



BRECCIA

Santa Clara Valley Gem and Mineral Society

Volume 72 Number 2, February 2024

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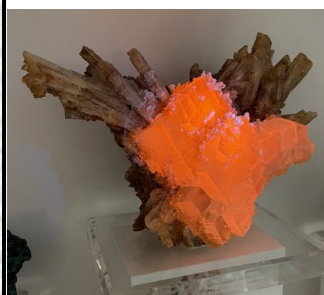
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A huge piece of German halite and selenite. From the Sollstedt Potash Works in Bleicherode, Thuringia, Germany, which was actively mined from 1902 to 1991.

Events

February 27: The General Membership Meeting will feature a **DRC pre-meeting Silent Auction**. Bidding starts at 7:00 and will end mid meeting. There will be 11 crystal clusters from Peru, each between 4 and 7 lbs.. The Bragging Rights theme is "**Bone**".

March 5: Board Meeting on Zoom.

March 16–17, 2024 – San Jose, CA

SCVGMS Annual Show

Santa Clara County Fairgrounds
344 Tully Rd.

Hours: Sat and Sun 10–5

Contact: (408) 265-1422

<https://www.scvgms.org/> or <https://www.facebook.com/santaclaravalleygemandmineralsociety>

March 26: General Membership Meeting will feature **Phil Kesten** - Colors of Rocks.

April 2: Board Meeting on Zoom.

Editor's Message

Jim Herbold has set up a new phone number, (669) 235-9417, where you can text your email address to sign up for the Breccia.

This month starts a new series on [Agates](#). **Missy and Jim Fox** created a slide show on Agates that **Jim** presented at the January General Meeting. I am reformatting it and it will take most of the year to include all the information and beautiful photos in the *Breccia*.

The big news is the [Annual SCVGMS Gem, Mineral and Jewelry Show](#) on March 16 and 17. Everyone is requested to volunteer your time, your specimens, anything you can, to help make it a success. Members are asked to donate rocks to be sold at the show, some at silent auction, but most for 50 cents/pound. You can bring them to the February meeting as well as to the show.

Do you have anything that other members might enjoy? The deadline for submissions is the Thursday 9 days after each General Meeting.

Deb Runyan, Breccia Editor
editor@scvgms.org, (408) 628-7789

Rockhound of the Month

Our rockhound of the month is **Bruce Poehlman**. Because **Jim Herbold** was camping in Arizona and unable to run the General Meeting, Bruce stepped up to run the show in his place. Thanks, Bruce!



Sunshine



It saddens me to announce the passing, on October 24, 2023, of long time club member (since 2010) **Victor Gassman**. A few years ago Victor moved back to OK to care for his wife. Victor was an active member of our club, a Smithie and member of the DRC (Donation Receiving Committee). Victor made beautiful silver jewelry, cast rings, and was an avid cabber. He was a volunteer at our yearly Rock Show. He had a great personality and had many friends in our club. He will be missed.

Bruce Poehlman has more sunshine in his life in the form of a new grandson! Congratulations!



If you know of anyone needing some sunshine in their lives, please email **Margo Mosher** at margomosher@yahoo.com.

Gem, Mineral & Jewelry Show

March 16 & 17, 2024

10:00 am - 5:00 pm Saturday & Sunday

JEWELRY
MINERALS
GEMS



FOSSILS
CRAFTS
AND MORE

Educational Exhibits - Rocks that Glow in the dark
How to make Arrowheads - Other demonstrations

Santa Clara County Fairgrounds

www.scvgms.org info.scvgms.org

Active Duty - Retired Military - Military Dependents - First Responders

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Scouts in Uniform admitted free

Children under 12 free with adult.

Adults \$8

\$1.00 off admission with this card

Save \$2 when you buy online!

FREE PARKING

Information on Shows

February 17–18, 2024 – Antioch, CA

Antioch Lapidary Club

Contra Costa County Fairgrounds

1201 West 10th St.

Hours: Sat 10–5, Sun 10–5

Contact: (925) 457-1859, (510) 693-9075,

roccosgee1@yahoo.com,

kellyplumb900@yahoo.com

<https://antiochlapidaryclub.com/>

February 24–25, 2024 – Vallejo, CA

Vallejo Gem and Mineral Society

Solano County Fairgrounds

McCormack Hall,

900 Fairgrounds Dr.

Hours: Sat and Sun 10– 5

Contact: (415) 254-1506,

dduhonvgms@gmail.com

<https://vjgems.co>

March 1–3, 2024 – Newark CA

Mineral and Gem Society of Castro Valley

Newark Pavilion, 6430 Thornton Ave

Hours: Fri 11–5, Sat 10–6, Sun 10–5

Contact: Joseph Alvarez, (510) 887-9007

<https://mineralgemshop.com/>

March 2–3, 2024 – Ventura, CA

Ventura Gem & Mineral Society

Ventura County Fairgrounds

10 W. Harbor Blvd.

Hours: Sat 10–5, Sun 10–4

Contact: (805) 312-8467, info@vgms.org

<https://www.vgms.org/>

March 8–10, 2024 – Victorville, CA (Stoddard Wells area)

Victor Valley Gem and Mineral Club

48th Annual Stoddard Wells Tailgate

Hours: 9 AM – 5 PM daily

Contact: (760) 243-2339, president@vvgc.org

<http://vvgmc.org>

March 9–10, 2024 – Turlock, CA

Mother Lode Mineral Society of CA

58th Annual Turlock Rock & Gem Show. Our theme this year is JADE.

Stanislaus County Fairgrounds, 900 North Broadway

Hours: Sat and Sun 10 AM – 5 PM

<http://www.turlockgemshow.com/>

March 16–17, 2024 – San Jose, CA

SCVGMS Annual Show

Santa Clara County Fairgrounds

344 Tully Rd.

Hours: Sat and Sun 10–5

Contact: (408) 265-1422

<https://www.scvgms.org/> or [https://](https://www.facebook.com/santaclaravalleygemandmineralsociety)

[www.facebook.com/](https://www.facebook.com/santaclaravalleygemandmineralsociety)

[santaclaravalleygemandmineralsociety](https://www.facebook.com/santaclaravalleygemandmineralsociety)

March 16–17, 2024 – Lemoore, CA

Lemoore Gem & Mineral Society

Lemoore Gem, Mineral and Jewelry Show

Trinity Hall, 470 Champion St.

Sat 10–6, Sun 10–4

Contact:

[https://facebook.com/](https://facebook.com/events/999726084444006/999726087777339/?active_tape=about)

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[active_tape=about](https://facebook.com/events/999726084444006/999726087777339/?active_tape=about)

March 23–24, 2024 – Angeles Camp, CA

Calaveras Gem and Mineral Society

2465 Gun Club Rd.

Hours: Sat 10–5, Sun 10–4

Contact: (209) 736-4892, dbrooks49@att.net
Website: <https://calaverasgemandmineral.net/>

April 13–14, 2024 – Mariposa, CA

Mariposa Gem and Mineral Club
Mariposa County Fairgrounds, 5007 Fairgrounds Rd.

Hours: Sat 10–5, Sun 10–4

<http://mariposagemclub.org>

April 13–14, 2024 – Placerville, CA

El Dorado County Mineral and Gem Society
El Dorado County Fairgrounds
Hours: Sat 10–5, Sun 10–4 PM

Contact: (530) 676-2472, office@edcmgs.org
<http://edcmgs.org>

May 4–5, 2024 – Lancaster, CA

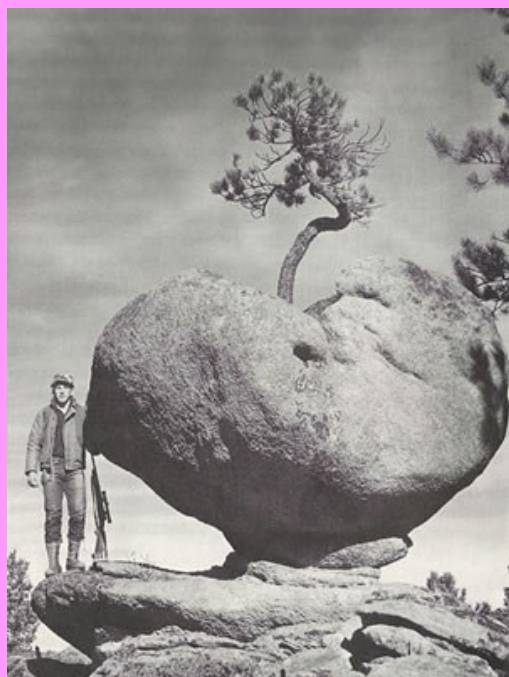
Antelope Valley Gem & Mineral Club
2551 W. Ave. H

Hours: Sat 10–5, Sun 10–4

Contact: marylandoriole@gmail.com

May 24 – 26, 2024 – Ventura, CA

CFMS/AFMS Combined Show and Convention
Seaside Gems at Ventura
Hosted by Ventura Gem & Mineral Society



Heart Rock as it appears in Red Feather Lakes the first hundred years 1871-1971



Heart Rock as it appeared in 2014

With permission from: RED FEATHER HISTORICAL SOCIETY

<https://redfeatherhistoricalsociety.org/>

Serving Red Feather Lakes, Crystal Lakes, Glacier View Meadows, and Livermore in the state of Colorado

Field Trips

Note: Driving times are from Campbell and are approximate.

March 2, Sat: Chowchilla, 2 hour drive

Fossil Discovery Center

A new hands-on science museum displaying Ice Age Fossils like mammoths, smilodons, dire wolves, saber tooth cats, sloths, camels and horses.

March 9, Sat: Victorville, CA (Stoddard Wells area), 6.5-hour drive

Victor Valley Gem and Mineral Club

48th Annual Stoddard Wells Tailgate

A family field trip to marble collecting site on Saturday from 9 AM to 1 PM.

Contact: (760) 243-2339, president@vvgc.org

Website: <http://vvgmc.org>

May 29–June 2, Wed–Sun (1 single day in this time-frame, TBD): Rainbow Ridge Opal Mine, Denio, NV, 9-hour drive, with tolls

3 scoops available, up to 3 adults per scoop. \$900.00 fee dig.

June 7, Fri: Rainbow Ridge Opal Mine, NV, 8.5-hour drive with tolls.

3 scoops available, up to 3 adults per spot. \$900.00 fee dig.

June 13–16, Thu–Sun: Prineville, OR, 10-hour drive.

Pow Wow Field Trips.

A 4-day Rock Show and 3 Field Trips, Fri (6/14), Sat (6/15), Sun (6/16). Locations to be announced.

August 3–9, Sat–Fri: Delta, UT, 11.5-hours drive through Reno; 13-hours through Las Vegas

Dugway Geodes, Topaz Mountain, Drum Mountain agate, Copper varieties, multi-colored druzy and fine crystals, mine tailings

2 travel days, 5 collecting days. Potentially, Garnet Hill, Ely, NV, on the way home.

Proposed for a time in the future: Ocean View Mine, San Diego Area, 7- to 8-hour drive

Tourmaline and Quartz

Smiles

Iron was discovered because someone smelt it.

I have never hated a man enough to give his diamonds back.

- Zsa Zsa Gabor

February Breccia Prez Message

Hello SCVGMS Members and Friends!

I'm hoping that you all have had a wonderful January and that your New Year has been delightful. I know that many of our members spent time in Arizona at the Quartzsite and Tucson gem and mineral shows. I was lucky enough to attend both and it's always great to see friends and so many amazing rocks and minerals and fossils. In Quartzsite, dozens of dinosaur bone collectors gathered, and there is no greater number of dealers of dinosaur fossils than what is found at the Quartzsite PowWow each year. In Tucson, the same happened with the community of fluorescent mineral collectors—several dozen made the trip. There were meetups and swaps and dinners and hounding trips, all in the name of finding the next magical glow rock. I personally had an amazing time, and it made me really start to look forward to our own Annual Show coming soon in mid-March!



Dinosaur gembone, partial vertebrae. Contour-polished to highlight the red elongated bone cells. Source: Colorado Plateau, USA.

Our January General Meeting was held on the 23rd. The highlight of the meeting was the presentation on agates. **Jim and Missy Fox** reviewed many interesting details about a variety of agates that they have cut and polished, and their pictures were very excellent and beautiful. **Stephen May** highlighted the field trips that will begin in late spring. **Michele Smith** walked through a number of details about the Annual Sale coming soon in mid-March and I know we are counting on everyone to chip in as a volunteer in some capacity to make the show a success!



Fluorescent dinosaur vertebrae. The calcite that fills the bone cell voids glows red under midwave UV light. Source: Colorado Plateau, USA.

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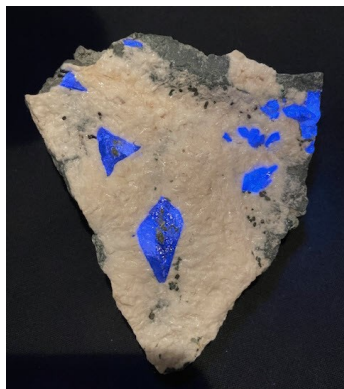
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The primary event for our February General Meeting is the all-new **DRC Mini-Sale**. The DRC is bringing minerals from the Joe Abramski donation, and there will also be 11 Peruvian crystal clusters from another donation. The Abramski minerals are of a very high quality, and the crystal clusters each weigh between 4 and 7 pounds. Silent auction bidding starts at 7:00 PM and will end mid-meeting so plan to arrive 30 minutes early!



Hokkaidoite! A recently discovered mineral from Japan (2022). A natural crystal of benzo[ghi]perylene, an organic compound composed only of carbon and hydrogen, and is considered to be a natural precursor of the organic compound 'coronene'. It provides valuable information on the mechanisms and processes of coronene formation and purification, details of which were previously lacking. Hokkaidoite presents as fine pale yellow dendritic crystals in opal that emit brilliant yellow to yellowish green fluorescence when irradiated with longwave UV light. I am lucky to be the new caretaker of these two exceedingly rare examples.

I want to call out our Rockhound of the Month for January, **Bruce Poehlman**. Because I was camping in Arizona and unable to run the General Meeting, Bruce stepped up to run the show in my place. Thanks, Bruce!



This plate of benitoite crystals exhibits very sharp crystal cleavage, and the price was right in Tucson! California's state gemstone. The beautiful blue fluorescence presents under shortwave UV light. Source: San Benito County, CA, USA.

As mentioned above, our Annual Show is coming soon! Setup is on Friday, March 15 and the show is open to the public on Saturday, March 16 through Sunday, March 17. Advertising is running on Facebook and ads will be appearing in The Metro soon. We have magnetic signs for automobiles and business cards that can be handed to anyone—both will be available at the February General Meeting. Tickets are \$8 in person and \$6 online (member volunteers are free of course!) and parking is free. Military, First Responders, and Scouts in uniform receive free admission. Missy Fox and Cynthia Porter are leading Discovery Zone. We are hoping to have up to 32 display cases at the show, and we want to encourage you to reach out to Stephen May with your commitment to set up a display case.

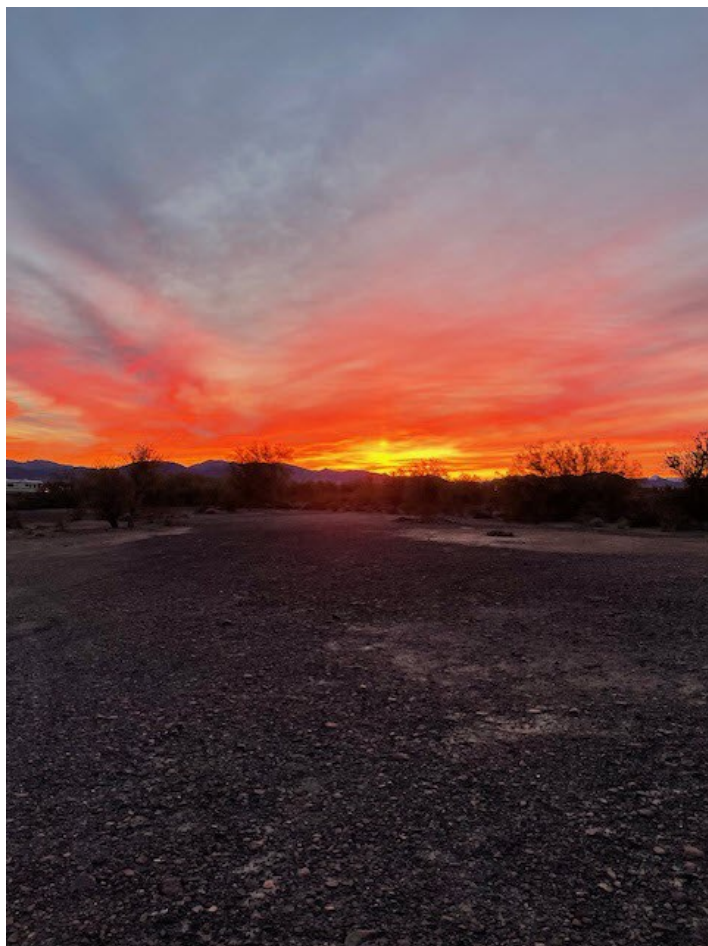
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Volunteers are needed to help assemble cases for the show. All volunteers will be put into a drawing to attend Camp Paradise, and two drawing winners will be selected. So yes, set up a display case and plan to volunteer for the weekend. The Annual Show is our highlight event of the year!



Who wants to spend \$28,000 on a huge piece of German halite and selenite? For every inexpensive rock from Tucson, there's an expensive one for you to pick up! There's two things that drive up the value of these pieces. They are the only examples in the world known to have halite crystals with selenite as a secondary mineral. Also these pieces are highly sought-after for their bright red-orange reaction of the halite under shortwave UV. No, I did not buy this one! From the Sollstedt Potash Works in Bleicherode, Thuringia, Germany, which was actively mined from 1902 to 1991.



I have one last note for you. The 2024 calendar on our website (www.scvgms.org) has been updated to reflect the schedule of the General Meetings (third Tuesday every month) and Board Meetings (the Tuesday following each General Meeting) for the year. If you would like to subscribe to the SCVGMS calendar so our events are synced into your personal calendar, feel free to use [this link](#) to do so.

Arizona has the very best sunsets. This one was my view on my last night of camping on the return drive home.

I'll see you at the Cabana Club on February 27!

Jim Herbold

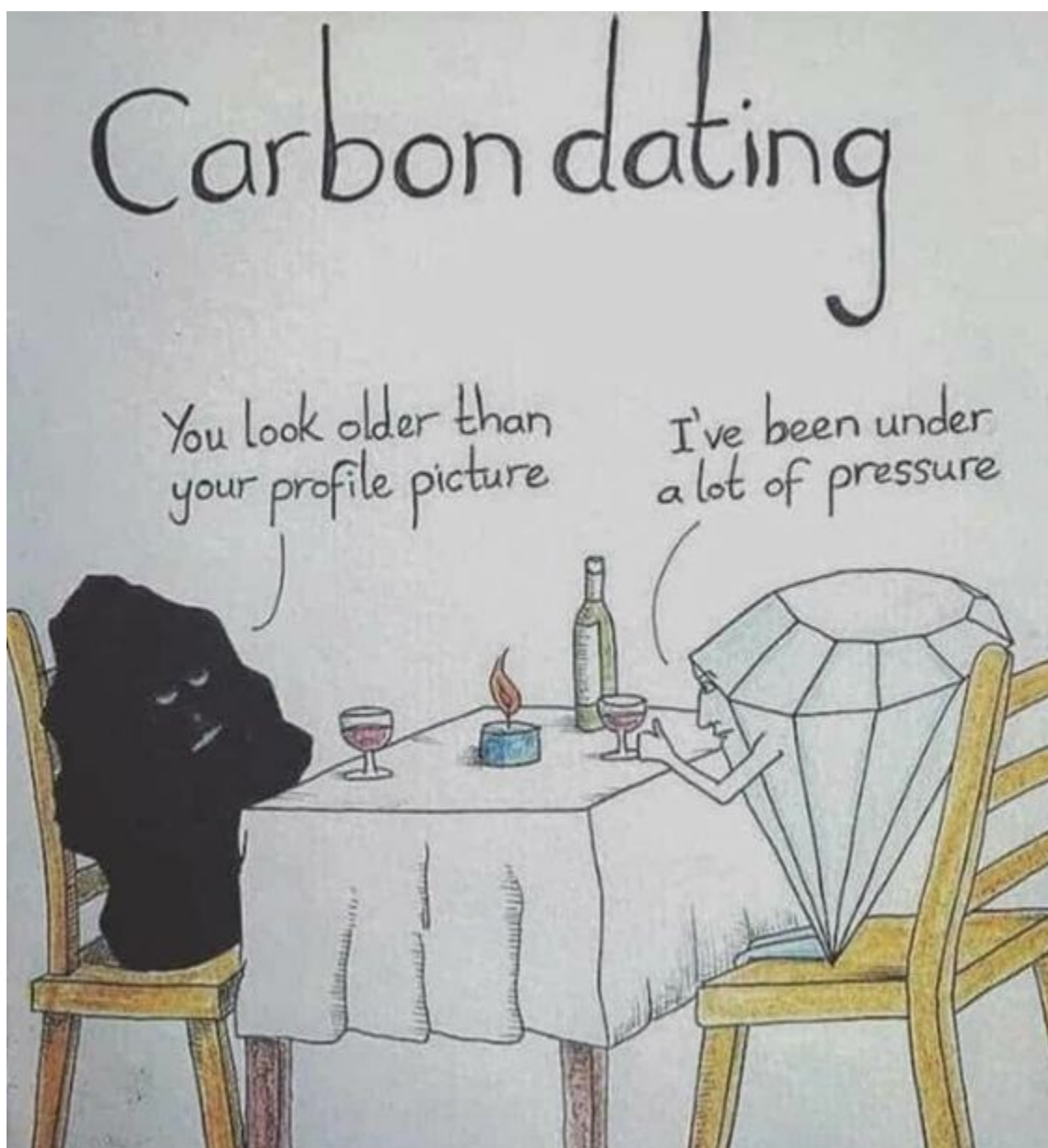
SCVGMS President

Bragging Rights

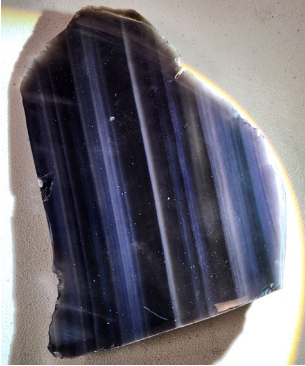
This month's Bragging Rights theme is "**Bone**". It is continued from last month because there were only 2 entries. "Bone" includes things like ivory.

Please text a photo of your Bone treasure to Cesar Nuñez, 408-561-8815, by 4:00PM on Monday, **February 26** to have it included in the contest.

Cesar Nuñez—Bragging Rights Chairman



Member Displays



Stephen May got a new variable speed angle grinder and tried his hand at polishing:

← a piece of Rainbow Obsidian;

Petrified Wood from Bonanza Mine; →



← Petrified Wood from Bonanza Mine;

and Plasma Agate with druzy from Clear Creek. →



Jim Fox:

← “Don’t lick this one!” Chalcanthite, a water-soluble sulfate mineral.

Quartz crystal cluster from Peru →



Chalcanthite
Chalcanthite is a mineral with rich blue-green color. It is water-soluble, and composed of a sulfate mineral $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$. It is commonly found in the late stage oxidation zones of copper deposits. Due to its ready solubility, chalcanthite is more common in arid regions. Mohs hardness is 2.5. **Warning:** It is poisonous, so wash your hands after handling! Good natural chalcanthite crystals are very rare. However, since this piece was presented to us while at the Inspiration Consolidated Copper Mine located in Arizona. There is a very good chance that this piece is natural and not man made. Well-formed crystals are easily grown synthetically, from copper sulfate solutions. This can be done by dissolving a readily

Peruvian Quartz Crystal Clusters
Quartz is an igneous rock made out of molecules of silicon and oxygen atoms held together in a crystal pattern. Quartz is found throughout the world and is present in igneous, metamorphic and sedimentary rocks. It is even found in meteorites! The color vary to include any color of the rainbow. It is usually transparent to translucent and is second most abundant mineral in the earth's crust (behind feldspar). The largest quartz crystal documented is 18,144 pounds and 20 feet X 5 feet X 5 feet in size! To describe quartz, Ancient Greeks used the word *kristallinos*, a word derived from *kruos* which means "icy cold". They believed quartz to be super cooled ice. Quartz can be divided into 3 major categories: macrocrystalline and microcrystalline. Macrocrystalline is where individual crystals can be seen by the unaided eye. Popular varieties include: amethyst, smoky quartz, citrine, rose quartz, aventurine and rock crystal (clear quartz crystals). Pop

Please email a photo of the items that you wish to display to [Michele Smith](#) by the Sunday before the general meeting, so that the people who attend the meeting on Zoom rather than in person can view your items. Please also bring your items with you to the Cabana Club, if you are attending the meeting.

Don't know what to display? Any type of rock, mineral, or fossil (identified or not), your latest project, information on a field trip, ideas for a display case, or anything to do with rocks is appreciated. Sharing items helps to educate all who are attending. Show off what you love, so that we can enjoy it with you.

AGATES

06-23-2020

Presented by: Missy Fox



Woodward Ranch Plume Agate Cab

(Editor's Note: This article will be continued in the next several issues of the *Breccia*.)

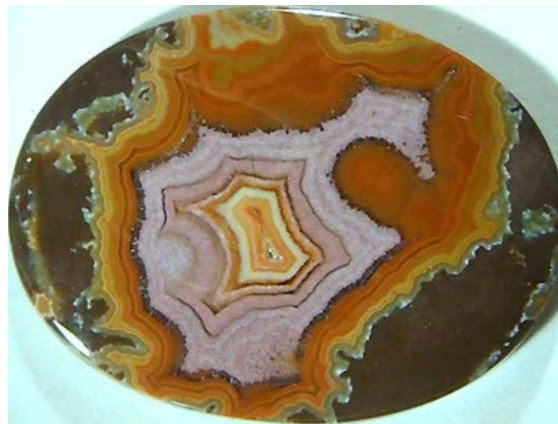
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Agates: No wonder we love them—so many colors and such a variety of patterns.



Iris



Dryhead



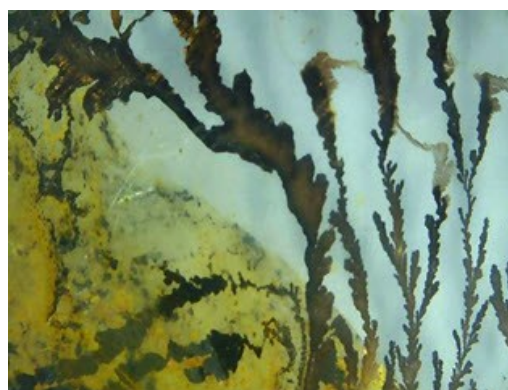
Laguna



Friday Plume



Carey Plume



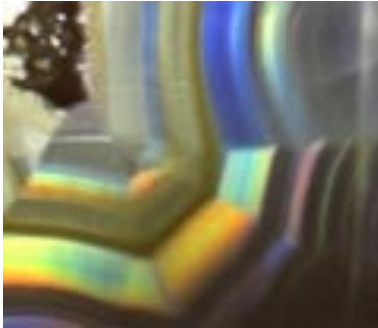
Brazilian Dendritic

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Agates—this family of rocks is one of the most popular due to their amazing variety of colors and patterns and for the ease in cutting and shaping.

It is believed that the word “agate” was derived from the ancient Achates River in Sicily, where agates were first described in writing.



Iris



Carey



Crazy Lace



Dendritic



Laguna



Royal Aztec Lace

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The basic composition of agate is chalcedony which is a form of quartz (silicon dioxide or SiO_2) in the form of microscopic fibrous crystals. No single theory of formation has accounted for all of the types of agates. What we do know is that the shape of the agate depends on the shape of the void that is being filled with the chalcedony solution. Some of the shapes that agates can assume are “amygdale” which is spherical or oval shaped, “vein” which is flat, or “fossilized” where the agate takes the shape of or replaces the fossil plant or animal.

(To be continued in the March 2024 issue of the *Breccia*.)



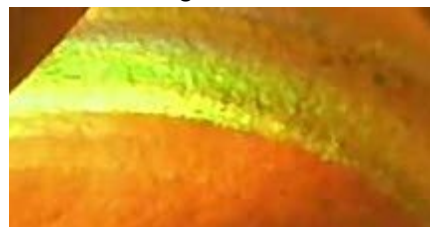
Nipomo



Stinking Water



Friday Plume



Fire



Moss Agate



Amethyst Sage

The Mohs Hardness Scale

By Prof. Philip R. Kesten, Ph.D.

If you've been collecting rocks and crystals even just for short time, you've probably learned how to identify many of them. What are the "tells"?

The color of a crystal can certainly give you a clue. A white, translucent crystal? That's likely quartz. Is the crystal yellow? Could be sulfur. And if your crystal is a deep purple, you might be holding a specimen of amethyst.

Amethyst... you can probably recognize a specimen of this prized mineral. Amethyst is a variety of quartz, and as such, forms as hexagonal crystals, sometimes long, hexagonal crystals capped with a six-sided point. The molecules that connect together to form a quartz or an amethyst crystal are composed of a silicon (Si) atom bonded to two oxygen (O) atoms, so SiO_2 . It is the bonding between these atoms that results in an hexagonal crystal shape. Throw in a few impurities, for example, some iron atoms, and an otherwise clear quartz crystal takes on a deep purple crystal hue. Amethyst is deep purple.

But, wait! Amethyst is not the only deep purple crystal. Perhaps what you have in front of you is a specimen of fluorite. One common variety of fluorite is purple.

You can probably recognize a specimen of cubic fluorite. As the name suggests, crystals of cubic fluorite are shaped like cubes, or, often, cubes embedded in other cubes. The molecules in fluorite are formed from a regular lattice of a calcium (Ca) atom bonded to two fluorine (F) atoms, that is, CaF_2 . It is the bonding between the atoms in these calcium fluoride molecules that results in a cubic crystal shape. In addition, while pure CaF_2 is colorless, impurities such as hydrocarbons can sneak into the calcium fluoride as it forms, imparting a variety of colors to a fluorite crystal. Perhaps the most common color of fluorite is deep purple.

Amethyst can be purple. Fluorite can be purple. You likely won't confuse the two: they exhibit very different crystal habits. That is, crystals of amethyst and fluorite exhibit very different shapes. If you're not convinced, take a look at the specimen of amethyst in Fig. 1a. and the specimen of fluorite in Fig. 1b. The two stones are essentially the same color, but clearly have different shapes.



Fig 1a. A specimen of purple amethyst.

<https://mindat.org/photo-176666.html>

Figure 1a



Fig 1b. A specimen of purple fluorite, displaying a cubic crystal habit.

<https://www.ebay.com/itm/165927617499>

Figure 1b

(Continued on page 17)

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Color is a property of a crystal that can help distinguish one crystal from another. But as amethyst and fluorite make clear, the type of a crystal cannot necessarily be uniquely determined from its color. But given that crystals of amethyst and fluorite have quite different shapes... perhaps a crystal's shape together with its color can uniquely determine what mineral or crystal you have in your hand?

Consider octahedral fluorite. As any variety of fluorite, it can be deep purple. But unlike cubic fluorite, crystals of octahedral fluorite form in a shape characterized by two back-to-back, four-sided pyramids. Octahedral fluorite is not cubic... you wouldn't confuse a crystal of octahedral fluorite with a crystal of cubic fluorite. So yes, color and shape are clearly important to consider when identifying a specimen.

But wait! The crystal spinel is composed of molecules in which a magnesium (Mg) atom, two aluminum (Al) atoms, and four oxygen (O) atoms are bonded together. Because of the way that the $MgAl_2O_4$ molecules connect, the crystal habit of spinel is octahedral. And when small amounts of manganese and cobalt sneak into the crystal lattice as it forms, the resulting spinel crystal is purple. A crystal of spinel, then, can be purple in color and octahedral in shape. And a crystal of fluorite can also be purple in color and octahedral in shape. (See Fig 2a. and Fig 2b.) So, no... color and crystal habit together do not necessarily uniquely identify a crystal!



Figure 2a



Figure 2b



Figure 2c

Fig 2a. A specimen of purple fluorite, displaying an octahedral crystal habit.

<https://fossilcartel.com/wp-content/uploads/2021/12/fluorite-octahedron-purp14-v1.jpg>

Fig 2b. Specimens of red and blue spinel, displaying an octahedral crystal habit.

<https://geology.com/gemstones/spinel/crystals-of-spinel.jpg>

Fig 2c. A specimen of purple alunite, displaying an octahedral crystal habit.

<https://i.ebayimg.com/images/g/myAAOSwNUlb9AuH/s-l1600.jpg>

And wait, again! The mineral alunite also has an elemental bonding structure that results in it forming octahedral crystals. And common impurities in alunite can also make it deep purple in color. So spinel, fluorite, and alunite... all can be octahedral and all can be deep purple. No: color and crystal habit together do not necessarily uniquely identify a crystal!

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And what does all this have to do with the Mohs hardness scale?

While some rocks and crystals can be uniquely identified by their color, or by their color and their crystal habit, sometimes other properties need to be considered to uniquely identify a specimen. One such other property is hardness.

As far back as the ancient Greeks, humans have known that observing what rock would scratch what other rock—when one is rubbed against the other—was a useful way to identify a specimen. (The Greek philosopher and natural scientist Theophrastus wrote about this way to characterize rocks and minerals in his treatise “On Stones” more than two thousand years ago.) But it was the German geologist Friedrich Mohs who devised a scientific approach to this. Mohs created a qualitative hardness scale in the early 1800s, defining a 10-point scale to characterize which mineral would leave a scratch on which other mineral when tested one against the other. The Mohs hardness scale runs from talc at 1 to diamond at 10, with a hardness of 1 representing the softest mineral and 10 representing the hardest. (The complete scale: talc, gypsum, calcite, fluorite, apatite, orthoclase feldspar, quartz, topaz, carborundum, and diamond. Mohs’ scale follows the handy mnemonic “The Girls Can Flirt And Other Queer Things Can Do.”)

As an aside, it is worth noting that the resistance of a specimen to being scratched, that is, its hardness, depends on the bonds between the atoms that make up the specimen. For many crystals, however, the bond strength between atoms or molecules is different in different directions, depending on which atoms are bonded to which other atoms... which means that the hardness of the crystal is different in different directions. As an example, although talc is of hardness 1 on Mohs’ scale and gypsum is hardness 2, talc will scratch gypsum when a specimen of gypsum is drawn against a specimen of talc in a direction perpendicular to the direction of cleavage. One of the most extreme cases of different hardness in different directions: kyanite has a Mohs hardness of 5.5 in one direction and 7 in another.

We concluded above that some rocks and crystals can be uniquely identified by their color, or by a combination of their color and their crystal habit, but sometimes other properties, for example, hardness, are required. Does hardness help distinguish fluorite from spinel from alunite?

Spinel, fluorite, and alunite can all be deep purple. All three can form as octahedral crystals. But while the Mohs hardness of fluorite is 4 (“the girls can Flirt...”), the hardness of spinel is between 7.5 and 8, and the hardness of alunite is between 3.5 and 4. Wow! Draw a specimen of spinel against a specimen of fluorite, and the spinel will easily leave a scratch on the fluorite. And draw a specimen of alunite against one of fluorite, and you will find a scratch on the alunite. (If you plan to try this, draw the specimens one against the other on parts of their surfaces not easily visible!) Color, crystal shape, and hardness... all three together might just uniquely identify a rock!

Prof. Philip R. Kesten, Ph.D., Department of Physics, Santa Clara University

Website Links

Your Window to the World of Important Websites

Click on any links below for sites you want to visit!

Link to Our SCVGMS Website: <https://www.scvgms.org/>

Note: After you click on the above link, if you want to see the Breccia and other news items, scroll down and click on "Download", shown under the Newsletter option.

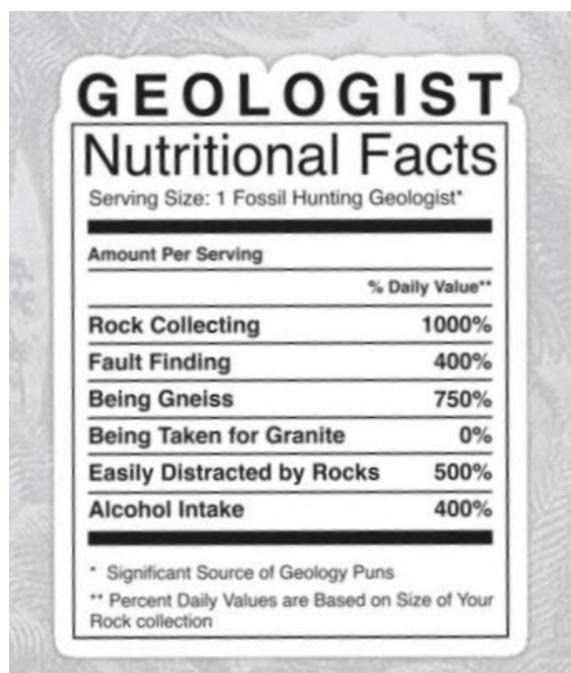
The American Federation of Mineralogical Societies (AFMS): <https://www.amfed.org>

California Federation of Mineralogical Societies (CFMS): <https://www.cfmsinc.org/>

To access the news from the American Lands Access Association: www.amlands.org

Mindat.org (world's largest open database of minerals, rocks, meteorites): <https://www.mindat.org/>

SCVGMS Facebook Page: <https://www.facebook.com/santaclaravalleygemandmineralsociety>



www.redbubble.com/i/sticker/Geologist-Nutritional-Information-Funny-Geology-Humour-by-MadPanda/37858753.EJUG5



www.zazzle.com/forget_princess_i_want_to_be_a_geologist_button-256209276121745393

Punny

What do you call a mineral that's always happy?

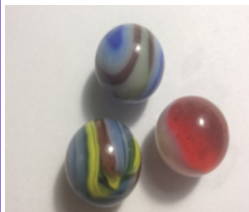
A beryl of laughs!

Marbles

By Jo Borucki

Many of us have collections related to rocks and minerals. I try to be a well rounded individual so among my many small collections is one of marbles, and in case you think that I have lost my marbles in writing this article for the Breccia, marbles are a legitimate pursuit for a rockhound because they are often made from rocks or minerals.

Small balls of stone have been identified in archeological sites as far back as 2500 BCE. The poet, Ovid, born 44 BCE mentions marbles in several of his poems including the poem, "Nux" where a game of marbles is played and walnuts are used as marbles. Germany, in the 1500s referred to the little balls as being made of marble. Marbles at this time were made by polishing small fragments of minerals such as agate, alabaster, limestone, and sometimes, brass.



My collection of marbles is modest at best, consisting of a few made from agate, one made from tiger eye quartz, and the remaining from glass or clay ceramics. Agate is a form of chalcedony, and my tiger eye marble is quartz. My most beautiful marbles are the tiger eye quartz marble and the agates.



Did you know that July 23rd is National Marble Day? Just think how you can amaze your friends with that little factoid!

Polishing small fragments of minerals to make marbles was slow and therefore expensive so at some point, marbles were formed from clay as little clay balls. As a child, I made some of these. A great aunt and uncle of mine lived in an area of Wisconsin that had not been glaciated, and so was hilly. The soil was a formidable form of clay, hard as stone when dry and slippery when wet. How people farmed it amazes me, but I didn't have to worry about that. I could take some of the clay soil home with me and make marbles, little dishes and animal shapes from it. The last time, in about 2013 that I visited relatives still living on that little farm, I took a small piece of clay as a remembrance of times past. I rolled it into a little ball which I keep as one of my small treasures. I could soak it until soft and malleable and make a couple of marbles, but I don't think that I will bother to do that because like those early clay marbles, they would wear away or chip easily.

Today's marbles are mainly made of glass. The materials used to make glass marbles include sand, soda lime, silica and other materials such as cullet which is often recycled or scrap glass. The materials are combined in a furnace and heated at 2300 degrees Fahrenheit for 24 hours or longer. The small glass globs are released and cut to size and then rolled down a ramp with grooved rollers to create spheres.

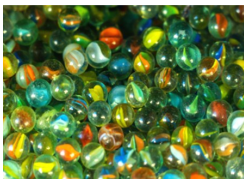
With the exception of marbles in my collection that are made from clay or glass and the one that is tiger eye quartz, the agate ones are examples of chalcedony. Chalcedony is a cryptocrystalline form of silica composed of fine bits of quartz and moganite. Chalcedony chemical structure is the same as quartz except that it also contains moganite. The varieties of chalcedony include agate, carnelian, chrysoprase, fire agate, heliotrope, moss agate, chrome chalcedony, and onyx. Chalcedony may be a bit softer than quartz with a hardness between six and seven while quartz is the standard on the Mohs Hardness Scale for hardness, seven.

(Continued on page 21)

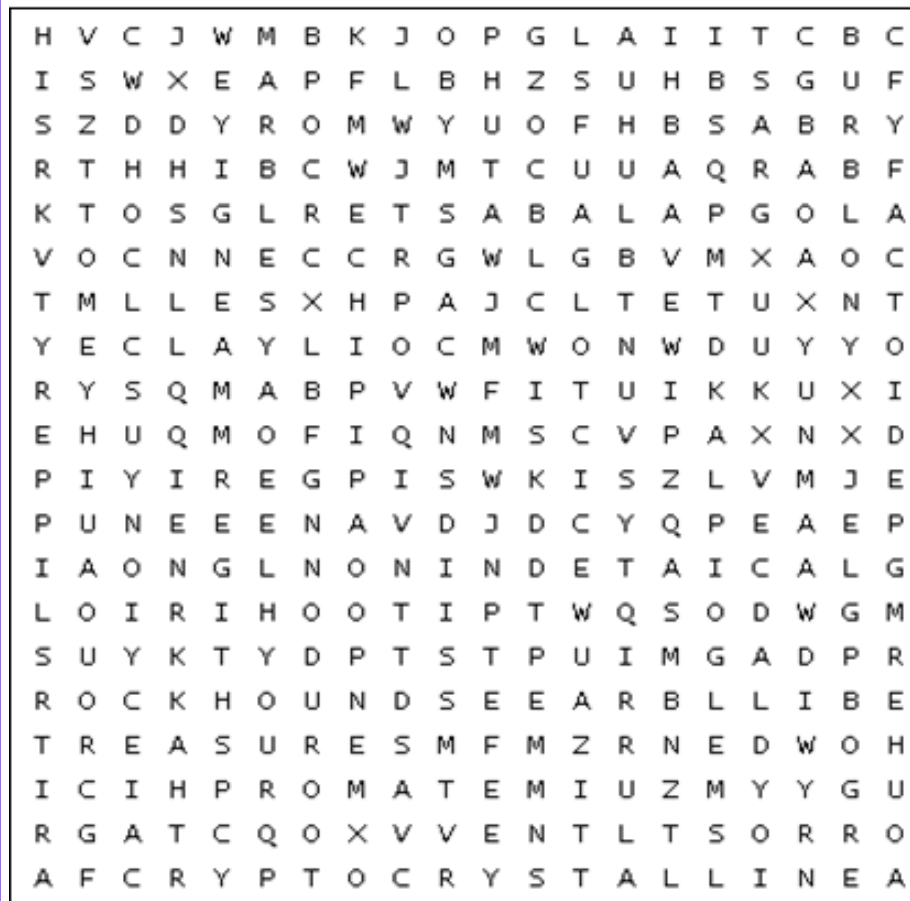
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Moganite has the same chemical structure as quartz, in other words, it is also a silica dioxide mineral, but the crystal structure of moganite is monoclinic while that of quartz is trigonal, a six sided prism ending with a six sided pyramid.

Cryptocrystalline defines a rock texture where the crystals are so small and so vaguely defined that it is hard to reveal them even microscopically. The texture crystals can be sedimentary, **metamorphic**, or igneous. Sedimentary rocks with cryptocrystalline structure include chert and flint. Metamorphic rock examples include marble, quartzite, schist, and phyllite. Igneous rock examples include a variety of diamond called black diamond, granite, and obsidian. While a black diamond marble would break my pocketbook for sure, some granite or obsidian marbles would be nice to have. Houseofmarbles.com sells a stone marble solitaire game set that has cherry quartz, gray agate, unakite, rose quartz, yellow aventurine, dalmatian, and blue aventurine marbles. This would be heaven for me since I like to play solitaire, enjoy the beauty of marbles, and enjoy rocks and minerals.



I have enjoyed my little excursion into the world of marbles, and I have learned something as well, about not only the history of marbles but about rocks and minerals. I hope that you enjoy the word search puzzle shown directly below. The words included in the puzzles are those underlined and bolded in this article.



Go to en.m.wikipedia.org for an enjoyable article about marbles. If you enjoy making puzzles, I highly recommend using the Discovery Education tool called Puzzle Maker: [Online Puzzlemaker](#) | [Create Your Own Puzzle](#) | [Discovery Education Puzzlemaker](#).

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Answer to Marbles Word Search Puzzle

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

Smiles

If you boil a funny bone, it becomes a laughing stock. Now that's humerus.

Light is faster than sound. That's why some people appear enlightened until they speak.

OK, so what then is the speed of dark?

The meek shall inherit the earth, but not its mineral rights.

Why is the Department of Interior in charge of everything outdoors?

January 23, 2024 - SCVGMS General Meeting Minutes

Meeting run by **Bruce Poehlman**, Vice President

Call to Order - 7:38 PM

Pledge of Allegiance

Program for the evening: **Jim Fox** presents on Agates

Installation Dinner Update (Stephen May): 32 people attended, very little left overs! Very tasty and many donations for Toys for Tots

New Members (Cynthia Porter): none to report

Member Displays: Members to present any specimens if any were brought.

3 minutes per person

Stephen May got a new variable speed angle grinder and tried his hand at polishing a piece of Rainbow Obsidian, Petrified Wood from Bonanza Mine and Plasma Agate with druzy from Clear Creek.

Jim Fox: "Don't lick this one!" Chalcanthite (water soluble) copper sulfate. Next month DRC pre-meeting Silent Auction bidding starts at 7:00 and will end mid meeting. There will be 11 crystal clusters from Peru, each between 4 and 7 lbs.

Volunteer Roles that need to be filled:

Secure volunteer who is responsible for February 27, 2024 general meeting snacks (**Anne Ruiz** volunteered)

\$100 reimbursement with receipts

Please bring something sweet, something savory, and something vegetable

Social Media Coordinator - Website, Insta, FB, Reddit, Meetup. We really need help here.

Mostly for meeting and Annual Show announcements

Email president@scvgms.org if interested

New Committees, open call for members that want to join. Email president@scvgms.org if interested. One or two hours of Zoom time is expected.

By-Laws Review Committee - to review By-Laws together to see if anything could use an update in the name of achieving club goals, to draft recommendations for Board review:

Capital Planning Committee - to brainstorm and report ideas to the Board that would allow the Club to invest capital into initiatives that promote Club goals:

Calling for Member Presentations at monthly general meetings!

We want to recruit people to present on interesting mineral and lapidary topics. Show off parts of your collection!

Suggested timing: anywhere from 5 to 20 minutes. You can create a presentation deck to use, or not. Bring in specimens to show off. Think of this as one or two steps deeper than what we do with Member Displays each meeting.

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Email president@scvgms.com if you are interested to present.

Update on Annual Show planning (Michele Smith): Anna and Frank doing advertising. Magnetic signs available to check out for display on your car to promote the show. Tickets \$8 and parking is free. Discount ticket gets you \$1 off. Military, First Responders, and Scouts in uniform receive free admission. Purchase tickets online for \$6. **Missy Fox** and **Cynthia Porter** leading Discovery Zone. Looking for displays for up to 32 cases at the show. Volunteers needed to help assemble cases for the show. All volunteers will be put into a drawing to attend Camp Paradise.

Break for snacks/food/beverage

Main Presentation (Jim Fox): Agates

Correspondence (Frank Mulaney): No report

Field Trips (Stephen May):

February: Fossil Discovery Center, Chowchilla, Rained out. To be re-scheduled, Saturday, March 2nd
Between May 29- June 2nd TBD Rainbow Ridge 3 scoops available (3 people allowed per scoop)
\$900 per scoop

June 7 (Friday): Rainbow Ridge Opal Mine, 3 scoops available, up to 3 adults per spot. \$900.00 fee dig.

June 13 - 16, Prineville, OR Pow Wow Field Trips: A 4-day rock show and 3 Field Trips, Fri. (6/14), Sat. (6/15), Sun. (6/16). Locations to be announced. Drive time 8 hrs. 42 min.

August 3 (Sat) - 9 (Fri), Delta Ut: -Dugway Geodes-, -Topaz Mountain-, -Drum Mountain agate-, -Copper varieties, multi-colored druzy and fine crystals, mine tailings-. 2 travel days, 5 collecting days. Potentially, Garnet Hill, Ely NV, on the way home.

Rock Hound of the Month from December 2024: Michael Paone, for taking care of most of the food at December's Installation Dinner. Thank you so much! Jim has a badge pin and patch for you.

Bragging Rights (Cesar Nunez):

For this month of January the theme is "Bone". Specimen review and voting.

Text pictures to Cesar at 408-561-8815.

Postponed until February

Hospitality: Introduce Guests; 25 Members and 1 Guest in attendance.

Sunshine (Margo Mosher): Margo is in Arizona

New grandson for **Bruce Poehlman!**

Federation Report (Karen Welder): none

Coming in February:

DRC Mini Sale: Silent Auction of 20-25 minerals from the Joe Abramski donation, and a few pieces from Michele's yard. Not the Swap Meet, where members bring rocks to sell, trade, or give away.

AZ Shows Report: Margo, Jim H, anyone else who went to Quartzsite or Tucson

Adjournment: Meeting adjourned at 9:17PM.

SCVGMS Board Meeting Minutes, January 30, 2023

Meeting called to order at 7:51 pm

Roll call: Jim Herbold (President), Bruce Poehlman (Vice President), Cynthia Porter (Secretary), Frank Mullaney (Treasurer), Noel Runyan (Board), Jim Fox (Board), Missy Fox (Board), Stephen May (Board), Michele Smith (Board), Deb Runyan (News Editor), Dean Welder (Parliamentarian), Karen Welder (Federation Director), Paul Kidman (Alternate Federation Director)

Absent: none

Reading of the Minutes from 12/7/2023 board meeting (Cynthia Porter):

Meeting #1 Minutes M/S/P Frank Mullaney/Dean Welder

Meeting #2 Minutes amended M/S/P Bruce Poehlman/Frank Mullaney

Revisions to the Minutes:

Correspondence (Frank Mullaney): Dodge and Cox in, IRS taken to be handled

New Members (Cynthia Porter): None

Treasurer's Report (Frank Mullaney): See Report

Final update on dues collection from delinquent members

Need 4 Banners for the fairgrounds M/S/P Dean Welder/Stephen May

Business cards need to be ordered

Metro advertising agreement \$2,529 need approval to pursue M/S/P Jim Fox/Frank Mullaney

Facebook Ads working well

Motion to drop members who have not paid their dues as of January 15th M/S/P Frank Mullaney/Jim Herbold

Federation (Karen Welder): None New

May 24-26, 2024 AFMS/CFMS show in Ventura

Field Trips (Stephen May): No Changes

Show 2024 (Michele Smith):

No new

Meeting about discovery zone Thursday, Feb 1

Old Business:

2024 Calendar:

General and Board meeting dates were shared with Eric the webmaster for website updates - COMPLETED.

A new Google calendar link is being created so people can sync the SCVGMS calendar to their personal calendar - COMPLETED, [link is here](#).

Bruce procured the permanent Zoom link to be used for all meetings - same link every time

<https://us06web.zoom.us/j/85186692823?pwd=ugX5p0nQtw3TbXLzWa2mcaz2MoSeB1.1>

(Continued on page 26)

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Meeting ID: 851 8669 2823 Passcode: 836284

Capital planning committee: Interested members: Jim H, Bruce, Michele, Cynthia. Check if there are any general members that have asked to be included. Jim will proceed to schedule.

By-laws review committee: Interested members: Jim H, Missy Fox, Bruce, Paul K. To check if there are any general members that have asked to be included.

New business:

Program schedule for 2024 General Meetings

January 23 - Bruce Poehlman to run meeting - Jim and Missy Fox - Agates presentation

February 27 - First DRC Mini-Sale Silent Auction of Joe Abramski minerals, plus discussion of AZ shows with mineral viewing - Jim and Margo to lead

March 26 - Rick Kennedy - Jackson's Crossroads 2023 dig and AMNH visit report

April 23 - check Phil Kesten (referred by Deb)

May 28 - silent auction with member contributions

June 25 - Ted Hadley - topic TBD

July 23 - ice cream social

August 27 - Ty Lamph dino bone dealer

September 24 - (2023 no program)

October 22 - Gabriela Farfang prior scholarship recipient - Smithsonian mineral ops

November 26 - silent auction

December 3 Installation Dinner: Need to get in about 5 pm.

We would like to reserve the picnic area for our Founders day Picnic on a Sunday some date to be determined in the Months of July through September

Founder's Day Picnic - August 11 (Sunday) is proposed

Frank to ask Cabana Club

2024 Scholarships/Grants

Now at \$1000, increase to \$1500 motion to increase grants to \$1500 for 3 students with yearly review M/S/P Bruce Poehlman/ Stephen May

Jonathan Miller of SJSU Geology Dept is unresponsive

Need a new action plan!

Approval to designate the following 3 permanent people to have access to the Club safety deposit box: Frank Mullaney, Jim Herbold, Stephen May M/S/P Bruce Poehlman/Deb Runyan

Approval to designate who can sign Club checks: Frank Mullaney, Jim Herbold, Bruce Poehlman, Cynthia Porter M/S/P Dean Welder/Jim Fox

Approval to place Zoom on the "approved for auto-payment" by the Club M/S/P Dean Welder/ Jim Fox

FYI: a new Google Voice number has been set up for email collection. (669) 235-9417.

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Posters can be created for the Annual Show to collect email addresses. Direct interested people to send a text to this number with their email address. Who to create the poster

Jim will add email addresses to the master email spreadsheet he is creating

We can use this same number and method at general meetings for guests

Website Breccia subscription is handled differently via a web-based method

Jim Fox would like to discuss the subject of continuing with the Paradise raffle.

Proposal to sponsor 2 trips to Paradise because Zyzyx is closed M/S/P Deb Runyan/Noel Runyan \$500 per winner, each winner trip is for 2 people

Rockhound of the Month for January 2024: Bruce Poehlman, for running the January General Meeting

Dean to review brief version of Roberts Rules. Also to be sent to all board members every year and be the foundation of our operation cadence. SENT.

Updates to the following topic: Noel suggested mechanisms for rock identification and open it to a nationwide resource. Latest: AI project for SJSU Geology Dept. Stephen to ask.

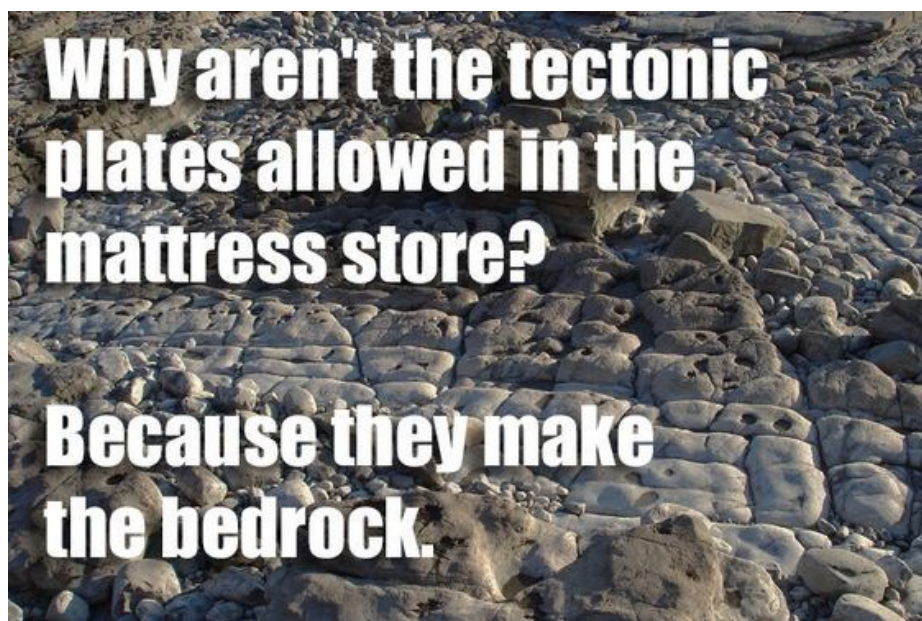
Upcoming Business:

For next BoD: Quick review of DRC Mini Sale held last week at the General Meeting. What worked well, what did not? Continue?

ID first month to hold Member Swap Meet before a monthly meeting (different from DRC Mini-Sale)

Upcoming Programs:

Meeting adjourned: 9:07 pm



SCVGMS ELECTED OFFICERS

President: Jim Herbold, 650-743-3254
Vice President: Bruce Poehlman, 818-912-1866
Secretary: Cynthia Porter, (408) 978-5848
Treasurer: Frank Mullaney, (408) 691-2656
Editor: Deb Runyan, (408) 628-7789
Federation Director: Karen Welder, (408) 353-2675
Alternate Fed. Director: Paul Kidman, (408) 356-4995

Board Members at Large

Jim Fox, (408) 356-7711
Missy Fox, (408) 356-7711
Stephen May, (408) 306-6782
Noel Runyan, (408) 866-7564
Michele Smith, (408) 374-1897
Parliamentarian: Dean Welder, (408) 353-2675

SCVGMS COMMITTEE HEADS

Bragging Rights Chair: Cesar Nuñez
Donation Receiving Committee Chair: Michele Smith
Show Chairpersons 2024: TBD
Fairgrounds Booth Chair: Michele Smith
Fairgrounds Liaison: Frank Mullaney
Fairgrounds Volunteer Coordinator: Margo Mosher
Field Trip Coordinator: Stephen May
Founder's Day Picnic Chairman: Jim Herbold
Founder's Day Raffle: TBD
Founder's Day Bingo: TBD
Hospitality: TBD
Installation Dinner: Tamara Bell, and Michael Paone
Member Displays: TBD
Refreshments: TBD
Silent Auction: TBD
Sunshine: Margo Mosher
Trophies: Frank Mullaney
Librarian: Deb Runyan

Santa Clara Valley Gem and Mineral Society

P.O. Box 54, San Jose, CA 95103-0054

Website: www.scvgms.org

Email: info@scvgms.org

Phone Number (408) 265-1422

Like us on Facebook:

<https://www.facebook.com/santaclaravalleygemandmineralsociety>

An Invitation

This society is pleased to invite guests to attend general meetings, study groups, and field trips. **General meetings are held the fourth Tuesday of every month with meet and greet time beginning at 7:00 followed by the meeting at 7:30 PM at 100 Belwood Gateway (the Cabana Club), Los Gatos, CA 95032.** Belwood Gateway is just south of Blossom Hill Road between Leigh Avenue and Harwood Road. **The Next General Meeting is on February 27 at 7:30 at the Cabana Club and also available on Zoom.** The Next Board Meeting is at 7:30 on **March 5** on Zoom.

Our Society's Purpose: The inculcation of a love of rocks and minerals by the furtherance of members' interests in the earth sciences and by education in all facets of related educational activities with the promotion of good fellowship, proper ethics, and conduct.

Our Membership Requirements: Attendance at two general meetings within twelve months.

This society is a member of the California Federation of Mineralogical Societies (CFMS) and is affiliated with the American Federation of Mineralogical Societies (AFMS).

Our Newsletter, the Breccia, is published 11 times annually. The deadline for all articles is the Sunday after each general meeting. The Breccia editor is Deb Runyan who may be contacted by email at Deb4Rocks@gmail.com and by phone at (408) 628-7789. The Breccia is proofread by Noel Runyan, Pat Speece and Sonia Dyer.

Exchange bulletins may be emailed to Deb4Rocks@gmail.com. Permission to copy is freely granted to American Federation of Mineralogical Societies (AFMS) affiliated clubs when proper credit is given.