

St. Croix Rockhounds
Doug Olson, Editor
211 Interlachen Way
Stillwater, MN 55082



October 2010

First Class

Please send exchange bulletins to:

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Stillwater, MN 55082



October 19th – *The program:*
Minerals and Volcanic Rocks

St. Croix Rockhound's
LEAVERITE NEWS

Vol. 35, Issue 8; October, 2010

Member of:



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ST.CROIX ROCKHOUNDS

MEETINGS: Club meetings are held the third TUESDAY of each month, at Stonebridge Elementary School on W. Elm. St. in Stillwater, MN at 7:15 P.M.. Everyone is welcome.

MEMBERSHIP: Full membership for a single person over 16 is \$7.50 per year. Family membership is \$10.50 per year.

OFFICERS:

President	Victor Martinsen	(715) 247-3700
Vice President	Ron Lewis	(715) 246-5118
Secretary	Bill & Thomas Fernholz	(651) 430-9039
Treasurer	Carol Jensen	(715) 483-1047
Program Committee	Bill Cordua	(715) 425-9544
	Victor Martinsen	(715) 247-3700
Show Committee	Bill Cordua	(715) 425-9544
Refreshments	Freya Kask	(651) 777-6371
Librarian	June Young	(651) 429-3887
Historian		
Sunshine Committee	Marie Newlander MN	(651) 439-7809
Tour Director	Susan Dustin	(651) 430-3933
Liaison Officer	Freya Kask	(651) 777-6371
Newsletter Editor	Doug Olson	(651) 430-9035

The purpose of our organization is to bring together rock and mineral enthusiasts on a regular basis through membership and through pooling of individual knowledge, talents and skills, to improve the lapidary skills of participating members. Affiliation: American Federation of Mineralogical Societies and Midwest Federation of Mineralogical and Geological Societies.

COMING UP! - October 19th - St Croix Rock club meeting will be held at the Stonebridge Elementary School on W. Elm St in Stillwater, MN at 7:15 pm. The program will be a presentation on Minerals and Volcanic Rocks.

COMING ATTRACTIONS

October 16-18th: Southeast Federation Convention and show in Knoxville, Tennessee.

October 16-17th: Minnesota Mineral Club show "Great Lakes, Great Rocks 2010" at the National Guard Training and Community Center, 8180 Belden Blvd, Cottage Grove, MN. \$1 child; \$2 per adult. Saturday 10-5; Sunday 10-4.

October 19th: St Croix Rockhounds club meeting will be held at the Stonebridge Elementary School on W. Elm St in Stillwater, MN at 7:15 pm.

November 13-14th: South Central Federation Convention and show in DeRidder, Louisiana.

November 16th: St Croix Rockhounds club meeting will be held at the Stonebridge Elementary School on W. Elm St in Stillwater, MN at 7:15 pm.

November 20-21st: Madison Gem & Mineral Club Show "Rockin' Madison 50 Years" at 1919 Alliant Energy Center Way; Madison, Wisconsin. Contact 608-251-2601 or e-mail burniesrockshop@gmail.com or check www.madisonrockclub.org.

February 26-27th, 2011: Anoka county Gem & Mineral Club "pre-spring" show at the Har Mar Mall in Rosedale, MN.

April 9-10th, 2011: Anoka county Gem & Mineral Club "spring" show at the Har Mar Mall in Rosedale, MN.

April 16th, 2011: St Croix Rockhounds Annual Club Show at the Valley Creek Mall in Woodbury, MN

Minutes of the St Croix Rockhounds September 21st, 2010

Meeting called to order 7:24 by president Vic Martinsen.

Motion to **approve minutes** was passed.

A discussion followed about The rock tumbler that was donated for the Zumbro field trip. It had a bad check written for it. Motion made to pay Rube \$50 for the tumbler - motion carried.

Treasurers report: note - Carol will no longer be our Treasurer due to a new job conflict. Total \$1480.49 Motion to elect interim Treasurer Tim Wilson, who volunteered, and the motion carried.

Field Trip Committee: Susan mentioned field trip for Keokuk Iowa for Geodefest has several members attending. Spots are still available at Keokuk Motor Lodge.

Tonight's guests: Sandy from Scandia, Jim from Stillwater, Bonny from Pine City, Theresa from Lake Elmo. Welcome Everyone.

Secretary's report – be sure to check the website <http://leaverite.com> and noted that new officers will be elected in January.

Upcoming Programs - October 19th Minerals and Volcanic Rocks. November program A 3M-er amateur archeologist will have program on artifacts, glaciol, and gravel pit materials.

April 16th Valley Creek Mall St. Croix Rockhounds **annual show**.

Pete Rodewald was inducted into the The National Rockhound and Lapidary Hall of Fame. Dr. Curdua also put an article on Pete in the Rocks and Minerals magazine.

Sunshine Committee – No report.

Refreshment committee - treats provided by Ray and Eloise Kimbal and Wendy Flynn. Thanks!

There was a lot of excitement for the **silent auction** to begin with the remaining Klinkhammer Estate specimens.

Meeting Adjourned 7:40 pm

Minutes submitted by Bill and Thomas Fernholz.

Celebrate! October's birthstone is Opal: Mysterious, elusive, varied, and delicate, opal has been treasured since ancient times for its unique properties and beauty.

Opal is a silicon oxide, and thus closely related to chalcedony. But while chalcedony is just **silica**, opal contains a variable amount of water in its structure. Opal is softer than quartz gems, about 5.5 to 6.5 on the Mohs scale, and is much more fragile and brittle than chalcedony. But what makes opal distinctive is its unique play of color, called "fire." There are four types of gem opal:

White opal is opaque, white material that looks much like porcelain. The colors appear as flashes, speckles, or sheets of rainbow colors. White opals are the kind most commonly seen in opal jewelry.

Black opal also contains fire, but the body color is dark gray or black. This accentuates the color play, producing a dramatic effect. Black opals are extremely rare and costly.

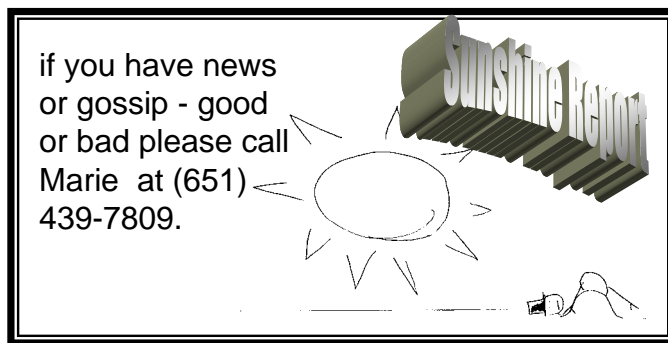
Water opal is transparent, colorless opal that contains brilliant flashes of color swimming within it.

Fire opal is transparent or translucent opal with an orange or red body color. It may or may not display fire. The term "fire opal" is frequently misused. Opal that has color play is called precious opal. The color play itself is called fire. Fire opals are simply reddish or orange opals, usually turbid, that may not have any fire!

October birthdays:

LeRoy Betlach – 3rd

Floyd Kimball – 10th



Opal – Birthstone for the Month of October:

Chemistry: $\text{SiO}_2 \cdot n\text{H}_2\text{O}$; Hydrated Silicon Dioxide.

PHYSICAL CHARACTERISTICS:

Color is white, colorless, pale yellow, pale red, gray or black when impurities are common. Diffraction can cause flashes of any color of the rainbow (opalescent).

Luster is vitreous to pearly.

OPAL Transparency: Specimens are transparent to translucent. Crystal System: Does not apply because opal is amorphous. Habits include massive, cavity-fillings such as in fractures and geodes, nodular, reniform or as a replacement of other minerals and wood. Cleavage is absent. Fracture is conchoidal. Hardness is **5.5 – 6** Specific Gravity is approximately **2 - 2.5** (light) Best Field Indicators are color play (opalescence), low density, fluorescence, fracture filling tendency and lack of cleavage or crystal faces. Opal is considered a mineraloid because this structure is not truly crystalline. The chemistry of Opal is primarily **SiO_2** and varying amounts of water. The amount of water varies from 5 -10% and greater. This water can help geologists determine the temperature of the host rock at the time the opal formed.

Although there is no crystal structure, (meaning a regular arrangement of atoms) opal does possess a structure nonetheless. Random chains of silicon and oxygen are packed into extraordinarily tiny spheres. These spheres in most Opals are irregular in size and inconsistent in concentration. Yet in Precious Opal, the variety used most often in jewelry, there are many organized pockets of the spheres. These pockets contain spheres of approximately equal size and have a regular concentration, or structure, of the spheres. This has the effect of diffracting light at various wavelengths, creating colors. Each pocket produces a different color, with a different intensity depending on the angle from which a viewer sees it. The multicolored flashes of light that Opal emits gives it a truly beautiful and valuable look. The name opal probably is derived from the Sanskrit name for precious stone; upala. It has been mined for centuries, at least since Roman times when they extracted the opal from areas now within the Czech Republic. The Aztecs made use of local Mexican sources as did the Spaniards when they exported the material back to Europe. Today most precious opal comes from Australia with significant sources from Mexico and the Western United States. Reprint from the Gemstone Gallery at:

<http://mineral.galleries.com/minerals/gemstone/peridot/peridot.htm>

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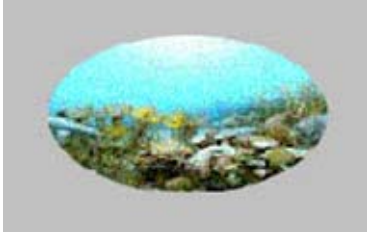
<http://mineral.galleries.com/> Photos Courtesy of Jessica Dow of Different Seasons –

<http://www.differentseasonsjewelry.com/>

via Rock Chippings 10/08



What Is A Geode? from <http://allicatsrocks.com/whataregeodes.html>



The term geode is derived from the Greek word Geoides which means "earthlike." A geode is a sphere or oval shaped rock which contains a hollow cavity lined with crystals. Most geodes have a hollow center with quartz crystals and various mineral formations inside. Some geodes are completely filled with small compact inward growing crystal formations such as quartz, agate, jasper or chalcedony and are called nodules. The only

difference between a geode and a nodule is that a geode has a hollow cavity, and a nodule is solid. Geodes begin as bubbles in volcanic rock, animal burrows, balls of mud or tree roots in sedimentary rock. Over time, the outer shell hardens and water containing silica precipitation forms on the inside walls of the hollow cavity within the geode. The silica precipitation can contain many varieties of dissolved minerals, the most common being quartz, but calcite, amethyst and many others are also found.



How did Keokuk Geodes form?

During the Paleozoic Era, much of the Midwest portion of North America was covered by a vast sea. The later half of the Paleozoic Era called Mississippian Period (360 to 320 million years ago) was the last time that Iowa was covered by carbonate producing seas.

In this Mississippian Period, the Keokuk, Iowa area lay almost directly under the equator. The climate is thought to have been tropical, hot and arid. Different types of rock sediment in the area suggest fluctuations in the sea level over long

periods of geologic time. Sediments containing small fossils and quartz sand represent periods of shallow water, while sediment absent of fossils and quartz represent periods of relatively deep water. It was in the sediment of these deep sea bottoms that the concretions (mineral masses which are caused by replacing rock sediment) formed which were much later to become the Keokuk Geodes. Large invertebrate shell life inhabited these seas and probably some of these creatures burrowed into the sea floor to escape predators. Some of these invertebrates died in their safe burrows. As with all decaying organic matter, the decomposition of these creatures by bacteria released chemicals which caused the water to become very alkaline. Calcite, a mineral found in limestone and marble, is attracted to these areas of alkalinity. Balls of calcite began forming around the decaying matter and concretions began to grow. Later silica replaced the calcite and began to form the chalcedony (a crystalline variety of silicon dioxide) shell which is found on all Keokuk Geodes. Minerals were deposited into the hollow core by flowing water which passed through tiny fractures in the chalcedony shell. Quartz is the most common and most attractive of minerals found in Keokuk Geodes but many others also formed during these early formations such as, kaolinite, calcite, pyrite, sphalerite. During the latter stages of the Paleozoic Era, the Pennsylvanian Period, fluctuations in the sea level and pressure allowed other minerals, barite, dolomite, aragonite, marcasite, geothite and chalcopyrite to begin forming crystals. Over a period of millions of years, layers of silica cool, forming crystals of different minerals within the cavity. Different types

SAWING (OR WHAT'S

INSIDE?) Roger K. Pabian, Lapidary Chair

There is a common belief that you never know what will be inside a rock until you saw it open.

There may be some surprises, but the lapidary has a lot more control over what sawing will produce than is commonly believed. The biggest mistake is fitting the rock into the vise. ("This rock fits perfectly into the vise, therefore, that must be the direction in which I should cut it.") I have seen hundreds of slabs of aventurine that have no sparkle because they were cut in the direction in which they most conveniently fit into the vise. The same holds true for tiger eye and for most feldspars, such as labradorite or spectrolite.

The solution to getting the proper cut is no farther away than the scrap wood pile and some white glue such as Elmer's™ Glue. If you have a piece of aventurine and you want maximum sparkles, glue the piece to the lumber scrap with the sparkly side up.

Give the glue about a week to dry and set up hard, then set the stone in the vise with the sparkles parallel to the blade. You should end up with some very nice slabs.

Tiger eye and feldspar are nice blocky minerals that fit very nicely into the saw vise, all in the wrong way. With tiger eye, make the cut such that it is parallel to the direction of the broken, fibrous surface.

Glue one of the fibrous surfaces to a board and get ready to cut some very fine eye material. The tiger eye will be at an angle to the saw blade, and not in a block that is essentially perpendicular to it.

For feldspars, to orient the stone, take the block you wish to cut and roll it about under a

bright incandescent lamp. (Do not use fluorescent lights or the ecologically safe lights as these do not have the proper wave lengths of light to be of any help.) You will find that when the surface of the stone shows the maximum reflection and color, that surface will be about 10 degrees off of the horizontal. Making your cut parallel to that surface will produce the best effect.

You will need to have a few shims to set the block at about 10 degrees to the board. Make sure to not cut wood with your diamond saw; use small rock scraps for shims, or cut some from a soft rock such as alabaster or limestone.

When slicing agate nodules, cuts parallel to the surface will produce an opened pattern, whereas cuts that are perpendicular to the surface produce a tightly banded fortification pattern. By different orientation of the stone, you can produce opened or closed patterns at will. Too many lapidaries tend to throw away the end cuts of agate nodules, but these often produce some of the most outstanding patterns when the surface is sawed away. My late friend, Bill White, won many American Federation trophies for his cabochons that came off of the end cuts; material that most people would have thrown away.

When working with big cabochons, it is often quicker and less expensive to remove the excess material with the trim saw. This was especially true when carbide wheels were in vogue, and diamond grinders were not in use.

At any rate, you are the one in charge when sawing a rock. The rock doesn't have any say in the matter. Don't be hasty; use some glue and board scraps. Treat the material with the care and kindness it deserves. *MW Fed Newsletter 9.2006*



FLAT LAPPING WITHOUT A MACHINE

The process of flat lapping is so simple that anyone can do it even if you don't have a flat lapping machine. So go to it and polish the bookends you want, or that clock face.

Just get a piece of aluminum about 12-14 inches square. (Larger for larger pieces.) Place it on a flat surface. Take a teaspoon of 120 grit (or even 90 grit if you have saw marks on your slab.) Mix your grit with Vaseline or water. (I like Vaseline because it holds the grit better, doesn't dry out and doesn't splash.)

Now take your slab to be polished and dop a piece of wood to it so that you have a handle and can hold it down on the grit. Just keep twisting it over and around on the grit. Be sure that your grit is always under the slab. Don't run it over dry aluminum. Move the slab in any pattern you wish, adding grit as you feel necessary. Keep at it until all the saw marks are well gone. Wash the stone and aluminum between grades of grit using progressively finer grits as you go. The slab should now be ready for polishing.

To polish, use a piece of leather about 12x12 inches. Stick it to a board and keep it for polishing only. Don't tack it down because the tack heads can scratch. Put your favorite polishing mix all over the leather and start polishing your stone. This is the oldest way to polish slabs and it still works well, if slowly. In answer to the statement that it will take a long time, a question, "What else would you be doing?" from THE SOUTHWEST GEM 2/03 via The Glacial Drifter 3/03 via Stoney Statements 05/10

In recognition of the fact that a number of club members are going to geode-fest in Iowa in late September, I wrote this list below which may be suitable for the Sept. or Oct. newsletter.

People's heads are like geodes because:

- they come in all sorts of colors.
- they can ring when struck.
- some are smooth and some are bumpy.
- some are open and some are closed.
- some are light and airy and some are pretty dense.
- some are hard and solid and some are empty .
- some are really sensitive and crack easily.
- some get rattled when shaken and others get sloshed.
- some look like old fossils on the outside.
- some are used for decoration and not much else.
- you can put funny hats on both of them
- BUT MOSTLY - all are unique, and you can never tell what wonders are on the inside just by looking at the outside.

--Bill Cordua

That Was Close – Twice!

On Tuesday, September 8, 2010 two small asteroids zipped past earth – both closer than the moon. Asteroid 2010 RX30 is estimated to be 32 to 65 feet in size (10-20 meters) and passed within 154,000 miles of Earth at 4:51 a.m. CDT. Asteroid 2010 RF12, about 20-45 feet in maximum width (6-14 meters), passed within approximately 49,088 miles (five times closer than the moon) of us at 4:12 p.m. CDT – less than 12 hours after the first. These objects were detected by the Catalina Sky Survey on Sunday, two days before closest approach. I suppose Bruce Willis was on vacation – just our luck.

Considering that the Wisconsin meteorite of April 14 was 3.3 feet in diameter, these babies would have made an impressive display had they smacked the earth! *from the Agateer 09/2010*

Stolen Gems *St Croix Rockhounds Leaverite News*

For the Linguists – as a beginner in this hobby, I was surprised to learn that “lapidary” referred not only to the form or hobby or endeavor, but also to the practitioner. One who does lapidary is a lapidary – not a lapidarist or lapiderrier, or lapidaryer. Can you think of any other activities/professions, where the practitioner and the practice are exactly the same term? A jeweler deals in jewelry, a baseball player plays baseball, a teacher teaches, a gardener gardens –*ed of the Agateer 06/2006 (ed. A cook will cook or is that a chef will cook?)*

An ounce of gold is heavier than an ounce of almost anything else? True! Gold is measured in Troy ounces while almost everything else is measure in Avoirdupois ounces. But.... a pound of gold is lighter than a pound of almost anything else as there are only 12 Troy ounces in a Troy pound while there are 16 Avoirdupois ounces in a pound of other things. –ed.

Ignimbrite - as Scott Moss discussed at the June meeting, ignimbrite is a noun and is defined as “A volcanic rock formed by the welding together of tuff material from an explosive volcanic eruption”. The New Zealand geologist Patrick Marshall derived the term 'ignimbrite' from 'fiery rock dust cloud' (from the Latin *igni-* (fire) and *imbri-* (rain)), formed as the result of immense explosions of pyroclastic ash, lapilli and blocks flowing down the sides of volcanoes. *from the Agateer 07/2010*

Floor Sanding Paper: Floor sanding paper will give amazing results in removing saw marks from slabs or specimens. Even if the sandpaper has been used it will still do a good job. Editor's note: This was actually the basis for one of the best dry lap polishers I've seen, Rockhounder's Paradise. It used an 18 inch steel disk with a floor sanding disk glued on with white glue that only cost a few dollars at rental stores last I knew. As the disk wore down, it did the polishing step too and produced a dead flat surface with a mirror finish. The polisher is no longer available new and tends to be expensive used, since it is an excellent polisher. It should be possible to make a home version. The hard part would be in making the counter-rotating chambers the stones sit in. *from Carny Hound 11/62 via Carny Hound 05/10 via Stoney Statements 09/2010*

Rock Bags: To make a good rock bag, take a pair of old jeans. Cut off one of the legs (about 24" is a good length) and sew one end closed. Of course, you can cut off more or less, depending on how much you think you can carry. Put in a draw string. *from Carny Hound 11/62 via Carny Hound 05/10 via Stoney Statements 09/2010*

Cutting the Last Slab: To cut that last slab from your favorite piece, use waterglass. Apply a thin coating to a board small enough to fit your vise. Then put the rock on the board, moving it around until it has a firm seating. Let dry for at least 24 hours. To remove the piece remaining on the board, soak in hot water until it slips off. Editor's Note: Waterglass used to be available at pretty much any drug store. Not so anymore. In fact, I haven't seen a source in quite a few years. It was used to fill cracks in stones more than about any other lapidary purpose. Current replacements would be Opticon for filling cracks and regular white glue to glue the slab to a block of wood that can go in the vise on your saw. As with waterglass just soak the block of wood for a few days after cutting to soften the glue and remove the slab.

Another option is a special rock grabber vise. These have the advantage of being much quicker than glue but are frequently hard to get softer materials to lock in without chipping out the edge. They come in multiple sizes.

from Carny Hound 11/62 via Carny Hound 05/10 via Stoney Statements 09/2010



Capping Stones: When capping stones, set them in a shallow dish of salt while the cement is drying. Salt packs better than sand and is easier to wash off. *from Australian Lapidary Magazine via Stoney Statements 09/10*