

THE LAKE AGASSIZ ROCK HOUND

Volume 19, Issue 9

November 2019

Topaz, a Chameleon Stone

Information excerpts used from article seen in full at:
<https://geology.com/minerals/topaz.shtml>

Topaz is a traditional birthstone for the month of November, and sold in almost every jewelry store. It is well-known and comes in a wide variety of attractive colors. In its *natural* form, it is a pale yellow, brown or nearly colorless...Not so attractive as jewelry. Specialty treatments using heat, radiation, or metallic coatings can bring out rainbows of subtle or vibrant hues.

Topaz is a rare, silicate mineral with a chemical composition of $Al_2SiO_4(F,OH)_2$. It usually forms in the voids, fractures or cavities left in igneous rocks as they cool. Topaz can show up as water-worn pebbles in streambeds that tumble out of eroding volcanic formations.

When allowed to grow in an unrestricted cavity, topaz forms orthorhombic crystals: that means rectangular prisims with a rectangular base...rather shoe-box shaped. Often, streaks of color or texture will parallel the long axis of the crystal. If it breaks off its base, it will be tend to be a glassy or conchoidal fracture.

Hardness is the best known property of topaz. It is well up there at 8 on the Mohs scale. For comparison, quartz ranks a "7" while only the corundums "9" and diamond "10" will top it. Topaz is extremely hard, but brittle, and cleaves easily with controlled toolwork. It is denser than most silicates and will sink into placer deposits by stream currents. Look for it under the regular sand.



Examples of "Swiss Blue" & "London Blue" shades

Treatment routines for color variations have been finessed over just the last century. Most topaz now being offered at low to moderate prices has been treated in a laboratory. Colorless topaz can be altered to create almost any color. "Swiss blue" and "London blue" are trade names for two of the most common varieties of treated blue topaz seen in today's market. Heating and then coating the stone with a layer of metallic oxide will produce a pink; or multi-hued iridescent specimen called a "mystic" topaz. However these coatings are thin and eventually wear thru with rubbing and or touching. A true, natural stone will not lose its luster.



ALL NATURALS : YELLOW, BROWN, BLUE AND "IMPERIAL" FROM BRAZIL



"Mystic" Topaz: Some topaz is heated and then coated with a metallic oxide to produce an iridescent effect. These are sold under the trade name of "mystic topaz." These materials are simply clear topaz with a coating that might not be very durable.

Blue topaz is the most popularly marketed color. The "blue" is easily created and so costs less. The topaz is radioactively irradiated and then heated. Any U.S. company doing this must be licensed by the Nuclear Regulatory Commission. Each handling follows strict regulations of the treated minerals, storing them while radiation subsides to harmless levels. A naturally blue topaz is actually quite rare and will generally be rather pale. The most valuable topaz colors for jewelry are the rare *natural* pinks, red and violet, caused by traces of chromium. Orangy-red shades are labeled "Imperial Topaz", and supplies of these are mostly being resourced out of Brazil.

Please Come to the LARC

November 2019 Meeting

Wednesday Nov 6th, 7:00 pm
Stevens Hall, Room 134, NDSU

Program:

AMY HAMILTON PRESENTS
TOPAZ THE BEAUTIFUL

Bring your 'Memory Rocks'
And tell their story.

Guests are always welcome!

Lake Agassiz Rock Club

President: Frank Svezia
Vice President: Nina Flippance
Treasurer: Terry Mallick
Secretary: Chris Patenaude
Youth Group/Pebble Pups: Nina Flippance
Program planning ideas/volunteers welcome

What is our Purpose?

To create an interest and promote a knowledge of all phases of geology or earth sciences in an informal setting.

Where and When Do We Meet?

The Geology Lab, Room 136, lower level of Stevens Hall, NDSU, Fargo. Time: 7:00 p.m. This placement may change soon as we are seeking a larger space for our members. Directions meanwhile:

[From N. University Dr. turn West on 12th Ave N. Turn North on Bolley Dr. Drive just past Centennial Boulevard. See **Stevens Hall** on west side of Bolley, 2nd hall from the corner. To park, go into next driveway ahead, on the left. Drive west, then left again behind a lab building to Stevens Hall back-lot. Enter E. door or call a member to hold N. door.

How Much Are the Dues?

Single person—\$20.00; Family—\$30.00; College (any school) students and youth (if not a family member)—\$10.00 per year. Send dues to Terry Mallick, Treasurer; 416 3rd Avenue S., Moorhead, MN 56560. Or contact him during regular meetings.

What Happens at Meetings?

Our youth group The Pebble Pups attend their own separate group meeting, while the adults cover business. The kids join us for the main Program; a silent auction of collectable minerals; and "lunch".

What are some of our Club Activities?

Field trips are taken to areas ND, SD, and MN. We fundraise at the R.R.V. Fair. LARC sponsors a scholarship to an outstanding Geology student at NDSU each year. Personal Info lessons can be arranged for pre-meeting times. Lots of Show & Tell at meeting nights!

What are Our Club Affiliations?

We are affiliated with the American Federation of Mineralogical Societies. (**AFMS**) We are in the subsector Midwest Federation of the Mineralogical and Geological Societies. (**MWF**)

How Do We Keep in Touch?

Website: > <http://www.lakeagassizrocks.com/> <
Facebook: > [lakeagassizrocks.com/about.php](http://www.lakeagassizrocks.com/about.php) <
The Lake Agassiz Rock Hound is our monthly bulletin e-mailed 7 days before meetings. Paper copy free to active members **without** computer access. \$15 dollar subscription/ yr. for hardcopy to members who want one in addition to their e-addy. **Send news tips and articles** to the editor: Chris Patenaude P.O.Box 434, Perley, MN 56574 or email LakeAgzRC70@yahoo.com. Rock Hound articles may be reprinted if full credit is given, unless otherwise noted.

LARC is an all-inclusive, diverse group. We welcome and respect every person in regard to age, gender, heritage, language, social class or disability. Discrimination or ill will towards another will not be tolerated. We are here to support any and all who love the hobby.

Minutes from October 2nd, 2019 Meeting

Submitted by Chris Patenaude, Secretary

We opened with our new relaxed, conversational style for meetings. On the central table, we enjoyed displays of show & tell from members who brought interesting things to share. We keep each collector's items in individual show-bins with labels or notes to identify who brought stuff and what we're looking at. The owners might hang out next to their tray to chat about what was brought or surf around the room themselves to inspect other displays.

This month's theme was FOSSILS. Among the offerings were:

Jessica (age 15) brought fossil fish, ocean critters and some neat, petrified Ginko leaves as accent.

Cam L. brought her shiny Ammonites, fossil fish, corals & a starfish!

Randy E. wrangled in some dinosaur bones, more Ginko examples, and some fossilized beetle cocoons. (Ringo wasn't among them.)

Merle and Susan H. showed off some brilliantly banded Crayola Jasper and complex shaped "Desert Rose" style gypsum. They also showed off some lake-bottom long-bone fragments they found while scuba diving. I imagined the poor deer that may have fallen thru the ice, trying to cross it during winter, no saying how long ago...

Jenny W. was our very knowledgeable presenter with her exciting topic on Paleontology and Fossil Collecting. Fossils can tell the stories of the full planet's biome, its creatures or botany. Individuals come to light, how they lived or how whole species acted by their defined characteristics. Plant fossils can divulge the very oxygen levels of the atmosphere of the era. She explained how in nearly every location there are specific limits and rules on who to ask, what's collectable or might be strictly licensed or regulated.

Surprise! Minnesota has dinosaur fossils to hunt. There's an iron mine company that had to dig thru deep, fossil-bearing overburden to reach their ore. These "spoils-piles" are available for picking. You can subject-search "Iron Range Paleontology Resources" or go to

- https://www.dnr.state.mn.us/hill_annex/fossil_tour.html
(takes you to an arranged Fossil Tour page)
- https://www.dnr.state.mn.us/hill_annex/index.html
(tells you more about the mine itself)

These DNR sites offer further links into mine history and photos.

Once you find the Google/Bing pages, there are more sites by individual collectors of the piles with their own photo galleries. The actual mine's Tour hours and schedules are limited, so call ahead before planning a trip to be sure they'll be able to accommodate you.

Following the presentation was a brief business meeting with the usual acceptance of Sec'tys Minutes from the previous Rock Hound; Treasurer's report that referenced the continued scholarship missions ongoing. We have decided to bring the Prospecting fundraiser next RRV Fair indoors to the Hartl Bldg, 2 booths side by side. (can't pick 2-across-aisle, must settle for what they assign us.)

We again will approach "Bernie" our local NDSU geo-professor about participating with our Activity during their Darwin Days celebration. We still need to discuss Birthday Parties and/or other venues, how to exactly attract or approach either concept or persons.

And a grateful compliment was given to the Activities Committee for efforts to bring us a more interesting and updated meeting format.

BRAD'S BENCH TIPS

RING SIZE VARIATIONS

The numerical sizes marked on ring gauges and ring mandrels are often not the same across different manufacturers. If you're using a ring gauge to measure a customer, be sure to compare the markings on the gauge with the markings on the mandrel you use to make the ring. They may not be the same.

Work smarter & be more productive with rad's "How To" jewelry books

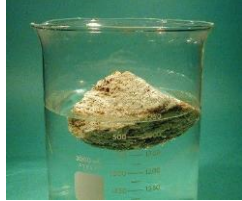
- <http://www.Amazon.com/author/bradfordsmith>

Support Pebble Pups Working on New Showing

Our Pebble Pups are planning an up and coming presentation. However they are in need of examples to work with and display, and we can help! Please donate some specimens if you can. It's on a *loan basis*, you get your piece(s) back, the kids need to borrow them is all. Please bring to the next meeting if you can!

What they need, apparently, are **anomaly stones**... weird things that happen with geology, or .. 'rocks with stuff inside' that you can see..., so the kids can explain how or why they work, or "how-the-heck it got in there!"

They need things like: **Rocks That Float** (pumice)



Magnetic Stones (lodestone)



"Phantom Quartz"
With internal sediments



"En Hydro Quartz"
With water or air bubbles trapped inside.

Fire Opal



Let your own minds walk thru your collections. What has given you an astonished "now hows that happen?" "Why does it do THAT?"

We might all be surprised by some answers.

LARC Christmas Party

December 4th, 2019 (normal meeting night)

Deaner's Diner

405 Main Ave W.

West Fargo, ND 58078

(701) 277-7062 Della



(Deaner's is located in the center of the cozy strip-mall at that address.)

We can come by 5:30 for fellowship (& food orders) in the "Green Room". Feasting begins around 7 PM.

Dinners are about \$10.00 and sandwiches \$8.00.

Everyone will pay for their own dinner.

Families are Welcome

BRING SOME HOMEMADE CHRISTMAS GOODIES TO SHARE

Bring a Secret Santa Gift for Exchange

Please identify adult or child on package

MWF November 2019 Calendar

(Edited for time and proximity to Fargo; &/or included for popularity. See complete calendar at:)

<http://www.amfed.org/mwf/Calendar/November.html>

- 2-3: STURTEVANT, WI** Racine Geological Society Annual Show. Sat 10 am - 5 pm; Sun 10 am - 4 pm. Fountain Banquet Hall, 8505 Durand Ave (Hwy 11), Sturtevant. Contact: John Lowman, (262) 989-9193; lowman.john@sbcglobal.net
- 9-10: FREEPORT, IL** North West Illinois Rock Club Annual Show. Sat 9 am - 5 pm; Sun 10 am - 4 pm. Highland Community College, 2998W. Pearl City Rd., Freeport. Contact: Brian Green, (815) 745-2228, bgreen57@hotmail.com NWILRockClubFRPT.BlogSpot.com
- 22-24: ST LOUIS, MO** St. Louis Mineral & Gem Society Annual Show. Fri 3 - 7 pm; Sat 10 am - 7 pm; Sun 10 am - 5 pm. Afton White-Rodgers Community Center, 9801 Mackenzie Rd., St. Louis. Contact: Melissa Perucca, (636) 861-3865; melissa5301@aol.com www.stlrockclub.com
- 23-24: CRYSTAL, MN** Anoka County Gem & Mineral Club Annual Show. Sat 10 am - 5 pm; Sun 10 am - 4 pm. Crystal Community Center, 4800 Douglas Dr. N, Crystal. Contact: Martha Miss, (651) 459-0343; martha@rock-biz.biz
- 23-24: MADISON, WI** Madison Gem & Mineral Club Annual Show. Sat 9:30 am - 5 pm; Sun 10 am - 5 pm. Alliant Energy Center. Contact: Nevin Franke, (608) 251-2601; burniesrockshop@gmail.com www.madisonrockclub.org

Pebble Pups Learn About Fiber Optics

At our last Oct 2nd meeting, the Pups were shown how light can be directed along fibers of man-made materials, to pop out just where we might want it to! Two bright minds ready their hand-built, energy-ray manipulators... **Wait For It!... And There Was Light!**



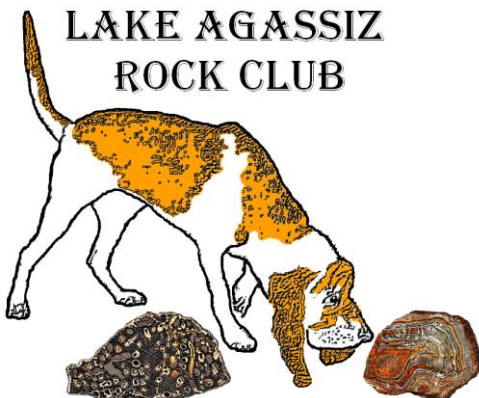
The room lights were switched off in order to see the working elements.

So the camera struggled with focus in the dimness, but caught it!

An interesting reflection in geology, gemology and Rock Hounding is that "nature" beat us to this effect eons ago. Any sample that displays "chatoyance" or that cat's-eye shimmer, is doing the same thing using the mineral rutile (titanium dioxide). Examples like Tiger Eye quartz or Cat's Eye (chrysoberyl) use rutile fibers to align glow inside the stone.



Lake Agassiz Rock Hound
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Perley, MN 56574



“Ugly” Also Subject to Eyes of the Beholder

Comments on visuals seen online at a brief webpage. Borrowed blatantly for ‘educational purposes’.

See full offering at: <https://steemit.com/geology/@roswellrockman/more-strange-and-ugly-rocks>

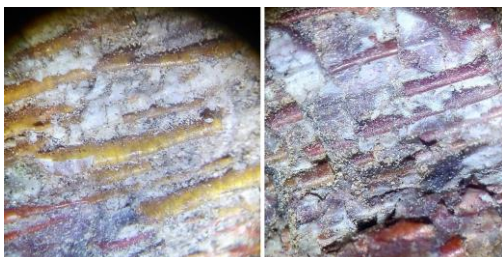
“Steemit” would seem to be a blog network one can engage with. I have no idea who roswellrockman58 would be, but he had a great concept to express... don’t reject something as “ugly” until you get in close enough to see the whites of their eyes. In this case, literally!

Magnification can change one’s whole judgmental perspective!

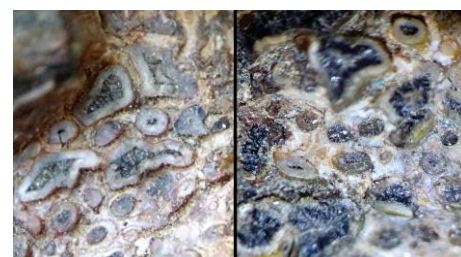
The rockman had come across what looked like a bland, iron-based mineral chunk. One UGLY ROCK!
The sides broke off oddly, had a rough ‘cleave’, to the naked eye.



But under the magnifying loupe, oh wow, the sides show that the whole piece is constructed, somehow, in close packed quartz tubes or mini channels with filling down their centers. As the fellow points out, some of the broken channels show that the innards once held minerals that left bright color behind as the different.. or same kinds...of elements decayed.



The larger, flat face shows how the tubules seem to be packed together like scores of white rimmed eyes. My interpretation would be that originally it was a flowing, pāhoehoe lava with tiny, fine bubbles that stretched into straws as it cooled. At microscopic levels, silicates began to coat them like baby agates.



Instead of filling with quartz, the centers rapidly developed iron pyrite down their centers. The broken yellow tubes could then be fresher iron pyrite, and the red ones, rusty with iron oxide showing they have been exposed to the air for a longer time. Anyone else have a better understanding? Let us hear from you!