

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



# February 2011

*First Class*

Please send exchange bulletins to:

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211 Interlachen Way  
Stillwater, MN 55082



February 15<sup>th</sup> - *The program: Those Fabulous Thundeggs*

St. Croix Rockhound's  
**LEAVERITE NEWS**

Vol. 36, Issue 2; February, 2011

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	Ron Lewis	(715) 246-5118
Vice President	Dave Rusterholz	(715) 425-8088
Secretary	Bill & Thomas Fernholz	(651) 430-9039
Treasurer	Tim Wilson	(715) 220-5808
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	Brad Bonse	(651) 439-6832
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! - February 15<sup>th</sup>** - 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 "Those Fabulous Thunder Eggs - A Gallery of Rare and Unusual Specimens". This is an award winning slide program obtained from the Midwest Federation. Members are encouraged to bring to the meeting any thunder eggs they may have in their collection for a little show and tell. It would be particularly fun if any members have had some experience self-collecting thunder eggs from Oregon or elsewhere.

## COMING ATTRACTIONS

**February 15<sup>th</sup>:** St Croix Rockhounds club meeting will be held at the Stonebridge Elementary School on W. Elm St in Stillwater, MN at 7:15 pm.

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

**March 15<sup>th</sup>:** St Croix Rockhounds club meeting will be held in River Falls on the University of Wisconsin campus. The program will be a Silent Auction

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

**April 16<sup>th</sup>:** St Croix Rockhounds Annual Club Show at the Valley Creek Mall in Woodbury, MN

**April 16-17<sup>th</sup>:** Chippewa Valley Gem and Mineral Society Show at Eau Claire County Expo Center, Lorch Rd., Eau Claire, WI; Sat 9-5, Sun 10-4.

**June 18<sup>th</sup>:** Rock swap/sale in Osseo, MN

**July 9-10:** Anoka county Gem & Mineral Club "summer" show at the Har Mar Mall in Rosedale.

**Feb 15 St Croix Rockhounds:** The program will be "Those Fabulous Thunder Eggs - A Gallery of Rare and Unusual Specimens". This is an award winning slide program obtained from the Midwest Federation. Members are encouraged to bring to the meeting any thunder eggs they may have in their collection for a little show and tell. It would be particularly fun if any members have had some experience self-collecting thunder eggs from Oregon or elsewhere.

## Minutes of the St Croix Rockhounds January 18<sup>th</sup>, 2011

**7:18 Meeting** Started by President Vic Martinsen.

**Meeting minutes approved** for November with the exception that the Find of the year mistakenly listed 2009 instead of 2010.

**January snacks** provided by Freya Kask and June Shalander.

**February refreshments** will be provided by Susan dustin and a volunteer yet to call Freya

**Treasurers Report:** Dues are overdue and we are late getting our MWF dues in. Tim hasn't been able to get the bank account transferred over from Carol.

**January meeting program:** Find of the year, and show and tell

**February Program:** Fabulous Thunder Eggs program. If you have an interesting Thunder Egg Please bring it in.

**March meeting** will be at UWRF since we lose the Stonebridge School classroom for March. The program will be a silent auction.

**Show Committee:** The Club Show will be Saturday April 16th 9am-3pm at the Valley Creek Mall in Woodbury MN. Members with displays should show up about 7am for there display setup. Sign up to display at the show starting February and March. Don't forget the Easter Bunny will be there again.

The **Sunshine Committee** noted Roy Betlatch has had a hospital stay and is home now. We wish him a speedy recovery!

**Elections:** The President will have to step down according to the by-laws. **Ron Lewis** was reluctantly volunteered, Thanks Ron.

Vice President: **Dave Rusterholz** volunteered for the position.

Secretary: Bill Fernholz volunteered to step

down after his two year term. No one volunteered so he will continue until somebody volunteers or is named.

The Secretary's duties include taking meeting minutes and emailing them to Doug for the newsletter. It's pretty simple!

Bill Fernholz will continue to be the webmaster and keep the club website <http://www.Leaverite.com> up to date in addition to his Secretarial duties.

Treasurer: **Tim** already volunteered a couple months ago to take over for Carol due to her conflict.

Brad Bonse is the librarian for the club his phone # is 651-439-6832. There are many interesting books in the collection available for members.

**Visitors:** We welcomed Chris Johnson Dr. Cordua's student, Gordy S., Gary and Beth G., and Barb Simon.

Motion to **Adjourn** seconded at 7:40pm

**Door Prize winners:** Jim S., Joe M., Dave F., Reubin S., and Joyce K.

### **Find of the Year Winners:**

Lake Superior Agate - Bonnie Cindman

Fossil - Norma Schutt

Polished Stone - Jim Swanson

Open Class - Hope Olson

Roy Betlatch has had a hospital stay and is home now. We wish him a speedy recovery!

if you have news or gossip - good or bad please call Marie at (651) 439-7809.



# Celebrate!!!

February's birthstone is the amethyst. The bright purple amethyst was originally very expensive. Ancient Greeks decorated goblets and other expensive pieces with them. Often worn for protection from contagious disease, the Amethyst was also thought to bring tranquillity to the wearer's life.

Because amethyst was thought to encourage celibacy and symbolize piety, it was very important in the ornamentation of Catholic and other churches in the Middle Ages. Amethyst was, in particular, considered to be the stone of bishops and some still wear amethyst rings .

Amethyst was considered to be a strong antidote against drunkenness and the gemstone still symbolizes sobriety. Ceremonial wine is frequently drunk from goblets fashioned from it.

**Birthdays** – none admitted

**Anniversaries** – none



## Making Your Own Unique Cabinet Knobs *by Debbie and Dave Ortman from The Agate Picker 01/11*

We remodeled our outdated 1930's style kitchen during the summer of 2009 and wanted to add an original touch. So after gutting the old kitchen, putting in new oak cabinets, dark counter tops, new flooring and new appliances, we decided to make our own cabinet knobs.

As longtime avid rock collectors who have lived almost our entire lives next to Lake Superior it should be no surprise that we wanted to use Lake Superior agates to make the cabinet knobs. We have been selling agates as tailgaters at the Moose Lake Agate Festival for over three years and have polished agates of various sizes. Although not as many as we had thought because besides selling agates at the festival we also give agates away at various events. It took several months but we have finally replaced all 48 knobs in our new kitchen.

Once we decided to make our own knobs we started doing research on the internet and found some information but most of it wasn't very helpful and many sites will only sell you finished rock-type knobs, not the supplies to make your own. Finished rock knobs that are available for sale online range from \$5.00 to over \$20.00 a piece.

The most important part one needs to make your knobs is the "base". After spending many hours searching for an appropriate base including going to local hardware stores and researching on the internet, we found only one source for a base and that was [www.hardwarehut.com](http://www.hardwarehut.com) which carries different finished bases for custom cabinet knobs and pulls. We ordered the antique brass finish ferrule base 5/8" (16mm). They \$2.26 each and do not include the screw. The cabinet knob and pull stem is 8-32 threaded to accept any 8-32 screw.

The best type of glue to use is a two-step epoxy. We would recommend Super Glue Quick Setting Epoxy which is a two-step epoxy adhesive: one tube contains the resin and one tube contains the hardener which when mixed together form a bonding agent that sets in 5 minutes. In our first attempt we used Gorilla Glue and the rocks fell off after a few weeks, plus the glue really expands and is not translucent, so do not use this type of glue.

Decide how you want to position the agate on the knob and then to insure good contact, roughen up the surface of both the base and the polished agate (where they connect and will have contact) with some carbide sand paper. Once you have mixed the epoxy and applied to just the knob side, position the agate, press firmly and let sit for 24 hours before putting your new knobs on the cabinets.

Everyone who enters our kitchen admire our beautiful Lake Superior Agate knobs and we couldn't be prouder.

## Recommended Polishes For Lapidary Materials from Benjamin E. Schmidt

[Ed. Gem Cutter News note: I found this list of recommended polishes in some old files recently. It was compiled by Ben Schmidt at least 10 years ago and given to me for my own use. Ben was an excellent cutter and so I thought I would share the list with you.]

	Cerium Oxide	Tin Oxide	Linde A	Diamond	Chrome Oxide		Cerium Oxide	Tin Oxide	Linde A	Diamond	Chrome Oxide
Actinolite		✓				Labradorite		✓			✓
Agate	✓	✓				Lapis Lazuli		✓	✓		✓
Alabaster		✓				Lepidolite					✓
Amazonite		✓				Limestone	✓	✓	✓		✓
Amber		✓				Malachite		✓	✓		✓
Amblygonite		✓				Moonstone		✓			
Andalucite		✓				Nephrite		✓	✓		✓
Apatite			✓		✓	Obsidian		✓			✓
Aventurine		✓				Onyx	✓	✓			✓
Azurite		✓			✓	Opal	✓	✓			
Apophyllite					✓	Peridot		✓	✓	✓	
Aragonite					✓	Petrified Wood	✓	✓	✓		✓
Axinite	✓					Phenocite		✓			
Barite					✓	Pollucite		✓			
Benitoite	✓					Quartz	✓	✓			
Beryl	✓	✓		✓		Rhodochrosite		✓	✓		✓
Bloodstone			✓			Rhodonite	✓		✓		✓
Brazilianite		✓				Ruby				✓	
Calcite		✓			✓	Rutile			✓		
Cassiterite		✓				Sapphire				✓	
Celestite					✓	Scapolite	✓				
Cerossite					✓	Scheelite					✓
Chrysoberyl				✓		Serpentine		✓	✓		✓
Coral		✓				Smithsonite		✓			
Corundum				✓		Sodalite	✓				
Cubic Zirconia				✓		Sosolite	✓				
Danburite		✓				Spinel		✓	✓	✓	
Datolite		✓				Sphalerite					✓
Diopside					✓	Spodumene		✓			
Dioptase	✓					Sunstone		✓			
Diorite	✓	✓	✓		✓	Thompsonite	✓				
Enstatite		✓				Tiger-eye	✓	✓	✓		
Epidote		✓				Titanite (sphene)		✓			
Euclase		✓				Topaz		✓	✓	✓	
Feldspar	✓	✓				Tourmaline		✓	✓	✓	
Fluorite		✓			✓	Turquoise	✓	✓	✓		
Gamet	✓	✓	✓	✓	✓	Unakite	✓				
Goldstone	✓	✓				Varicite	✓	✓	✓		
Hematite	✓					Vesuvianite	✓				
Hickoryite			✓			Williamsite			✓		
Howlite	✓	✓	✓		✓	Wonderstone,		✓	✓		
Hypersthene		✓				Wulfenite					✓
Jadeite	✓	✓	✓		✓	Zircon		✓			
Jasper	✓	✓	✓		✓	Zoisite	✓				
Kyanite		✓									

from Gem Cutters News 3/98 via Rock Rollers, 4/00

from Augusta Gem & Mineral Society Newsletter 01/09

## **Special Colours of Gold: Purple** *From the World Gold Council web site: [www.utilisegold.com](http://www.utilisegold.com)*

But gold is yellow? Pure gold is a deep yellow colour and conventional carat gold jewellery alloys can range from red through yellow to pale yellow/green and even white by varying the alloying metals. But it is possible to make gold jewellery that exhibits unusual colours such as purple and blue and black. How is this possible? Well, this can be accomplished by one of two techniques: formation of special gold metal compounds (intermetallic compounds) or by a surface coating or patination. Both approaches can yield attractive colours but they do have some disadvantages over normal carat gold alloys.

Purple gold (also known as amethyst or violet gold) - When gold and aluminium are alloyed in a certain fixed ratio, they form a gold intermetallic compound with the chemical formula AuAl<sub>2</sub>. That is one atom of gold to two atoms of aluminium. This compound has an attractive purple colour, as the pendant illustrates. In terms of composition, this compound is about 79% gold by weight and hence is hallmarkable as 18 carat gold.

All intermetallic compounds, and purple gold is no exception, tend to be very brittle. They cannot be easily worked by conventional metal working processes. If one attempted to roll or hammer a piece of purple gold, it would shatter into pieces!

It also tends to tarnish easily, according to P. Gainsbury (*Aurum*, no 20, p.40, 1984).

Melting gold and aluminium together to make purple gold is not easy and requires vacuum melting equipment. However, it is possible to melt and cast pieces of purple gold into a mold. The compound has a melting point of about 1060°C, higher than that of both gold and aluminium, which is indicative of the compound's high stability. The purple colour can be retained at aluminium contents as low as 15%, but such alloys will be 2 phase, comprising the purple compound and some aluminium-rich solid solution. These non-stoichiometric alloys will tend to be less brittle in their mechanical properties, but the colour will be diluted.

Cast pieces can be machined or faceted by grinding or milling to form pseudo 'gem stones' which can be set in conventional gold jewellery.

An alternative approach to making jewellery with purple gold decoration is to physically vapour deposit (PVD) the two metals, gold and aluminium, in the correct ratio onto a carat gold substrate. Such processing can be done by a number of PVD techniques such as sputtering. Jewellery made by this approach is commercially available.

A powder metallurgy approach is also possible, with additions of 7-30% cobalt, nickel or palladium powders added to the gold-aluminium powder, which is pressed and sintered (Japanese patent JP62240729, 1987). It is claimed that such alloys are of good purple colour and have satisfactory workability. Similar alloys are also claimed in a patent, WO 00/46413, granted in 2000 to Singapore Polytechnic.

In a new patent (Japanese patent JP 2003183710), ornamental purple gold alloys containing 70-85% gold, rest aluminium, are claimed which are made by vacuum melting an ingot, atomising it centrifugally and the powders packed in a mould and electrical discharge sintered. Partial surfaces may be strengthened by diffusion bonding with pure gold, silver or platinum or alloys thereof.

Purple gold wires can be made made (Japanese patent JP4176829, 1992) by bundling gold-plated aluminium and aluminium-plated gold wires together and drawing them down to produce a composite wire, which is then subjected to a thermal diffusion treatment at 450-700°C in a reducing atmosphere. This way, a wire with a fibrous structure of purple gold (with some gold in a 2 phase structure) is claimed that is tough and flexible. Such a diffusion process can also be used to provide a purple gold effect on gold jewellery by depositing a layer of aluminium onto the surface and doing a thermal diffusion treatment to form the purple compound.

## What are Thunder eggs?

“Thunder egg” is a popular rockhound term for a nodule, usually spherical in shape and often a bit knobby or ridged, found in silica-rich volcanic rocks such as rhyolite. They are particularly typical of volcanic rocks that came out as hot ash eruptions, rather than lava flows. They can range from an inch or so to several feet across. Most are the size of a baseball - or some really disgusting hailstones. Thunder eggs are silicified and have angular star or sunburst shaped central openings that are filled to partly filled with secondary minerals such as quartz or opal. The quartz is massive or as drusy crystals or chalcedony. Agate---filled thunder eggs are particularly attractive and are routinely cut and polished by rockhounds. The chalcedony often may be banded, often in flat strata---like or onyx---type layers. Many times these resemble scenery, especially seascapes or skylines. The chalcedony can have plumes and a wide range of colors. The colors tend to be more muted compared to colors in other agates, with clear, white and shades of blue most typical. Other minerals known form in thunder eggs include zeolites such as natrolite, calcite and sulfides such as cinnabar.

Why are they called thunder eggs? One story goes to the fact that many good beds of thunder eggs are found in the Pacific Northwest, which is still quite volcanically active. According to local Native American lore, the volcanoes are inhabited by Thunders Spirits, the loud rumblings of the peaks during an eruption being their stirrings. These round rocks are what they threw at each other during their conflicts. Since thunder eggs are found in volcanic ash beds that have erupted explosively, this is not that a bad an interpretation. However the thunder eggs themselves were formed inside the ash beds after the eruption, not by being flung into the air.

If not by being hurled by angry gods, how do thunder eggs form? As you might expect, this is much debated. Most authors agree that it has to do with the release of watery gases from the cooling volcanic glass. Volcanic glass is not stable over long geological period. It slowly crystallizes, or devitrifies. In volcanic glass water is trapped on the molecular scale in its chaotic internal structure. As the glass crystallizes to form quartz and feldspar, neither of which incorporate water into their crystal structure, the water is expelled and builds up as gas in the unaltered rock. The gas under pressure then gets released, leaving behind a cavity. Contraction as the surrounding rock cools also helps develop the cavity. The cavity filling comes in later, through cracks and pores, forming the chalcedony and other minerals. An excellent review of thunder egg geology, as applies in particular to a locality in Colorado, is given by Daniel Kirk in a 2002 article in Rocks and Minerals magazine.

Thunder eggs can be found at many places in the world. The deposits in Oregon are the world's most famous localities, with dozens of productive sites. They are formed in the abundant volcanic rocks extruded during Tertiary to Recent times by the many volcanoes in the region. There are places they can be dug for a fee. In fact, thunder eggs are Oregon's official state rock.

Thunder eggs, though, can be found anywhere geologic conditions are right. They can be found in many of the geologically active areas of the American West, such as California, Colorado, Nevada, Idaho and New Mexico. They also are known to be from Germany, Australia, Turkey, Mexico and many other locations around the world. Recently thunder eggs have been found in Wisconsin, in some of the older volcanic rocks. These are unique in that they have purple and green fluorite filling. Thunder eggs have also been reported from the volcanic rocks of northern Minnesota.

Good news for thunder egg enthusiasts! There is a thunder egg festival each July in Nyssa, Oregon. This features fun, food, a quilt show, a car show, and, of course rock sales and rock hunts. What's not to like? ---- **Dr. Bill Cordua, U. of Wisconsin – River Falls.**

Reference:

Kirk, Daniel, 2002, "Occurrence and genesis of Thunder Eggs containing plume and moss agate from the del Norte area, Saguache County, Colorado", *Rocks and Minerals* vol. 77, pp. 252-268.

# Stolen Gems *St Croix Rockhounds Leaverite News*

**Jump Rings** – It's better to use a round jump ring on the end of a chain instead of an oval one. Oval rings will wear faster because tension on the chain concentrates wear on the smaller ends of the jump ring. Wear is distributed evenly on a round jump ring because it can rotate through the last link of the chain and the clasp. This gives the ring a longer useful life. *from the Voice 12/10 via Rock Chips 01/11*

**Hot Tip on Thundereggs** - Many lapidaries now heat nodule and thunder egg halves under a heat lamp for a few minutes, before polishing with tin oxide or cerium oxide on felt. The polish comes up almost instantly. Alternatives include putting specimens in a 200 degree oven until warm to the touch, or putting specimens in a kettle full of hot water until they are warm. Dry off excess water before polishing. *from the Voice 12/10 via Rock Chips 01/11*

**Patina Using a Hard-Boiled Egg** - I've demonstrated this popular non-toxic patina in my newsletter, workshops, and in my "Cool Tools and Hip Tips" column in *Lapidary Journal Jewelry Artist* magazine. All you need is a peeled warm hard-cooked egg, your piece and a ziplock bag.

Put the warm egg and the piece in the bag, seal it tight and let the bag sit on the countertop for a few hours. You'll get a gentle, subtle patina from the sulfur of the egg yolk. Throw the egg away once you've got a color you like. Again, seal your patina with Krylon or wax (Renaissance, Butchers, or floor wax all work well, and a tiny dab will protect a large pendant or brooch). *from the Voice 12/10 via Rock Chips 01/11*

**Polishing Talc** – *by Richard Chappell, Jr., Houston Gem & Mineral Society* The natives of Brazil have used the talc found there to make common utensils such as cooking appliances. Professional talc carvers from Anapolis-Goies, Brazil showed me this quick method when they visited Houston, Texas, in a nation-wide tour.

- 1) Cut the talc into size desired with hand saw (even the pros didn't use any electric equipment except a lathe for hollowing out bowls and pots). Sometimes this step may be skipped if the piece is of correct size.
- 2) Carve the talc into approximate shape with a knife.
- 3) Sand with 220 or 400 grit sandpaper.
- 4) Smooth with quadruple zero (0000) steel wool, the finest available.
- 5) Heat in strong sunlight or warm oven until slightly warm to the touch.
- 6) Rub with clear paste wax while the talc is still hot, and you have got yourself a finished carving.

Reasonably pure talc is required, but impurities give it a delightful marking or pattern. This method may be used for cabs, statues, or anything else. The finished product may surprise you, as you can't tell how it will turn out until the paste wax is on. *from the Voice 12/10 via Rock Chips 01/11*

**Carnelian** - a blood-red to reddish-orange translucent variety of chalcedony, carnelian is also occasionally called cornelian. Its coloration is due to the presence of iron oxide, and it can be uniformly colored or banded. Strongly banded material is known as carnelian agate. Scotland, Brazil and Washington State are among the localities that produce finer-quality carnelian. Freshly mined carnelian, especially Indian material, is often placed in the sun to change brown tints to red. Carnelian was once thought to still the blood and calm the temper. Conversely, it was said to give the owner courage in battle, and help timid speakers to be eloquent. India produces the best examples of carnelian. *Via Cedar Valley Gems, February 2010*