nov 12th we went to First Creek for agate, jasper, and crystal geodes. It was a cold but clear and sunny day. Temps were in the mid to upper 30s. We had a little bit of snow on the trail in some sections (1-2") and in some of the dig areas, but the slopes facing southeast and south were clear and were the better option for collecting. Beautiful views of snow covered hill tops and mountains. The hills above the trail are steep with rock slides and scree, and much care needs to be taken if attempting them. 8 other brave souls joined me on this 2 mile trek. So much great material to be found in the area. We collected for 3-4 hours and then I broke out my camp stove and kettle for hot cocoa, tea, and coffee as the sun was sinking low on the southwestern hill tops. Winter weather has definitely arrived in the Cascades along with short daylight hours and this was our last scheduled trip of the year. The CMS Christmas party is coming up on Sunday Dec. 4th where we have a pot luck, quick meeting, and auction of club material. A nice way to cap off the year. I'll be putting out the Field Trip schedule for 2023 in mid to late Jan. with our first trip being in March.

Attendees on this trip were Nik B., Peggy and Paul, Ananda C., Julie M., Gina M., new member Arlie W. and guest Tonya.

CMS Field Trips for 2022 have been successfully completed. You can read about each trip as well as view pictures on the Trip Reports tab of our web site. I plan to have the new schedule for 2023 field trips listed on the Field Trips tab by mid-January or early February.





There are no shows or field trips in December.

The AFMS now has a page for juniors.  
AFMS Juniors  
<https://www.juniors.amfed.org>

## Azurite

Azurite is a very popular mineral because of its unparalleled color, a deep blue called "azure", hence its name. Azure is derived from the arabic word for blue. The color is due to the presence of copper (a strong coloring agent), and the way the copper chemically combines with the carbonate groups (CO<sub>3</sub>) and hydroxyls (OH). Azurite has been used as a dye for paints and fabrics for eons. Unfortunately, at times its color is too deep and larger crystals can appear black. Small crystals and crusts show the lighter azure color well. Azurite is often associated with its colorful close cousin, malachite.

Green malachite is closely associated with azurite in many ways. Not only do they frequently occur together (pictured above), they also have very similar formulae. Malachite can also replace azurite, making a pseudomorph, or an exact copy of an azurite crystal (only now instead of being blue, it would be green). Malachite is therefore [sic] more oxidized than azurite. This means that malachite represents a later stage of oxidation and the increased oxidation is what causes the color change.

The oxidation is persistent and actually ongoing, although very slow. Azurite paints made centuries ago have undergone the transformation much to the imagined horror of artists whose paintings of beautiful blue skies now have a most unusual green hue! Thankfully for mineralogists and collectors, this transformation is one of the most aesthetically pleasing in the mineral kingdom. Although the malachite may soften the sharpness of the azurite crystal, it generally leaves the specimen intact and a whole range of transformations from pure azurite to pure malachite can be obtained. There really is no comparison to any other mineral to mineral transformation in terms of overall beauty.

Azurite is used in jewelry and for dyes as mentioned above. It is also an unimportant ore of copper, although its significance has been more impressive in the past. It is still considered a minor ore of copper; mostly because it is found associated with other more valuable copper ores. Fine crystal clusters, nodular specimens, and interesting and beautiful combinations with malachite are important pieces in anyone's mineral collection. The magnificent color of azurite is worth mentioning again as it truly is a one-of-a-kind in the mineral world. Azurite is one of those classic minerals.

### Physical Characteristics:

Color is azure, deep blue or pale blue if found in small crystals or crusts

Luster is vitreous to dull depending on habit

Transparency: Transparent if in thin crystals, otherwise translucent to opaque.

Crystal System is monoclinic; 2/m

Crystal Habits crystals are irregular blades with wedge shaped terminations. Also, aggregate crusts and radiating, botryoidal, nodular and earthy masses

Cleavage is good in one direction and fair in another

Fracture is conchoidal and brittle

Hardness is 3.5-4

Specific Gravity is 3.7+ (heavier than average)

Streak is blue

from West Seattle Petroglyphs, 5/21

---

## Maybe Quarry Produced World-Class Sulfur and Celestine Specimens

 by Dr. Christopher J. Stefano and William B. Barr, Jr.

The Maybee Quarry, located in central Monroe County, Michigan, is well known among local collectors in southern Michigan and northern Ohio as a source of world-class sulfur and celestine specimens. This gem of a locality has remained somewhat obscure on the national and international collecting scene, but the appearance of our article about it in the May-June 2021 issue of the Mineralogical Record may well make it better known.

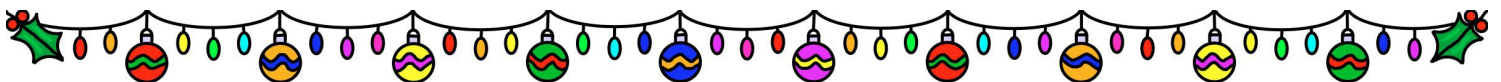
Although the geology and mineralogy of the locality are relatively simple, there are important lessons to be learned from Maybee, perhaps most importantly concerning how native sulfur may be generated in sedimentary rocks. In 1906 Walter Hunt first worked out this geochemical process at Maybee, and it is summarized in the Mineralogical Record article.

The Maybee Quarry has a surprisingly rich history, dating back to the 1850s. When Michigan state geologists visited around 1900 to study the quarry's stratigraphy, they also noted the excellent sulfur and celestine crystals. Around 1905, Edward Kraus, founder of The American Mineralogist, visited the locality with his student, Walter Hunt, and wrote about the crystallography of the celestine and the origin of the sulfur.

At that time, the quarry was being worked as a source of building stone but, with the decline of that market prior to the first World War, the quarry was abandoned and flooded. New owners eventually drained the quarry and put it back into production circa 1960, just as America's "rockhounding" craze was beginning, and so Maybee saw many visits by "rockhounds" between 1960 and circa 1990. It was during this period that most currently extant Maybee specimens were collected.

The lion's share of the good pieces remain today with the collectors who found them, but others have made their ways to local museums, especially Michigan Technological University's A. E. Seaman Mineral Museum. Fine Maybee specimens are only rarely encountered on the international market.

via The Quarry, 3/22; via Conglomerate, 1/22; via the MWF Newsletter, 3/22; from the Strata Data



# Merry Christmas and Happy Holidays!