

The CMS Tumbler

November
2022

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

Next Meeting:
November 10, 2022
7:00 p.m.

American Legion Hall
25406 97th Pl S
Kent, WA

The Program is speaker
Chris Holden on finding gold

The Show & Tell
Theme is a rock, stone, or
fossil you found

Table of Contents

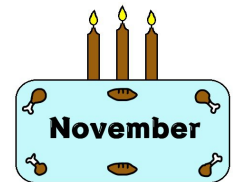
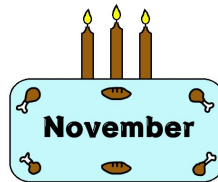
Calendar.....	5
Cartoon.....	5
Board Minutes.....	6
General Minutes.....	6
From the Top of the Rock Pile.....	6
General Club News.....	7 & 8
Heavenly Pits.....	8 & 9
San Andreas Fault.....	9 & 10
Young Richard's Almanac.....	10
Young Tumblers.....	14
October Field Trip Report.....	15
Field Trips.....	15
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



This month remember
to wish a
Happy Birthday to
Paul Vitellaro on November 4
Malcolm B. Wheeler on November 14
Paul Wasley on November 19
Peggy Shashy on November 23



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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.

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

2022 Elected Officers

President Kat Koch	425-765-5408	president@cascademineralogicalsociety.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
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Federation Representative Kat Koch	425-765-5408	president@cascademineralogicalsociety.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@cascademineralogicalsociety.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@cascademineralogicalsociety.org
Show Vendor Chairman Kat Koch	425-765-5408	vendorchair@cascademineralogicalsociety.org

2022 Committee Chairs

Club Historian		
Donations Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
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Shop Reservations Diana Horsfall	425-226-3154	dianahorsfall@comcast.net
Public Relations Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Refreshment Angie & Brian Bayer	253-569-0245	Text to her number (no email)
Raffle Master Roger Pullen	206-387-3214	Phone calls only. No email or texting.
Show & Tell Michael Blanton	425-271-8757	mblanton41@hotmail.com
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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@cascademineralogicalsociety.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.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

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 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.



For quick access, you can scan the following codes.



Access CMS Club Instagram page



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



Access our CMS YouTube channel



Access CMS Facebook Groups

November

Sun	Mon	Tue	Wed	Thur	Fri	Sat
Have a Happy Thanksgiving!		1	2	3	4	5
6	Board Meeting 7:00 pm	8	9	General Meeting 7:00 pm	11	12 First Creek Trip
13	14	15	16	17	18	19
20	21	22	23	24 Thanksgiving 	25	26
27	28	29	30 	Turkeys Before and After		

CMS Show Committee Meeting:....Monday, November 7.....6:30 pm to 7:00 pm
 CMS Board Meeting:.....Monday, November 7.....7:00 pm to 8:00 pm
 CMS General Meeting:.....2nd Thursday, November 10.....7:00 pm to 9:00 pm

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

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

Dino Survival

by KAM

If the non-avian dinosaurs had survived the asteroid...



would they now be roaming parking lots for french fries?

CMS Board Meeting Minutes October 10, 2022

Canceled.

by Pete Williams, 2022 Secretary

CMS General Meeting Minutes October 13, 2022

by Pete Williams, 2022 Secretary

Meeting called to order at 7:14.

Minutes were approved as written.

The club now has 110 family memberships and 246 members.

Kat and Mike represented our club at the Portland Regional Show. It was not as exciting as in the past. They had no planned field trips. They did have 40-50 display cases. We need to work on having more displays at our next show.

The Christmas Party will be on Sunday, December 4. Setup will be at 11:30 with lunch at noon followed by election of officers, and an auction. The club will provide ham and turkey. Angie will send out a sign-up sheet.

The next field trip will be Saturday, October 15, to Red Top.

The Northwest Federation collects postage stamps and sells them to donate for cancer research. Members are asked to tear off stamps from envelopes they receive and bring them to club meetings.

Program: A YouTube video on Hunting Crystals in the Cascades was shown along with commentary from Jim Cerenzie. Jim had a YouTube channel called "Vug Meister".

Meeting Adjourned: 8:14, followed by show and tell and the raffle.

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

At our October meeting, Angie 100% surprised me with a birthday cake. Thank you, Angie, and everyone that sang Happy Birthday to me. Our members are really awesome!

Our club elections are coming up at our holiday dinner in December. You will find a description of the positions that need to be filled elsewhere in this issue of The Tumbler. Club nominations are made at our November meeting, and voting is at our December meeting. Please seriously consider filling one of the positions.

This year we are doing our Holiday Potluck Dinner a little differently. The club provides turkey and ham. Angie is keeping a list of what people are bringing for the Potluck Dinner. We will have a better variety of dishes and not so many duplicates. You can talk to Angie at the November club meeting, call her, or text your name and what you are bringing. Angie's cell number is 253-569-0245.

There is an essential change in our club's annual financial budget. The American Legion Hall has substantially raised our fees to use the facility. Our monthly meeting fee has been raised from \$40 per month to \$75, an increase of 87.5%. In addition, our room rental fee for our annual holiday party has gone from \$120 to \$300, an increase of 250%.

As long as we can hold club membership at 100 families or more, we should be able to cover these increases. Presently club membership stands at 110 families.

**A Surprise Package Arrived!**

I received a large package addressed to the Cascade Mineralogical Society from the AFMS. I was puzzled. When I opened it, I was astonished.

At the AFMS level, our club has won the following awards!

1st Place Plaque – Keith Morgan, Drawn Feature – Undiscovered Dinosaurs, August 2021 Issue

1st Place Certificate – Keith Morgan, Cartoon – Archeopteryx, June 2021 Issue

5th Place Certificate – Keith Morgan, Large Bulletin - The Tumbler, October 2021 Issue

Honorable Mention – Roger Danneman, September Field Trip Report, October 2021 Issue

Congratulations, Keith and Roger!

Keith (The Tumbler Editor) and Roger (Field Trip Guide) put a lot of time and effort into their respective volunteer positions, month after month. Job well done. Thank you for everything you do to make our club such a great success.

Welcome new members!

We are continuing to have new members every week. I look forward to meeting new members at our meetings, so be sure to come up and introduce yourself.

I hope to see all of you at our November meeting. It's all about gold!

Welcome
New Members

General Meeting – Thursday, November 10th

Topic: Gold!

Our speaker will be Chris Holden. He is a CMS Member, Board Member of North America Miners Assoc., and owner of Blackjack's Metal Detectors and Mining Equipment, Renton. He will be speaking on finding gold in the northwest, and equipment needed.

Have your questions ready as Chris will have a Q & A session too.

FYI: His store also sells beautiful mineral specimens, rocks, and related items. He also offers a discount if you show your CMS membership card.

Show 'n Tell: A rock, mineral or fossil you have self collected.



General Meeting – Sunday, December 4th

Holiday Potluck Dinner, Board Officer Elections, Auction

As always, the club provides the turkey and ham.

But this year we are doing our Holiday Potluck Dinner a little differently.



Angie is keeping a list of what people are bringing for the Potluck Dinner. Hopefully, we will have a better variety of dishes and not so many duplicates. We usually have around 40 to 45 members and guests attending. Kids of any age are always welcome.

Once you decide on what you are going to bring, talk to Angie at the November club meeting, call her, or text your name and what you are bringing to her cell number 253-569-0245.

Another thing that is new, is there be a great door prize drawing.

This year bringing your own place setting is optional. The club will have a supply of paper plates and plastic silverware on hand.

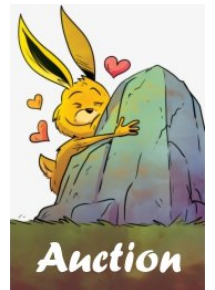
Setup: 11:30 am and Dinner: noon

Dinner is a great time to visit with one another and talk about our hobby.

After dinner we hold the election of board officers for the coming year. We have two board positions that seriously need to be filled. Please consider volunteering.

Winding up the afternoon, we will hold our annual holiday auction. The auction is a great time to pickup some fantastic bargains. The kids can also spend their "Rock Bucks" that 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.



Looking For Volunteers

The club has two positions that absolutely need to be filled: Treasurer and Show Chair. Please seriously consider volunteering.

Treasurer: If you handle your family finances by paying the monthly bills or if you work as a bookkeeper, you could Handle this position. Someone to pay the club bills, deposit money, book the room for our meetings, send out membership Cards, and fill out various forms for the club. You must attend the meetings in case someone wants to join the club or renew their membership and collect any income from the meeting. Our monthly board meeting is via Zoom on the Monday before our club meetings.

It is an easy bookkeeping job, but you must be timely in getting it done. We have very easy software to track monthly expenses and produce monthly financial statements. Our current Treasurer, Charlie, and Kat are available to help you when needed.

Show Chair: We need a Show Chairman for next year, September 16 & 17, 2023. This job is mostly coordinating everything. I have put together very detailed notes on putting the show together. It can be done 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.



I will write the website to sell booth spaces and find and book the vendors. We also have someone that has volunteered to handle the silent auction, raffle, and display cases. It's important 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.

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 software to edit and post the video to our YouTube club channel. We meet on Thursday, and the video needs to be posted no later than the following Sunday.

Historian: Copies of the Tumbler, pictures from club events, records of club officers with pictures, 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. Various members can help provide older content we want to keep.

If you can help out, text or call Kat Koch or Pete Williams. Their 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.

Anyone that joins CMS between now and Dec 31st your membership will be good until January 1, 2024! So if any of your friends or guests that are sitting on the fence about joining our great club – now is the time to become a member. Go to our website(www.cascademineralsociety.org) and you can join using your credit card. This applies also to any current members that renew 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 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 at every meeting for adults and kids.

Two times a year we have club auctions. It's a great time to pickup 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 about the hobby of collecting minerals, fossils, and rocks.

Make new friends with people that have a similar interests.



Heavenly Pits by Kat Koch, Cascade Mineralogical Society Kent, WA

In China, enormous sinkholes are called Tiankengs which translates approximately to "Heavenly Pits" or "Sky Holes."

We often hear the term "sinkhole" used when a large gaping hole suddenly appears in a road, intersection, or near a home in urban or suburban areas. These sinkholes swallow up anything above them when they open up.

In the early 1980s, China first started documenting sinkholes. In October 2001, Zhu Xuewen of the China Cave Study Association and Institute of Karst Geology proposed the term "tiankeng." Out of approximately 75 giant sinkholes worldwide, around 50, including the largest ones, are located in China. To a large extent, this is purely a Chinese term for the Chinese phenomenon. These sinkhole-collapsed caves have formed over 2 million years.

The karst region of China lies within Leye County. According to the Oxford Dictionary, Karst is defined as a "landscape underlain by limestone which has been eroded by dissolution, producing ridges, towers, fissures, sinkholes, and other characteristic landforms." These types of sinkholes are mainly found in Mexico (called sótano, Papua New Guinea (called tiankeng), and China. Karst aquifers are the primary water source for over 700 million people worldwide.

Leye County is a heavily forested, sparsely populated area where 30 Heavenly Pits have been found. Leye County has been designated a UNESCO World Heritage Site because of the sinkholes. The Geological Survey Team from the Institute of Karst Geology of China recently found the 30th sinkhole on May 6, 2022, and named it The Eagle.

The Eagle measures 2,100 feet deep, 2,000 feet long, and 1,760 feet wide and contains a waterfall, plus rare and previously unknown plants and animal species. The bottom of the sinkhole is a very dense well, preserved primitive forest with 30 ft. tall trees.

The natural landscape is primarily carbonated rocks such as dolomite and limestone. Rainwater falling on the rocks for centuries causes erosion, small cracks, mineral deposits, and tunnels to start to form in the rocks with underground rivers. Over time, these cracks widen and



eventually collapse inward on themselves, opening up giant sinkholes or collapsing caves. These sinkholes have been devoid of human activity and have become an area for allopatric speciation of animal and plant life. The Oxford Dictionary definition for allopatric speciation is where groups from an ancestral population evolve into separate species due to a period of geographical separation.

The world's largest sinkhole can be found 678 miles northeast of "The Eagle" in Fengjie County, China. It is named Xiaozhai Tiankeng, which translates to Little Village Heavenly Pit or Little Village Sky Hole, as at one time, there existed a small village near the sinkhole. This sinkhole was mapped and explored by China Caves Project in 1994.

It's a double-nested sinkhole with near vertical walls. The opening of the upper sinkhole is 1,050 ft deep and 843 ft wide, and the lower sinkhole is 1,122 ft deep and 879 ft wide. Inside the sinkhole, the cave is approximately 328 ft wide and 328 ft high. Inside is a 13 ft waterfall that feeds an underground river 5.3 miles long. The rare enormity of the cave's volume is 236 million cubic feet, making it the World's Largest Sinkhole!

Once again, the area has been devoid of human activity and has become an area for allopatric speciation of animal and plant life. As of May 2022, scientists have discovered plant 2,000 species, including the Ginkgo tree and Cathaya pine, rare animals like the clouded leopard and Chinese Giant Salamander, and over 100 side caves.

To accommodate tourists, they have installed a 2,800-step staircase.

The following is a quote from Wondermondo: "The correct recipe for a fine tiankeng looks like this:

First, a thick and clean layer of carbonate (or sandstone) rock is needed. The thickness of the rock should be at least 655 ft - 985 ft. Any layer of impurities will distort the process of formation.

The layer of carbonate should be above sea level. It is even better if tectonic processes raise the area. Thus, for example, the Nakanai mountains in New Britain (Papua New Guinea) rise by some .12 inches in a year; also, the areas in China with tiankengs are rising.

There is needed lots of rain. In areas with carbonate rocks, this inevitably leads to the formation of underground rivers. If the limestone layer is raised high, these rivers flow several hundred feet below the surface. If this is in place, nature does its work, and tiankeng is formed."

Bibliography: Oxford Dictionary, English – China News, Wikipedia, Dogo News, Mashable, Virtual Globe Trotting, Wondermondo, Science Alert, China Org

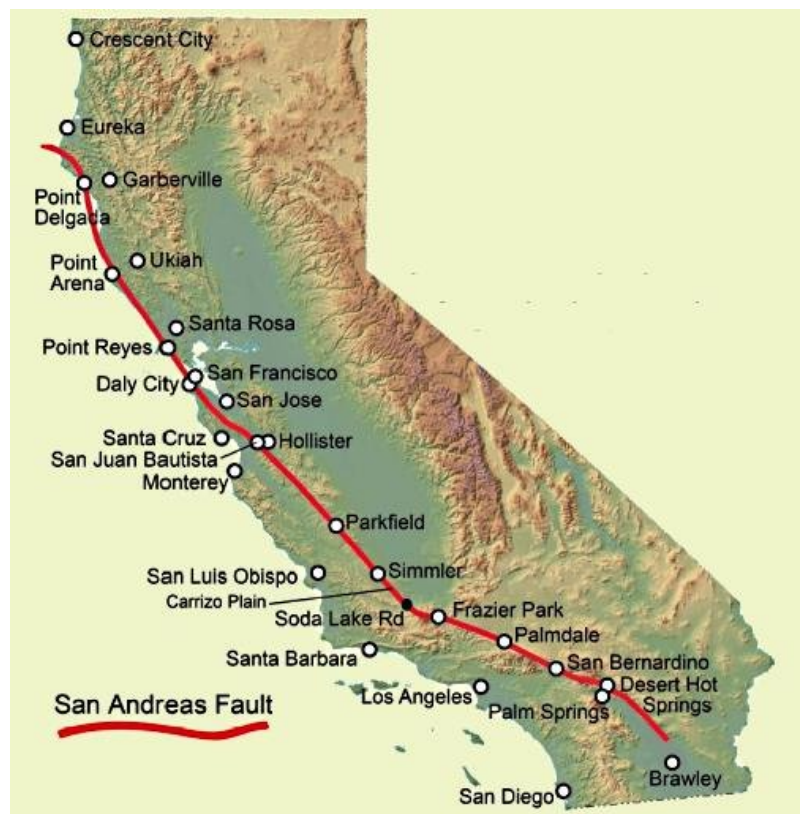


San Andreas Fault, California by Kat Koch

The San Andreas Fault runs through a 750-mile portion of California where two tectonic plates meet, the Pacific Plate and the North American Plate. It is one of the longest faults in the world. UC Berkeley Professor Andrew Lawson identified the northern portion of the fault in 1895.

The fault is a horizontal right-lateral strike-slip of two plates. It's divided into three parts, each with its own characteristics and different earthquake risk. The fault is slipping from 0.79 to 1.38 inches per year. The San Andreas Fault began to form in the mid-Cenozoic about 30 million years ago. The southern section of the San Andreas Fault formed about 5 million years ago.

The motion between the North American and Pacific Plates differed from the relative motion between the Farallon and North American Plates; the spreading ridge began to be "subducted," creating a new relative motion and a new style of deformation along the plate boundaries. These geological features are what are chiefly seen along San Andreas Fault. The San Andreas Fault is a sliding boundary between the Pacific and North American Plates. The fault slices California in two from Cape Mendocino to the Mexican border. San Diego, Los Angeles, and Big Sur are on the Pacific Plate. San Francisco, Sacramento, and the Sierra Nevada are on the North American Plate. It is possibly a reason for the separation of the Baja



California Peninsula.

From 2004–2007 a project called San Andreas Fault Observatory at Depth(SAFOD) did core drilling near Parkfield, Monterey County. The purpose was to collect material to understand the fault's chemical and physical behavior.

Northern Section: This portion of the fault starts in the ocean, north of Black Sand Beach, off the coast of Cape Mendocino, and works its way south (on land and underwater along the coast) to the city of Hollister. This section has several significant "sister faults" running parallel to the San Andreas Fault and causing significantly destructive earthquakes. For example, the epicenter of the 1906 San Francisco earthquake was on the San Andreas Fault.

Central Section: This portion is on land from Hollister south to Parkfield. The central section has a phenomenon called a seismic creep. This is where the fault is continuously slipping without causing earthquakes.

Southern Section: The final portion is also entirely on land and starts at Parkfield and ends at the Salton Sea. The southern terminus is only 35 miles from northeast of Los Angeles. A large earthquake on the Salton Sea portion would kill thousands of people in San Bernardino, Riverside, Los Angeles, and surrounding areas. In addition, damages would be hundreds of billions of dollars.

Over much of the length of the fault, an aerial view reveals the presence of a linear trough - the San Andreas Fault. The linear arrangement of lakes, bays, and valleys in the trough is striking. Viewed from the ground, however, the features are more subtle. For example, many people driving near Crystal Springs Reservoir, near San Francisco, along Tomales Bay, through Cajon or Tejon Passes may not realize that they are within the San Andreas fault zone. However, the fault can be recognized on the ground by carefully inspecting the landscape. The fault zone is marked by distinctive landforms that include long straight escarpments, narrow ridges, and small undrained ponds formed by the settling of small blocks within the zone. In addition, many stream channels characteristically jog sharply to the right where they cross the fault.



Cascadia Connection. A 2008 paper studying past earthquakes along the Pacific coastal zone found a correlation in time between seismic events on the northern San Andreas Fault and the southern part of the Cascadia subduction zone. The Cascadia stretches from Vancouver Island, Canada, to northern California. Scientists believe quakes in the Cascadia subduction zone may have triggered the most significant earthquakes in the north San Andreas Fault within the past 3,000 years. The evidence also shows the rupture direction is from north to south in these time-correlated events.

The 1906 San Francisco earthquake seems to have been the exception to this correlation because the plate movement was mostly from south to north, and a major quake did not precede it in the Cascadia zone.



Bibliography: Wikipedia, Maps of the World, Geology, USGS, Britannica, Science, Earthquake Authority, Google Maps.

Young Richard's Almanac by Dick Morgan

As a child on the farm in Jersey I used to help out the other farmers when they went to harvest one farm at a time, several farm families would meet at a designated farm starting at breakfast. This is when the wife would prepare her best meals, as we went from farm to farm the list of meals were very good. They ran the gamut of difference, such as groundhog pot pie, specially spiced breakfast sausage, home made spaghetti and meat balls, mock apple pie, and 4-inch deep apple pies.

As a kid helping, I drove the team of horses to pull out tractors stuck in the mud and any task that required a small body to accomplish. The real joy was being fed such delicious meals by the different farmers' wives as they prepared their favorite meals.

What! Why!

Why can't you hear a pterodactyl go to the bathroom? Because the "P" is silent.

Why can't you use "beef" as a password? Because it's not stroganoff.

What do you get when you drop a piano down a mine shaft? A flat minor.

Why does a chicken coop have two doors? If it had four doors it would be a sedan.

from Breccia, 10/22

Fossil Replicas' Purpose in Paleontology by Steve Mulqueen

Introduction

Fossil replicas have played essential roles in the study of paleontology. This article will explore the many applications of paleo-facsimiles as they apply to the understanding of ancient and extinct life forms. Replicas of human, animal and plant remains are useful in many facets of science when studying prehistoric to present-day organisms with their complex physiological and anatomical features.

The following lists some of the sciences that commonly use physical models as tools for teaching, exhibiting, training, and demonstrating: Anatomy, Archeology/Anthropology, Biochemistry, Biology, Botany, Evolution studies, Extinction studies, Forensic sciences, Medical fields, Osteology, Paleontology, Physiology, and Veterinary sciences.

Replicas for Paleontology

In the science of paleontology, fossil replicas are needed in schools, universities, museums, private collections and fossil repositories for the applications listed below:

Exhibit Purposes

Fossil replicas are often exhibited instead of the fragile and sensitive fossils. The environment in the exhibit case may expose the original specimen to heat, dust, humidity, vibration, oxygen and/or excessive light, conditions that may be detrimental to the fossil.

Scale Models

Scale models can be very effective for exhibits and for demonstration purposes.

Trade and Borrow Specimens

Museums, universities and fossil repositories often trade and borrow fossil specimens in order to make their own fossil replicas and to study original specimens for scientific research.

Rare Fossils

Some fossils are very rare and must be shared with other paleontological institutions. The sharing of rare specimens is often made by sending only fossil replicas. This will eliminate the wear and tear on the original specimens and prevent the possibility of a fossil being lost in the exchange.

Expensive Fossils

Some fossils are so rare and expensive that the museums or universities cannot afford originals.

Dissemination of Specimen-quality Learning Tools

If fossil replicas can be mass produced and disseminated to numerous institutions, this will enable one original specimen to benefit thousands of scientists, students and members of the general public.

Demonstration of How Fossils Form

Replicas are often used to demonstrate the complex sequences of natural conditions necessary for fossils to form and to be preserved during long periods of geologic time.

Unavailability of the Original Fossil

When the original fossil is unavailable on the open market, a replica is the only alternative.

When the Fossil Does Not Exist

Some fossilized skeletal remains can be missing a few parts. Fossil replicas can be made to complete the skeleton for exhibit purposes or for scientific study.

Fossil Replicas Manufactured for Fraudulent Purposes

Unfortunately, there are many fossil replicas being manufactured, presented and sold as if they are the real specimens. Whenever a collector is in the market for a genuine fossil, they should first make a diligent effort to research the fossil in order to become familiar with its many characteristics. When in a position to purchase a fossil, it is best to physically hold the specimen to determine its relative density and to observe its fine details. Most replicas are made with materials that are less dense than the original. However, this is not always the case.

The use of a hand lens, magnifying glass or microscope is essential while checking for authenticity. Most genuine fossils have small cracks that are usually not very well replicated in the reproduced fossil. It is also recommended that you get a second opinion from an avid fossil collector or paleontologist, especially when purchasing an expensive specimen.

Materials Applied to the Manufacture of Fossil Replicas

Replicas, including molds, casts and storage jackets are made from one or more of the listed materials: plaster of Paris (with or without impregnated burlap or cheesecloth), resin/fiberglass, composite materials, clay/ceramic materials, plastic, polymer, latex, silicone rubber, dental molding compounds, wood fibers with binding adhesive, papier maché, cement (with pulverized matrix from a fossil-bearing formation to match color, texture and density of the real specimen),

polyurethane foam, 3-D printer medium (plastic).

Tomography Applied to Paleontology

Tomography is a technique for obtaining high-resolution images of fossil specimens with use of penetrating-wave energies and image-processing computer. Tomography, applied in the laboratory for analyzing fossils may include X-ray computed imaging, CT scanning or thermal neutron penetration. In the field, energy sources used in searching for and imaging fossils can involve computer-assisted ground-penetrating radar, electrical resistivity and induced seismic surveys. These computed images are processed and enhanced to assess a buried specimen in order to aid in the excavation process, to piece together the image to create a complete picture and as an aid in forming and manufacturing exact replicas.

Fossil Replicas made on a 3-D Printer

Today, fossil replicas can be made on a personal computer with a 3-D printer. These printers are readily available for hobby or professional use. Some of the least expensive 3-D printers cost about \$500. The printer medium is a plastic substance that is usually available in a spool of thin, continuous plastic rod. The spool of continuous plastic rod resembles a spool of wire. Many computer programs that assist in generating fossil replicas are available on the Internet for no charge. Programs must be compatible with personal computer software and the printer's capabilities. All programs of this nature are based upon scaled versions of exact dimensions and proportions, originally generated by tomographic imaging.

Conclusion

Specimen replicas and physical models are effective tools that are useful in numerous scientific applications. In the science of paleontology, paleo-facsimiles are very common in collections, museums and universities. When purchasing real fossils, it is important to be able to detect a replica, especially when it is being presented as a genuine specimen. With today's ever-advancing technologies, excellent quality specimen copies can be manufactured with little effort. All scientists have been exposed to essential information that was conveyed by use of effective models. Fossil replicas are very important to the study of paleontology because they exhibit the shapes, colors and textures of the real specimen needed for teaching, exhibiting, training and demonstrating, especially when the original specimen is not available.

Sources

Refer to sources of information under the heading of fossil replicas, including manufacturers, suppliers and their numerous applications related to paleontology. Also, see references under the heading of tomography as applied to paleontology, including X-ray computed, CT scanning, thermal neutron scanning, ground-penetrating radar, electrical resistivity and the use of induced seismic energy.

via Rockhound Rambling, 9/22; from Rockhound Rambling, 1/16

Colemanite

Colemanite is a secondary mineral that forms by alteration of borax and ulexite. It was first described in 1884 when William Tell Coleman, owner of the Harmony Borax Works at Furnace Creek in Death Valley discovered it.

Colemanite is a borate mineral of hydrated calcium borate ($\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 5\text{H}_2\text{O}$). It was a significant ore of boron, and was the most important ore prior to the discovery of Kernite in 1926. It typically occurs as colorless, brilliant crystals and masses in Paleogene and Neogene sediments (those formed 65.5 to 2.6 million years ago), where it has been derived from ulexite and borax. Some of the largest deposits of Colemanite are in the Southwestern U.S. Large crystals come from Death Valley, Inyo Co., California. Crystal-filled nodules associated with Celestine were found in the Calico district in San Bernardino Co., California. Other California Colemanite deposits are Boron, in the Kramer District, Kern Co.; Tick Canyon, Lang, Los Angeles Co; and the Boraxo Mine, Inyo Co. In Nevada, it comes from the Muddy Mountains, Clark Co. Colemanite is an important source of commercial borates and boric acid.

Colemanite forms in evaporite deposits together with other borates and is one of the more stable of borate minerals. It is pyroelectric and develops an electrical charge during a change of temperature. The crystal symmetry of prismatic monoclinic minerals would scientifically disqualify them from being pyroelectric, since pyroelectricity is directly related to crystal symmetry. This mineral is therefore regarded as a scientific oddity, as no satisfactory explanation has been given to how Colemanite is pyroelectric.

It forms in the monoclinic crystal system and is ranges from colorless to white, yellowish, or even grey in color.

Colorless, white, yellowish, grey with an Adamantine to Vitreous in luster and is Transparent to Translucent. Colemanite has a hardness of 4.5 on the Mohs hardness scale and a specific gravity of 2.423. It often has a pale white fluorescence under a shortwave ultraviolet light. Commonly found in association with Ulexite, Borax, Realgar, Celestine.
from Panorama Gem & Mineral Club News, 2/22

Scared!

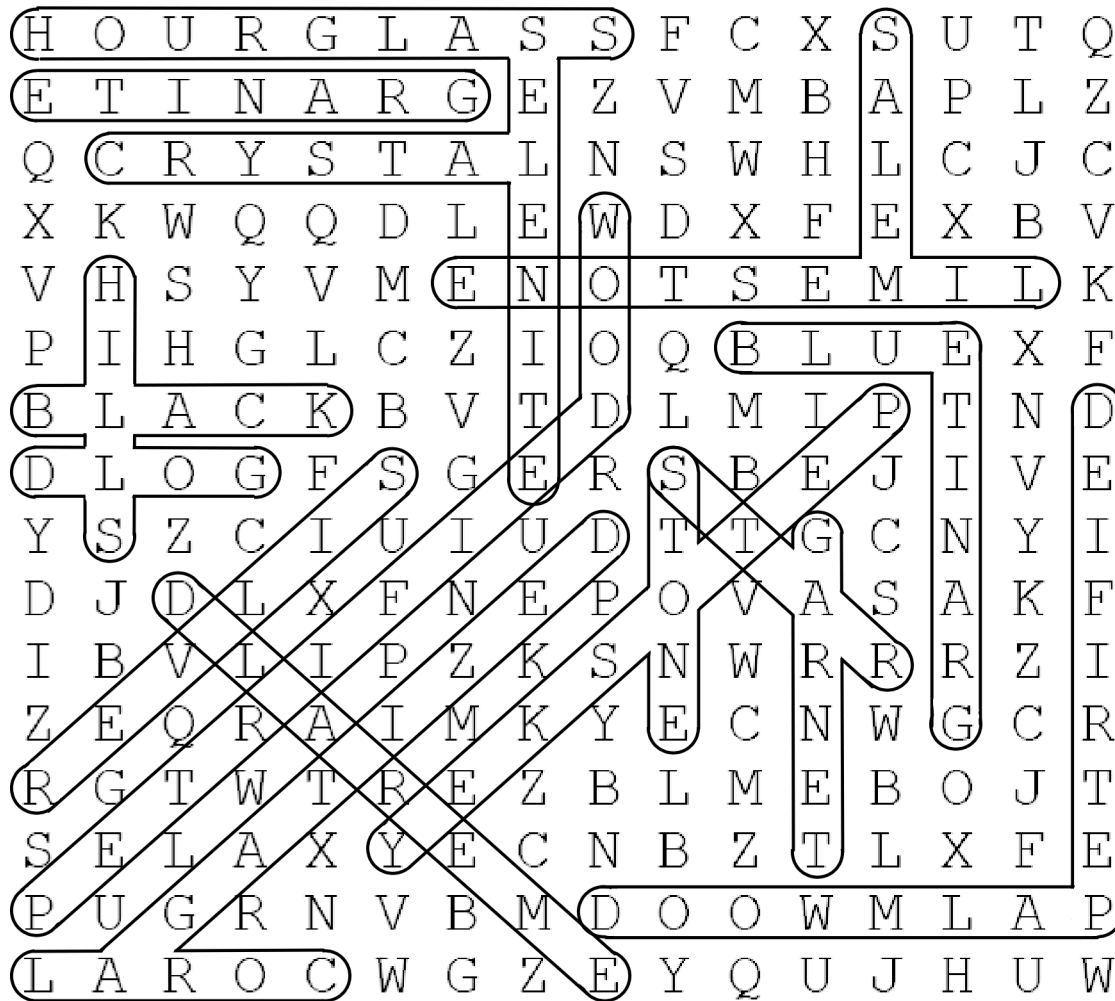
I asked an old man, "Even after 70 years of marriage, you still call your wife Darling, Honey, Sweetheart. What's your secret?"

Old Man: "I forgot her name 10 years ago and I'm scared to ask her what it is."

from Breccia, 10/22

Editor's Note by Keith Alan Morgan

Apologies to anyone who was confused by last month's word search. I tried something different and the response was confusion. I won't be trying that again. Here is the answer sheet for last month's puzzle.



Gaspeite by Sheila Stratton

Approximately eight years ago, Frank and I took a trip to Tombstone, Arizona. Growing up watching Western movies, I love everything Western and Cowboy. We wandered into a Native American jewelry store and a ring captivated my attention. It was a light green stone and I thought it was just beautiful. The man working there said it was "Gaspeite" and a very rare stone. It was mined in Australia and Canada and that they were being mined out very quickly. (Maybe that was a sales pitch, but I still loved the stone with the silver setting.) The ring and matching bracelet I purchased were made by a Native American.

What is Gaspeite? According to Geology.com, Gaspeite is a rare nickel carbonate mineral and a member of the calcite mineral group. It was first discovered on the Gaspé Peninsula of Quebec, Canada, from which it received its name. Gaspeite does not have a long history in the scientific literature, being first described in *The American Mineralogist* in 1966. Because of its rarity and relatively short history, it is not a widely-known material.

However, over the past two decades, Gaspeite has been emerging into popularity as a colorful inlay material used to add a splash of green color to Southwestern-style jewelry. It is typically set with turquoise, coral, shell, lapis lazuli and other gem materials in sterling silver mountings. These produce an attractive and affordable product. Gaspeite is also seen as beads, tumbled stones, and cabochons.

Gaspeite occurs as a secondary mineral where nearby rocks serve as an abundant source of nickel. It is often found where ultramafic igneous rocks have been weathered or where they have been altered by hydrothermal metamorphism. All significant occurrences have been found in Western Australia and Quebec, Canada. Minor occurrences are known from Japan and South Africa.

Now that I know this is a relatively rare stone and the fact I love the color, I am going to keep my eyes open to purchase more jewelry.

Young Tumblers News

Cartoons Anyone? by Jennifer Haley, AFMS Historian

For as long as I have known Rockhounds, I don't think I have ever been without the company of a good sense of humor. It's true, there's always a good story to be told, and it's accompanied by a chorus of good laughter. If you want to have a good time, hang out with Rockhounds; you are bound to feel better.

Having a sense of humor comes naturally for some people, but with Rockhounds it's pretty much a given. We can laugh at ourselves and with each other.

In the earlier years of rock and gem societies, there were members who had a lot of fun drawing and writing cartoons about our hobby for the newsletters. We aren't talking professional artists, but your normal everyday member.

Over the years the number of cartoons entered in society and federation newsletters has dwindled. There's been a sprinkling here and there, but in general it's become rare. Whatever one's age, wouldn't it be fun to encourage your members to give humor a hand once again? You don't know unless you try.

I am sure there are many juniors who have no idea there's a Drawn Features Competition they can enter, and that cartoons can be one of the categories. Some of those kids can really draw, and their funny bones are often more active. Others who never thought they had an artistic bone in their body might find drawing cartoons is fun to play around with. If you are a couch potato, you might just come up with a talent you didn't know you had.

There are lots of free instructions online for drawing easy cartoons, and of course there are books. Doodling can be a fun way to begin. In the past, doodling was often seen as someone wasting time. Today it's known that doodling opens up our creativity whether or not we think we have any talent, and it is good for our mental wellbeing just like crossword puzzles.

There are as many styles of drawing cartoons as there are people drawing them, and you might find you have your own style too. How many times have we laughed at ourselves or with another while learning and having fun with the many aspects of our hobby? Lots, and there's more on its way given our nature, whether it's during work together or play. Give humor a hand, and you might just discover you have a new talent. We can all use some more smiles today.

from AFMS Newsletter, 9/22

Cartooning Suggestions by KAM

If you want to draw a cartoon, why don't you? Some people may worry they're not good enough, but every artist I've ever talked to thinks that, no matter how good they are.

Cartoons don't usually need a realistic style to work, a simple cartoony art style works very well. You can draw a cartoony human or draw an anthropomorphic animal (or furry, for short).

Additionally you could draw a normally inanimate object, or use a picture.



...or a below panel word caption!

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.

Some information from the Washington State Mineral Council webpage (<https://mineralcouncil.wordpress.com>).

November 12 *Cascade Mineralogical Society - First Creek - Agate, crystals, geodes*
Roger Danneman roger.danneman@gmail.com 425-757-3506 cell and text

November 12 **Alger** – Meet at 240 exit I-5 before 9:00 am - Dalmation Stone – Bring hard rock tools

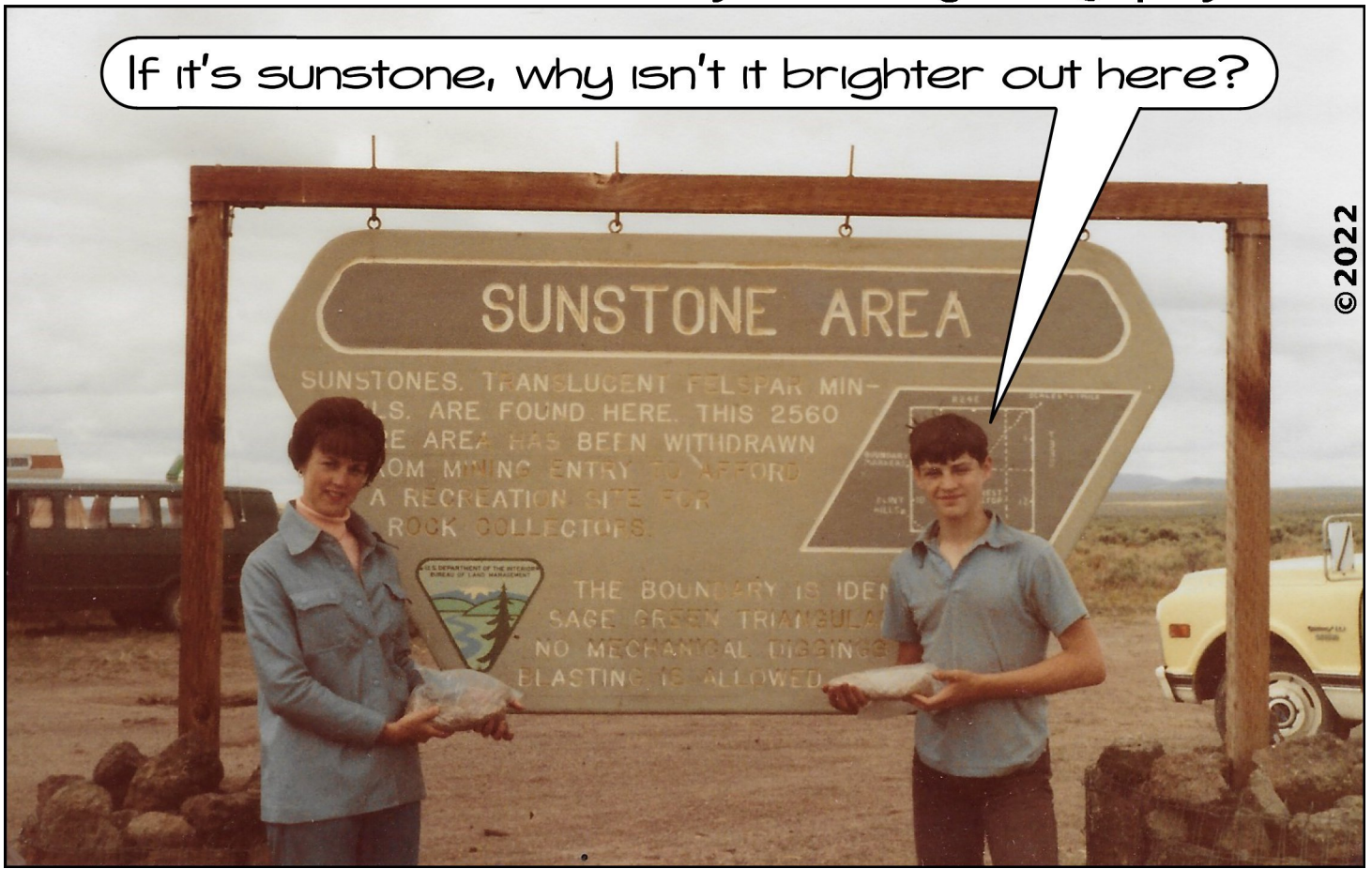
October Field Trip by Roger Danneman, CMS Field Trip Chairman

We had a beautiful day for our Red Top trip on Oct. 15th. The late summer weather has been very friendly to rock hounds. 17 vehicles, 34 people, and 2 dogs made up a large group heading out of Cle Elum. Quite a few new members. Despite the long caravan, everybody made it up to our first site which is still a good productive site for nice colorful agate and jasper. We spent a couple of hours here digging and collecting, and then about 1/2 the group hiked up the Indian Creek Trail to the Red Top Meadow where we spent another 2 hours. I had read a post that the dig pits up at the meadow had been all closed up by machinery, but that was not the case. Still lots of holes up there so a person can continue someone else's hard work. Very dry and dusty in the pits though. I didn't do that well at the meadow, but I was out of energy and didn't like the dust. Did well at the lower dig site though. The roads in the Red Top area have really been worked on. Graded, pot holes filled, and the side trees clipped. It's in the best shape I've ever seen it and far above the forest roads of our other sites.

Attendees: Erica D. and Chris, Ananda C., Joye E. and Nancy, Gina M., Julie M., guests Charlie and Christina, Ann S. and dog Tess (met us at the meadow), Loren M., Kamera M. and dog Gracie, Nik B., Chris W., and dog Cody, Jenn S., Melissa T. and John, Jenn R., Meghan and Ashley, Sara N. group of 7, John N. and Mason, Tanya K., Artem T. and son, and of course me. Sorry if I forgot anyone. It was a large group. But lots of fun.

Next trip is to First Creek on Nov. 12th which is our last scheduled trip of 2022.





Shows

November 12 & 13: Saturday 9 am – 5 pm; Sunday 10 am – 4 pm
Skagit Rock & Gem Club, *Treasures of the Earth*
 Sedro Woolley Community Center
 703 Pacific St
 Sedro Woolley WA

November 19 & 20: Saturday 10 am – 5 pm; Sunday 10 am – 5 pm
Kitsap Mineral and Gem Society, *Fall Festival of Gems*
 The President's Hall
 1250 NW Fairgrounds Road
 Bremerton, WA

Why Is Quartz So Cold?

Brrrrr. On a warm day, put your hand on a big piece of quartz that hasn't been sitting out in the sun. Do you know what you will feel? Will it feel warm or cold? Surprise, it will feel COLD! The ancient Roman naturalist, Pliny the Elder, concluded that quartz is water that froze so hard that it would never melt. In other words, quartz is petrified ice. Why did he think this? First, he noted that quartz crystals were found near glaciers in the Alp mountains, where it is very cold in the winter, and at least cool in the summer.

Second, he also noted that quartz crystals are not found on volcanic mountains. Third, he pointed out that when large quartz crystals are held, they will cool the skin on his hand. Therefore, quartz crystals must be petrified ice. So, why does it feel cold? Heat is energy. Energy moves from hot objects to cooler objects, until both objects are the same temperature. The ability of an object to absorb heat is called its "thermal conductivity." Sounds scientific, doesn't it? What it means is that solid objects have the ability to take heat (energy) from the world around them and move that heat into the object itself. Hold an ice cube in your hand. Feel how very cold it is? It feels cold because the block of ice is taking heat away from your hand. This is what happens with quartz. Quartz has a very high thermal conductivity.

This means that it can move heat very easily and quickly away from your hand. When it does this, your brain tells you that the quartz feels cool and that your hand is feeling cool as well.

via The Quarry, 10/22; via The Conglomerate, 9/22; from The Pick and Shovel, 7/22