BRECCIA

Santa Clara Valley Gem and Mineral Society

Volume 73 Number 9, September 2025

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Events

September 23, 6:30 PM: Member Sale

If you have something to sell, please contact Jim Herbold.

September 23, 7:30 PM: The General Membership Meeting will feature a presentation by **Jim Fox** - stories about various touch table rocks. The Bragging Rights theme is **"Pink"**.

September 30, 7:30 PM: Board Meeting on Zoom. All Members are welcome to attend. If you want to attend, please contact Jim Herbold.

October 3, 10-11:30 AM or 1-2:30 PM: The Almaden Quicksilver Mining Museum is offering tours. See County Museum Digs into Local History of Mercury Mining in this issue, for more information.

October 28: General Membership Meeting.

Editor's Message

If you like Jim Fox's Article about Bertrandite and Clear Creek Jade in this issue, you will get a chance to see the Touch Table specimens that he wrote about at our September General Meeting.

See County Museum Digs into Local History of Mercury Mining in this issue for information about the Almaden Quicksilver Mine. You can hike its trails, visit the museum on weekends, or take a First Friday Tour on Oct. 3.

There are 3 field trips left this year if you want to get out and hunt.

Please contribute something, from a short "how-to" or "my favorite thing", up to 2 to 3 pages of whatever you think others would find interesting. Rock related photos are also appreciated. The deadline for submissions is the Sunday after each General Meeting.

Do you have anything that other members might enjoy?

Deb Runyan, Breccia Editor

editor@scvgms.org, 408-628-7789

Sunshine

We are sorry to say that **Bruce Poehlman's** father recently passed away.

Thanks to **Cynthia Porter** for the great snacks she brought to the August meeting, despite her recently broken rib.

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

Field Trips

Note: Driving times are from Campbell and are approximate.

September 25–28 (Thursday-Sunday): Topaz Mt & Dugway Geo Beds, North West of Delta, UT, 11-hours

Materials: Topaz Crystals, Bixbite (Red Beryl), Pseudobrookite Crystals, Hematite Crystals, and Geodes.

Sponsors: Co-Op Field Trip, Roseville Rock Rollers, CFMS

Leader: Gene Doyle

Stays: Topaz Mt camp site (alternative Delta UT)

October 10–12 (Friday–Sunday): Clear Creek, CA, 5.5-hours

Materials: Plasma agate, serpentine, other goodies

Sponsor: Ventura Gem & Mineral Society

Leader: Tyrone LaFay, 909-802-9177

Sign Up: www.whoscoming.com/vgms

November 8 (Saturday): Black Butte Reservoir, Stoney Creek, OR, 11.5-hours

Materials: Jaspers of multiple colors, Poppy or Orbicular Jasper, some Agate, Quartz veins.

Sponsors: Co-Op Field Trip, Mother Lode Mineral Society

Leader: Kevin Kirschman

Stays: Buckhorn Campground, Orland Buttes Campground (Hotel stay in Orland)

For questions about the two Co-Op field trips

Contact: Stephen May, Stephenmay0990@gmail.com

Phone: 669-248-3993 or 408-306-6782

President's Message

Hello club members and friends! This month I want to share some information and pictures from a recent backpacking trip I took to northwestern California. In the vicinity of the Humboldt Redwoods State Park. We saw all of the big old-growth redwoods and camped out at an old railroad tie production camp which had way too many mosquitos. After a couple days of hiking and camping my pal and I were looking forward to immersing our sweaty bodies into the Eel River. The water was not very cold and felt really nice, and we were less odiferous for a short while. At the particular location where we dropped into the river, we traversed an enormous gravel shoal. I gently let my friend know that I would be spending a couple hours rockhounding on the shoal after our river rinsing.

I love hiking through redwood forests. The ground is soft, the shade is always nice, and the trees are quite impressively large.

Near Humboldt Redwoods State Park, the surrounding geology consists of Franciscan Assemblage bedrock consisting of Mesozoic-aged sedimentary and metamorphic rocks. These rocks were formed from sediments deposited on the ancient ocean floor and then accreted onto the edge of the continent through plate tectonics. So, it seems like the round rocks along the Eel River have quite a long history of being bounced around, in, and under water. Younger formations like the St. George Formation, Wimer Formation, and the Prairie Creek Formation are also present, representing various depositional and erosional events. Pleistocene marine terrace deposits and the Battery Formation are also found in the area.

From these assemblages come the jaspers, jaspagates, hematite, quartzes that are fun to look for along the river banks. They are found in a broad range of sizes of river-tumbled stones. They are partially polished by the river action so when they are dipped in water and viewed in bright sunlight, their colors can be amazing. Bright reds and yellows are the most highly prized pieces. Some have beautiful

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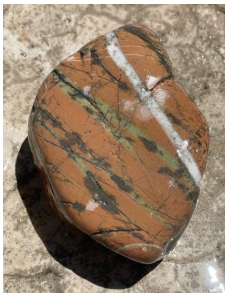
fortification patterns, and a local form of red poppy jasper is used for cabochons.

Reds are a prize on the shoals of the Eel River.

The fortifications in this piece are small, but pretty nice with their oranges and reds.

The Eel River represents California's third largest watershed. The mainstream flows more than two hundred miles and travels over 800 river miles from the headwaters above Lake Pillsbury in Lake County to the ocean. North and south of the park we were at, the Eel River is accessible at more than 10 places where car parking and very short and easy trails are available. I have previously spot-checked several of these access points to look for the relatively famous Eel River jaspers and jaspagates, but I had never really found anything too colorful or interesting. So yes, I finally found a bountiful source of the Eel River jaspers that I've read about for years. Below are some pictures of some of the more interesting pieces that I came home with.

Fractured jasper filled with quartz veins. The forces that caused this fracturing at the scale of this rock are confounding to me…



Two jaspers that exhibit two generations of fracturing and refilling.

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Yellows and reds are easy to spot on the shoals of the Eel River.

Small but really nice—the zone of red on top is unfractured, and the brecciation on the bottom is beautifully complex.

To conclude, I present an oddball—a rock with a varicose vein—the raised quartz vein has not succumbed to the tumbling as much as the host matrix which looks more like a mudstone than a jasper.

So, I'll see you at the next club general meeting on September 23!

Enjoy!

Jim Herbold

SCVGMS President

New Member

We welcome a new member to SCVG&MS!

Charles Jenkins

Bragging Rights

August's Bragging Rights Theme was **"Green"**.

1: Apple Green Willemite - **Jim Herbold**

2: Nephrite Jade - **Dan Gehret**

3: Aventurine - **Deb Runyan**

4: Petrified Wood - **Stephen May**

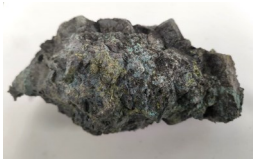
The Winner is **Dan Gehret.**

This month's Bragging Rights theme is **"Pink"**.

5: Mariposite - **Randy Merten**

6: Malachite - **Sonia Dyer**

7: Dioptase - **Joan Schramm**



8: Copper Ore - **John Sutter**

9:Chrysoprase & Emerald - **Neil Delfino**

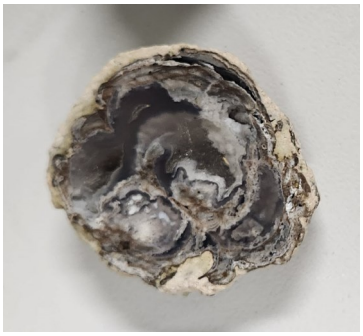
Member Displays

Neil Delfino brought Plasma Agate.

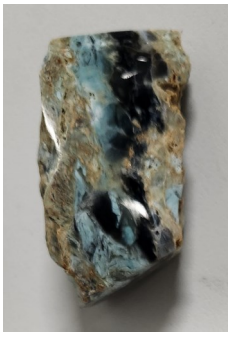
Bruce Poehlman identified the mystery mineral he brought last month as Gold/ Mercury/Lead.

Stephen May brought a selection of rocks from field trips: Hemimorphite, Lace Agate, Silicified Serpentine, Dugway Geode, Angel Wing Agate, and Jasper-Agate mixes.







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.

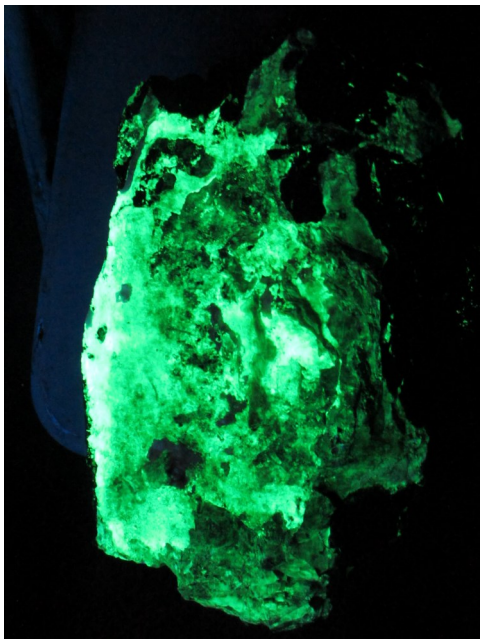
Jim Fox's Touch Table: Bertrandite and Clear Creek Jade

Bertrandite

Commonly called Tiffany Stone, it is composed of predominantly Opalized Fluorite (the blues, purples and whites) often mixed with many other minerals such as quartz, chalcedony, dolomite, rhodonite, manganese oxides (blacks) & beryllium (the whites, yellows or pinks). Fine quality Tiffany Stone has purple coloration and can even be a pure dark, translucent purple color.

Tiffany Stone is a beautiful and very rare stone. The rarity is due to its availability. Tiffany Stone is only found in Utah, specifically at the Brush Wellman Beryllium Mine near Delta, Utah. The mine is no longer open for collecting and all of this beautiful material is now ground up for beryllium ore. Beryllium is lighter than aluminum and stronger than steel. Bertrandite is a beryl sorosilicate hydroxide that was discovered by French mineralogist Emile Bertrand. Many opalites can contain some fractures, as does the opalite in this Tiffany Stone.

Some uneven hardness can be encountered in this material, but Tiffany Stone generally cuts easily and takes a fine polish with diamond, tin or cerium oxide. Its Mohs hardness is 5 to 6. It fluoresces bright green under a (shortwave) UVC light.



The size of this piece of Bertrandite is (under natural light and UV):

Length: 13 1/2"

Width: 10"

Depth: 6 1/4"

Weight: 54 lbs.

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Clear Creek Jade

The classification of jade includes two different forms: jadeite and nephrite. The two different types are sometimes hard to differentiate, but they have different specific gravities and, under a microscope, different crystalline forms. This stone is a jadeite and was found in Clear Creek in San Benito County, California. The jade found in this area is usually a "brecciated" jade that contains not only a pretty green jadeite but also a highly prized "mutton fat" white jadeite. As you can note, it will take a good polish. The primary use of jade is ornamental with the highest valued stones being a beautiful bright translucent green.

The size of this piece is:

Clear Creek Jade

Length: 16 3/4"

Width: 13 1/2"

Depth: 5"

Weight: 41 lbs.

Smiles

Rock hounds don't wrinkle, they just show lineation!

Why don't rock hounds argue?

They're too pelite.

CFMS Report from Stephen May

The Fall CFMS Meeting will be on November 8th.

Volunteers are needed to run for offices. Email Stephen May or Pat LaRue, if you are interested.

Donations are needed for auctions to be held by both CFMS and AFMS. Bring them to me and I will take them to the CFMS Fall Meeting.

Field Trip Safety: Adults should demonstrate for kids: boots, goggles, gloves, long pants, hats and sunscreen.

Lapidary Safety: Glasses and hair ties; a teenager lost a lot of hair cabbing.

Please share a story about a Field Trip, Show, or Special Find. Send it to me, and I'll pass it on to Pat LaRue. (Editor: please send it to me too, for the Breccia.)

You can also share our successes locally to the Mercury News: our scholarships, shows, trips, and cool programs.

Membership Dues for 2025 Are Due

SCVGMS membership dues are due for the year 2025. Your dues are essential to the operation of SCVGMS.

Dues are $5.00 for Junior, $20.00 for an individual, and $30.00 for the household.

You can now easily pay online, at https://www.scvgms.org/product/membership-dues/

Or

Pay Frank at a meeting

Or

Send your check to: Treasurer, Santa Clara Valley Gem and Mineral Society, Box 54, San Jose, CA 95103-0054;

or Frank Mullaney, 5705 Begonia Drive, San Jose, CA 95124

Thank you.

Website Links

Your Window to the World of Important Websites

SCVGMS Website: https://www.scvgms.org/

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

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

American Lands Access Association (ALAA): www.amlands.org

BLM Rockhounding: https://www.blm.gov/programs/recreation/rockhounding

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

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

GemKids: https://gemkids.gia.edu/

Smithsonian Science How Webcast Archives: https://naturalhistory.si.edu/education/school-programs/grades-3-5/smithsonian-science-how/smithsonian-science-how-webcast-archives

Smithsonian National Museum of Natural History: https://www.youtube.com/@nationalmuseumofnaturalhistory

Information on Shows

September 13–14, 2025 – Reno, NV

Reno Gem and Mineral Society

Silver State Pavilion at the Grand Sierra Resort, 2500 E. Second St.

Hours: Sat 10–5, Sun 10–4

Contact (925) 785-4551, sabl@comcast.net

Website: https://renogms.org

September 20–21, 2025 – Arcadia, CA

Pasadena Lapidary Society

Arcadia Masonic Center, 50 W Duarte Rd.

Hours: Sat 10–5, Sun 10–4

Contact: (626) 260-7239

Website: https://pasadenalapidary.org/pls-2024-show/

September 20–21, 2025 – Monterey, CA

Carmel Valley Gem and Mineral Society

Monterey Fairgrounds, 2004 Monterey Road

Hours: Sat and Sun 10-5

Contact: johnandjamiesmama@yahoo.com, (831) 679-2896

Website: http://cvgms.rocks

September 20–21, 2025 – Chico, CA

Feather River Lapidary & Mineral Society

Silver Dollar Fairgrounds, 2357 Fair St.

Hours: Sat 9-5, Sun 9-4

Contact: shows@featherriverrocks.org

Website: https://www.featherriverrocks.org

September 27–28, 2025 – San Luis Obispo, CA

San Luis Obispo Gem and Mineral Club

San Luis Obispo Veteran's Memorial Building, 802 Grand Ave.

Hours: Sat-Sun 10-5

Website: https://slogem.org/gems-by-the-sea/

October 4, 2025 – Lake Elsinore, CA

Lake Elsinore Gem and Mineral Society

32097 Corydon Rd.

Hours: 10-4

Contact: (909) 208-6956, berylman50@aol.com

October 4–5, 2025 – Anderson, CA

Shasta Gem and Mineral Society

Shasta District Fair and Event Center, 1890 Biggs St.

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Hours: Sat 9-5, Sun 9-4

Contact: (530) 356-2378, miller3987@gmail.com

Website: https://shastagemandmineral.org/

October 4–5, 2025–Grass Valley, CA

Nevada County Gem and Mineral Society

Nevada Co. Fairgrounds, 11228 McCourtney Rd.

Hours: Sat 10-5, Sun 10-4

Contact: (530) 273-0871, jan.2@att.net

Website: https://www.ncgms.org

October 11–12, 2025 – Redwood City, CA

Peninsula Gem and Geology Society

Redwood City Community Activities Building

1400 Roosevelt Ave.

Hours: 10-5 both days

Contact: (650) 575-3144, cci@pacbell.net

Website: https://pggs.org/

October 11–12, 2025 – Signal Hill, CA

Long Beach Mineral and Gem Society

1800 E. Hill Street

Hours: Sat 10-5, Sun 10-4

Contact: (562) 253-1390, lbmineralgemsociety@gmail.com

Website: https://lbmineralgem.org

October 18, 2025 – West Hills, CA

Woodland Hills Rock Chippers

First United Methodist Church, 22700 Sherman Way

Hours: 10-5

Contact: barnettcelia53@gmail.com

Website: www.rockchippers.org

October 18, 2025 – Anaheim, CA

Searchers Gem and Mineral Society

The Downtown Community Center, 250 E. Center Ave.

Hours: 9-2

Contact: anaheimsearchers@gmail.com

Website: https://www.searchersrocks.org

October 18-19, 2025 – Santa Rosa, CA

Santa Rosa Mineral & Gem Society

Santa Rosa Veterans Memorial Building, 1351 Maple Ave.

Contact: (707) 583-1824

Website: www.srmgs.org

What is that rock? Is it sapphire?

By Philip R. Kesten, Ph.D.

If you are a rock collector, even if you have only been at it for a short time, you have learned how to identify crystal and mineral specimens. You might start by looking at the shape and color of a mineral or crystal. You might also evaluate the streak color of a specimen, by rubbing it against a plate of unglazed porcelain. (Because the color of the streak that a particular mineral leaves is always the same regardless of any variations in the apparent color of a stone, a streak test can be a dead giveaway in the identification of a specimen.)

But you might also test the Mohs hardness of a specimen in order to identify it. On the Mohs hardness scale, minerals—as well as other objects—have a hardness of between 1 and 10; when one object is rubbed against another, the one with the larger hardness value will leave a visible scratch on the other. Humans have been testing the hardness of minerals—by testing what stone will scratch what other stone—for thousands of years. From the Greek philosopher and natural scientist Theophrastus (who studied under Aristotle), we have a mention of this way to study rocks in his treatise On Stones, written around 300 BC. And the German geologist (and medical doctor) Friedrich Mohs, back in the early part of the nineteenth century, codified a scale of relative hardness of stones. A hardness scale, by the by, that is now in common usage, and a scale that carries his name. The scale Mohs developed is qualitative rather than quantitative, but it is nevertheless rather useful in identifying mineral specimens, especially out in the field.

You can remember the hardness scale that Mohs developed using the mnemonic "***T**he **G**irls **C**an **F**lirt **A**nd **O**ther **T**hings **C**an **D**o*". From a Mohs hardness of 1 to a hardness of 10, the scale is represented by **T**alc, **G**ypsum, **C**alcite, **F**luorite, **A**patite, **O**rthoclase (feldspar), **Q**uartz, **T**opaz, **C**orundum, and **D**iamond. (If you are not a fan of flirting, perhaps this other mnemonic will appeal to you: ***T**o **G**et **C**andy **F**rom **A**unt **F**anny, **Q**uit **T**easing **C**ousin **D**anny*.) To use the hardness scale effectively, it is also helpful to know the Mohs hardness of a variety of common,

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easily available objects. Your fingernails, for example, have a Mohs hardness of two and a half. The hardness of a copper penny is three and a half, the hardness of a knife blade is five and a half, and both glass and a steel file have a Mohs hardness of six and a half. So for example, if you can scratch an unknown mineral specimen by running the edge of your fingernail against it, it has a hardness of less than two and a half… it could be talc or gypsum. A penny will leave a scratch on a piece of calcite ("The girls **C**an flirt"… *__c__*alcite has a Mohs hardness of three, so it is softer than a copper penny. But a penny will not scratch a specimen of fluorite, with a Mohs hardness of four.)

As an aside, although diamond sits atop the Mohs hardness scale, it is not—at least in theory—the hardest substance we know. **Lonsdaleite**, a rather rare crystal of carbon atoms connected in a hexagonal lattice, is thought to have a hardness of more than fifteen. (Diamonds, at ten on the hardness scale, are carbon atoms arranged in a cubic structure.) Lonsdaleite forms when graphite embedded in a meteorite experiences enormously high temperatures as the meteorite crashes through the atmosphere of the Earth.

By the by, graphite is also composed of carbon atoms. But graphite is quite soft, with a Mohs hardness of one. In graphite, layers of carbon atoms are connected in hexagonal rings, and these layers are easily separated one from the other. (Which is the reason that graphite is unable to resist being scratched, that is, the reason that graphite is soft.)

Why is graphite soft while lonsdaleite—which, again, forms from graphite—is hard? The transformation of graphite into lonsdaleite produces molecules in which the atoms are tightly bound one to the next. Also worthy of note: the lonslaleite available for study is found in meteorites, but these crystals are microscopically small. As a result, they have not been thoroughly studied. And crystals of lonsdaleite that have been studied are not as hard as the theory predicts: they have a Mohs hardness of between seven and eight. This is likely due to the abundance of both lattice defects and impurities in the crystals.

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So. You have come across a striking blue crystal in a local rock shop. It has a distinctive crystal habit… indeed, it looks just like an image of raw sapphire crystals you can find on the Web. And wait—it is relatively inexpensive, that is, it is being sold for far less than you would expect for sapphire, which is a precious gemstone. Should you buy it? How can you decide if it is really a sapphire?

For starters, the look and habit of a mineral crystal specimen can deceive you. Consider the crystals shown in Fig. 1a. and Fig. 1b. That is indeed a sapphire, in matrix, in Fig. 1a. But the tanzanite crystal shown in Fig. 1b. presents with a similar color and a not-so-different crystal structure. How can you tell if the stone you have found at a rock and mineral show is a relatively expensive specimen of sapphire, or a relatively inexpensive specimen of tanzanite?

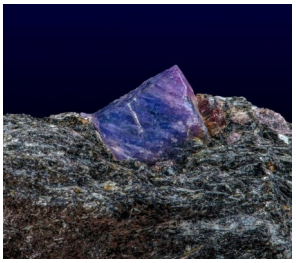

Fig. 1a. A crystal of sapphire.
https://stock.adobe.com/search?k=sapphire%20raw

Fig. 1b. A crystal of tanzanite.
https://www.mardanifineminerals.com/wp-content/uploads/2020/10/085-Tanzanite-08083-x.jpg

How to tell? Talk to Dr. Mohs! Sapphire is a variety of corundum, so it has a Mohs hardness of nine. (The "c" of "can" represents corundum; "can" is the ninth word in the mnemonic.) And why is corundum so hard? The molecules that comprise corundum (and therefore also sapphire) consist of two aluminum (Al) atoms bonded to three oxygen (O) atoms—Al_2O_3. The bonds that hold these Al_2O_3 molecules together are extraordinarily strong, which makes corundum extraordinarily hard. The bonds that hold together the atoms in the molecules in a specimen of tanzanite, however, are relatively weak, especially

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when compared to those in corundum. This makes tanzanite much softer than corundum—tanzanite has a Mohs hardness of about six and a half. By the by, the molecules that comprise tanzanite are formed from calcium (Ca), aluminum, and silicon (Si) atoms, with oxygen and hydrogen (H) atoms interspersed among them, bonded together. (A molecule in tanzanite is $Ca_2Al_3Si_3O_{12}(OH)$).)

So yes, tanzanite is much softer than corundum. Use this to your advantage: rub a steel file against a spot—a small, unobtrusive spot, oh, my(!)—on that blue specimen you have found. With a hardness of nine, a specimen of sapphire would not be scratched by a steel file, but the file would certainly leave a visible scratch on a specimen of tanzanite. If the specimen you found is scratched by the steel file, you have found a specimen of tanzanite, not sapphire.

And, of course… You can bet that if this striking blue rock you found is being offered for sale at a tantalizingly low price, it is most certainly not a sapphire! A specimen of rough tanzanite can be found for sale on the Web for as little as a few dollars, while a specimen of rough sapphire of the same size can be tens, or even a few hundred, dollars.

So, yes, the hardness scale Friedrich Mohs developed is handy, especially when you are trying to identify a specimen out in the field. But be aware that his scale has some limitations. One is that the hardness of a crystal is not always uniform—very often, hardness depends on the direction in which you draw a test material against it. So kyanite, for example, has a hardness of seven when a specimen is measured in one direction relative to the axes of the crystal, but a hardness of only five and a half when a test material is drawn against it in a direction perpendicular to the direction of the crystal axes. Other minerals, notably talc and diamond, also exhibit a variation in hardness when measured in different directions.

Another limitation of the Mohs hardness scale is that it is not linear. For example, fluorite—at a Mohs hardness of four—is not twice as hard as gypsum, which sits at two on the hardness scale. And while going up on the hardness

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scale from calcite to fluorite, that is, from a Mohs hardness of two to a Mohs hardness of three, is a twenty-five percent increase in hardness, going up by one in hardness from corundum (nine) to diamond (ten) is an increase of more than three hundred percent in hardness!

These limitations notwithstanding, you should for sure know the Mohs hardness scale to help you identify minerals. And beyond using hardness in identifying minerals, there are also industrial applications of hardness. Bits of diamond glued to a spinning wheel, for example, make an effective tool to cut metal. And a stone called corundite, which is mostly corundum, is crushed to form "emery" and used for a variety of abrasive applications. (Yes, the applications include the "emery boards" that you might use to file your fingernails, for example!) On the other side of the scale, the softness of talc makes it ideal for use in making soothing body powders. Combine powdered talc with corn starch, for example, and you have a wonderful "baby" powder!

The Mohs hardness scale also plays a significant role in nature. As a rapidly flowing river washes rocks downstream, the rocks that are harder—quartz for example—tend to survive, while softer rocks tend to get worn down into pebbles, then into silt, and then… they are gone. Harder rock also tends to be more resistant to erosion. The sandstone from which the buttes found in Monument Valley Utah are formed, for example, has a hardness of between six and seven. (Two sandstone buttes in Monument Valley are shown in Fig. 2a.) This relative hardness has enabled those rock structures to survive the beating they have taken from wind and rain over the course of the more than two hundred and fifty million years. And just as an aside, if you have ever wondered about the difference between a butte and its flat-topped cousin, the mesa… In general terms, a butte is taller than it is wide, while a mesa is wider than it is tall. Fig. 2a. shows Sentinel Mesa in Utah. It is about the same height as the buttes shown in Fig. 2b, but clearly much wider.

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Fig. 2a. Sentinel Mesa in Utah rises to an elevation of 6,417 feet.

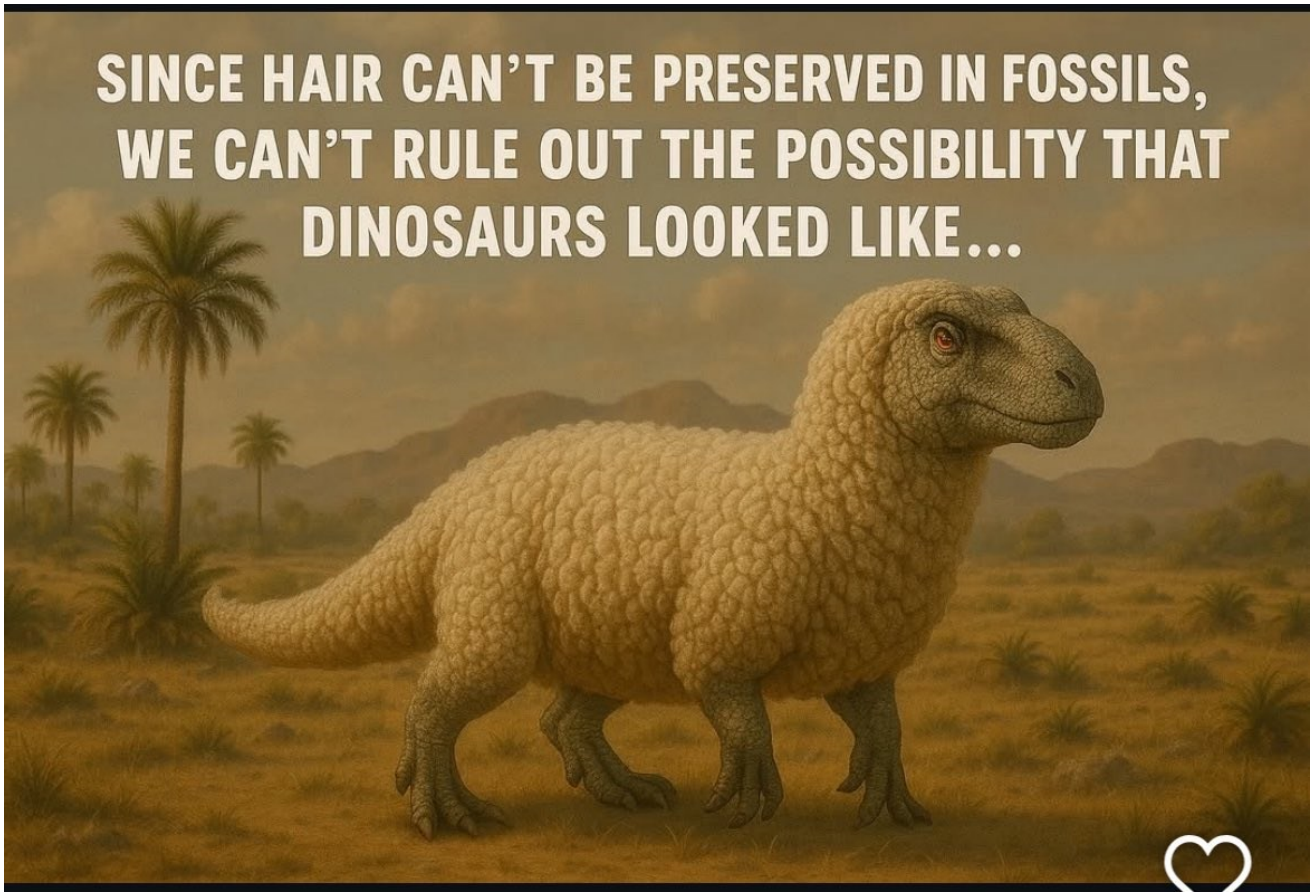
https://i.pinimg.com/564x/ff/a5/30/ffa53011b577fbebbc5e3171a5439346.jpg

Fig. 2b. Sandstone buttes rise majestically above Monument Valley in Utah.

https://mediaim.expedia.com/destination/1/fbc0ff995514dacc21f470c246588607.jpg

So. "The Girls Can Flirt And Other Things Can Do." This is a key to the Mohs hardness scale... use it!

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



County Museum Digs into Local History of Mercury Mining

The Almaden Quicksilver Mining Museum offers First Friday Tours that explore the important role that mercury mining and processing played in the Gold Rush

September 3, 2025

Almaden Quicksilver County Park, located in the western foothills of San José, features diverse ecosystems and a rich cultural heritage.

That heritage includes a significant role in the gold-mining boom of the mid-1800s, a phenomenon you can learn about at the Almaden Quicksilver Mining Museum, which is hosting a tour on Friday, Oct. 3.

The 4,163-acre park lies in a region where a red rock known as cinnabar is found, a mineral that humans have used in various ways since ancient times.

Photo of a historic building.

The Almaden Quicksilver Mining Museum is situated in the historic Casa Grande mansion in Almaden Quicksilver County Park.

For thousands of years, local indigenous people dug the red rock from the hills. By the 1700s, they had hollowed out a tunnel that was more than 50 feet long. They ground the cinnabar and used it for ceremonial body paint. The substance was traded and used throughout much of Northern California.

In 1845, a captain in the Mexican military learned about the cinnabar deposit, a discovery that significantly impacted California history. Cinnabar mining created the first industrial enterprise in San José, attracting people from Mexico, England, Wales, Chile, China and the East Coast seeking a better life. The town of New Almaden and the hill communities of Spanish Town and English Town were home to 3,000 people at the peak of mining in the late 1800s.

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Cinnabar is the ore body of mercury, which is also known as quicksilver because of its silvery, liquid appearance. Since Roman and Egyptian times, people have used mercury to process gold, silver and other precious metals.

With the discovery of gold in 1848 in the Sierra Nevada foothills, the mines of New Almaden were perfectly situated to sell and distribute mercury to gold country (and later to Nevada during the silver boom of 1859). During the mine's heyday, miners lived on the hill and commuted down narrow shafts and long tunnels to their work underground.

By candlelight, miners broke down rock faces, erected timber-lined tunnels, and extracted the rich, red cinnabar ore. Carted to furnace yards at the base of the hills, the cinnabar was heated and reduced to elemental mercury, then poured into iron flasks. Each 76-pound flask was shipped on boats and trains bound for mining camps.

Diorama, or exhibit, of a minecart.

The Almaden Quicksilver Mining Museum includes exhibits such as this diorama illustrating a minecart.

By the 1890s, the grade, or quality, of the ore had declined, and a process utilizing cyanide to extract gold and silver made cinnabar mining unprofitable. The mines declared bankruptcy, although small mining operations continued until 1975.

The Santa Clara County Parks and Recreation Department purchased most of the former mines in the 1970s. In 1993, the department acquired the Jacques Ridge property, adding another 372 acres to the park.

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The Almaden Quicksilver area has a rich history of trail use by endurance riders and equestrians going back to the early 1960s and is now a popular destination for hikers. Park staff and volunteers have also provided guided tours of the park and trail system over the years.

The department has invested millions of dollars in remediating mercury contamination from the mining operations, which has allowed the County to open nearly all the trails and historic areas to the public.

In partnership with other agencies, the department continues to remediate the environmental contamination in the park and protect the stormwater quality in the Guadalupe River Watershed.

Today, very little evidence is left in the hills from the cinnabar-mining era. For those who want to learn more, the Almaden Quicksilver Mining Museum is located inside the historic and stately Casa Grande mansion. Visitors can view a mining diorama, maps and original black-and-white photos and explore the lives of miners and their families by viewing displays of authentic artifacts and clothing.

The museum is hosting First Friday tours on Sept. 5 and Oct. 3. Two times are available: 10-11:30am or 1-2:30pm. You can RSVP using the museum's registration form.

You can also visit at your own pace on Saturdays and Sundays from 12 to 4 p.m. Visit the museum's website to learn more.

A donation of $2 per person is suggested.

This article originally appeared on the website of the County of Santa Clara. It was written by Lynda Will, a parks program coordinator for the Santa Clara County Parks Department, with contributions from Ben Curry, a cultural resources manager, and Jeremy Farr, principal planner.

Sapphire, the September Birthstone

Sapphire typically refers to the rich, blue gemstone variety of the mineral corundum, but this gemstone occurs in every color except red, which is called ruby. Trace elements of iron, titanium, chromium, copper, and magnesium give colorless corundum a tint of blue, yellow, purple, orange, or green, respectively.

The name "sapphire" comes from the Latin sapphirus and Greek sappheiros, meaning "blue stone", although those words may have originally referred to lapis lazuli. Some believe it originated from the Sanskrit word sanipriya which meant "dear to Saturn".

Sapphires have been popular since the Middle Ages. The celestial blue color symbolized heaven and attracted divine favor and wise judgment.

Greeks wore sapphire for guidance when seeking answers from the oracle. Buddhists believed that it brought spiritual enlightenment, and Hindus used it during worship. Early Christian kings cherished sapphire's powers of protection and used it in ecclesiastical rings.

Ancient Hebrews believed that the Ten Commandments were engraved on tablets of sapphire, although historians now believe they may have been made of lapis lazuli.

The remarkable hardness of sapphires, 9 on the Mohs scale, is second only to diamond. They aren't just valuable in jewelry, but also in industrial applications. In 1902, French chemist Auguste Verneuil developed a process to make synthetic sapphire, unlocking industrial applications spanning integrated circuits, satellite communication systems, high-durability windows, watches, and scientific instruments.

The information in this article comes from https://www.si.edu/object/corundum-var-sapphire:nmnhmineralsciences_14176994

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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.

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 editor@scvgms.org and by phone at 408-628-7789. The Breccia is proofread by **Pat Speece** and **Sonia Dyer**.

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