

The Agate Explorer

July 2023



Annual Potluck Picnic

Saturday, July 8 Meal at noon

Buffalo Hills / Lions Park
101 Buffalo Hills Lane, Brainerd

The Club will provide grilling meat.

After the meal there will be a rock knowledge bowl game! Prizes to the winning team!!

To R.S.V.P. with what you are bringing, please email newsletter editor Marcia Opatz at theisma@hotmail.com how many people are coming and what you are bringing.

A food list will be emailed out periodically, keeping people up to date.



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.

2023 Field Trips

July 21
Northland Monument
Tour and Agate Pick

Longville MN

Things to know:

Free tour of how rock equipment, followed
by local agate pick (tentative) and bring your
own picnic lunch. Carpooling may be availa-
ble. **NEED A LEADER FOR THIS TRIP!**

August 3-11 *Billings MT* American
Federation's yearly conference, includes
rock show Aug. 3-6 and field trips.
Mon. Aug. 7: Bear Canyon Agate
Tue. Aug. 8: Bear Paw Formation -



Shale Fossils

Wed. Aug. 9: Montana Agate -
Yellowstone River Valley

Thu. or Fri. Aug. 10 or 11: Cedar Creek
Anticline – Marine Fossils* and/or
Digging for Dinosaur Bones* (fee site)

*Tentative

Pre-register for field trips. Website for more
information and field trip registration.
<https://show.billingsgemclub.com/>

Throughout the spring/summer/fall
any location to pick Lake Superior agates.

If you are interested in any of the above
trips, please contact Ed Opatz at
320-250-1363 or opatz1@att.net.

Club Calendar

- July 8—Annual Potluck Picnic
- July 21—Tentative Northland Monument Tour and Agate Pick
- August 3-11—American Federation conference/rockhounding
- August 12—meeting date
- September 9—meeting date
- October 14—meeting date
- November 11—meeting date
- December 9—Christmas 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.

**Cuyuna Rock, Gem & Mineral Society
Meeting Minutes
Saturday, April 22, 2023**

Board Meeting

Call to Order- The meeting was called to order at 12:23 by President Ed Opatz.

Present were- Vice-President Lori DuBois, Treasurer Kevin Martini, Secretary Joanie Hanson, and Board members-at-Large Vern Iverson, Jo Schwalboski, and Judi Laurence.

A motion was passed to approve the April 1st minutes.

Treasurer's report- a motion was passed to pay the current bills. The full report is at the rock club.

Show updates- Preparations continue for the rock show.

Pebble Pups- June 9th and 10th.

Show signs- will be put up right before the show.

MWF- Judi Laurence and Joanie Hanson are prepping for the MWF meeting.

Joanie's brother Bruce (retired geologist) will be rock wizard and will display his Herkimer diamond collection at the show.

Dates for Thunder Bay- June 24-26.

Refer to newsletter for summer activity/trips dates.

There will be 2 drawings. One for the petrified wood piece, one for the tumbler.

Meeting adjourned at 1:22pm.

General Meeting

The meeting was called to order at 2:05 pm

by President Ed Opatz. There were 28 members present.

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

Volunteer sign ups- still need more volunteers for the show. Preparations for the show continued during the meeting.

Flyer distributions- everyone took some flyers to distribute to the schools in the surrounding communities.

Door Prizes today went to: David Israel, Marie Israel, Steve Moening, Vern Iverson, and Justin Reisz.

The club has a grinder for sale- \$400.00

Meeting adjourned 2:30 pm.

Respectfully submitted,
Joanie Hanson, Secretary



**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.

New Dinosaur With Blade-Like Spikes for Armor Discovered on UK's Isle of Wight

A new species of dinosaur with blade-like spikes for armor has been discovered on the Isle of Wight, off the south coast of England.

Named Vectipelta barretti, it is the first armored dinosaur, or ankylosaur, to have been found on the island in 142 years, according to a statement from London's Natural History Museum, where several of the researchers who discovered the dinosaur work.

The dinosaur would have lived during the Early Cretaceous period, 145-100.5 million years ago, the museum said.

There are few fossils dating from the period worldwide, which some believe suggests there was a mass extinction at the end of the Jurassic period, which preceded it.

Given the lack of fossil record from the Early Cretaceous period in other parts of the world, the Isle of Wight is vitally important for our understanding of what happened, the museum said.

"This is an important specimen because it sheds light on ankylosaur diversity within the Wessex formation and Early Cretaceous England," said study lead author Stuart Pond, a researcher at the Natural History Museum.

"For virtually 142 years, all ankylosaur remains from the Isle of Wight have been assigned to Polacanthus foxii, a famous dinosaur from the island, now all of those



finds need to be revisited because we've described this new species."

The new species has several differences to Polacanthus foxii, which was previously the only ankylosaur known to have lived on the island, with variations in neck and back vertebrae, as well as the pelvis and the spiked armor.

The team's analysis showed that Vectipelta barretti is most closely related to Chinese ankylosaurs, suggesting dinosaurs were able to move between Asia and Europe in the Early Cretaceous.

The dinosaur is named after Professor Paul Barrett, who has worked at the museum for 20 years.

"I'm flattered and absolutely delighted to have been recognized in this way, not least as the first paper I ever wrote was also on an armored dinosaur in the NHM (Natural History Museum) collections," he said in the statement.

<https://www.cnn.com/2023/06/16/uk/new-dinosaur-vectipelta-barretti-scli-intl-scn-gbr/index.html>



July Birthstone Ruby

One of the most popular traditional jewelry stones, ruby is exceptionally durable. Its colors — always red — can reach vivid levels of saturation. Fine-quality rubies are some of the most expensive gemstones, with record prices over \$1,000,000 per carat.

Rubies have long been connected with physicality and strength. Favored by warriors, rubies were thought to be intimately connected with the human body. They were credited with increasing the strength and stamina of the wearer. Rubies were also thought to calm anger and help the wearer navigate passionate social situations.

Rubies are a radiant red gemstone. Technically, rubies and sapphires are both corundum. Rubies are corundum gems that have a dominant red hue. However, you can find rubies with orange or pink undertones.

<https://www.gemsociety.org/article/birthstone-chart>

Join the Moose Lake Area Chamber of Commerce for

Moose Lake Agate Days

Saturday - Sunday
July 15th - July 16

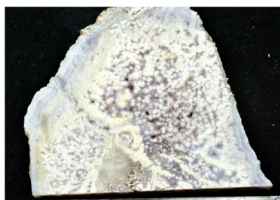
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| Gem & Mineral Show Riverside Arena 20 Earl Ellens Dr. Moose Lake, MN Sat 9am - 5pm Sun 9am - 3pm | Art in the Park Moose Lake City Park 412 4th Street Moose Lake, MN Sat 9am - 5pm |
| Agate Stampede Elm Ave Moose Lake, MN Sat 3pm | Kids Free Dig Saturday/Sunday outside Riverside Arena Farmers Market Saturday 8am - 1pm Sunday 9am - 1pm Steak Fry Saturday/Sunday Moose Lake Fire Hall |



Agates Around The World

Luna Agate Durango & Chihuahua Mexico

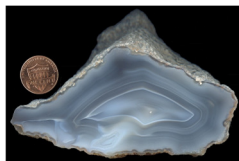
Luna agate is a purple and white orbed agate from Mexico. It ranges from a light, gray/blue/purple with green tones to a vibrant amethystine purple.



Named "Luna" because it was found around the Apollo mission hype and because the spots look like moon craters. The rough material has been said to have a stromatolite texture or a texture from ancient microbes.

<https://www.rockyourworldgems.com/search?q=%22luna+agate%22>

Luna Agate Luna, Grant County, New Mexico



The basalt beds around Luna, New Mexico have produced several similar types of agates passed as just "Luna

Agates" which leads to the confusion with purple colored Luna Agate from Mexico. They tend to be found in large sizes under the blanket of pine needles. Most are fractured, and come in the colors of white, gray, and faint blue/lavender. They may have formed by the agate filling in the irregular gaps lined with calcite. The Luna Agates appeared to have already weathered out of the basalt beds and what remained of calcite are their crystal impressions on the agates.

<http://www.sailorenergy.net/Agates/AgatesNewMexicoLuna01.html>

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
Oregon Geodes
Chalcedony
Desert Rose
Plume Agate
Yellow Jasper
Bruno Jasper
Owyhee Picture Jasper
Brazilian Agates
Amethyst
Obsidian
Mineral specimen
Hauser Bed Agate
Thundereggs
Mexican Geodes
Montana Petrified Wood
Montana Moss
Tee Pee Canyon Agate
Slabs of all sizes and types
Septarian Nodules—Utah
79 Bed Geodes—Oregon
Moroccan White Agate
Mexican Luna Lace Agate

Small Botswana Agate
Smokey Quartz crystals - Colorado
Snowflake Obsidian
Utah Petrified Wood
African Blue Lace Agate
Carnelian Agate
Tiger Eye—red and blue

New!

Tiger Eye—gold & blue Variegated
Obsidian
Condor Agates
Agua Nueva Agates



Polychrome Jasper
Tabasco Agate Pairs
Sunset Jasper
Noreena Jasper
Tiger Iron
Kumerha Jasper
Swazi Agate
Calandria Agate (Mexico)
New Moroccan Agate

Upcoming Midwest July Rock Show

14-15—MINOCQUA, WI: Lakeland Gem Club; Lakeland High School; Fri. 10-6, Sat. 9-5; Free; Email: neatrocks@gmail.com

15-16—MOOSE LAKE, MN: Carlton County Gem and Mineral Club and Moose Lake Chamber of Commerce; Riverside Arena; Sat. 9-5, Sun. 9-3; Free; Email: danlynnsunrisefarm@yahoo.com

22-23—FREDERIC, WI: Indianhead Gem & Mineral Society; Frederic High School; Sat. 10-5, Sun. 10-4; Free; contact Roy Wickman, (715) 357-3223

29—CANTON, SD: Sioux Empire Gem and Mineral Society; Bethany Reformed Church; Sat. 10-5; Adults \$2 Children 12 and under Free; Email: rock-swap@segams.org



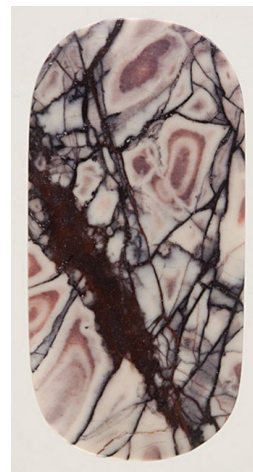
Volunteer Needed

The Club is looking for someone to be a field trip coordinator. This person would look for locations to rock-hound and organize the trip. It would not be necessary to go on every trip, but have contact information available.

Assistance given by Board members.

Call/text Ed Opatz at 320-250-1363.

The World of Jasper Porcelain Jasper



Origin of name: Porcelain Jasper is a descriptive name because many specimens look as if they were assembled from porcelain fragments.

Synonyms and trade names: Exotica or Sci-Fi Jasper

Localities: near Sonora, Sierra Madre, Mexico

Handling: like all Quartzes Ocean Jasper is sensitive to hydrofluoric acid only.

Worth knowing: for German-speaking geologists and mineralogists the term "Porzellanjaspis" stands for rocks which form when ascending magma takes along fragments of clay and marl as inclusions and subsequently gets fritted at high temperatures.

<https://www.edelsteine.at/en/glossaries/lexicon/porcelain-jasper/>

Sunshine Requests

If you know someone who could use a little sunshine—birth, illness, surgery, family death—please contact Joanie Hanson at 218-831-2665.



Gem Encyclopedia



Chicken-Blood Stone

Chicken-blood stones are so called due to their bright red splashes of color, which looks like fresh chicken blood. This material has eight basic colors, which blend or combine in different layers: red,

black, white, yellow, green, blue, gray, and purple. Some specimens may be entirely red. The translucent body colors of the base rock, known as dong, can be white, yellow, or gray.

As with other ornamental objects, chicken-blood stone's value is based primarily on artistry and workmanship. You should also take into consideration any antique value.

In China, the color red traditionally symbolizes good luck. Thus, the Chinese often give red seals made from chicken-blood stone to celebrate weddings, birthdays, promotions, and other successes.

Although jade, both jadeite and nephrite, is also highly prized (and its folklore more well-known in the West), Chinese consumers popularly consider chicken-blood stone a more powerful talisman against evil than jade.

Chicken-blood stone is actually a rock, or mix of minerals, used as a gem material. This fine-grained mixture consists of clay (dickite and kaolinite) and quartz, with varying amounts of cinnabar. The cinnabar content gives this material its red spots, streaks, and patterns.

As jewelry, chicken-blood stones earn the "Display Only" grade for wearability. Reserve this material for display or decorative purposes only. Furthermore, store or display any chicken-blood stones away from sunlight, since cinnabar tends to turn brown when exposed to sunlight. Any change in an object's prized red color will lower its value and appeal.

Although the quartz content has a high hardness of 7, clay and cinnabar have very low hardness (2-2.5). This variation makes working with this material quite challenging for lapidary artists.

Normal handling of finished chicken-blood stone jewelry and decorative objects should pose no health risks. However, jewelers and gem carvers should take special precautions when working with this material. The cinnabar in chicken-blood stones contains highly toxic mercury. Take care when cutting this material. Avoid inhaling dust or fumes and wash your hands after working with it.

Please note that the gem known as blood-stone, with green body color and blood red

spots, is a type of chalcedony. It represents a distinct gem material with different physical and optical properties. Iron oxides create its red to orange spots.

Another chalcedony variety, myrickite, has red spots and layers actually colored by cinnabar. Nevertheless, it's still distinct from chicken-blood stone.

There are no known lab-created chicken-blood stones. However, like other gemstones in high demand with strong symbolic associations, chicken-blood stones have inspired many imitations or simulants. For example, seals sold to tourists as genuine chicken-blood stone objects turned out to be steatite (talc) cores coated in yellow-brown plastic with red streaks. Other imitations include pieces with various red coatings, materials glued to natural pieces of cinnabar, and reconstituted materials with added red lead paint.

Only two known locations, both in China, produce chicken-blood stones: Changhua, Zhejiang Province and Balinyouqi, Inner Mongolia Autonomous Region.

<https://www.gemsociety.org/article/chicken-blood-stone-jewelry-and-gemstone-information/>



Anyone Can Discover a Fossil on This Beach— if You Wait out the Tides

If you want to see where dinosaurs walked and giant, ancient centipedes crawled, just follow their footprints. That's what scientists are doing in New Brunswick, Canada, where the world's highest tides rush and recede over 40 feet twice per day in the Bay of Fundy. Amid rugged foothills and rock cliffs along the Atlantic Ocean, this phenomenon is revealing one of North America's richest caches of fossils.

While researchers make most of the discoveries in this less visited province, citizen scientists—students, local residents, and even visitors—have been involved in a number of significant finds. It's a welcome assist in a place where a piece of the ancient history puzzle might vanish as quickly as it emerges.

"It's a race against the tides," says Matt Stimson, a geology and paleontology curator at

the New Brunswick Museum in Saint John, the province's largest city. "Mother Nature is doing the excavation work for us. Something new is continually exposed. But it can also be erased."

Here's how travelers can see fossils—and help find new ones.



Travelers can dip into New Brunswick's fossil history at parks and preserves up and down the province's 1,400-mile-long coastline. Tour guides lead walking, hiking, and paddling excursions. There's also beachcombing at low tide, when the water recedes as much

as 650 feet and you can walk along the gurgling mudflats of the ocean floor.

You can also go fossil spotting on your own, but consult a tide chart for safety; you have about six hours between the water's lowest and highest points. Once the tide begins to roll in, it rises a foot every six minutes, and

can easily overwhelm a beach in less than an hour.

Some fossil footprints—stuttering zig-zags of toe and tail-drag impressions—are found embedded in cliffs; others turn up in rocks the tides scatter across the sand. By provincial law, discoveries must be left in place—like crime scene evidence—and reported to the New Brunswick Museum,

which then deploys researchers to evaluate them. If the find is significant, you might see your name recorded in the museum.

<https://www.nationalgeographic.com/travel/article/new-brunswick-fossil-tourism-bay-of-fundy?loggedin=true&rnd=1687958348193>



Pebble Pups 2023

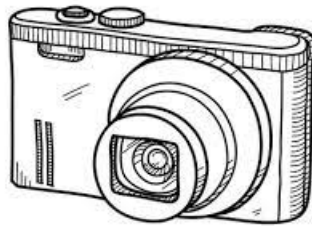


Thunder Bay 2023

Most photos by Josh Martindale



Tips to Photograph Crystals and Minerals



Rock and mineral photography can be complicated, and how you decide to approach it depends on the purpose of the photograph. For the purpose of illustrating research or other texts, it is important to select the specimens which best highlight important mineralogical features, and do your best to represent those through your images – however, when attempting represent an individual specimen for sale, catalog, or digital display, the focus of your images will be to show that specimen as accurately and realistically as possible.

Many factors affect photo quality, and accuracy of representation. Resolution, orientation, focus, lighting, and magnification can all drastically affect the resulting aesthetics. Ultimately, your goal will define the means – but here are some tips which will help you get started.

Representing your specimen

In rock and mineral photography, features such as clarity, intense color, form, crystallization, and previous damage can be difficult to capture – but these aesthetic features are what truly define a specimen. Representing them accurately is both a matter of skill and time, and requires the ability to take oneself outside of the process, and objectively compare the resulting image with reality.

In some cases, it will be impossible to accurately represent particular features through rock and mineral photography. When this occurs, simply do your best to highlight relevant points, and then provide a detailed explanation in your caption or description.

Choosing your angle

Before snapping shots, you'll want to decide your specimen's orientation. Place it on the surface you intend to use as backdrop, and turn it 360 degrees – paying attention to its relative orientation, play of shadows, and the placement of features. When deciding which face or magnification will offer the most attractive images, simply place yourself at the angle and distance from which you would prefer to view your specimen, and close one eye – this will help you envision the resulting two-dimensional image, and adjust your approach, if necessary.

Most rock and mineral photography tends to focus on a center of interest – often a significant, defining feature, or the main crystal growth. When highlighting your center of interest, the general rules of photographic composition apply. Remember that you can always use magnification or digital zoom/cropping to adjust, or to highlight smaller features, later. You might not be able to find just one necessary angle, so don't be surprised if you need to take multiple photos in order to

show the fine mineral specimen the way you wish.

Defining your resolution

Using a long exposure can be helpful in rock and mineral photography – but be sure to

eliminate any environmental vibration beforehand, or the sharpness of the image may be negatively affected. Shooting with filters can also compromise sharpness and resolution, so it is best to shoot as-is, and apply digital filters later, if necessary. Ultimately, your results will be maximized with the use of a great camera, and a high-quality macro lens – so if you intend to take lots of photos of this nature, it is recommended that you invest in both.

Adjusting focus

Focus is incredibly important when it comes to rock and mineral photography. When important areas of a specimen are out of focus, one loses the unique and detailed information which defines that piece – so if you can't capture your specimen with precision in one shot, take several to ensure a well-rounded perspective.

It is best to snap a test shot for review, before taking additional images. This will help you identify any fingerprints, dust, or other photographic intrusions while you still have the ability to address them. If you are having difficulty focusing on a particular noteworthy feature, or need to throw sharper relief in a particular area, reducing the depth of field can occasionally help eliminate distraction, and highlight your area of focus – however, this should be used sparingly, and for highlights only.

Using a tripod to make sure your camera is steady also can be helpful. When photographing small rocks, it can be easy for small movements to cause photos to be out of focus. A strong and sturdy tripod can help avoid these errors.

Reviewing reflections, and play of light
Finding the balance between the display of light and shadow is important. Too much light reflecting off of a crystal face will create a burn-out (which shows up as a white blank in images), whereas too much shadow will create a black-out (where a portion of your specimen is left in darkness). Achieving a good balance and distribution of darkness and light takes time, and practice – but when achieved, appropriate lighting allows the maximum portrayal of detail, while still creating the impression of dimension and depth. It can be helpful to employ the help of a lighting box or other reflective tool, when shooting a particularly difficult specimen.

Ensuring fidelity of color

Color fidelity is drastically affected by the temperature of light – so be sure to use the camera settings appropriate for your light source. Some specimens (particularly blue-green minerals) can be difficult to represent correctly in color, and will have to be adjusted digitally for accurate display. Changing color or saturation should only be done to match the specimen, and should not be done to exaggerate features of the specimen.

Lighting

Lighting is among the most important and most difficult aspects of mineral photography. As mentioned above, the light itself must be the correct temperature, with the brightest light source located above the specimen. Reflectors can be used to provide fill-in light, from other directions, if needed to balance the specimen. The use of a lighting diffuser can also be helpful in the elimination of burn-outs and black-outs, and can create a more appealing image. If using backlighting to highlight physical features or a specimen's internal color, you must be sure to note this when crafting the description of your specimen.

Background

In rock and mineral photography, the choice of background is really an aesthetic one – however, use of a plain, contrasting background is suggested to promote accurate representation, and reduce distraction.

A specimen with a dark border should be placed on a light background (and vice-versa), in order to create definition, and help the specimen stand out. A smooth, matte-finish paper in a neutral color (white, black, or gray) provides an ideal background for most images.

Rock and mineral photography is truly an art form, in and of itself – and it can take years to develop a great eye. Still, practice makes perfect – so experiment with some of the pieces in your own collection, and see where it takes you!

<https://www.irocks.com/essentials-of-rock-mineral-photography>

As a member of the Cuyuna Rock Club you are also a member of the Midwest Federation of Mineralogical and Geological Societies. If you are interested in a MWF membership card they are available at the Clubhouse.

**Do you have any suggestions for speakers, class ideas or instructors?
Contact a Board member.
Board member contact information is on the last page of the newsletter.**

ROX BOX

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



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

Wanted: Rock Saw, 14-16 inch blade and tumbler, 20+ pounds. Contact Mike Stanwood at 218-821-4775.

Tumbling with Vibratory Tumblers

Vibratory tumbling is a great way to tumble stones, small slabs, cabochons, or preforms.

The use of a notebook to keep track of the material you tumbled, the grit steps, days for grit completion, will be of help.

Since vibratory tumbling gives such quick results, CHECK YOUR STONES DAILY.

Use stones of the same hardness in the tumbler. The tumbler bowl should be 50-75% full when loaded. Use a filler to keep your stones from chipping or spalling. Fillers can include hardwood sawdust, maple pegs, small masonite chips, rice hulls, rubber pieces, or ceramic media. For most hard stones use about 1/4 cup of filler per pound of stone. Obsidians will need 50 to 75% filler.

Vibratory tumbling does not round the stones as much as a barrel tumbler. (Note: The use of a barrel or rotary tumbler for the rough grit stage will extend the life of the polyurethane liner of the vibratory tumbler).

ROUGH GRIND or #80 silicon carbide, abrasive grit stage is for smoothing the stones or edges from slabs. Add grit at 1 tablespoon per pound of stone in the tumbler. Rule of thumb is an equal amount of water and grit. Slurry thickness is IMPORTANT. As the stones wear away, the rock dust, moisture and abrasive mix form a slurry which coats the stones. If the slurry is too thick, grinding action will stop. It may be necessary to add more water, a teaspoon at a time, or sometimes the slurry must be discarded. In that case, clean stones, and add grit and water and continue tumbling.

Estimated time for rough grind will be 1-5 days. When this stage is completed, thoroughly clean barrel and lid. Clean stones by rinsing them off on an elevated fiberglass window screen and rinse off with the garden hose and rinse several more times. (Grit in the kitchen sink will clog the pipes.) Grit left in vugs or crystal pockets will contaminate the next stage if not removed.

The harder the material, the more steps of grinding or grit should be used to get a smooth surface. Stones having a hardness of 6 or more should use the following grind or grit

For Sale: 5 spools (10 yards each) of chain in a variety of colors. Includes jump rings and clasps. \$25 for all
Also some sterling silver chain. Please call Marie Israel at 218-924-4017

For Sale: I have many pieces of equipment for sale—saws, tumblers, flat laps, and grinder/polisher/sanders. I also have many wheels and motors. Contact Ed Opatz at 320-250-1363 or opatz1@att.net



sequence: 80, 220, (400/ optional), 500, (aluminum oxide 800 pre-polish/ optional) then polish.

From 220 grit stage on, the average time for tumbling is 24-48 hours. Continue all the grit stages with the same

amount of grit and water as before and tumble, wash/rinse off grit, clean barrel and lid, etc. If you have cabochons hand prepared through the 220 grit stage, they may be added to the tumbler at the 400 grit stage.

FINAL STAGE IS POLISHING: a recommended polish is Rapid Polish #61, (use 1/2 level teaspoon for 4 pounds or rock and media in the tumbler, also tin oxide or cerium oxide are used in the ratio of one tablespoon of polishing powder for each pound of stones. Add water in the ratio of 1/2-1 tablespoon per pound of stone. Add a filler for this stage which aids in thickening the solution surrounding the stones and cushions the load.

IMPORTANT: Do not attempt to operate this cycle with mixture too thin. Load must be coated with a thickened "batter" like solution in order to obtain optimum results. Should the mixture require the addition of water, add sparingly and slowly to bring the mixture to a "thick batter" stage. Approximate time for polish stage is 2-3 days up to a week. When stones have reached the desired polish, they will look as good dry as wet, then wash the load.

A burnish stage for additional buffing or removing any minute traces of polish, may give the stones additional sparkle. Use a powdered detergent, such as Borax, 2-3 tablespoons and an equal amount of water and tumble 3-4 hours. Another option if polish is noted on the stones, use a small amount of Ivory soap chips for a 1-2 hour cycle. Using one more grit sequence of 1000 grit will give even better results.

Wash & dry stones with a terry cloth towel and ENJOY!

<https://stoneageindustries.com/product/tumbling-with-vibratory-tumblers/>

Cuyuna Rock, Gem, & Mineral Society on the Web

www.cuyunarockclub.org

Minnesota Rock Shops

Agate City 721 7th Ave., Two Harbors
218-834-2304

Agate Trails of Fellerer Creations 471
Arrowhead Ln, Moose Lake 320-279-3553

AM Rock Shop 710 E River Rd, Anoka
763-421-2807

Art & Soul 5124 202 Main St Stillwater,
651-275-0255

Beaver Bay Agate Shop 1003 Main St.,
Beaver Bay 218-226-4847

Christy's Crystals 407 N Riverfront Dr,
Mankato 507-720-1061

Designed In Stone 841 Forest Ave E Suite
110, Mora 651-248-8768

Dream in Jasper Crystal Shop 107 N
Meridian St, Belle Plaine 763-301-1058

Enchanted Rock Garden 1228 E 66th St,
Richfield 612-866-1140

Jon's Gem Emporium 184 North Hwy
10, Motley 218-640-1047

Magic Mushrooms in the Crystal Garden
171 Lake St N, Big Lake 612-805-7111

MO'R Designs 2100 Snelling Ave N
Suite 13, St Paul 651-294-3069

Naturally Unique 137 Western Ave N,
Park Rapids 701-429-0409

Rocks and Things 201 N Rum River Dr,
Princeton 763-389-0979

**Rocks & Tools SeashellsbyShelly Rock
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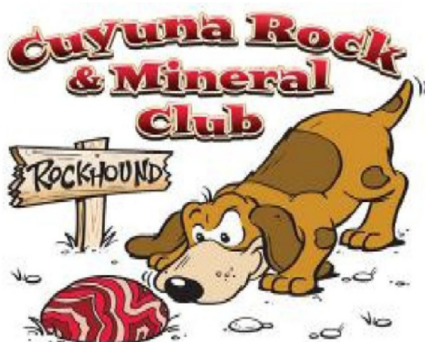
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Notes from the President

A group of about ten, mostly newer members, went on a field trip to the Blue Point Amethyst Mine east of Thunder Bay in Ontario. The weather was okay, for the most part, but the gnats were ferocious. I think everyone was happy with their finds.

There are a couple more field trips scheduled for this summer. One is to a company that cuts large rock for landscaping and monuments. Another is to Montana, which includes a rock show and field trips. You can choose how long to stay and which things you want to do. I would suggest that if you plan on going that you contact me ASAP. There are things that you need to sign up for soon before they fill.

Because the crops in a lot of central Minnesota are delayed we may still be able to look for Lake Superior agates. If you have any where that the Club can go pick, please let me know.

Marcia and I will not be available to lead the field trip to the Northland Monument, Longville, and hopefully an agate pick on Friday, July 21st. Can anyone volunteer for that?

I hope to see many of you at the picnic on July 8th. Bring show and tell of any new finds.



Ed Opatz