

Cuyuna Rock, Gem and Mineral Society

The Agate Explorer

October 2019

Elections Will Be Held on Saturday, November 2, along with a silent auction. Please bring any items you would like to sell to this meeting.

In regard to elections, a portion of the Bylaws of the Club read as follows:

Article IV: Board of Directors

Sec. 1—The Board of Directors shall have seven (7) members. Four (4) of these are elected officers of the Society: President, Vice-President, Secretary, and Treasurer: and three (3) additional elected Directors.

Sec. 2—All Board members shall serve without pay and must be Regular or Senior members having at least one year of membership in the Society.

Sec. 5—**The President and Secretary shall be elected in odd numbered years** and the Vice-President and Treasurer shall be elected in even numbered years.

Sec. 6—The three additional board directors shall be elected annually.

Sec. 7—A Nominating Committee shall be responsible for nominating a slate of prospective board member. In addition, any voting member can nominate a candidate to the slate of nominees.

Sec. 8—Election of Board members shall take place at the November annual meeting of the Society. Board members will be elected by a simple majority of voting members present at the annual meeting.

Sec. 9—The term of office shall be two (2) years for officers, and one (1) year for the other board members. The term of office shall commence on January 1.

This year's nominating committee consists of Lisa Hughes (320-240-9876) and Kevin Martini (218-770-8917). Contact either to put your name on the ballot.



Franklin Art Center

Club Information

Website-www.cuyunarockclub.org
Email-cuyunarockgemclub@gmail.com

Meeting Place

Lower level
Franklin Arts Center
1001 Kingwood St, Brainerd, MN 56401

Directions

.4 mile east of Business Hwy. 371
& Hwy. 210 intersection.
(Castle turret water tower.)

Date/Time

the 2nd Saturday of each month
at 2 p.m. unless otherwise noted.

Club Dues

\$20/ family
Free /unaccompanied juniors
Membership runs
from Jan. 1-Dec. 31st.

Rock Wrappers

*An open gathering for wire wrappers
starting at 10 a.m. on meeting Saturdays.*

Hang out with other wrappers, and work on your projects. (Bring all supplies needed.) Learn tricks to make wrapping easier, a new design, or perhaps a new place to find supplies. All skill levels welcome!

Club Calendar



October 12— Open shop and rock sorting from 9-12; Rock Wrappers at 10; Board Mtg. at noon; General Mtg. at 2. Ed and Marcia Opatz will speak on their trip to Morocco.

November 2—Meeting—**NOTE CHANGE OF DATE, DUE TO FRANKLIN ARTS CRAFT SALE & OPENING OF DEER HUNTING ON NOV. 9.** Includes elections and silent auction.

December 14 - Christmas Potluck Party

Information subject to change.

Club Purpose:

To foster an interest (& encourage young & old) to study earth science, enjoy the art of lapidary, hunting for rocks, and semi-precious stones. We also strive to use what we know and acquire to further educate everyone who has an interest in our hobby.

We are a not-for-profit organization.

October Rock Shows

2-6—JOSHUA TREE, CA: Sportsman's Club of Joshua Tree, 6225 Sunburst Street; daily 9-6; Free; Website: jtsports-mansclub.com

4-6—INDIANAPOLIS, IN: Treasures Of The Earth Gem & Jewelry Shows; Indiana State; Fri. & Sat. 10-6, Sun. 11-5; \$5, under 16 free; Website: www.toteshows.com

4-6—ALBUQUERQUE, NM: Jay Penn; Expo NM State Fairgrounds; daily 9-5; Free; Website: <http://abqfallshow.wixsite.com/abq-fall-show>

4-6—DALLAS, NC: Gaston Gem, Mineral & Facetor's Club; Gaston County Park; Fri. & Sat. 9-6, Sun. 9-4; Free; Website: <http://gastongemclub.weebly.com/>

4-6—SACRAMENTO, CA: Gem Faire Inc.; Scottish Rite Center; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7, under 12 free; Website: <http://www.gemfaire.com>

4-6—ORLANDO, FL: Central Florida Mineral & Gem Society; Florida National Guard Armory; Fri. 1-6, Sat. 10-6, Sun. 10-5; \$5, students \$2; Website: www.cfmgs.org

4-6—SARASOTA, FL: Frank Cox Productions; Sarasota Municipal Auditorium; daily 10-5; \$5; Website: FrankCoxProductions.com

5-IDAHO FALLS, ID: Idaho Falls Gem & Mineral Society; Pinecrest Event Center; Sat. 9-5; \$3, under 13 free; contact Bill Thielbahr, (208) 524-0139

5-MACUNGIE, PA: Annual show; Pennsylvania Earth Sciences Association; Macungie Memorial Park; Sat. 8:30-3; \$2, under 12 free; Website: <https://www.facebook.com/events/314092412814506>

5-6—JEFFERSON, WI: Rock River Valley Geological Society; Jefferson County Fair Park; Sat. 10-5, Sun. 10-4; free will offering; Website: www.stevensrockshop.com

5-6—OMAHA, NE: Nebraska Mineral & Gem Club; Westside Middle School; Sat. 10-6, Sun. 10-4; \$6, under 12 free; Website: <http://www.nerockgem.org>

5-6—MARYSVILLE, WA: Marysville Rock & Gem Club; Totem Middle School - Gymnasium; Daily 10-5; Free; Website: <https://www.marysvillerockclub.com/page/>

5-6—GRASS VALLEY, CA: Nevada County Gem & Mineral Society; Nevada County Fairgrounds; Sat. 10-5; \$3, under 14 free; Website: www.ncgms.org

5-6—SPRINGFIELD, IL: Lincoln Orbit Earth Science Society; Illinois State Fairgrounds; Sat. 10-6, Sun. 10-4; \$2, under 12 free; Website: <http://www.loess.org>

5-6—ANDERSON, CA: Shasta Gem & Mineral Society; Shasta District Fairgrounds; Sat. 9-5, Sun. 10-4; Free; Website: www.shastagemandmineral.com

11-12—MOUNT IDA, AR: Mount Ida Area Chamber of Commerce; Montgomery County Fairgrounds; Daily 7-4; Website: www.mtidachamber.com

11-13—VIRGINIA BEACH, VA: Treasures of the Earth, Inc.; Virginia Beach Convention Center; Fri. 12-6, Sat. & Sun. 10-5; \$5, under 17 free; Website: <http://www.TreasuresOfTheEarth.com>

11-13—MOAB, UT: Moab Points & Pebbles; Old Spanish Trails Arena; Fri. & Sat. 10-6, Sun. 10-4; Free; contact Jerry Hansen; Email: moabrockclub@live.com

11-13—COSTA MESA, CA: Gem Faire Inc.; OC Fair & Event Center; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7; under 12 free; Website: <http://www.gemfaire.com>

11-13—TRONA, CA: Searles Lake Gem & Mineral Society; SLG&MS Lapidary and Show building; Fri. 1:30-6:30, Sat. 7:30-5, Sun. 7:30-3; free; Website: www1.iwvisp.com/tronagemclub/

11-13—SALT LAKE CITY, UT: Mineral Collectors of Utah; Trolley Square; Fri. 12-9, Sat. 10-9, Sun. 10-5; Free; Website: <http://m-c-u.org/>

11-13—PORTLAND, OR: Portland Regional Gem & Mineral Association; Jackson Army National Guard; Fri. & Sat. 10-6, Sun. 10-5; \$5, under 13 free; Website: www.PortlandRegionalGemandMineral.com

11-13—HUNTSVILLE, AL: Huntsville Gem & Mineral Society; Jaycee Community Center; Fri. & Sat. 10-6, Sun. 12-5; \$3, under 5 free; Website: www.huntsvillegms.org

12-13—TEMPLE, TX: Tri-City Gem & Mineral Society; Frank W. Mayborn Civic & Convention Center; Sat. 9-6, Sat. 10-5; \$5, teens \$2; Website: <http://drarhie.wixsite.com/tcgme>

12-13—WALNUT CREEK, CA: Pacific Crystal Guild; Civic Park Community Center; Sat. 10-6, Sun. 10-4; \$12, under 12 free; Website: <http://www.crystalfair.com>

12-13—SIERRA VISTA, AZ: Huachuca Mineral & Gem Club; Cochise College; Sat. 9-5, Sun. 10-4; free; Website: huachucamineralandgemclub@info.com

12-13—TOPEKA, KS: Topeka Gem & Mineral Society, Inc.; KS Expocentre Agricultural Hall; Sat. 10-6, Sun. 10-5; \$5, under 13 free; Website: www.TopekaGMS.org

12-13—SEATTLE, WA: Crystallography Gem + Mineral Full Inventory Show; Seattle; OmCulture (Wallingford); Sat. 12-7, Sun. 10-4; Free; Website: www.crystallographygems.com

18-20—LEWISTON, ID: Northwest Federation Show & Hells Canyon Gem Club Annual Show; Nez Perce County Fairgrounds; Fri. & Sat. 10-6, Sun. 10-5; Website: <http://www.hellscanyongemclub.com/>

18-20—FORT WAYNE, IN: Three Rivers Gem & Mineral Society; Allen County Fairgrounds; Fri. & Sat. 10-6; Sun. 10-5; \$5, under 13 free; Website: http://3riversgem_mineral.tripod.com/

18-20—DEL MAR, CA: Gem Faire Inc.; Del Mar Fairgrounds; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7, under 12 free; Website: <http://www.gemfaire.com>

18-20—MASON, MI: Central Michigan Lapidary & Mineral Society; Ingham County Fairgrounds; Fri. 6-9, Sat. 10-6, Sun. 11-5; \$3, under 12 free; Website: Michrocks.org

18-20—AUSTIN, TX: Austin Gem & Mineral Society; Palmer Events Center; Fri. & Sat. 9-6, Sun. 10-5; \$8, under 13 free; Website: www.agms-tx.org

18-20—KNOXVILLE, TN: Knoxville Gem & Mineral Society; Rothchild Conference Center; Fri. 10-7, Sat. 10-6, Sun. 11-5; \$6, under 12 free; Website: <http://www.knoxrocks.org/>

19—WEST HILLS, CA: Woodland Hills Rock Chippers; First United Methodist Church; Sat. 10-5; free; Website: www.rockchippers.org

19—ALBANY, NH: Saco Valley Gem & Mineral Club; Albany Town Hall; Sat. 9-5; \$2, under 12 free; Website: sacovalleygemmandmineralclub.org

19-20—SPRINGFIELD, MO: Ozark Mountain Gem & Mineral Society; Springfield Expo Center; Sat. 10-5, Sun. 10-4:30; \$6, student \$3, under 12 \$1; Website: www.omgms.rocks

19-20—SOUTH CHARLESTON, WV: Kanawha Rock & Gem Club; So. Charleston Community Center; Sat. 10-6, Sun. 10-5; \$3.50, under 12 free; Website: <http://kanawharockandgemclub.org>

19-20—COTTAGE GROVE, MN: Minnesota Mineral Club; National Guard Training & Community Center; Sat. 10-5, Sun. 10-4; \$2, children \$1, \$5 for family; Website: <https://mnmineral.org/>

19-20—DES MOINES, IA: Des Moines Lapidary Society (DMLS); Iowa State Fairgrounds; Sat. 9-5, Sun. 10-4; \$5, under 12 free; Website: www.DMLapidary.org/OurShow

19-20—SEDONA, AZ: Sedona Gem & Mineral Club; Sedona Red Rock High School; Sat. 10-5, Sun. 10-4; \$3, under 12 free; Website: sedonagemandmineral.org

19-20—LANCASTER, CA: Palmdale Gem & Mineral Club; Antelope Valley Fairgrounds; daily 9-5; free; Website: palmdalegemandmineral.org

19-20—CLIO, MI: Flint Rock & Gem Club; Carter Middle School; daily 10-5; \$3, under 6 free; Website: www.flintrockandgem.org

19-20—HONOLULU, HI: Rock & Mineral

Society of Hawaii (Hui Pohaku O Hawaii); Ohana Hale Marketplace; Sat. 10-8, Sun. 10-5; free; Website: <https://hawaiimineralsociety.pohakugalore.net/18th-annual-hawaii-rock-and-mineral-show-oct-19-and-20-2019>

19-20—CHICAGO HEIGHTS, IL: South Suburban Earth Science Club; Prairie State College; daily 10-5; free; Website: <http://www.prairestate.edu>

19-20—ORLANDO, FL: Florida Fossil Hunters; Central Florida Fairgrounds; Sat. 9-5, Sun. 10-4; \$4, children \$1; Website: <https://floridafossilhunters.com/>

19-20—PLACERVILLE, CA: El Dorado County Mineral & Gem Society; El Dorado County Fairgrounds; daily 10-5; \$6, under 12 free; Website: <http://www.eldoradorocks.org>

19-20—SANTA ROSA, CA: Santa Rosa Mineral & Gem Society; Santa Rosa Veterans Memorial; Sat. 10-6, Sun. 10-5; \$6, under 12 free; Website: www.srmgs.org

25-27—SANTA ROSA, CA: Gem Faire Inc.; Sonoma County Fairgrounds; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7, under 12 free; Website: <http://www.gemfaire.com>

26-27—CUYAHOGA FALLS, OH: Summit Lapidary Club & Akron Mineral Society; Emidio's Expo Center; Sat. 10-6, Sun. 10-5; \$5, srs. \$4, 7-14 \$1, under 7 free; contact Evelyn Tryon, 330-673-9664, 330-673-9664

26-27—CANBY, OR: Clackamette Mineral & Gem Club; Clackamas County Fairgrounds; Sat. 9-6, Sun. 10-5; Website: <http://www.clackamettegem.org>

26-27—BELLEVUE, WA: Bellevue Rock Club; Vasa Park; Sat. 10-6, Sun. 10-5; free; Website: www.bellevuerockclub.org

26-27—OKLAHOMA CITY, OK: Oklahoma Mineral & Gem Society; State Fair Park; Sat. 9-6, Sun. 10-5; \$6, under 12 free; Website: omgs-minerals.org

26-27—EVANSVILLE, IN: Evansville Lapidary Society; C K Newsome Community Center; Sat. 10-5, Sun. 10-4; \$2, under 13 free; Website: <https://www.facebook.com/groups/Lapidary/>

26-27—PORT MOODY, BC: Port Moody Rock & Gem Club; Kyle Centre, daily 10-5; donation; Website: <http://www.portmoody.rocks>

Sunshine Requests

If you know someone who could use a little sunshine—birth, illness, surgery, family death—please contact Christi Higgins at 320-224-6650.



Because there was no September meeting the August meeting minutes cannot be published until the November newsletter, after approval at the October meeting.

National Fossil Day Wednesday, October 16th

During 2019 we celebrate the 10th Anniversary of National Fossil Day! Join paleontologists, educators, and students in fossil-related events and activities across the country in parks, classrooms, and online during National Fossil Day. National Fossil Day is an annual celebration held to highlight the scientific and educational value of paleontology and the importance of preserving fossils for future generations.

<https://www.nps.gov/subjects/fossilday/index.htm>



Famous Pearls in History



Maharani Sita Devi Sahib of Baroda in western India (1917-1989) was dubbed the “Indian Wallis Simpson” after she legally dissolved her first marriage and married her second husband, Maharaja Pratapsingh Gaekwar, who at the time was reportedly the second richest Indian prince and the 8th richest man in the world. To commemorate the couple’s wedding, the Maharaja gave Sita Devi

several pieces of jewelry from the Baroda treasury, including a seven-strand pearl necklace.

The Baroda Necklace was re-fashioned into a two-strand necklace using the largest and most perfect pearls from the original seven-strand necklace. The necklace includes 68 graduated pearls, measuring 9.47mm to 16.04mm, and is joined by a cushion-cut diamond Cartier clasp. The necklace sold at Christie’s in New York for an incredible \$7.1 million USD.

<https://www.truefacet.com/guide/lustrous-luxurious-worlds-expensive-pearls/>



Here is part of the crew that went on the SD/MT trip, digging for Teepee Canyon agate. Note the box (lower left) with some of the extracted nodules.

THE MINNESOTA MINERAL CLUB

17th Annual



Free Rock Identification

Agates — Rocks — Gems — Minerals — Fossils — Jewelry — Beads

October 19 — 20, 2019

Sat. — 10:00 AM to 5:00 PM Sun. — 10:00 AM to 4:00 PM

National Guard Training and Community Center

8180 Belden Blvd.

Cottage Grove, MN 55016

(9 miles SE of downtown St. Paul on US Hwy. 61 — take the 80th St./Grange Blvd. exit)

ADMISSION: \$1 per Child * \$2 per Adult * \$5 for the whole Family

For More Information: info@rock-biz.biz or 763-717-1641

Website: www.mnmineral.org

Facebook: [facebook.com/mnmineralclub](https://www.facebook.com/mnmineralclub)

Rock Room

This Club is unique because it has its own rock store. Here is an inventory of what is available for Club members to purchase. Stop in when you come to the Clubhouse.

Grit and Polish
Montana Moss & Blue Agate
Montana Petrified Wood
Oregon Geodes
Chalcedony
Desert Rose
Plume Agate
Yellow Jasper
Bruno Jasper
Owyhee Picture Jasper
Brazilian Agates
Amethyst
Tee Pee Canyon Agate
Hauser Bed Agate Thundereggs
Slabs of all sizes and types
Septarian Nodules—Utah
79 Bed Geodes—Oregon
Moroccan White Agate
Obsidian
Mineral specimens
Dinosaur bone
Condor Agate
Mexican Luna Lace Agate
Starolites (Cross Rocks)
Small Botswana Agate
Rocks from the Moes' collection
New material will be available soon from a recent donation.

New Dinosaur Unearthed

A new kind of duck-billed dinosaur has been discovered in Japan. The largest dinosaur skeleton ever found in the country was hiding underneath 72 million-year-old marine deposits in the town of Mukawa, according to Hokkaido University.

First, part of the dinosaur's tail was discovered during a joint excavation carried out by the Hobetsu Museum and Hokkaido University Museum in 2013.

Subsequent excavations unearthed a nearly complete dinosaur skeleton, described in a study published in *Scientific Reports*. It belongs to a new genus and species of a herbivorous hadrosaurid dinosaur, the university said in a news release.

Scientists named the dinosaur "Kamuysaurus japonicus." The name comes from "kamuy," the word for diety in Ainu, the language of the indigenous people of northern Japan; "saurus," meaning reptile in Latin; and "japonicus" for Japan.

A group of researchers led by Yoshitsugu Kobayashi from the Hokkaido University

Museum analyzed the skeletal bones. The dinosaur found was most likely an adult, according to the research team's histological study.

It was about 8 meters long and weighed either 4 or 5.3 tons, depending on if it walked



on two or four legs respectively. That's around the weight of an Asian elephant. The frontal bone of its skull had a long anterior platform for the nasofrontal sutural surface, meaning the dinosaur had what some might call a duck bill.

The team discovered this dinosaur has three characteristics that aren't shared with other

biologically similar dinosaurs: the low position of the cranial bone notch, the short ascending process of the jaw bone and the anterior inclination of the neural spines of the sixth to twelfth dorsal vertebrae.

Scientists are interested in what the Kamuysaurus japonicus can tell us about its clade, a taxonomic grouping of organisms with a common ancestor - its branch on the tree of life, so to speak.

The latest common ancestors of the dinosaurs in the Edmontosaurini clade were spread across both Asia and North America. At the time, they were connected by what is present-day Alaska, which allowed them to travel back and forth between the two continents.

The group's research also suggests that the dinosaur's ancestors preferred to inhabit areas near the ocean. The coastline environment may have played an important role in the diversification of hadrosaurids in its evolution.

<https://www.cnn.com/2019/09/05/world/new-duck-billed-dinosaur-scnd-trnd/index.html>

Mineral Encyclopedia



Lepidolite is the name of a rare lithium-rich mica mineral that is usually pink, red, or purple in color. It is the most common lithium-bearing mineral and serves as a minor ore of lithium metal, with rubidium and cesium sometimes being byproducts. When impregnated with quartz, lepidolite is used as a minor gemstone. Flakes of lepidolite are sometimes responsible for the color of pink and red aventurine.

Lepidolite can only form in geochemical environments where high concentrations of lithium are available for mineral formation. Lepidolite is a rare mineral because these geochemical situations rarely occur. The lithium ion is very small, and it does not readily substitute in other minerals. As a result, it is usually one of the last ions to form minerals during the crystallization of a subsurface magma. As other ions are depleted, the residual fluids of magma crystallization become progressively enriched with lithium.

During the final stages of crystallization, there might finally be a high enough concentration of lithium present to form discrete lithium minerals such as spodumene, lepidolite, and petalite. Elbaite tourmaline is another lithium-bearing mineral that forms in association with lepidolite and other lithium minerals. Other associated minerals include: beryl, cassiterite, cleavelandite, muscovite, quartz, topaz, and a variety of feldspar minerals.

Pegmatites, greisens, and hydrothermal quartz veins are rocks of late-stage magmatic crystallization. They are the rocks where much of the world's lithium minerals are found. In these rocks, lepidolite occurs as disseminated particles, aggregates of fine grains, "books" of flat sheets, and aggregates of curved sheets. Most deposits of lithium-bearing minerals formed by igneous processes are small pod-shaped deposits of a few hundred to a few thousand tons where hand mining and hand separation are required.

Notable occurrences of lepidolite have been found in Minas Gerais, Brazil; Manitoba, Canada; Honshu, Japan; Madagascar; Ural Mountains, Russia; Skuleboda, Sweden; California, Maine, and New Mexico, United States; and Coolgardie, Western Australia.

Most specimens of lepidolite have pink, red or purple as their dominant hue. These are the expected colors of lepidolite. The mineral sometimes has a dark tone, which gives it a grayish appearance. Rare specimens of lepidolite are colorless or yellow.

Many people assume that lithium produces the color of lepidolite; however, lithium rarely serves as a chromophore in minerals. Manganese is the cause of color in pink, red and purple lepidolites.

Lepidolite has a chemical composition that ranges in a solid solution series from that of polyolithionite $\text{KLi}_2\text{Al}(\text{Si}_4\text{O}_{10})(\text{F},\text{OH})_2$ to that of trilithionite $\text{K}(\text{Li}_{1.5}\text{Al}_{1.5})(\text{AlSi}_3\text{O}_{10})(\text{F},\text{OH})_2$. This compositional range of lithium mica is known as the lepidolite series.

The properties of lepidolite make most specimens easy to identify. If you find a pink to purple mica mineral, it is probably lepidolite.

The most important use of lepidolite has been as a minor ore of lithium metal. This use was more important in the first half of the 1900s than it is today. Today most lithium is produced from brine and evaporite deposits in South America, where lithium can be extracted more economically. Small amounts of rubidium sometimes substitute for lithium in the lepidolite crystal lattice. When present, the rubidium can be recovered as a byproduct during the extraction of lithium. Lepidolite and pollucite, another lithium mineral that can contain significant amounts of cesium, often occur together. These minerals can be mined for lithium with cesium as a byproduct.

Lepidolite is sometimes used as a source of flake mica. It is also used to make glass and as an ingredient in some enamels. Lepidolite can be used as an ornamental stone and is an important constituent in some gem materials.

Lepidolite as a mineral lacks the hardness and tenacity to be a good gem material. However, it is sometimes impregnated with quartz, and that gives it durability. Lepidolite impregnated with quartz makes an attractive pink to purple gemstone, but what

makes these stones even more desirable are the bright flashes that occur when the mica cleavage surfaces reflect light. This material is used to produce cabochons, beads, tumbled stones, and ornamental items. They are usually sold as "lepidolite" without giving the quartz proper credit for its important job.

Lepidolite is also an important ingredient in the quartz gem known as "aventurine". The aventurescence and color of pink, red, and purple aventurine is often caused by the presence of tiny flakes of lepidolite within the quartz. Just a few weight percent of lepidolite flakes can be enough to impart a distinct color in aventurine.

<https://geology.com/minerals/>

Physical Properties of Lepidolite

Chemical Classification:

Silicate - Phyllosilicate

Color: Usually pink, red, or purple, often grayish. Rarely colorless or yellow.

Streak: White to colorless. Often sheds tiny flakes upon hardness testing.

Luster: Pearly to vitreous.

Diaphaneity: Transparent to translucent

Cleavage: Perfect in one direction.

Mohs Hardness: 2.5 to 3.5

Specific Gravity: 2.8 to 3.0

Diagnostic Properties: Cleavage, color, transparency, pseudo-hexagonal crystals.

Chemical Composition: $\text{K}(\text{Li},\text{Al}_3)(\text{AlSi}_3\text{O}_{10})(\text{OH},\text{F})_2$

Crystal System: Monoclinic

Uses: Used as an ore of lithium. Crushed for use as flake mica. Used to make glass and enamel. Used as a minor gemstone.



We're on Facebook!
Cuyuna Rock,
Gem & Mineral Society

is a closed group, so you must ask to join. After being approved you can follow the members' posts and add your own information.

Cuyuna Rock, Gem, & Mineral Society on the Web

www.cuyunarockclub.org





Agates From Around The World

Brockway Mountains Agates Keweenaw Peninsula of Michigan

There are few places on both sides of Copper Harbor, Michigan where the agate-bearing basalt beds are exposed and they're heavily weathered. The main source was at the northern side of Brockway Mountains to the west of Copper Harbor and the same bed extends underwater off Keweenaw Peninsula where scuba divers chiseled the agates out of. It's not easy to find the basalt outcrops due to forest overgrowth. It can be easy to get lost if one doesn't mark the way.

I visited the place and extracted a few agates out of the basalt bed. Many agates are heavily fractured as a result of being weathered for so many centuries since the last glacier period and some agates show healed fractures that make them seem more interesting. Because of their weathered nature, many agates tend to crumble when cut or polish so it's not easy to find ones that are strong enough to withdraw the stress of being cut and grinded. The colors are mainly red to orange. There had been few finds of large agate nodules there as well as amethyst pieces.

<http://www.sailorenergy.net/Agates/AgatesLakeSuperiorBrockwayMtns11lg.jpg>

Fluorescent Minerals

There are several minerals that emit light, or glow under black lights (ultraviolet (UV) light). Non-visible (to the human eye) black light reacts with the chemicals in minerals and causes the rock to fluorescence. If the glow remains after you remove the light source, you have a phosphorescence mineral. Other minerals glow when struck or crushed (triboluminescence) or when heated (thermoluminescence). A UV light that emits both longwave and shortwave light helps identify fluorescent minerals as many emit different color under varying wavelengths; however use caution when using shortwave light as it can cause blindness.



Scheelite

A popular, collectible mineral, scheelite (calcium tungstate), glows blue under short wave ultraviolet light.

Fluorite

Fluorite (calcium fluoride) usually fluoresces blue, but many specimens emit various colors, including yellow, red, white, green and red. A few specimens simultaneously produce different colors when viewed under long wave and short wave UV light, while a number of fluorite specimens' phosphorescence (glow without a visible light source) in a third color.

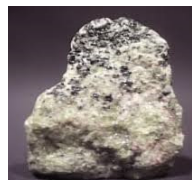


Scapolite

Commonly found in short to long crystals, scapolite, which means "shaft" in Greek, emits orange or yellow color and, on rare occasions, red under black light. As an attractive gemstone, scapolite's colors vary from yellow or orange to pink or violet.

Willemite

Nearly all willemite ore (zinc silicate) glows bright green under black light and a few will phosphorescence. This rare mineral, a source of zinc ore, is one of the finest specimens of fluorescent material.



Calcite

Not all calcite minerals are florescent, although some specimens glow red, yellow, pink or blue under UV light. Calcite (calcium carbonate) gets its name from the Greek "chalix" (lime) and has many uses, such as cement, mortars, or as an ornamental stone.

Autunite

One of the most beautiful radioactive minerals, the yellow-green color of the autunite mineral (hydrated calcium uranyl phosphate) fluoresces under ultraviolet light. Strangely, when autunite loses water it



Precious or Semi-Precious Gemstones

Sapphire is any gem-quality specimen of the aluminum oxide mineral corundum which is not red. While sapphires are often blue, they can be colorless to any other color.



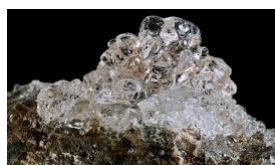
Colors are due to trace amounts of iron, copper, titanium, chromium, or magnesium.

The chemical formula of sapphire is (α - Al_2O_3). Its crystal system is trigonal.

Corundum is hard, around 9 on the Mohs scale.

<https://www.thoughtco.com/alphabetical-list-of-precious-and-semiprecious-gemstones-4134639>

irreversibly converts to an entirely different substance called meta-autunite-I. After many years, the meta-autunite turns to powder, ruining the specimen.



Hyalite

One of many names for the common opal, hyalite is a colorless to sky-blue

transparent color that fluoresces green under UV light.

Gypsum

A common sedimentary mineral, gypsum, (hydrated calcium sulfate) glows blue under ultraviolet light. As a natural insulator, gypsum feels warm to the touch, and is commonly used in drywall.



Eucryptite

Some eucryptite (lithium aluminum silicate) minerals fluoresce pink under ultraviolet light. Eucryptite crystals, although

transparent to translucent, are rarely cut as gemstones.

<https://sciencing.com/rocks-glow-under-black-light-5973965.html>

Jewelry Making Tip

No Scratch Vise Jaws

If your bench vise has replaceable jaws, there is a simple modification to customize it for bending sheet metal and holding jewelry pieces without worrying about the jaws leaving scratch marks.

I make a duplicate set of jaws from high density plastic such as Nylon or Delrin. Remove the jaws and use them as a template. Cut two pieces from a 1/2 inch sheet of scrap plastic. Then clamp the steel jaw over the plastic and drill through the steel side and into the plastic. Finally, use a

larger drill to countersink the plastic for the screw heads.

Plastic can be obtained from the scrap bin at a local plastics store, can be purchased online, or can be repurposed from an old kitchen cutting board.



The World of Jaspers Spider Jasper

Spiderweb Jasper is found north of Carefree, Arizona.

It can be gray with black lines or red with black lines.

2019 Show Card Winner

To the right is Club President, Ed Opatz, awarding Nancy Kazlauokas with an amethyst geode. The geode was this year's prize for the special drawing from the show for bringing back the show advertising business card. Congratulations!



Green Gemstones

Durable Green Gemstones

Jade
Verdelite and Chrome Tourmaline
Green Garnets: Tsavorite and Demantoid
Bloodstone
Green Diamond
Maw Sit Sit
Green Chrysoberyl
Chrysoprase
Prasiolite
Green Sapphire
Idocrase (Vesuvianite)
Aventurine

Fragile Green Gemstones

Emerald
Peridot
Chrome Diopside
Moldavite
Turquoise
Sunstone and Oregon Sunstone

Zoisite
Malachite
Green Zircon
Serpentine
Prehnite
Green Apatite
Variscite
Kornerupine
Green Collector's Gemstones
Chrome Sphene
Ekanite
Hiddenite
Gaspeite
Seraphinite (Clinocllore)

https://www.gemsociety.org/article/green-gemstones/?utm_source=igs&utm_medium=email&utm_campaign=august_26_32_green_gemstones

Rox Box

A place to advertise rock items to sell and to inquire about items to purchase.



The Cuyuna Rock, Gem & Society accepts no responsibility for any dissatisfaction that may occur by either party, seller or buyer. The Society does not profit in any way by sales transactions.

For Sale:

Double barrel Lot-O Tumbler in good condition. On cement block for stability. \$175.



For Sale: Finish polish wheel with brand new leather. \$110.



Buffer/Polisher in fair condition. Includes wood stand. \$65.



All three can be seen at the Clubhouse.

Call Ed Opatz at 320-250-1363.

For Sale: Rock

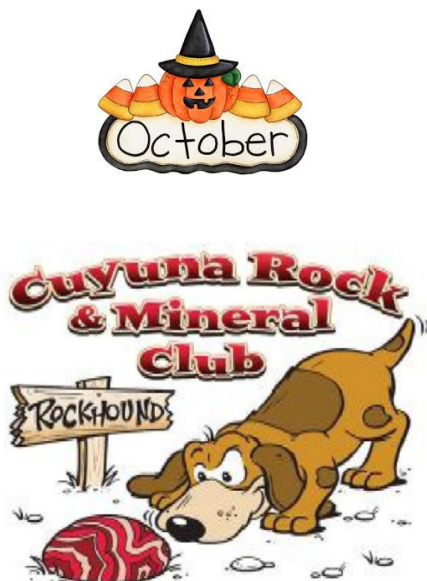
Drilling System Like new condition. Includes 3 speed drill press, coolant delivery system, 3 spare nozzles, maple drilling block, 8 oz. bottle diamond lube, stainless steel magnetic base coolant recovery/ splash tray, adjustable mini-vise, 6 piece diamond drill bit assortment. \$200. Call Bev Williams at 218-821-5684.



For Sale: A variety of lapidary equipment, including tumblers, flat laps, rock saws (10-20' blades), automatic cabbing machine, 4 wheel cabbing machine, saw blades. Call Ed Opatz at 320-250-1363.

Marcia Opatz, Editor
Cuyuna Rock, Gem
& Mineral Society
1001 Kingwood Street
Suite B-40
Brainerd, MN 56401

FIRST CLASS MAIL



The Agate Explorer

October 2019

*Official Publication of the Cuyuna Rock,
Gem & Mineral Society*

Members of AFMS & MWF



Notes from the President

We are about to leave Montana from our South Dakota and Montana trip with boxes of treasures. I even found a few elusive Fairburn agates!

During the two week period we had as many as 30 people from the combination of two Clubs, the Cuyuna Rock, Gem, and Mineral Society, and the Roving Rockhounds. New friends were definitely made. The Roving Rockhound club may invite the Cuyuna Club on another trip since we were so Minnesota nice.

The group found Fairburn, bubblegum, Indian eye, prairie, Montana moss, and Teepee Canyon agates; fossils, petrified wood, and probably more.

And before we even get home I am thinking about the 2020 trip. Does anyone have anywhere on their wish list? Please let me know. I think I may have a location for a fall Minnesota agate pick. Does anyone else have a possible picking place?

We received a donation of a couple of pails of rocks that are now in the rock room. We have more sorting to do! Please come early to the October meeting if you would like to help.

As you can see on page 1, elections will be held at the November meeting. If you have been a member for a year or more, PLEASE consider becoming a Board member.



Ed Opatz

Club Officers & Board of Directors

cuyunarockgemclub@gmail.com

President: Ed Opatz
opatz1@att.net
320-250-1363

Vice-President: Sharon Smith
sharon@agatesrock.com
218-343-7037

Secretary—Joanie Hanson
secretarycuyunarockgemclub@outlook.com
218-831-2665

Treasurer: Kevin Martini
treasurer@cuyunarockclub.org
kjspumanti69@gmail.com
218-770-8917

Director: Lori DuBois
Director: Vern Iverson
Director: Lilly Peterson

Newsletter Editor: Marcia Opatz
theisma@hotmail.com
320-250-8120