



The Agate Explorer

August 2019



Fall Trip to South Dakota & Montana

The last two weeks in September the Cuyuna Club will combine with the Roving Rockhounds to hunt in the Dakotas and Montana. The dates are from approximately September 14-29. As always you can come and go according to your own personal schedule.

This is a rough calendar of the trip. Please be aware that there may be changes, based on weather, availability of guides, etc.

Saturday., Sept. 14-Tuesday, Sept. 17—Kadoka, SD

Fairburn and bubblegum agates, fossils, Badlands Petrified Gardens Possible campground is Kadoka Kampground; possible motel is Lakota Lodge

Wednesday, Sept. 18-Monday, Sept. 23-Rapid City, Custer SD area

Prairie, and teepee canyon agate, petrified wood, rose quartz, School of Mines Museum of Geology, Jewel Cave National Monument Plan to stay in/near Custer.

Tuesday, Sept. 24-Sunday, Sept. 29—Glendive/Terry, MT area

Montana moss agate, petrified wood, dinosaur bone, Glendive Dinosaur and Fossil Museum

Possible campground is near Intake, MT. Motels in Glendive.

We will do our best to stick to this schedule, but realize that changes could occur.

If you are interested in joining the group, please sign up at the Clubhouse, or by calling Ed Opatz at 320-250-1363.

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

August 10—THERE WILL BE A MEETING. Open Shop & Rock Wrappers from 10-12, Board mtg. noon; General mtg. 2; instead of speaker rock sorting

September 14—Meeting

Mid-September-early October—fall field trip to SD & MT

October 12—Chuck Durnan to speak on gem identification. Real or synthetic?

Information subject to change.



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.

Club Purpose:

To foster an interest (& encourage young & old) to study earth science, enjoy the art of lapidary, hunting for rocks, and semiprecious 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.



Agate Facts



Agate is a kind of quartz and it is a mineral. Agate can come in many different kinds and colors. Agate

deposits are primarily found in large rocks such as boulders. Agates take 50 million years to form. It is characterized by colored band patterns inside various rocks. Often, agates are also accompanied by amethyst deposits inside as well as quartz-like crystals occurring in larger deposits.

The stone was given its name by Theophrastus, a Greek philosopher and naturalist, who discovered the stone along the shore line of the river Achates (Greek: $\Delta\chi\dot{\alpha}\tau\eta\varsigma$) in present-day Sicily, sometime between the 4th and 3rd centuries BC. Colorful agates and other chalcedonies were obtained over 3,000 years ago from the Achates River, now called Dirillo.

Agate is one of the most common materials used in the art of hardstone carving, and has been recovered at a number of ancient sites,

indicating its widespread use in the ancient world; for example, archaeological recovery at the Knossos site on Crete illustrates its role in Bronze Age Minoan culture.

Most agates occur as nodules in volcanic rocks or ancient lavas, in former cavities produced by volatiles in the original molten mass, which were then filled, wholly or partially, by siliceous matter deposited in regular layers upon the walls. Agate has also been known to fill veins or cracks in volcanic or altered rock underlain by granitic intrusive masses. Such agates, when cut transversely, exhibit a succession of parallel lines, often of extreme tenuity, giving a banded appearance to the section. Such stones are known as banded agate, riband agate and striped agate. In the formation of an ordinary agate, it is probable that waters containing silicain solution—derived, perhaps, from the decomposition of some of the silicates in the lava itself—percolated through the rock and deposited a siliceous gel in the interior of the vesicles. Variations in the character of the solution or in the conditions of deposition may cause a corresponding variation in the successive layers, so that bands of chalcedony often alternate with layers of crystalline quartz. Several vapor-vesicles may unite while the rock is still viscous, and thus form a large cavity which may become the home of an agate of exceptional size; thus a Brazilian geode lined with amethyst and weighing 35 tons was exhibited at the Düsseldorf Exhibition of 1902. Perhaps the

most comprehensive review of agate chemistry is a recent text by Moxon cited below. The first deposit on the wall of a cavity, forming the "skin" of the agate, is generally a dark greenish mineral substance, like celadonite, delessite or "green earth", which are rich in iron probably derived from the decomposition of the agate in the enclosing volcanic rock. This green silicate may give rise by alteration to a brown iron oxide (limonite), producing a rusty appearance on the outside of the agate-nodule. The outer surface of an agate, freed from its matrix, is often pitted and rough, apparently in consequence of the removal of the original coating. The first layer spread over the wall of the cavity has been called the "priming", and upon this base, zeolitic minerals may be deposited.

Many agates are hollow, since deposition has not proceeded far enough to fill the cavity, and in such cases the last deposit commonly consists of drusy quartz, sometimes amethystine, having the apices of the crystals directed towards the free space so as to form a crystal-lined cavity or geode. When the matrix in which the agates are embedded disintegrates, they are set free. The agates are extremely resistant to weathering and remain as nodules in the soil, or are deposited as gravel in streams and along shorelines.

https://kids.kiddle.co/Agate



2019 Rockacademy Award Winners!

Left to right:
Bev Williams, Artist of the Year
Judi Laurence, Volunteer of the Year
Dolores Sibet, Member/Vendor of the Year
Lilly Peterson, Best Public Relations



Jason Meyer, grand door prize winner. Jason is Club member Ron Dick's son-in-law.

August Rock Shows

1-4—SPRUCE PINE, NC: Mitchell County Chamber of Commerce; NC Mineral & Gem Festival, 12121 Hwy 226 S; Thu.-Sat. 10-6, Sun. 12:30-5; \$3, under 10 free; Website: www.ncgemfest.com 2-4—NORTH BEND, OR: Far West Lapidary; North Bend Community Center; Fri. & Sat. 10-5, Sun. 10-4; \$1, under 12 free; Email: doninnes.innes20@gmail.com 2-4—PRESCOTT VALLEY, AZ: Prescott Gem & Mineral Club; Findley Toyota Center; Fri. & Sat. 9-5, Sun. 9-4; \$5, srs, vets, students \$4, under 12 free; Website: www.prescottgemmineral.org 2-4—PLEASANTON, CA: Gem Faire Inc.; Alameda County Fairgrounds; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7, under 12 free; Website: http://www.gemfaire.com 2-4—NIPOMO, CAA: Orcutt Mineral Society; Nipomo High School; Fri. 10:30-5, Sat. 10-5, Sun. 10-4; free; Website: http:// www.omsinc.org 3-4—SAN FRANCISCO, CA: San Francisco Gem & Mineral Society; San Francisco County Fair Building; Sat. 10-6, Sun. 10-5; \$12, seniors and students, under 12 free; Website: www.sfgms.org 8-11—BUENA VISTA, CO: Buena Vista Contin-Tail Rock Gem & Mineral Show; Buena Vista Rodeo Grounds; daily 10-6; free; Website: https://bvrockshow.com/ 9-10—SPOKANE, WA: Stone Crazy & Ampersand Gem & Jewelry; Rings & Things August Rocks, 304 E 2nd Ave; Fri. 10-6, Sat. 10-5; free; Website: https:// ampersandgemandjewelry.com/ 9-11—WEST SPRINGFIELD, MA: LLD Productions, Inc.; Eastern States Exposition; Fri. & Sat. 10-6, Sun. 10-5; \$10, under 13 free; Website: www.mineralshowslld.com 9-11—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 9-11—HOUGHTON, MI: Copper Country Rock & Mineral Club; Houghton Elementary School; Fri. 1-8, Sat. 10-6, Sun. 11-3; free; Email: show@ccrmc.info 10-11—EDMOND, WA: Maplewood Rock & Gem Club; Maplewood Rock & Gem Clubhouse; Email: collma1@comcast.net 10-11—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 10-11—GONZALES, LA: Baton Rouge Gem & Mineral Society; Lamar Dixon Expo Center; Daily 10-5; \$5, ages 5-12, \$3; Website: www.brgemandmineral.org 15-18—WOODLAND PARK, CO: Ute Pass Saddle Club Arena; Daily 9-5; free;

Website: Woodlandparkrockandgemshow 16-18—LEBANON, PA: Mid-Atlantic Gem & Mineral Association; Lebanon County Fairgrounds & Expo; Fri. & Sat. 10-6, Sun. 10-4; \$6, under 12 free; Website: www.gem -show.com 16-18—PARRSBORO, NS: Cumberland Geological Society: Parrsboro Lions Recreation Center; Fri. & Sat. 10-5, Sun. 10-5:30; \$5, under 12 free; Website: fundygeological.novascotia.ca 16-18—SANTA BARBARA, CA: Gem Faire Inc.; Earl Warren Showgrounds; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7 weekend pass, under 12 free; Website: http:// www.gemfaire.com 16-18—SARASOTA, FL: Frank Cox Productions; Sarasota Municipal Auditorium; Daily 10-5; \$5, under 16 free; Website: www.frankcoxproductions.com 16-18—CORVALLIS, OR: Benton County Fairgrounds; Fri. 1-8:30, Sat. 10-5, Sun. 10-

Fairgrounds; Fri. 1-8:30, Sat. 10-5, Sun. 10-4; \$5, srs, 13-college \$2; under 13 free; Email: kira@oregonrockandgemfestival.com
17—SHELTON, WA: Shelton Rock and

17—SHELTON, WA: Shelton Rock and Mineral Society; MCRA Park; Sat. 9-5; free; Website: https://sheltonrockclub.-weebly.com/

17-18—TEHACHAPI, CA: Tehachapi Valley Gem & Mineral Society; Tehachapi Senior Center; Daily Sat. 9-5, Sun. 9-5; free; Website: Tvgms.org

17-18—BOSSIER CITY, LA: Ark-La-Tex Gem & Mineral Society; Bossier Civic Center; Sat. 9-6, Sun. 10-4; Daily \$4, both days \$6, under 6 free; Website: larockclub.com 17-18—SPOKANE VALLEY, WA: Crystallography Gem + Mineral Market; Spokane County Fairgrounds; Daily 10-6; Website: www.crystallographygems.com 23-24—TAHLEQUAH, OK: Tahlequah Rock & Mineral Society; Tahlequah Community Center Building, 909 S. College Ave; Fri. 9-6, Sat. 9-5; free; contact Elizabeth Spinks, PO Box 932, Tahlequah, OK 74465-0932

23-25—COSTA MESA, CA: Gem Faire Inc.; OC Fair & Event Center; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7 weekend, under 12 free; Website: http://www.gemfaire.com 24—EAU CLAIRE, WI: Chippewa Valley Gem & Mineral Society; Eau Claire County Expo Center; 8-4; Free; Email:

CVGMS2017@gmail.com

24—SAN ANTONIO, TX: Southwest Gem & Mineral Society of San Antonio; Wonderland of the Americans Mall; Sat. 10-5; free; Email: jspeck2@att.net

24—RACINE, WI: Racine Geological Society; Bartlet Youth Foundation; 10-4:30; free; Website: www.racinegeological-society.weebly.com

24-25—CANTON, NY: St. Lawrence County Rock & Mineral Club; Canton Recreational Pavilion; Sat. 9-4:30, Sun. 9-3; \$2, under 13 free; Website: www.stlawrence-countymineralclub.org 24-25—EAST PEORIA, IL: Geology Section of Peoria Academy of Science; Eastside Centre; Sat. 9-5, Sun. 10-5; free; Website: pasgeology.com

August 2019-September 2019

30-1—SAN DIEGO, CA: Gem Faire Inc.; Scottish Rite Center; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7 weekend pass, under 12 free; Website: http://www.gemfaire.com 30-2—PENSACOLA, FL: Southeastern Gem & Mineral Shows; Pensacola Interstate Fairgrounds; Daily 9-6; free; Website: www.segms.org 30-2—RALEIGH, NC: Treasures of the

30-2—RALEIGH, NC: Treasures of the Earth, Inc.; North Carolina State Fairgrounds; Fri. 12-6, Sat. & Sun.10-5, Mon. 10-4; \$5 weekend pass; under 17 free; Website: http://www.TreasuresOfThe-Earth.com

31-1—HANFORD, CA: Diggin's Productions; Hanford Civic Auditorium; Sat. 10-6, Sun. 10-4; \$3, under 14 free; Website: https://www.facebook.com/Gem-Mineral-Show-Hanford-by-Diggins-Productions-1560396140867556/

31-1—CONCORD, NH: Capital Mineral Club; Douglas N. Everett Arena; Sat. 9-5, Sun. 9-4; \$5, under 16 free; Website: www.capitalmineralclub.org 31-2—SILVER CITY, NM: Grant County Rolling Stones Gem & Mineral Society; Grant County Veterans Memorial Conference Center; Sat. 9-5, Sun. 10-5, Mon. 10-4; free; Website: https://rollingstonesgms.blogspot.com

The World of Jaspers Burrow Creek Jasper-Agate

From Wickensburg, Arizona, it is generally, a multicolored, dendritic jasp-agate or jasper with shades of lavender, pink, yellow, browns and tans. Possibly some red dendrites in the agate verity. The most known variety is the Amethyst stained purple Chalcedony.



https:// www.minerals-nmore.com/arizona -burrow-creekjasper-silverpendant

Mineral Encyclopedia



Vanadinite

Vanadinite is a mineral composed of vanadium, lead, oxygen, and chlorine. It has a chemical

composition of Pb5(VO4)3Cl. It is an important ore of vanadium and a minor source of lead.

Vanadinite usually forms where lead minerals are oxidized, often in areas with an arid climate. It is not a common mineral, but it is found in small quantities in many parts of the world. It was given its name because of its vanadium content.

Physical Properties of Vanadinite

Vanadinite has a number of properties which, when considered together, usually make it easy to identify. It often occurs as brightly colored crystals that are usually short, tabular hexagonal prisms with a resinous to adamantine luster. It is most often bright yellow, orange, red or brown in color. It can also occur in globular forms and incrustations on other minerals.

As an ore of lead, vanadinite has a high specific gravity (6.6 to 7.2) and a low hardness (3 to 4 on the Mohs hardness scale). It has a pale yellow to yellowish brown streak and is brittle, easily breaking with an uneven or conchoidal fracture. The crystals can be transparent, translucent or opaque.

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.

Rock Room

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

Geologic Occurrence of Vanadinite

Vanadinite is almost always a secondary mineral that forms in the oxidized zone above lead deposits. It is often found in oxidized veins containing primary and secondary minerals of lead. It is commonly associated with the oxidation of galena.

The vanadium and chlorine are usually leached from the overburden by downwardmoving waters. Vanadinite deposits are usually found in arid regions, with notable deposits in Argentina, Morocco, Namibia, and the southwestern United States.

Vanadinite Composition & Solid Solution

Although the ideal composition for vanadinite is Pb5(VO4)3Cl, phosphorus and arsenic often substitute for vanadium in the mineral's crystal lattice. This results in a wide range of compositions which influence the specific gravity, color, and other properties. A solid solution series exists between vanadinite and mimetite Pb5(AsO4)3Cl. Small amounts of calcium, zinc and copper can substitute for lead.

Uses of Vanadinite

Vanadinite, along with carnotite and roscoelite, are important ores of vanadium metal. Vanadinite is also a minor ore of lead. Both vanadium and lead are produced wherever vanadinite is mined. Vanadinite is very popular as a specimen with mineral collectors. They enjoy its bright colors, showy hexagonal crystals, resinous color, and adamantine luster.

Physical Properties of Vanadinite

Chemical Classification: Lead

cholorovanadate

Color: Usually bright yellow, orange, red or brown. Sometimes gray, black or colorless.

Streak: Pale yellow to yellowish brown Resinous to adamantine Luster: Opaque to translucent to Diaphaneity: transparent

Cleavage: None. Usually breaks with an uneven or conchoidal fracture.

Mohs Hardness: 3 to 4

Specific Gravity: 6.6 to 7.2 depending

upon purity

Diagnostic Properties: As an ore of lead, vanadinite has a very high specific gravity. Few minerals with this high of a specific gravity have an adamantine or resinous luster. The bright colors of vanadinite can help in its identification. Its crystal habit of short hexagonal prisms is also diagnostic. Vanadinite also occurs as incrustations and as globular masses.

Chemical Composition: Pb5(VO4)3Cl Crystal System: Hexagonal

Uses: An ore of vanadium and a minor source of lead. Vanadinite is popular with mineral collectors because of its bright colors, high luster, and interesting crystal habit.

https://geology.com/minerals/

Agates of the World Wave Hill Agate



This agate can be found at the Wave Hill Pastoral Station in the Northern Territories in Australia. The location is

remote, making it harder to obtain. Most agates found there are heavily fractured with peeling bands, but some good specimens have been found and those are usually expensive. These agates usually consist of interlaying quartz and white, gray, lavender, pink or red agate bands. The inclusions and quartz (sometimes geodes) nodules are more resistant to weathering. The large and better specimens can be obtained only from older collection despite few recent attempts at mining the agates.

http://www.sailorenergy.net/Agates/ AgatesAustraliaWavehillAgates01.html

Famous Pearls in History



This double-strand pearl necklace may not have a name, but it easily holds its own in quality against the other fabulous pieces.

The necklace features 120 large pearls, ranging from 6.5-12.25mm in size. (For

comparison, the largest pearl is even wider than a penny's diameter.) The pearls are strung together and secured with a cushion cut three carat diamond clasp, a type IIa piece—the most chemically pure type of diamond—signed by Cartier.

The necklace was auctioned at Christie's in 2012 and fetched \$3.7 million U.S. dollars.

https://www.truefacet.com/guide/lustrousluxurious-worlds-expensive-pearls/

Agates From Around The World El Sueco

El Sueco, Chihuahua Province, Mexico





The El Sueco Agates are collected from the weathered deposit (few from the bedrock itself) near El Sueco. Some El Sueco Agates were found to contain pseudomorphs (after aragonite) and sagenite (after zeolites) structures. The typical colors are tan, brown, yellow and colorless and some come with red, pink, and lavender colors, sometimes in bright color combos. The agates appear to have produced a high rate of Iris (Rainbow) Agates.

Those agates can be confused with Coyomito Agates that they were known to be mixed with Coyomito or sold under "Mexican Agates" name. The wider banding spaces and "watered-down" colors usually distinguish the El Sueco agates from Coyamitos.

http://www.sailorenergy.net/Agates/AgatesMexicoElSueco01.html

Cuyuna Rock, Gem & Mineral Society Saturday, June 8, 2019 Board Meeting

Call to Order- President Ed Opatz at 11:30 am.

Present: Kevin Martini-treasurer, Joanie Hanson-secretary, and members-at-large Lori DuBois and Lilly Peterson.

Motion to approve the minutes of the May meeting, as amended, was passed.

Motion to approve payment of rent passed. Payment for Franklin club space rent will be sent in September when it is due for September 2019 through August 2020.

A motion was made and passed to purchase fitted tablecloths for the rock show club tables and spinning wheel tables.

The summer shows that the rock club will have the spinning wheel at are: Fifty Lakes (6/29/19), Moose Lake (7/13-7/4), Emily Day (7/20), Outing Corn Feed (8/17). We decided not to do the Crow Wing County Fair this year.

Treasurer's Report- Kevin Martini- will be posted at the rock club.

A motion was made and passed to give the Seglers a gift card as thanks for letting the club and Kid's Camp pick on their fields June 8th.

A motion was made and passed to help Dave Moe store and sell his collection of rocks and minerals. We will share 50-50 in the profits from sales with him.

A motion was passed to pay all the bills for the month.

80% Of Harry's collection has now been sold. A motion was passed to pay Harry. Details posted in rock club treasurer's report.

Show wrap up and Kid's Camp review will be tabled to the next meeting in August.

The Grand Prize winner of the tumbler is Jason Meyer.

The Show Card winner of the amethyst geode is Nancy Kazlauokas.

The General meeting was cancelled in lieu of the agate/rock pick. The agenda for this meeting was tabled to the August meeting. At the August meeting members will be able to purchase items from Dave Moe's collection. See Kevin at the meeting for pricing. It will also be a shop day.

There were 24 members at the rock pick.

Respectfully Submitted, Joanie Hanson, Secretary

Precious or Semi-Precious Gemstones



Quartz is a silicate mineral with the repeating chemical formula SiO2. It may be found in either the trigonal or hexagonal crystal system. Colors

range from colorless to black. Its Mohs hardness is around 7. Translucent gemstone-quality quartz may be named by its color, which it owes to various element impurities. Common forms of quartz gemstone include rose quartz (pink), amethyst (purple), and citrine (golden). Pure quartz is also known as rock crystal.

https://www.thoughtco.com/alphabeticallist-of-precious-and-semipreciousgemstones-4134639

Cuyuna Rock, Gem, & Mineral Society on the Web

www.cuyunarockclub.org



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.



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

New Bird-Like Dinosaur Unearthed in Wyoming

-like evolved in dinosaurs that lived out their lives on the ground.

Hesperornithoides miessleri roamed our planet approximately 150 million years ago (Jurassic period). Nicknamed Lori, the ancient creature was about the size of a chicken and lived in a world populated by giant

dinosaurs such as Stegosaurus, Diplodocus, and Allosaurus.

The partial, well-preserved skull and postcranial skeleton of Hesperornithoides miessleri were found in 2001 at the Jimbo Ouarry in the Morrison Formation near Douglas, Wyoming.

"I remember the first time I laid my eyes on this little dinosaur. Even back then, I knew it was a significant discovery," said team member Dean Lomax, a paleontologist and visiting scientist at the University of Manchester.

"But, it wasn't until 2015 when our dino team formed and we began to study 'Lori' in much more detail than ever before."

One of the other key findings of the study relates to the origin of bird flight. Hesperornithoides miessleri is a highly terrestrial proto-bird, suggesting that many features scientists associate with being bird

"We found that Lori is a primitive member of a group of dinosaurs that includes Troodon, but perhaps more importantly we discovered that the smaller details of the family tree of bird-like dinosaurs isn't quite as re-

solved as some researchers would claim," said team leader Scott Hartman, a PhD candidate at the University of Wisconsin-Madison.

"For example, it only takes a few changes in the dataset for Hesperornithoides miessleri to be found as a closer relative of Velociraptor than of Troodon."

"One robust finding we did come up with is that even as the interrelationships changed, the primitive members of all these groups were non-flying ground dwelling dinosaurs."

"That means that some small relatives of Velociraptor such as Microraptor that looks like it could have glided evolved this separately from the modern bird family."

http://www.sci-news.com/paleontology/ hesperornithoides-miessleri-07413.html

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.

For Sale:

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: 10' x 10' EzUP tent with side curtains and weights. \$100. Contact Dave or JoAnn Moe, 602-689-2567 or 602-

689-4319.

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.

Jewelry Making Tip By Brad Smith www.BradSmithJewelry.com

Templates



Whenever I have to make more than 2-3 exact copies of anything, I think of making a template. A template lets me easily draw

the shape of an item.

Art stores sell templates for common shapes like circles, ovals, hearts, etc. Other sources would include cooltools.us/ and kingsleynorth.com/

For nonstandard shapes, it's easy to make your own template. Simply cut the shape out of sheet plastic or thin sheet metal. My preference is brass. I carefully lay out the shape using a steel ruler, a set of dividers, a scribe, and a fine center punch.

One example is the brass template in this picture that let's me quickly trace the design of ginko leaf earrings onto silver sheet. Another is the nickel template which makes it easy to drill a pattern of holes for pin inlay into wooden handles.



Field Tools for the Rockhound

Appropriate tools will make your rockhounding trips easier and safer. You will not, however, need all

the tools we list! Pick the ones you need for your particular expedition.

Collecting Tools

(marking tools with bright or fluorescent paint helps keep you from losing them)

Crack hammer (2, 3, or 4 lb.): This is for breaking medium-sized rocks and for driving your chisels. Go with the argest hammer you can comfortably handle.

Crowbar or pry bar: A basic tool every rockhound should have. 22" pry bars are good basic tools, although 30" and larger are needed for really heavy work.

Hand chisels, wide-ended or pointed:

Another basic tool, and you should have a good-quality set of them. Carbide-tipped ones will make your work easier, although they are quite expensive.

Geologist's pick (hammer/pick): A standard tool used for prying (not hitting rocks unless you want only a small chip) and as a handy guide to scale in photographs! Some manufacturers, such as Estwing, also offer geologist's

hammer/chisels, as well as belt sheaths for both tools.

Sledge hammer (12 to 16 lb.) or Mason's hammer (6 to 8 lb.): For breaking big rocks. Again, go with the largest you can comfortably handle (and haul). The sledge hammer often is more effective if you cut the handle off at 18".

Pocket tools: These are used to extract specimens from deep pockets, and will go a long way toward saving your hands. Some possibilities are a commercial pocket tool, an 18" screwdriver, an ice pick, or a modified garden claw.

Paintbrush/whiskbroom/toothbrush: These are used to clean specimens, to help you evaluate them.

Tools for fine work: Possibilities are spatulas, surgical knife, palette knife, sieve, dental picks, geologist's trim hammer.

Other tools: Hoe pick, bricklayer's (splitting) hammer, shovel, trowel.

Transportation of SpecimensField bag or internal-frame backpack: To

carry all your stuff! If you anticipate carrying a very heavy load, a properly adjusted internal-frame backpack will make your life easier. (Some rockhounds use a large-wheeled handcart or the like when collecting in areas where the terrain is not too rough.)

Newspaper or other wrapping paper: Dumping all your specimens in together is a good way to damage them. Wrap each separately to protect them. Don't use newspaper for fluorescent specimens unless you wrap them in plastic first, as fluorescent dyes can sometimes rub off on your prizes.

Collecting bags: Used with wrapping paper to protect fragile crystal groups.

Tubes, boxes, etc. for fragile specimens.

Bucket: Can be used inside your pack or field bag to protect the fabric from tools, as well as to carry the specimens you don't have room for in your pack on the way home.

Personal/Safety Equipment

Safety goggles: Hitting rocks creates highvelocity chips. Protect your eyes! Heavy gloves: To shield your hands from nicks and scrapes.

Hard hat: This is a necessity on any rock-hounding trip where overhanging or falling rocks are a possibility.

Polarized sunglasses: These will both protect your eyes from bright sunlight and help you identify specimens by blocking glare. Sturdy walking shoes: Collecting areas generally have rough footing. Ankle support, lug soles, and steel toes are recommended. Sun hat: If a hard hat is not needed, protecting your eyes and skin from the sun is still a good idea.

Drinking water, lunch, first aid kit, snake bite kit, sunscreen, etc.

Specimen Identification

Field guides: Bring the appropriate field guide for the specimens you are hunting (crystals, fossils, general rocks and minerals, etc.).

10x loupe or magnifying glass: A good quality lens is an important aid, particularly for identifying small crystals and fossils.

Magnet: Meteorites and iron-bearing rocks such as magnetite will attract a small,

handheld magnet such as a refrigerator magnet. (A metal detector can be a good investment for a serious collector of meteorites -- or of gold or other metals, for that matter!) Vinegar: A few drops of vinegar on your specimen will form bubbles if carbonate is present.

Streak plate: The color left when a rock is rubbed on a streak plate can help you distinguish between similar-appearing minerals. An unglazed porcelain tile (such as the back of a bathroom tile) can be substituted for a standard streak plate.

Moh's hardness scale with test items: You can use a regular Moh's hardness kit, or you can use an informal approach. For example, window glass is Moh's $5\frac{1}{2}$ and a steel file is $6\frac{1}{2}$.

UV lamp (short-wave and/or long-wave)

and viewing bag: These are used for identifying fluorescent minerals. A black plastic sheet can be used in lieu of the viewing bag. Navigation & Record-Keeping Notebook and pen or pencil: You should keep a record of where each specimen was found, along with any other relevant details. Bearing compass and altimeter: Noting an altitude reading and a bearing course on a good landmark can make it easy to find your prime collecting site on future trips. They also are handy when you must bushwhack a trail in rough country with the aid

GPS: An alternative to compass and altimeter, although the cheaper units are not as accurate as we might wish!

of a topographic map.

Maps and/or guidebook: Guidebooks for your state will list a number of collecting sites, along with what can be found there and directions for reaching each site. Topographic maps can help you find your way, particularly in rough territory.

Permission to collect: Always get permission to collect on private land!

Camera: Record site locations and celebrate your trophy specimens.

Adhesive tape: Use this for labeling specimens.

https://www.mamasminerals.com/Field-Tools-for-the-Rockhound_ep_116.html

Where do all the rockhounds hang out? Where the rocks are, of course! Dave Moe sold some of his rocks at the picnic.
What a hit!



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

FIRST CLASS MAIL







The Agate Explorer

August 2019

Official Publication of the Cuyuna Rock, Gem & Mineral Society

Members of AFMS & MWF



Notes from the President

When Marcia and I were vending in Grand Rapids at the flea market we met some possible new Club members. The best part is that they might have access to some picking places in that area. Fingers crossed! Have you found any new places that the Club could take members?

I am working on a site to pick binghamite and silkstone near Crosby. Who is interested? Let me know. Related to that subject. Right now the state park is Crosby is off limits to picking rocks. I believe that the possibility exists to change this with a new law. This could be a great draw to the Crosby area. Who would like to help start the ball rolling?

Since this is the August newsletter we need to start thinking about fall (and winter). What classes, and speakers would you like to have? We need to start planning NOW.

I am still looking for someone to call those people who do not have email. PLEASE consider taking on this small job. You would only need to do it a few times a year to about 6 people.

TO THE PERSON WHO HAD 2 BLUE MOON BEERS AT THE APPRECIATION DINNER—PLEASE CALL ME! 320-250-1363.

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