

Lake George Gem & Mineral Club

Club News

May, 2020



CANCELLATIONS!

The coronavirus pandemic has resulted in statewide emergency regulations and public health advisories against group gatherings. This has resulted in the cancellation of all Lake George Gem & Mineral Club activities until further notice. Cancellations include all LGGM Club meetings, programs, and field trips, as well as classes such as Rockhounding 101, Mineral Identification, and Basic Wire Wrapping. We will let you know when these events can be rescheduled.

We do not yet know whether the **Lake George Gem & Mineral Show** will be held as scheduled (August 14-16), or whether we may need to cancel it. Please check future newsletters or visit the club website at www.lggmclub.org or the club facebook page for further information.

COMING EVENTS OUTSIDE THE LGGM CLUB:

Dick's Rock Shop Liquidation - After more than 4 decades, Dick's Rock Shop in Fountain is closing and liquidating all of their inventory of rough, tumbled and cut stones as well as mineral specimens, fossils geodes, etc. Consult their web site at <https://dicksrockshop.com/> for more information, or email Diana Wing at diwing@dicksrockshop.com to schedule an appointment.

Our LGGM Club class on **Basic Wire Wrapping** has been cancelled, but if you are interested in wire wrapping some of your stones while you are at home during the coronavirus pandemic, you might want to visit <https://www.perfectlytwistedjewelry.com/classes.html> and to check out the online video wire wrapping classes that Susan Gardner offers by internet. LGGM Club members can contact Jerrolynn Kawamoto at jerrolynn@wildblue.net or by calling 719-748-8152 to receive Susan's gem club discount code for \$10 off of the price of the \$30 class. Or use this link <https://www.perfectlytwistedjewelry.com/free-tutorials.html> to watch her 101 Basic Cabochon Wire Wrapped Pendant YouTube video tutorial.

Nearly all events that are held in college facilities or local community facilities have been cancelled until further notice. Others have been postponed and may be postponed again.

Fri.-Sat.-Sun., May 15-17, Colorado Mineral and Fossil Spring Show, Crown Plaza Hotel - Convention Center, 15500 E 40th Ave., Denver, Colorado, 10-6 Fri. & Sat., 10-5 Sun., free parking & admission. **Cancelled**

Fri.-Sat.-Sun., June 12-14, Pikes Peak Gem & Mineral Show -- Cancelled.

We have not yet seen any cancellation notices about the following gem and mineral shows:

June 18-21 Rocky Mountain Federation of Mineralogical Societies 2020 Annual Conference and Gem and Mineral Show is being held in Big Piney, Wyoming. For more information and conference registration packet, click on the following link:

<https://rmfms.org/uploads/conferences/2020/2020%20RMFMS%20Convention%20Packet%20REV%2001.pdf>

Thurs.-Sun., July 23-26, Fairplay Contin-Tail Gem, Mineral, and Jewelry Show, Fairplay River Park.

Thurs.-Sun., Aug. 6-9, Buena Vista Contin-Tail outdoor gem and mineral show, Buena Vista Rodeo Grounds. Colorado's longtime famous and best attended tent & tailgate rock swap and show.

Fri.-Sun., Aug. 14-16, Lake George Gem and Mineral Show, sponsored by the Lake George Gem and Mineral Club. Also taking place nearby "down the road" is the **Woodland Park Rock, Gem and Jewelry Show**, Aug. 13-16.

Fri.-Sun., Sept. 18-20, 53rd Annual Denver Gem and Mineral Show, at the Denver Mart. 2020 theme is "Fabulous Fluorite".

OTHER COMING EVENTS OUTSIDE THE LGGM CLUB: (Nearby gem, mineral, fossil and geology events that you may enjoy.)

- **Cañon City Geology Club**, cancelled until further notice.
<https://www.canoncitygeologyclub.com/>
- **Columbine Gem & Mineral Society**, meetings TBD. <https://rockaholics.org/about/>
- **Colorado Springs Mineralogical Society** meetings cancelled until further notice
- **Pueblo Rockhounds**, meetings cancelled until further notice.

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For more lecture series during the year see:

Colorado Café Scientifique in Denver, monthly lectures on science topics

see <https://coloradocafesci.org/>

CU Geological Science Colloquium (Cancelled until further notice - Wednesdays, 4 p.m.)

see <http://www.colorado.edu/geologicalsciences/colloquium>

CSU Dept. of Geoscience Seminars (Cancelled until further notice - Fridays, 4 p.m.),

see <https://warnercnr.colostate.edu/geosciences/geosciences-seminar-series/>

Van Tuyl Lecture Series, Colorado School of Mines, (Cancelled until further notice - Thursdays, 4 p.m.): <https://geology.mines.edu/events-calendar/lectures/>

Denver Mining Club (Mondays, 11:30), see <http://www.denverminingclub.org/> .

Denver Museum of Nature and Science, Earth Science Colloquium series, (Cancelled until further notice - 3:00-4:00 p.m.), VIP Room unless noted, meeting dates and day of the week vary. Museum admission is not required; see <http://www.dmns.org/science/research/earth-sciences/>

Denver Region Exploration Geologists Society (DREGS); (Cancelled until further notice - usually 1st Monday, 7 p.m., Room 241 Bethoud Hall, CSM campus, Golden) <http://www.dregs.org/index.html>

Florissant Scientific Society (FSS); (Cancelled until further notice - meets monthly in various Front Range locations for a lecture or field trip; meeting locations vary, normally on Sundays at noon; all interested persons are welcome to attend the meetings and trips); see <http://www.fss-co.org/> for details and schedules.

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Friends of Mineralogy, Colorado Chapter, (Cancelled until further notice -usually meets on the 2nd Thursday of odd-numbered months, 7:30 p.m., Berthoud Hall Room 108, CSM campus, Golden; see <https://friendsofmineralogycolorado.org/>.

Golden Beer Talks (April talk cancelled) 2nd Tuesday, 6-8 p.m.), at the Buffalo Rose, 1119 Washington Ave., Golden. Doors open at 6; Talk begins at 6:35; Intermission – 7-7:15; Q&A/clean up 7:15-8. “Golden’s grassroots version of TED talks, Expand your mind with a beer in your hand”, <http://goldenbeertalks.org/>

Nerd Night Denver is a theater-style evening featuring usually 3 short (20-minute) TED-style talks on science or related topics; held more-or-less monthly at the Oriental Theater, 4335 W. 44th Ave., Denver; drinks are available; for ages 18+. Admission is \$6 online in advance, \$10 at the door. See <https://www.nerdnitedenver.com/> .

Rocky Mountain Map Society RMMS; Denver Public Library, Gates Room, 3rd Tuesday, 5:30 p.m.), <http://rmmaps.org/>

Western Interior Paleontological Society (WIPS); (April meeting unknown) WIPS will meet on the 1st Monday of the month, 7 p.m., in Petroleum Hall, Green Center, 924 16th St., Colorado School of Mines campus, Golden See <http://westernpaleo.org/> .

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LGGM Club News:

Membership Applications for 2020 closed as of March 31, 2020. Although non-members are welcome to attend the educational programs at the monthly meetings, you must be a member to participate in any field trips with the club.

Member Reports on Private Rockhounding Activities. With the cancellation of rockhounding field trips for our club, we would love to receive reports and photos from club members who have done rockhounding on public lands that allow rock collecting, or on private lands or mines which allow fee digs or rockhounding with permission. Please tell us where you went, what you found, and provide contact information for obtaining permission (if required). Your information and photos may be included in future newsletters.

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Request for Specimens:

Our Annual Show Committee would like to request that all members who have small rock and mineral samples that they are willing to share send us your contact information so that we can have Carol Kinate contact you. These specimens will be used for our kids’ activities if the show occurs as scheduled.

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Pebble Pups:

In honor of National Poetry Month, **Steve Veatch** submitted the following two poems by Pebble Pups.

Oh Colorado Mountains

By Karah Teague

Oh Colorado mountains,
How colors fill your canyons.
The sandstone, how it burns and shines all shades of red.
What mysteries lie beneath the sediments bed?

Time trapped beneath the shell and ash of the mighty volcano.
What part of life will the fossils show?
Oh Colorado mountains what beauties do you hold?
Granite that shows a slight sparkle for the eye to behold.
Gold and rich-filled minerals buried beneath.
Your sunsets and flowers who else can compete?
Oh Colorado mountains how dear you are to me.



Colorado mountains. Image by S.W. Veatch

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The Crystal

By Josilyn Teague

Like a prism the crystal sparkles.
Always making us witness to its marvels.
How does it always captivate us some ask?
But the crystal stays quiet for it has but one task—
To make us all want it, to make us say I must have it.
To make us cry if we don't, but brag if we have it.
The crystal laughs as it sees us a bustle,
It wins our hypothetical battle without any muscle.

But we don't want the crystal for its beauty.
We want to wear it and become that same ruby.
But why does the crystal want you to be jealous of it for?
Because deep down it knows it's just a mineral and it will never be more.



A solitary crystal. Image by [Robert Strasser](#) from [Pixabay](#)

The latest installment of **“Bench Tips”** by **Brad Smith:**
(www.BradSmithJewelry.com)

DRILLING SMALL ITEMS

Small pieces need to be held securely while drilling to prevent them from spinning if the drill catches. Having sliced my fingers occasionally in my younger days, I avoid band-aids now by using flat-jaw pliers or a ring clamp. Pliers also save you if the piece gets hot. Put a little tape or a piece of vinyl tubing over jaws of the pliers if needed to avoid scratches.



DRILLING A STONE

One of the things my students often ask to do is drill a hole through a piece of gemstone. The usual thought is to get a diamond drill, but I've been disappointed with them. I think the reason is that the tip of the drill is just pivoting in the hole and fails to cut well. When it looks like the drill isn't cutting, the tendency is to push with more force. The drill gets hot, and the diamond grit falls off.

A much better approach is to use a core drill. This is a small hollow tube with a coating of diamond grit at the business end. The diamonds easily carve out a circular arc without undue pressure or heat buildup. Core drills are readily available from lapidary and jewelry supply companies. They come in sizes as small as 1mm and are very reasonable in price. For instance, a 2mm diameter drill is about \$7.

Chuck the core drill in a drill press, Dremel or Foredom and be sure to keep the drilling zone wet to cool the tool and to flush out debris. Also, if you're drilling a through hole, go very easy on the pressure as the drill is about to cut through. Otherwise you will usually chip off some of the stone surface around the hole.



Work Smarter With Brad's "How To" Jewelry Books
www.Amazon.com/author/bradfordsmith

Happy hammering,
- Brad

Notes from the Editors

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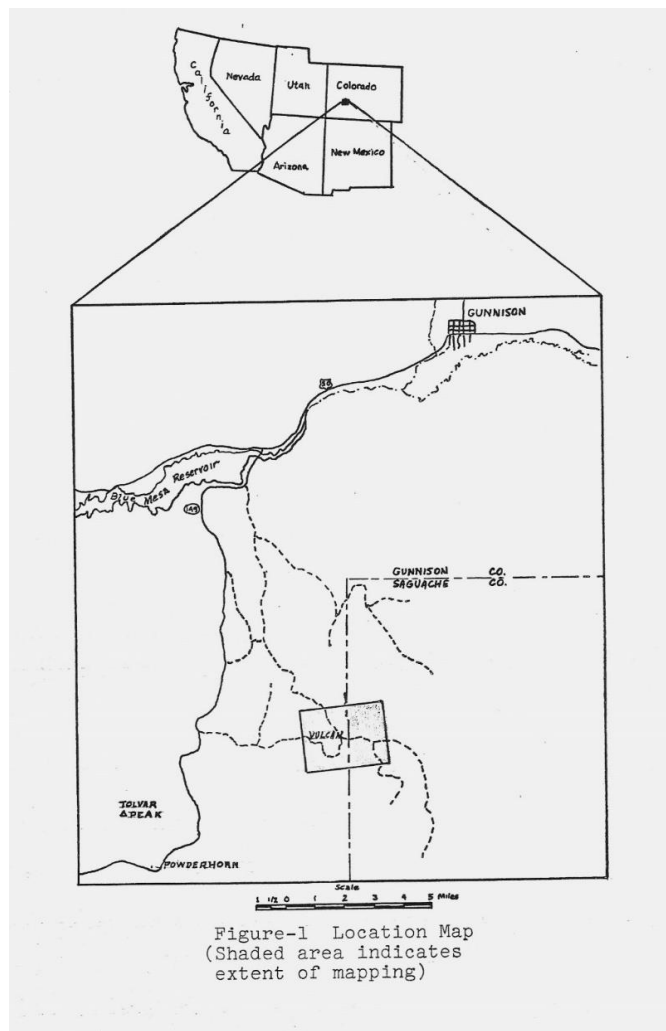
A type locality is the first site at which a new mineral was found. **Bob Carnein** continues his series of articles on type localities in Colorado with this article on Rickardite.

Colorado Type Localities

by **Bob Carnein**

Rickardite

Colorado accounts for 86 mineral type localities, including zunyite and creedite, which were covered in previous articles. This month's installment is about an extremely rare telluride mineral: **rickardite**, $\text{Cu}_3\text{-xTe}_2$.



First described from the Good Hope mine, at what is now the ghost town of Vulcan, Gunnison County (Figure 1), rickardite also occurred at the adjoining Vulcan mine, in Saguache County. The Vulcan mining district is, incredibly, the type locality for five minerals, including rickardite, weissite, vulcanite, cameronite (all tellurides), and zincmelanterite (a sulfate). During its short life-span (mainly 1894-1903), the district's three interconnected mines produced a relatively modest total of between 20,000 and 25,000 ounces of gold and an unknown amount of silver. The mines were plagued by problems, including poor planning, fires, flooding, and difficult wall rock.

Host rocks for the Good Hope mine are Precambrian schist, phyllite, and amphibolite of the Dubois greenstone belt. These rocks started out as lava flows and volcanic sediments that hosted hot spring (exhalative) sulfide deposits (now massive pyrite, sphalerite, and chalcopyrite) that were metamorphosed about 1.75 Ga. During the Laramide orogeny, the rocks were uplifted and exposed at the surface, where weathering converted the massive pyrite to a mass of porous iron oxides, called gossan. In the Oligocene or Miocene Epoch, hydrothermal solutions following the boundary between the massive sulfides and schists spread into the gossan, where they deposited opalite and chalcedony, along with gold

and silver as native metals and tellurides (Drobeck, 1981). Although sulfides occur to a depth of at least 700 feet, the later mineralization (reportedly 9.2 to 16.0 ounces per ton gold and 220 opt silver) was concentrated in these silicified rocks near the surface (Hartley, 1983).



Figure 2, 3. Vulcan-Good Hope mine, early 1900s and in 2015. Carnein collection.



Rickardite was named by W.E. Ford (1903) in honor of famous Colorado and world-wide mining engineer, writer, and editor (of several mining journals) Thomas Arthur Rickard (1864-1953) (Figure 4). Rickard was State Geologist of Colorado from 1895 to 1901 and, in his later years, wrote several popular books on mining. According to Eckel (1997), the naming of rickardite was controversial, because A.B. Sanford, a Denver mining engineer (<https://www.littletongov.org/my-littleton/littleton-history/biographies/sanford>, accessed April, 2020), supposedly described the mineral in 1901, turning over his data to Rickard, who, in turn, turned them over to Ford. Even then, egos and personal friendships certainly played a role in mineral naming.

Figure 4. Photo of T.A. Rickard, 1935. (Wikipedia.org)



Figure 5. Rickardite (iridescent) in native tellurium. (Dave Bunk specimen; Carnein photo)

Rickardite's properties (Figures 5, 6) include a metallic luster, hardness of $3\frac{1}{2}$, SG of 7.5, red-violet color on a fresh surface (iridescent blue otherwise), and a red streak. The mineral is orthorhombic but rarely occurs as well formed crystals. Although rare, its presence should be suspected anywhere one finds native tellurium or other tellurides, especially the other copper tellurides weissite (Cu_{2-x}Te), vulcanite (CuTe), or cameronite ($\text{AgCu}_7\text{Te}_{10}$).

According to Eckel (1997) and Mindat.org (accessed April, 2020), rickardite occurs at several other Colorado gold localities, but mostly as fine grained intergrowths and replacements. Reported

occurrences include Boulder County (e.g. Poorman, Horsefal, Potato Patch, and Buena mines), Lake County (Buckeye Gulch), Custer County (Lucille mine), and Saguache County (Empress Josephine mine). The mineral is strictly a curiosity; it doesn't occur in large enough quantities to be an ore of copper. Other rickardite localities in the U.S. include the Hilltop mine, Doña Ana County, New Mexico; the North Star mine, Juab County, Utah; and the Darwin mine, Inyo County, California. Rickardite is also known from more than 30 other localities scattered across the globe (Mindat.org, accessed April, 2020).



Figures 6, 7. Rickardite (blue) with sonoraite (green; an iron telluride) in mica schist. (Carnein photos and specimen)

References Cited:

Drobeck, P.A., 1981, Proterozoic syngenetic massive sulfide deposits in the Gunnison gold belt, Colorado, in R.C. Eps, *et al.*, eds., *Western Slope Colorado: New Mexico Geological Society 32nd Field Conference Guidebook*, p. 279-286.

Eckel, E.B., 1997, *Minerals of Colorado, Updated and Revised by R.R. Cobban, et al.*: Golden, Colorado, Fulcrum Publishing.

Ford, W.E., 1903, Rickardite, a new mineral: *American Journal of Science*, 4th Series, vol. 15, no. 85, p. 69-70.

Hartley, P.D., 1983, Geology and mineralization of the Vulcan-Good Hope massive sulfide deposit, Gunnison County, Colorado, in R.C. Handfield, ed., *Gunnison Gold Belt and Powderhorn Carbonatite Field Trip Guidebook: Wheat Ridge, Colorado*, Denver Region Exploration Geologists Society, p. 19-27.

Note: all mineral formulas came from Black, M.E., 2014, *Fleischer's Glossary of Mineral Species, Eleventh Edition*: Tucson, The Mineralogical Record, Inc.

Monthly Mineral Quiz



Last Month's Mineral. Wulfenite $Pb(MoO_4)$, is a relatively common mineral found in the oxidized zone of lead-sulfide (galena) deposits. Although we typically think of it as being some shade of red-orange-yellow, the color is very variable. A recent find at the La Morita mine in Mexico contains beautiful butterscotch-yellow crystals; those from other localities may be black. The specimen to the left, from the Rowley mine in Arizona, shows typical (for that locality) neon-orange color. Crystals are tetragonal, often tabular, but may be dipyramids. Wulfenite is so popular among collectors

that it was the theme mineral for the 2019 Tucson gem and mineral show. It's hard to believe that, at some localities, it was so common that it was used as a molybdenum ore.

This Month's Mineral:



This month's mineral: two specimens from Africa. (Carnein photos and collection)

The mineral for May is another favorite among collectors—you have no doubt seen it at shows. Although its color is very variable, the specimen on the right (above) is pretty typical for one gem variety of this mineral. An interesting property that this variety often shows is **pleochroism**—the color varies depending on the direction in which light passes through it. Although the mineral is, itself, moderately common and not particularly attractive, specimens like those shown above come from only one locality on Earth. It's a very valuable gemstone, but, like many gem minerals, it's often heat-treated before it achieves its best color. You may find specimens of this or related minerals at various localities in Colorado, including the Sedalia copper mine, where a pink variety occurs above the almandine garnet collecting area. What's the mineral (not the variety) name?



The Lake George Gem and Mineral Club is a group of people interested in rocks and minerals, fossils, geography and history of the Pikes Peak/South Park area, Indian artifacts, and the great outdoors. The Club's informational programs and field trips provide opportunities to learn about Earth science, rocks and minerals, lapidary work and jewelry making, and to share information and experiences with other members. Guests are welcome to attend, to see what we are about!

The Club is geared primarily to amateur collectors and artisans, with programs of interest both to beginners and serious amateurs. The Club meets on the second Saturday of each month at the Lake George Community Center, located on the north side of US Highway 24 on the east edge of town, sharing a building with the county highway shops. **In the winter, we meet at 10:00AM. From April through September, we meet at 9:00AM, to allow more time for our field trips.**

Our organization is incorporated under Colorado law as a nonprofit educational organization, and is a member of the Colorado, Rocky Mountain, and American Federations of Mineralogical Societies. We also sponsor an annual Gem and Mineral Show at Lake George, where collectors and others may purchase or sell rocks, minerals, fossils, gems, or jewelry. Annual membership dues (Jan. 1 through Dec. 31) are \$15.00 for an individual (18 and over), and \$25.00 for a family (parents plus dependents under age 18). New memberships and renewals are only accepted Jan 1 through March 31 each year.

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