

Lake George Gem & Mineral Club

Club News January, 2020



NOTE: LGGM Club meetings in October through March will start at 10:00 a.m.

Membership Applications:

Membership applications for 2020 must be received between January 1st and March 31st. 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. Go to <http://lggmclub.org/> Be a Member to sign up. If that is not possible, print out the membership application form sent to you as a separate file along with this newsletter and submit it at the club meeting or send it to the club address shown on the form.

LGGM Monthly Meeting: Saturday, January 11, 2020 10:00 a.m.

SCHEDULE OF LGGM CLUB PROGRAMS, FIELD TRIPS & EVENTS			
Date(s)	What	Where	Leader/Notes
Jan 1-Mar 31	Membership applications are due.		
Jan 11			
Feb 8 10:00am	Alma Gold	LGGM Club Presentation	Steven Veatch
Mar 14 10:00am	Rockhounding 101	LGGM Club Presentation	John Rakowski
Mar 28 10-2	Mineral Identification	Florissant Library	Bob Carnein
Apr 11 10:00am	Rise of the Mammals	LGGM Club Presentation	Corral Bluffs Alliance
May 9 10:00am	Filing Claims & Recent Finds	LGGM Club Presentation.	Joe Dorris
TBD	Rare Earth Minerals	LGGM Club Presentation	Phil Persson
Possibly	Tava Formation	LGGM Club Presentation	Christine Siddoway
Possibly	Paleontology	LGGM Club Presentation	Paul Combs
Presentations and Field Trips for 2020 will be added to in future newsletters after they are confirmed.			

Bob Carnein will offer his 4-hour mineral ID course from 10:00 – 2:00 on March 28 at the Florissant Library. This short course covers most of the physical properties that a mineral collector needs in order to distinguish between common minerals that you're likely to find. The course is free and requires only a few materials. Handouts will be provided by the LGGMC. **Pre-registration is required: contact ccarnein@gmail.com.** The class is suitable for children 12 or above and for adults. **We need at least 12 people to sign up for the class to be offered."**

Bob Carnein canceled his Central Colorado Geology field trips this fall because only a half dozen people signed up. He will try to re-schedule the trip on two separate weekdays or weekends sometime next spring. He notes that he needs to have at least 10 registrants to justify all of the preparation involved.

Jerrolynn Kawamoto will offer two or more 4-hour classes in Basic Wire Wrapping of cabochons this spring (tentatively on weekends in March or April.) If you are interested in attending one of these classes, please contact Jerrolynn by email at jerrolynn@wildblue.net.

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

- **Cañon City Geology Club**, meets on the 2nd Monday of the month at 6PM in the United Methodist Church, Cañon City
- **Columbine Gem & Mineral Society**, meets on the 2nd Thursday of each month, 6:30PM in the meeting room, Mt. Shavano Manor, 525 W. 16th (at J St.), Salida
- **Colorado Springs Mineralogical Society**, meets on the 3rd Thursday of each month at 7PM in the Mt. Carmel Veteran's Service Center, 530 Communication Circle, Colorado Springs;
- **Pueblo Rockhounds**, meets on the 3rd Thursday of each month at 6:30PM in the Westminster Presbyterian Church, 10 University Circle, Pueblo.

Pete Modreski suggests the following upcoming events:

Mon., Jan. 6, 7:00 p.m., monthly meeting of the Western Interior Paleontological Society (WIPS), "**The Cartographic Roots of Colorado**", by Wes Brown.. At (***new meeting place for WIPS!***) in Petroleum Hall, at the Green Center, 924 16th St., Colorado School of Mines campus, Golden. All are welcome; come at 6:15 for social time & refreshments. See <https://www.westernpaleo.org/> for more info and an abstract of the presentation.

Thurs., Jan. 9, 7:30 p.m., bimonthly meeting of the Friends of Mineralogy, Colorado Chapter: "**The Pala Gem Pegmatite District, San Diego County, California**", by Ryan Bowling. All are welcome; Berthoud Hall, Room 241, Colorado School of Mines campus, Golden.

Mon., Jan. 13, 7:00 p.m. (social time at 6:00), DREGS (Denver Region Exploration Geologists Society) monthly meeting, "**DREGS GOES TO IRELAND - The Irish Zn Pb Orefield**", by Drs. Paul Bartos and John Dreier. Berthoud Hall room 241, CSM campus, Golden; all are welcome. See <http://www.dregs.org/index.html>.

Thurs., Jan. 16, 4:00 p.m., Van Tuyl Lecture series at CSM, **Diverse Environments of Advanced Argillic Alteration (Mineral Stabilities; Hypogene, Steam-heated, and Supergene Formation; Exploration Implications)**, by Antonio Arribas, University of Texas at El Paso. Berthoud Hall room 241; all are welcome.

Thurs., Jan. 16, 7:00 p.m., **Deciphering the timing and causes of Great Unconformity erosion: An example from Pikes Peak, Colorado**, by Rebecca Flowers, Univ. of Colorado. At the monthly meeting of the Colorado Scientific Society, Berthoud Hall (***new meeting place for CSS!***) Room 241, Colorado School of Mines campus, Golden; all are welcome; come for social time & refreshments at 6:30, meeting at 7:00. See abstract & more info at <https://coloscisoc.org/>.

Thurs., Jan. 30, 4:00 p.m., Van Tuyl Lecture series at CSM, **The Rare Earth Elements: A Tale of Plumes, Magmas and Aqueous Fluids**, by A. E. Williams-Jones, McGill University, Montreal, Quebec. Berthoud Hall room 241; all are welcome.

Feb. 13-16, 66th **Annual Tucson Gem and Mineral Show**, sponsored by the Tucson Gem and Mineral Society (TGMS), Tucson Convention Center, Tucson, AZ. "The main show" in Tucson; other, commercial shows, in the city are open beginning January 26, 27, 28, 29, or earlier.

Thurs., Feb. 20, 7:00 p.m., **Petrologic evolution of Platoro magmatic system after the eruption of the Chiquito Peak Tuff, San Juan Volcanic Locus, Colorado**, by Amy Gilmer, US Geological Survey.

Monthly meeting of the Colorado Scientific Society, Berthoud Hall Room 241, Colorado School of Mines campus, Golden; all are welcome; social time & refreshments at 6:30, meeting at 7:00.

Fri.-Sat.-Sun., Feb. 28-Mar. 1, Denver Gem & Mineral Guild, Jewelry, Gem, and Mineral Show, Jefferson County Fair Grounds, 15200 W. 6th Ave., Golden, CO. Free parking & free admission; hours 10-6 Fri. & Sat., 10-5 Sun.

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For more lecture series during the year see:

Colorado Café Scientifique in Denver, monthly lectures on science topics held either at Blake Street Station or Brooklyn's, Denver; open to the public, no charge other than refreshments you may choose to purchase; see <http://cafescicolorado.org/>.

Colorado Scientific Society (3rd Thursday, 7 p.m.), see <http://coloscisoc.org/>. Meets at Berthoud Hall Room 241, CSM campus, Golden, except when noted otherwise.

CU Geological Science Colloquium (Wednesdays, 4 p.m.)

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

CSU Dept. of Geoscience Seminars (Fridays, 4 p.m.),

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

Van Tuyl Lecture Series, Colorado School of Mines, (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, 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); usually 1st Monday, 7 p.m., Room 241 Bethoud Hall, CSM campus, Golden; <http://www.dregs.org/index.html>

Florissant Scientific Society (FSS); 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.

Friends of Mineralogy, Colorado Chapter, usually meets on the 2nd Thursday of odd-numbered months, 7:30 p.m., Berthoud Hall Room 241, CSM campus, Golden; see

<https://friendsofmineralogycolorado.org/>.

Golden Beer Talks (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); beginning January 2020, 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:

Vote for Club Officers: At the December LGGM Club meeting, the following 2019 club officers were re-elected to the same offices for 2020:

President -- Richard Kawamoto

Vice President -- John Rakowski

Secretary – Lorrie Hutchinson

Treasurer – Cathy McLaughlin.

The club also voted to change from having a single LGGM Club Newsletter Editor to having two Co-Editors (Bob Carnein and Jerrolynn Kawamoto).

Non-elected Volunteer Positions: The following club members have volunteered to continue in their positions for 2020: Dave Alexander – Field Trip
Educational Program Coordinator -- Bob Baker
Field Trip Coordinator – Dave Alexander
Show Chair – Carol Kinate
Librarian -- Norma Engelberg

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Annual Towel Show

Each December the LGGM Club encourages members to show the club some of their new finds, mineral purchases, or things they have made during the year from their gems or minerals. Each member is limited to the amount of material that they can display on a hand towel. Club members also contribute a variety of snacks to accompany the towel show. Below are some of Bob Carnein's photos from this year's towel show.



Many members contributed snacks for the show.







Interesting Geological Articles Online:

From Wayne Orlowski we have the following links:

From Rock & Gem Magazine

Spodumene

https://www.rockngem.com/spodumene/?utm_source=newsletter&utm_medium=email&utm_campaign=rg_newsletter122619

Now is probably as good a time as any to check your backyard for particularly heavy and hard-to-break rocks - you might be sitting on a metaphorical gold mine.

https://www.sciencealert.com/a-man-kept-this-rock-for-years-thinking-it-s-gold-turns-out-it-s-a-spectacular-meteorite?utm_source=ScienceAlert+-+Daily+Email+Updates&utm_campaign=5eadf201ef-MAILCHIMP_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_fe5632fb09-5eadf201ef-365667545

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

DEPTH GAUGE FOR DRILLING

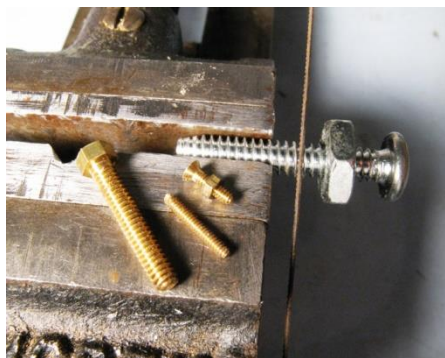
Sometimes you need to drill a number of holes all to the same depth. One quick and easy way to do this is to wind some tape around the drill bit so that the tape just touches the part surface when the hole is deep enough. You can set the depth either by measuring from the tip of the drill to the tape or by drilling to the correct depth, leaving the bit in the hole, and wrapping tape around the bit at the surface level. Note that a little extra tape left free on the end will blow away debris from the drilling.



CUTTING A BOLT

Whenever you have to cut a threaded bolt shorter, it's often difficult to get the nut to thread back onto it. And the smaller the bolt, the more difficult it is to restore any distorted threads. The problem is easily solved with the use of a nut. Here's how I do it.

First, screw a nut onto the bolt before cutting it. Grip the bolt by the threaded section that is to be sawed off. Then saw the bolt to the desired length, taper the end with sandpaper or file, and unscrew the nut from the bolt. Unscrewing the nut over the freshly cut end of the bolt will straighten out any damage that sawing and filing did to the threads. Gripping the bolt by the piece to be sawed off localizes any crushing damage to the piece that will be thrown away.



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

Happy hammering,
- Brad

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Methods to Stabilize Material for Cutting

Last Updated: 30th Mar 2011

By Jamey Swisher

There are many methods you can use to stabilize fragile materials. It is typically best to do so prior to cutting, but could be done after preforming or pre-polish, prior to final polish.

The following procedure is one way to stabilize your stones:

1. Buy the standard size two tubes of Epoxy 330.
2. Buy acetone and a large mason jar from Walmart or another store.
3. Pour a pint of acetone into the jar.
4. Now squeeze both tubes of Epoxy 330 into the acetone.
5. Mix well. Stirring is best as shaking can get too much on the seal. If the epoxy is mixed with acetone by shaking, any epoxy on the jar seal will dissolve more slowly and may take longer to mix evenly in the acetone. Once the acetone and epoxy are mixed, place your slabs or preforms into the mixture. Soak them for at least 7-10 days, agitating the mixture every few days.
6. After soaking, remove slabs and place them on a surface that is disposable, lol. I like the aluminum oven mats from Walmart. They cost about \$1.98 for two of them and they work very well for this. Now leave slabs alone for at least another 10 days.
7. They are now ready to cut.
8. **Remember that if you sell these pieces or the finished gemstones, you MUST disclose that they have been stabilized, and you should disclose what method of stabilization was used.**

Second option:

1. Place your stones in a pint-size Mason jar with enough Opticon (resin) to just cover all the stones by 1/8-1/4 inch.
2. Cover the pint jar with a doubled piece of foil (do not put lid and ring on) and place the jar on the hotplate of a coffee machine, such as an old Mr. Coffee. Turn on the machine like you would if you were making coffee and heat the stones in the Opticon for 6-8 hrs.

3. After 6-8 hours, remove the jar of stones from the heat, take off the foil, and pour as much of the Opticon out of the jar as you can. **Use oven mitts...that jar is mighty hot!!!!** After you have gotten the hot resin out, if the jar of stones has cooled off a lot, put it back on heat for a minute or so.
4. Once you've done this procedure a few times you can empty out the resin fast enough that the jar and stones are still hot, and you don't have to return it to the heat.
5. While the Opticon-soaked stones are still hot, (or after you have reheated them) place the lid and ring on the jar and tighten. Set aside for 8 hrs at room temperature. When it cools, the lid will pop and create its own vacuum. I usually start in the morning and then let the jar cool overnight.
6. After it has set for 8 hours or more, open up the jar and remove the stones one by one, cleaning off the resin with a paper towel. Use gloves (surgical or latex) when doing this. You do not want to get this stuff on your hands!!!!
7. Place the stones on a piece of foil and apply a little of the Opticon hardener to the stones (Don't use a whole lot, but the stones have to be coated with the hardener. Get a pair of chopsticks or shishka-bob sticks and roll the stones so every part is wet with hardener.
8. Get another pint jar, lid and ring out for the hardener. Run the jar under the hottest water your sink puts out to pre-heat the jar of. (Be careful not to get water into the jar.) When the jar is fairly warm, place the stones (on the foil) down in the jar. I normally shape the foil first to fit down into the jar.
9. Cover the jar with foil, place it on the coffee machine burner, and heat for 2 hours. After about 1 hour of heating, use your chopsticks to roll the stones in the hardener at least once. It is very important that you do not breathe the fumes; hold your breath when you do this.
10. After about 2 hours, remove the jar of stones from heat and place lid on it and tighten ring on jar. Set aside for 6-8 hours. The lid should suck down during this step, too.
11. After it has set 6-8 hrs, open up jar and remove stones (with gloves on) and wipe off any remaining hardener. Let stones sit for a day or more until they don't feel sticky.

A third method is to impregnate the stones with sodium silicate (water glass):

I do not remember where I got this method and have not tried it yet, but it was highly recommended. If I can find the source, I will include proper credit for this. Here's the general procedure: it's not as involved as it may seem at first glance, and it gets easier with practice.

1. Clean slabs (or rough less than 1" thick) in a solution of hot water and trisodium phosphate (available in most paint departments for wall cleaning) prepared in the concentration specified for grease removal. I let them soak overnight. This may cause some slight color change (deeper blues and greens on chrysocolla and turquoise). Rinse slabs thoroughly and allow to air-dry.
2. For this step, you need a shallow, lidded stainless steel (not iron or aluminum) pot or pan and a means of holding temperature at around 180 F, substantially below boiling. I found a thrift store electric buffet warming plate which worked nicely.

The stabilizing formula is based on sodium silicate solution with a weight ratio of around 3.2 (available at http://www.chemistrystore.com/sodium_silicate.htm and other similar sources). **Read the MSDS!** This solution is caustic, and you should wear eye and skin

protection to handle it. Spray the pot - lid edge with PAM or other cooking spray to keep it from adhering to the pot. Clean up drips and used utensils immediately with warm water. If the solution gets on fabric, rinse and wash it before the silicate dries.

Now, this is where things get a little weird -- it takes a combination of very low activity organic acid and alkali mineral salts (carbonates, phosphates and sulfates of calcium, potassium, etc.) to get the silicate to polymerize in a non-water-soluble form, e.g. as agate. Though this can be done with the mineral water from the drinking water section of the grocery store (about 1 gallon boiled down to 1 cup) and aspirin or citric acid, I found the easiest and cheapest way to do this was with Emer-Gen-C Lite mineral supplement packets. It's important to get the Lite sugar-free version --- sugar or fructose will oxidize and may discolor the stones. Dissolve one packet of Emer-gen-C in 1 cup (approx. 250 ml) of water and wait until the fizzing stops. Add this solution to 8 oz. of sodium silicate in the stainless steel pot and stir to mix. For stones with very fine porosities or hairline cracks, add about 1 teaspoon of liquid dish soap to reduce the viscosity of the solution.

Submerge the slabs in the silicate solution in a single layer. Stacked slabs may stick together. Cover and let stand on the heat source for at least 24 hours. Longer heating won't hurt. I've left some material in for up to 4 days. (For very thick material, a pressure cooker has been suggested, but the risks of silicate splash clogging the vent mechanism are too great for my peace of mind.) Remove the slabs and set them on a spray-greased baking rack over newspaper. Allow the slabs to drip dry. The dried slabs are safe to handle bare-handed, and can be gently pried off the rack if they stick. A word of caution --- dried silicate can be as sharp as glass!

3. Place the dry slabs on a cookie sheet and set in a cold oven. Turn the oven to "warm" and leave it on overnight. Turn the oven off and allow the stones to cool to room temperature with the door closed. The slabs should look shiny and any deep cracks will be partially filled. Porous stones should feel noticeably heavier after this treatment.
4. At this point, you can re-clean the stone and "paint" silicate formula to fill larger cracks and voids. Repeat the drying and baking processes to set the added silicate. The whole cleaning, soaking, drying and baking process can be repeated as many times as you feel necessary. There may be some brownish surface discoloration on the stone, but this comes off with polishing.
5. Silicate solution can be reused multiple times, adding a little water to replenish the volume. The solution may have some precipitated white silica gel and will turn tea-colored. When a thick layer of silica gel has precipitated and the solution seems thin, dispose of it by pouring the solution out on about a pound of scoopable cat litter, allowing the litter to dry, then discarding it in regular trash. Don't pour it down the sink.

I've tried to explain in as much detail as I've gleaned from a half dozen or so different trials. So far, it has worked on slabs and rough of many different jaspers, chrysocolla, turquoise, Laguna agate, Botswana agate, plume and moss agates, Koroit opal, petrified woods and fossil coral.

Hope this helps.

Reference:

Swisher, J. 2011, Methods to Stabilize Material for Cutting: Retrieved from <https://www.mindat.org/article.php/1129/Methods+to+Stabilize+Material+for+Cutting> on 06/24/2019.

Note from the LGGM Club Newsletter Co-Editors: This article has undergone minor editorial changes from the original version referenced in the link given above.

Monthly Mineral Quiz



Last Month's Mineral. Stibnite, Sb_2S_3 , is a relatively common mineral that is the most important source of antimony (Sb), which is used in fireworks and safety matches. It occurs in low temperature hydrothermal deposits with arsenic minerals, cinnabar, and other sulfides. Crystals are common, and Japan was once noted for the largest and finest specimens. Cleavage surfaces parallel to the long axes of the crystals typically show striations across their length. This, combined with low hardness (2 on the Mohs scale), metallic luster, and easy fusibility in a match flame make this an easy mineral to identify.



(Carnein specimens and photos)

This Month's Mineral. Here's a mineral that you may have seen at recent shows, where very fine specimens from silver deposits in Morocco are being sold at what I think are bargain prices. The colors of the specimens above are typical, though monoclinic crystals are relatively rare and are more often acicular and tiny. The samples shown came from Ontario (left) and Saxony (middle and right). (Saxony is in northern Germany.) The mineral, which is very soft ($H \sim 2$), sectile, and flexible, typically occurs as an alteration product of certain sulfide and arsenide minerals. It's uncommon in Colorado, occurring in Gunnison, San Juan, and San Miguel counties, associated with löllingite, skutterudite, and thucolite. Do you know what this mineral is?



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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