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

January 2009

First Class

Please send exchange bulletins to:

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211 Interlachen Way
Stillwater, MN 55082

January 20th – The Program is:
Show and Tell &
Find of the Year

St. Croix Rockhound's
LEAVERITE NEWS
Vol. 34, Issue 1; January, 2009

Member of: AFMS & MIDWEST FEDERATION

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:

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Vice President	Brad Bonse	(651) 439-6832
Secretary	Doug Olson	(651) 430-9035
Treasurer	Victor Martinsen	(715) 247-3700
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Show Committee	Bill Cordua	(715) 425-9544
Refreshments	Freya Kask	(651) 777-6371
Librarian	June Young	(651) 429-3887
Historian	John Parsons	(651) 257-2724
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! - January 20h: St. Croix Rockhounds club meeting will be at Stonebridge Elementary School in Stillwater MN at 7:15 pm. The usual January program is **Show and Tell, Find of the Year.** So plan on bringing in your treasures

COMING ATTRACTIONS

January 20th: St Croix Rockhounds club meeting at Stonebridge Elementary School.

January 30 - February 15: Tucson Gem, Mineral & Fossil Showcase (Showcasing 45 Shows)

February 17th: St Croix Rockhounds club meeting at Stonebridge Elementary School.

Fed 28-Mar 1: Anoka County Gem & Mineral Club pre-spring show at the Har Mar Mall

March 14-15: Macomb, IL. Geodeland Earth Science Clubs, Inc. 29th Annual Show. Student Union Building at Western Illinois University, Murray St., Macomb, IL. Free admission. Saturday 10-6, Sunday 10-5.

March 20-21: Cedar Rapids, IA Cedar Valley Rocks and Minerals Society Annual Show, Teamsters, Union Hall, 500 J. St. SW. Saturday 8:30-6:00, Sunday 9:30 -5:0

April 18-19: Des Plaines, IL 44th Annual Show, Des Plaines Valley Geological Society, Des Plaines Park District Leisure Center, 2222 Birch St. Sat 9:30 a.m. - 5 p.m.; Sun. 10 a.m. - 4 p.m. Jewelry, gem, fossil, rock and mineral dealers. Live lapidary arts demonstrations, silent auction, educational exhibits, kids' room, raffles and door prizes. Contact Lois Zima at (847) 298-4653 or Jeanine N. Mielecki, jaynine9@aol.com.

May 16-17: Mid West Federation Show in Parma Ohio

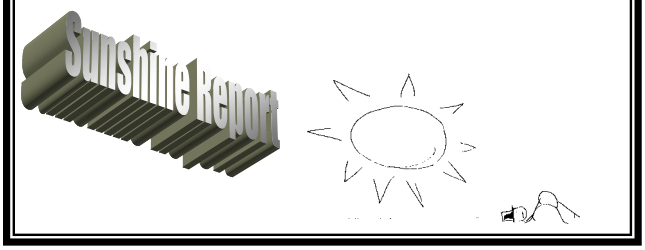
July 18-19th: Agate Days

Minutes of the St Croix Rockhounds

December, 2008

There are no minutes for December

If you have news or gossip call Marie Newlander (651) 439-7809



Celebrate: January's birthstone is the garnet. The name "garnet" is derived from the Latin "granatum" meaning "pomegranate" because the crystals resemble the red color and seed-like form of this fruit. Most people think of the garnet as a red gemstone, but in fact, it exists in all kinds of colors, such as black, many shades of red and green, or even colorless. The garnet's variety of colors comes from metals such as manganese, iron, calcium, and aluminum. Some varieties even contain mineral fibers that produce the illusion of a four- or six-rayed star within the stone. Green garnets are most highly prized but are very rare. Emerald green and colorless stones are highly valued, followed by pure red garnets.

Ancient warriors believed that garnets brought victory. The Crusaders used them as protection against wounds and accidents during their journeys. In contrast, Asiatic warriors believed that glowing garnets, used as bullets, inflicted more severe wounds. In 1892, during hostilities on the Kashmir frontier, the Hanza tribesmen fired on British soldiers with garnet bullets, believing them to be more effective than lead bullets.

Birthdays:

None admitted

Anniversaries:

None admitted

Titus and the Ugly Rocks - A Mineral Mystery Story

About 2500 years ago, Titus's shop in Athens was legendary, crammed with the rare and marvelous rocks and other wonders of Nature. One day, Titus' cadaverous servant Aegirine was walking through the market and noticed an old friend, the slave Xanthias selling produce. Aegirine knew that Xanthias had recently moved with his master to a small farm overlooking Lavrium, south of Athens. Xanthias was despondent. He moaned that the land was poor. His master was so hard on him. He labored in the sun all day and still they barely eked out a living. Even worse, they were in sight of the silver mines at Lavrium, reminding them daily of the riches that fell to others. Aegirine noticed that, among the olives and cheese, was a pile of rocks of an ugly violet-brown color.
"What are those?"

"We pick them up all over the place. They are soft and some people try to carve them. We sell a few, but they aren't really that attractive."

"Perhaps my master will be interested in some," said Aegirine and they negotiated a price. Aegirine felt he had paid too much, but he was sorry for his friend and bargained less rigorously than usual. Fortunately Titus was intrigued by ugly rocks.

"I've not seen its like before. It's so soft I can almost scratch it with my fingernail. It's like a clay or perhaps like horn or maybe hard pine resin. Are you sure this is rock?"
Aegirine shrugged." He tells me this material lies on the surface and can be dug from the ground. I have no call to disbelieve him".

"Notice how heavy this is, even though porous in appearance. Heft it in your hands and feel how unlike clay or bone it is."

In the evening Titus sat at his bench pondering the ugly stones. The weight of the samples perplexed him - not as heavy as metals, but too heavy for common rock. Maybe there was metal trapped within the stone with some airy substance. He considered what might drive free the airy portion. Perhaps heat!

A piece held carefully in a candle flame began to soften –until Titus dropped it as his fingers singed. Bemused, he thought about how best to hold a rock in a flame. Perhaps the answer is not to bring the rock to the flame, but the flame to the rock. He put some small fragments of the ugly mineral into a ceramic bowl. Then he found a hollow tube made of bronze. He set the bowl close to the flame, the using the tube, blew the flame on to the sample. It took a while to learn how to aim the flame. The first burst of fire propelled the samples from the bowl and he had to start again. Eventually he was able to pin the rock against the hardened clay by the force of his breath. The samples looked like they were beginning to melt! But he kept running out of breath just as the process began in earnest. Finally he learned he could breath in and out through his nose while blowing out with his mouth, if he didn't think too hard about it. Soon he had a continuous hot flame blasting the little rocks, and they melted to a puddle. Airs from the samples wafted out his windows. Eventually he stopped, gasping, and waited for the puddle of liquid with partly melted rock fragments in it to cool. To his great surprise, the puddle glittered with little spots of silver metal. Metal had been freed from the stone.

In the morning Titus sent Aegirine to deliver a note to Xanthias' master with these glad findings. Soon the poor land become a rich mine. A few months later, Titus asked Aegirine if he had heard any more from Xanthias. Aegirine noted he rarely saw his friend now, and when he did, Xanthias would barely talk to him.

“Why not? " asked Titus. "Is life not better now that his master is prosperous?“

"Oh, he's complains now that he no longer sees the sun and fields. He spends his days all below ground now, digging rock in that dark, dusty mine. There are some people you can never please, I guess."

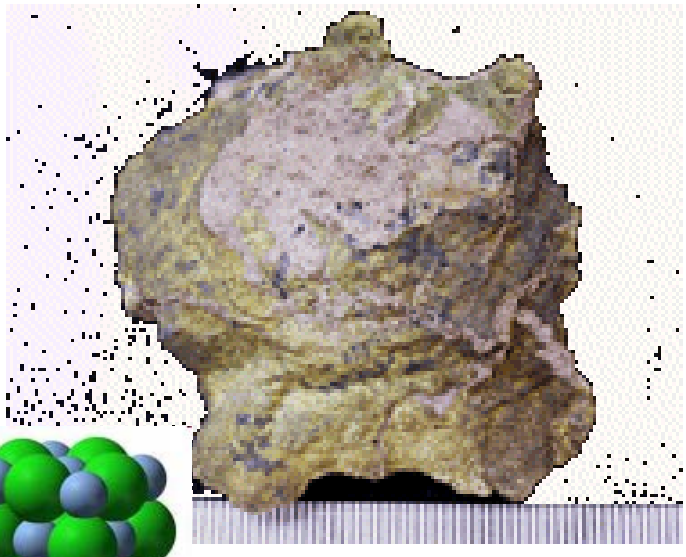
OK you 21st Century mineral enthusiasts - what mineral makes up Titus' ugly rock?

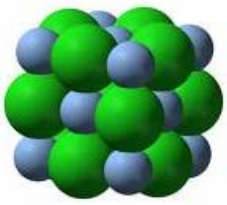
- Dr. Bill Cordua, U.W. - River Falls

This is chlorargyrite, a silver chloride. This mineral, sometimes called "horn silver" was a major ore in Nevada and elsewhere.

Peridotite: Rock with Appetite for Carbon Dioxide

Peridotite is one of the main rocks in the upper mantle, an area that provides a girth below the Earth’s crust. The rock occurs some 20 km, or more, down, although in areas where plate tectonics have forced up some of the mantle, peridotite reaches the surface. This happens in part of the Omani Desert. Geologists know that when peridotite is exposed to air, it can react quickly with carbon dioxide to form carbonates, like limestone or marble. Omani peridotite absorbs tens of thousands of tones of carbon dioxide a year. By drilling an fracturing the rock, they believe they can start a process to increase absorption rate 100,000 times or more. The Omani outcrop could absorb 4 billion tones of carbon dioxide a year, which is a part of the 30 billion tones of gas that humans send up into the atmosphere, mostly by burning fossil fuels. Peridotite at the surface can also be found in other parts of the world: Pacific islands, Greece, Croatia and America. Researchers are also looking at volcanic basalt in Iceland. *from Economist Magazine 11/08 via the Trilobite 12/08*





Chloragyrite

Scientists Unearth Ancient Impacts – *condensed from an article by Mark Jirsa, geologist with Minnesota Geological Survey from Astronomy Magazine, December 2008*

About 1.85 billion years ago, a massive 6-mile wide object from space smashed into Earth at what is now Sudbury, Ontario. The impact blew a gaping crater in the seafloor about 160 miles across. In 2007, I came face to face with a strange layer cake of geological deposits west of Gunflint Lake in Minnesota. One of the deposits contains debris blasted 470 miles from the Sudbury impact. I t is one of a dozen deposits scattered around the Great Lakes region that are revealing new clues to what happened. (He describes how a large forest fire diverted his planned geological field trip as part of the annual meeting of Institute of Lake Superior Geology) As I was walking along the boundary between burned and unburned woods, I noticed some unusually light-colored rocks that formed the next ridge to the north. As I approached, I recognized that it contained iron-rich rock common in the area. This rock, though, was broken into large fragments and cemented into a breccia. Then it got stranger. I noticed a portion of the deposit containing green and brown rock spheres, about ½ to ¾ inches across. That outcrop held valuable new clues to one of the most violent events in Earth's history.

Today's Sudbury Basin is an oval depression measuring 20 x 40 miles. An erosion-resistant rock formation, called the Sudbury Intrusion, defines the basin's outer rim. This appears to have solidified from rock melted by energy of the impact. The center of the basin contains sedimentary formations composed of pulverized rock and other debris that fell back into the crater. As crustal plates collided 900 million years ago, the resulting tectonic strain stretched the remnant crater into an oval bowl.

The most compelling evidence for the Sudbury impact is presence of deformation patterns in nearby sandstone called shatter cones. They from when intense shock waves emanate from meteorite impact.

Ejecta deposits are another important source of evidence for impacts. They contain debris propelled hundreds or even thousands of miles before being incorporated into sediments, such as sand or mud. They contain telltale clues linking them to an impact. One example is "shocked quartz" mineral grains deformed in a distinctive manner as tremendous energy of an impact rips through the ground. Ejecta sometimes contain accretionary lapilli, a mix of tiny rock fragments, as and solidified droplets of molten rock. The lapilli harden in impact-generated mushroom clouds, and then rain down onto the surface. Later, they turn up in sedimentary rock deposits as small rock spheres, just like the ones I found in the deposit near Gunflint Lake. In the turbulent cloud of ejects, some of the ash and vapor coalesced into spherical stones (accretionary lapilli), similar to the way water forms hailstones during thunderstorms. The hail of stones rained on the landscape. Millions sank to the sea bottom. Mud encased debris over time and they hardened into sedimentary rock, preserving a record of the event for geologists to discover.

By reading the rocks, we learn how the deposits may have formed. One thing we see is possible signs of tsunami, giant sea waves, that raced outward from the impact site, like ripples set in motion by a stone tossed into a pond. By the time the tsunami hit, the seabed and seashore would have been a tumble of fragmented rock and ash. Tsunami waves might have torn across the area forcefully enough to disrupt the submarine debris and mixed it into a jumbled mess that gradually settled and hardened into sedimentary rock. The slice of geological time exposed near Gunflint Lake is a tightly cemented mixture of black, green, and brown colored fragments of rock from the Gunflint Iron Formation. These fragments may represent portions of the seafloor torn apart by shock waves and then later swirled into a tumble by tsunami waves. Small green spheres of accretionary lapilli and tiny rock fragments, possibly falling from the impact, wedge in between the large fragments. *…continued on the next page…*

Scientists Unearth Ancient Impacts continued… The deposit I found is a layer cake 23 feet thick that tilts gently to the south. Like deposits of Thunder Bay, it is sandwiched between the older Gunflint Iron Formation below (1.88 billion years old) and the younger Rove Formation above (1.83 billion years old).

Much of the deposit consists of pieces of fragmented rock cemented together – the breccia.

The largest fragments are about 10 feet long, the smallest mere grains. The fragments' orientations are chaotic and nearly random, with some standing on end. What are these rocks trying to tell us? The organization of fragments within breccias at Gunflint Lake records a sequence of geologic events. The largest fragments occur near the bottom of the layer, and smaller fragments occur near the top. This suggests deposition by a single high-energy event that waned quickly, allowing material to sort itself by weight. Recent fieldwork on the deposit suggests some of the fragments were initially encased in mud that gradually solidified around it. One way to interpret this is that earthquakes triggered a massive underwater landslide of debris down a muddy submarine slope. Today we may be looking at its compacted remains.

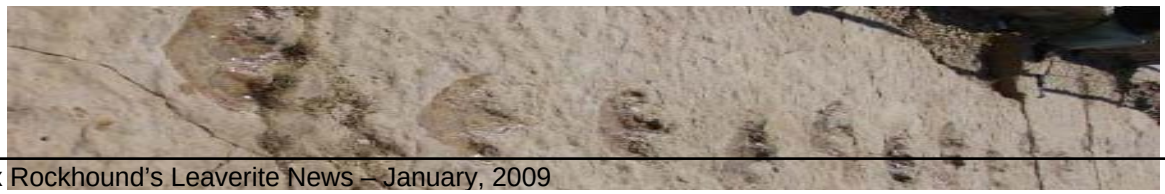
A layer of spherical lapilli and small rock fragments caps the breccias deposit in many locations. At this point, it's unclear what this layer represents. It could have formed as late fallout from the ejecta cloud, or was deposited by backwash of a large tsunami.

At the time of the impact, the only life forms that existed were microscopic cyanobacteria. The fossilized remains of their colonies, called stromatolites, are common in the Gunflint Iron Formation. Being photo synthetic organisms, the cyanobacteria produced "free oxygen" releasing it into the ocean and atmosphere. Researchers believe a global cyanobacterial boom just before the Sudbury impact infused Earth's environment with oxygen, making new forms of life possible. Oxygenation also caused dissolved iron and silica to precipitate out of the previously anoxic seawater and form massive banded iron deposits on the seafloor. We have mined these formations extensively for iron ore. Banded iron deposits stopped forming around the same time as the Sudbury impact. Is there a connection? Could the impact have caused the cyanobacteria to go extinct, thereby ending favorable conditions for iron deposition? We don't have the answer yet.

Work on the ejecta deposits is underway, but still in its infancy. A lot of work needs to be done in the field to see what the Gunflint Lake deposit tells us that other sites don't. It lies in a different geologic setting. It's a little farther away from the impact and the rocks are altered differently. It may reveal some secrets about the impact that other discoveries haven't… or that's what we hope will happen.

The Sudbury impact deposits have given us access to one of the largest, best exposed, and oldest impact debris blankets ever studied. It holds great promise for answering questions about the nature of early atmosphere, dynamics of the impact event itself, and composition of the meteorite.

Ironically, Lake Superior geologists have stared right at debris from Sudbury impact for nearly a century with little idea of its true nature. Generations of geologic mappers have gathered at the historic Gunflint Lodge on the south shore of Gunflint Lake after long days of fieldwork. The lodge's prominent fireplace was constructed in 1927 from strange looking cobbles that the owner ferried by boatload across the lake. Geologists undoubtedly pondered the origin of these unusual rocks in the fireplace. The fireplace stones are a postcard from an ancient catastrophe that rocked the Lake Superior region nearly 2 billion years ago, one that might have altered the path of evolution. Who knows what more the rocks have to teach us? *from The Trilobite 12/08*



FIND OF THE YEAR

Contest Rules (revised 1991)

The contest is open to all members of the St. Croix Rockhounds club. Absentee members may submit specimens through another member and junior members are eligible to enter the contest and to vote. However, there can be only one entry per person per class. There are five entry classes:

Lake Superior Agates: No lapidary work of any kind is allowed. Agates may be oiled.

Fossils: Specimens may be cut or glued together. Specimens may be treated or sprayed only to prevent deterioration and not to enhance them. They may not be polished.

Polished: Tumble or face polished but not spray polished. The specimens may also be cut or glued together.

Jewelry: The stone may be cut, shaped, polished and mounted. The featured stone must have been found and worked in this current year.

Open: Specimens may be cut or glued together but not polished or sprayed. Lake Superior Agates may NOT be entered in the Open class.

Note: all specimens must have been found in 2003. Polishing or lapidary work must also be done on the specimen during the year it is found and entered. Finally, the specimen must have been found in its natural setting ("in-situ") by the person entering the specimen.

Also, please label all entries (approximately 2x3 inches) stating the category, material, and general location (county) of your find. On the REVERSE side of the label, print your name. Place the card, name side down, on the table adjacent to your entry. Thank you.

Stolen Gems *St Croix Rockhounds Leaverite News*

Preserving Iron Meteorites: a new way to preserve your iron meteorites, especially etched ones, is to submerge them in ATF (Automatic Transmission Fluid) in a small Tupperware container. This prevents rust better than older methods, such as gun oil and WD-40. For meteorites in glass display cases, you can enclose a VCI (Volatile Corrosion Inhibitor) with them. These Emitters contain special compounds which evaporate, forming a very thin layer only a few molecules thick, on the surface of all metals present. For more information go to CortecVCI.com. *Submitted by Shawne Lardin, VGMS in Rockhound Rambling 2/ via Stoney Statements 12/08*

Remove Algae and Lichen from rocks by soaking them in ammonia water followed by the use of a stiff brush. Some minerals, like calcite, will dissolve in ammonia, so check your chemistry before you do it. *from KGMS Gems 2/07 via Rock Chips 7/07*

Before grinding and sanding cabochons, put **cold cream** on your hands and rub them together until they are dry. This fills the pores and cracks in your fingers. When grinding, sawing or sanding is completed, the dirt can be washed off easily. When grinding and sanding **obsidian**, always grind from the center out. Otherwise the wheel and sanding belts will pick up tiny chips of glass that will scratch your stone. *from assorted newsletters via The RockCollector & Blue Agate News 05/08 via Calgary Lapidary Journal 10/08*

A speedy sanding tip: one day I found the sandpaper on my sanding drum was worn down to such an extent that it would not remove the grinding marks from a cabochon. I had no extra paper on hand and had to finish the cab as it was for a gift. SO - I thought I'd try the loose grit for sanding. I placed a wet sponge under the sanding drum so that the worn out sanding belt came in contact with the sponge. This kept the paper moist but not too wet. I turned on the motor and began sanding. The results were wonderful! I had to dip the stone in the grit a few more times before finishing. I sand all my cabs this way now, as it is faster and better. When I replace the paper, I never use a grit coarser than 400. *from assorted newsletters via The RockCollector & Blue Agate News 05/08 via Calgary Lapidary Journal 10/08*

The secret of hiding fractures in a cab with epoxy is to shape your stone and semi-polish it. Heat the stone to 200 degrees in an oven. Mix epoxy and apply to one end of the crack and work towards the outside of the cab so that the air in the fracture is driven out and the resin replaces it. You will note the epoxy becomes very fluid when it touches the hot stone and flows right into the crack. Put the stone back in the oven for 20 minutes for the epoxy to harden. Scrape off the surplus and proceed with your final polish. *from assorted newsletters via The RockCollector & Blue Agate News 05/08 via Calgary Lapidary Journal 10/08*

To Clean Fluorite, do not use hot water or even warm water – the luster will vanish forever. And the specimen will crack along cleavage planes very easily. It can be placed in muriatic acid to remove calcite, and then washed in cold water. *from The Tulip City Conglomerate 06/07 via Sedona Red Rocking News 5/08*

Wonder why the jade cab you are making won't reach the high degree of polish desired? The glaze caused by working with a well worn sandpaper prevents the high polish. Try washing the stone in acetone, then washing in detergent two or three times, scrubbing with a toothbrush. Rinse well and try it on new sandpaper. By Doc Wimmer *via hips and Gneiss Times via Stone Chipper 03/08*

Polyurethane Glue: If you've ever used polyurethane glue, you know that it doesn't store well after being opened. To prolong its shelf life, store the bottle upside down. An easy method of doing this is to drill a hole in a block of wood just large enough for the cap end of the bottle. NOTE Always buy the smallest bottle that will suit your purpose. With this kind of glue the economy size may not be the best bargain. *by Don Greene from Chips 'n Splinters 03/05 via The RockCollector 03/08 via Crack'N Cab 03/08*