

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



May, 2007

First Class

Please send exchange bulletins to:

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211 Interlachen Way
Stillwater, MN 55082

May 15th – Program is: "Video Field Trip
to the Keweenaw Rift: Lava Flows and Copper"



NOTE: Contact Brad Bonse NOW if you want to meet him for
Fairburn Agate (see page 5)

St. Croix Rockhound's
LEAVERITE NEWS
Vol. 32, Issue 5; May, 2007

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	Pete Rodewald	(715) 425-5561
Vice President	Brad Bonse	(651) 439-6832
Secretary	Doug Olson	(651) 430-9035
Treasurer	Lin Rawlings	(651) 735-4691
Program Committee	Mark Rasmussen	(651) 275-0607
	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	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

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! - May 15th: St. Croix Rockhounds club meeting will be at Stonebridge Elementary School on W. Elm. St. in Stillwater, MN. Meeting time will be 7:15 pm. The program is: "Video Field Trip to the Keweenaw Rift: Lava Flows and Copper". This 41 minute feature was made by Dr. Bill Rose, a geologist at Michigan Tech. It is an introduction to the geology of this famous area. As a number of members may be going there this summer on field trips, it will serve as a good grounding for the rocks they will be enjoying.

COMING ATTRACTIONS

- May 15th:** St. Croix Rockhounds club meeting will be at the Stonebridge Elementary School
- May 19-20th:** WI Geological Society 50th Annual show at Hart Park in Wauwatosa, WI.
- June 8th:** St. Croix Rockhounds field trip to Wolverine 2 in the Keweenaw, MI – led by Pete Rodewald
- June 5-10th:** AFMS/RMFS in Roswell, NM
- July 7-8th:** Anoka County Gem & Mineral Club at the Har Mar Mall, Rosedale, MN.
- July 14-15th:** Moose Lake Days in Moose Lake Minnesota.
- June 15-17th:** California Federation show in Lancaster, CA.
- August 3-5th:** Northwest Federation convention in Butte, MT
- August 11-12th:** MWF convention in Houghton, MI (during Copper Country week 7-12th)
- September 18th:** St. Croix Rockhounds annual Silent Auction at Stonebridge Elementary School in Stillwater, Minnesota.
- October 6-7th:** Eastern Federation convention in Newark, NY
- October 13-14th:** Anoka County Gem & Mineral Club at the Har Mar Mall, Rosedale, MN.

June 20-22, 2008: MWF convention in Lincoln, NE.

Minutes of the St Croix Rockhounds April 17th, 2007

Meeting was called to order by president, Pete Rodewald at 7:20. 21 members and guests were present. Carol Jensen was presented a certificate for getting 1st place in the jewelry category in the “find of the year” contest.

Treasurer’s Report-Lin Rawlings reported that we now have a total of \$1675.00 in our treasury. Lin reminded us that membership cards are available to all members. The treasurer’s report was approved.

Minutes of the March meeting were approved.

Refreshments-Floyd and Eloise Kimball and Brad Bonse provided refreshments for the meeting. Next month Freya Kask and Elaine Martinson will bring refreshments.

Sunshine-June Shalander is recovering in the Greeley Health Care Center. She would love to hear from us.

Field Trips-Susan Dustin reported that the trip to the Zumbro River to look for cold water agates is still

tentatively scheduled for April 28 depending on the river depth. She and Brad Bonse will scout out the area on April 23 and then Susan will contact all members who have signed up to inform them if the trip will occur.

Pete Rodewald announced that a field trip to the Upper Peninsula to dig for agates with copper at the Wolverine #2 mine will take place on June 9th and 10th. Pete will give more information at the May meeting.

Librarian-June Young expressed thanks from the Washington County Library for the book the club donated. She will bring a list of more library materials to the May meeting so that members will know what’s available and can contact June if they wish to borrow anything.

Show Committee- Bill Cordua announced that our annual Rock and Mineral Show at the Valley Creek Mall was again a huge success. He thanked members who exhibited, provided hand out materials, set up lighting and helped with other tasks. Hours will be shortened next year from 9:00-3:00 to coincide with the “Easter Bunny’s” schedule.

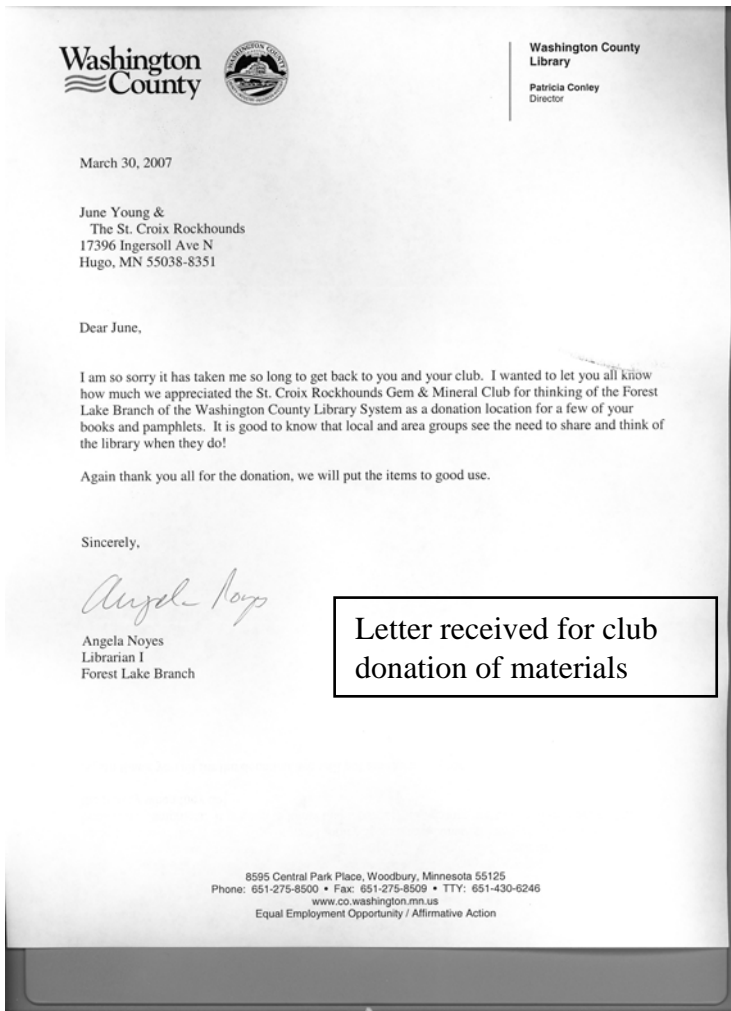
Door Prizes were won by Brad Bonse, Victor Martinsen, Floyd Kimball, June Young, Elaine Martinsen, Lin Rawlings, and Carol Jensen.

Motion to adjourn at 7:55.

Tonight’s program was an “agate quiz” that tested our knowledge against Pete Rodewald’s unusual and beautiful agate collection from around the world. No one got even close to 100%, but it was challenging and fun.

Next month’s program will be arranged by Bill Cordua and will be a video field trip to the Keweenaw Rift about lava flows and copper.

Submitted by Susan Dustin, “Sub” Secretary



Celebrate!

St. Croix Rockhounds Membership List 2007

May's birthstone –Emerald. This brilliant green stone reinforces love and creates harmony in the family.

May's Birthdays:

Jeanne Blom – 5th

May's Anniversaries:

Bill & Janet Cordua – 16th

June's birthstones - June has three stones: pearls, moonstone, and Alexandrite. Pearls, according to Indian mythology, were dewdrops from heaven that fell into the sea. They were caught by shellfish under the first rays of the rising sun, during a period of full moon. In India, warriors encrusted their swords with pearls to symbolize the tears and sorrow that a sword brings. .

June's Birthdays:

Janet Cordua - 8th

Marie Newlander – 16th

Dave Klinkhammer – 18th

June's Anniversaries:

Elaine & Victor Martinson – 24th

June & Reuben Shalander – 7th

July's birthstone – The Ruby. Large rubies are harder to find than large diamonds, emeralds and sapphires. As a result, rubies' value increases with size more than any other gemstone. In the Orient, rubies were once believed to contain the spark of life -- "a deep drop of the heart's blood of Mother Earth"

July's Birthdays:

Dick Blom – 7th

July's Anniversaries: none

August's birthstone –Peridot and Sardonyx. The peridot was regarded since ancient times as the symbol of the sun. The Greeks believed that it brought royal dignity upon its wearer. During the Middle Ages, peridot was pierced, then strung on the hair of an ass and attached to the left arm to ward off evil spirits. The Crusaders thought that peridots were emeralds, and brought them back to Europe where they were featured as ornaments in churches.

August's Birthdays:

June Shalander – 23rd

August's Anniversaries:

Jeanne & Dick Blom – 15th

Florence & Brad Bonse – 25th

Field Trip to Copper Country Friday June 8th – Pete Rodewald

Starting times and rendezvous for caravan will be decided at the next meeting for the morning of Friday the 8th of June. Directions to Houghton, MI will commence at Hayward, WI as everyone can surely get to Hayward. Follow STH 77 east about 35 miles to Clam Lake .At Clam Lake make a left turn jog over to County Road GG, TURN RIGHT ON GG. This is a 22 mile wilderness drive to Mellen, WI. A short cut. One can follow 77 to US HWY13, turn left or north to Mellen, 77 and 13 follow together. Arriving at Mellen on GG you'll first come to a veneer factory on the left with maple logs outside being sprinkled. Go past this a few blocks, turn right towards main street and turn right again. You'll again meet 77,turn left. Follow 77 all the way to Hurley, WI. Just before Hurley is Montreal. Home of the World class, famous Montreal Iron Mine. Deepest of its kind on Earth with a tailings pile on the right. You'll pass through a historic mine housing area with all the little houses the same and very kempt.

Arriving at Hurley there is first a wide 4 way stop intersection, not quite perpendicular, turn left to get to 51. At 51 there is a Dairy Queen on the right, and I believe, a Cenex station on the left. Again turn left, following 51 less than a mile to US # 2. Just before 2 there is a sweeping clover leaf type turn to the right, take it. This one is easy to miss. Follow US 2 DIRECTLY AND IMMEDIATELY to Iron Wood, Michigan. Staying on 2 to Bessemer, then Wakefield turn left at light. It is the first stop in town where M28 is your road now, you'll go around the east end of pretty Sunday Lake, then to Merriweather, Lake Gogebic, Bergland, Topaz, Matchwood, Ewen, Finally Bruce Crossing. Left on to US # 45 HEADING NORTH.. Next is the right turn on to M 26 & 38. You are now in Copper Country, There are mines all around you can't see from road. Drive through the town of Mass, named for the Mass mine, just a few quick miles another similar intersection. Turn right on to M 26, direct route to Houghton. First you'll go through OR PAST Winona, Twin Lakes and huge campground, Donken, Toivola, Painesdale, Trimountain, at South Range turn left staying on 26, then on to Atlantic Mine, next is Houghton. and long sloping hill, divided Memorial Drive, down toward Portage Canal, near bottom road sweeps right. Don't go to draw bridge, stay on top away from goofiest intersection approach to bridge. Go straight ahead on one way upper side east bound US # 41 to where west bound 41 joins again. A couple of blocks turn left where Super 8 sign is. The motel is lower on the water front.

For those going up on Friday, let us meet in lobby at 7 pm to 8 pm eastern daylight savings time, then go eat at Quincys supper club in Dollar Bay. For those arriving Saturday a message of instructions will be left at motel desk. Again we will meet in lobby at 7 pm to 8 pm.

Equipment, bring rock hammer, if you do not have one I've several. Small sledge, or nail hammer, chisels, gloves, SAFETY GLASSES, insect repellent, nail aprons are very handy, couple plastic buckets, couple egg cartons if you don't have aprons. Hand lens. Spray bottle with water. Sun blocker. Very sturdy foot wear for rock pile climbing around. Bring lots of drinking water and lunch foods.

Field trip to South Dakota for Fairburn Agate – Led by Brad Bonse

Brad Bonse is hoping that some of the St. Croix Rockhounds will join him and Florence on a trip to South Dakota to find prairie agates and fairburn agates. They would like to meet people at Wall, S.D. sometime on May 17th or 18th with the idea of probably staying in a motel in Wall for 2 nights.

Brad will need you to make contact with him **before Tues. May 8** when he's beginning a trip to Montana and won't be available. If you can't contact him by then, or you decide at a later date to go on the trip, he'll call me on Mon. May 14th to find out who's going, and then he'll contact you by cell phone. The actual area he'll be looking at is the Badlands National Recreation Area where collecting is allowed, and there is a very nice interpretive center. Brad doesn't check his e mail often, and he doesn't have voice mail, but he'll call you back if you leave a phone no. on his caller i.d. His number is: 651-439-6832. I'd love to join some of you, but I'm leaving for San Francisco on May 17th to run/walk a little race called "Bay to Breakers" with my kids who live in CA. Hope some of you can join Brad and Florence, and bring an agate back for me,

ok?



A large measure of the enjoyment of our hobby consists of collecting in the field. For that reason, the members are proud to endorse the following:

"Code of Ethics"

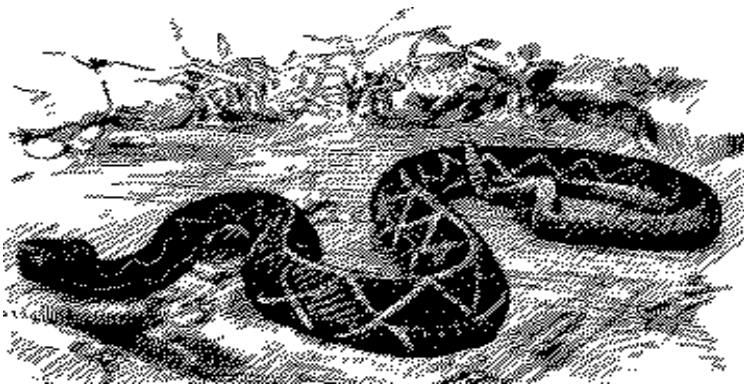
- I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.
- I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.
- I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.
- I will leave all gates as found.
- I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material - matches, cigarettes, etc.
- I will fill all excavation holes which may be dangerous to livestock.
- I will not contaminate wells, creeks, or other water supplies.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field-trip leaders and those in designated authority in all collecting areas.
- I will report to my club or federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the "Golden Rule", will use Good Outdoor Manners and will at all times conduct myself in a manner which will add to the stature and Public Image of Rockhounds everywhere.

Revised July 7, 1999 at the AFMS Annual Meeting



**This is the last regular Leaverite
Newsletter Until September!!!**

Enjoy your Summer.



THE PERFECT? LIGHT-WEIGHT FIRST AID KIT

by Chris Rylands - Bellevue, WA

[Did you know rockhounds field trip the internet, too? Recently, the rockhound e-mail exchange group had an interesting discussion. It started when Chris Rylands (BRIOS@aol.com) attempted to describe the perfect light-weight first aid kit. See if you agree with Chris or perhaps you think of something that should be added. - Mel Albright, Chair, Safety]

The idea of this kit is small and lightweight but yet an all around life saver. >>One of those blue plastic eye cups if you need to wash out your eye, and an eye patch and eye ointment for infections. Most rockhounds do not bother using their eye protection. Next time you go out watch... >>Water purification tablets, cheapest, or one of those fancy pocket water purifiers if you are in a mineral rich area, with springs or flooded mines. >>Hmm. Nice Vug, Lost your footing, AAAAAAAA!!! WHAM!!! Roll of black tape (Electrician's tape) it is elastic, waterproof, and air tight. Can be used for things like splinting, arm slings, worse yet tourniquets. >>I hear the plane and can see it but they cannot see me, no wood or too wet to have the smoking fire. Go to the local boat supply for orange smoke pots. Not flare guns, unless you want to burn to death in the forest. Or be on CNN as the most stupid of all time rescues. >>Water out of sand: For you Desert Rock-hounders, 2 dark green thick jumbo plastic garbage bag, one 3 foot 1/4" plastic fish tank hose. First dig a 3 ft x 2 ft deep hole. Place one bag in the bottom center of the hole, shape it as a cup. Lay the plastic suction tube in the cup bottom and up and out of the hole. Now cover the hole with the other plastic bag one layer thick. Totally seal the circumference of this hole and bag with sand. Now place a stone in the center, as to made a depression in the bag over the cup. As the humidity condenses on the top bag the moisture beads up and rolls to the drip point and lands in the cup. Then you suck on the straw. Remember you can also soak the pit sand with what ever fluid you want as long as it has H2O in it, radiator fluid, wet dirt, mashed up weeds/foilage etc. or even your own you know what. After all this is what the astronaut's life support systems do. >>>30somthin sealed, wax dipped strike anywhere wooden matches, wrapped with wax dipped paper. By the way, did you know you can start a camp fire with fine steel wool and your flashlight battery. >>Pocket thermal space blanket. >>Chemical toe warmers, about \$2.00 a pair at local sports stores, can be used as warm compress or to save your cold toes,/fingers.>>You may have a big geode stuck in your mouth, and cannot yell for help, and it is night. One phosphorescent snap and glow stick. >>One of those Oval Green Rubber Snake bite kits. >>A pocket card on CPR Heat injuries, Shock, Burns, Fractures, Dislocations, Cold injuries, Bleeding etc... most fire depts and or hospitals have these free items. After all if you save your partner's life, he/she may give you their rock collection. >>One safety pin, for among many things, picking out things. >>One candle. >>Pencil and 3X5" card. >>some waterproof cloth type Band-Aids And remember, if you are in the cold or damp climate, "COTTON KILLS". ---- **Did I forget anything?**

Bauxite and Greenhouse Earth

Bauxite is a hard clayey material, generally white to red with dark spots or blotches called pisolites. It looks like it has an illness of some sort. This material was once described as a mineral ($\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$). We now know it is a mixture of various aluminum hydroxide minerals (gibbsite, boehmite, diaspore) with minor amounts of clays and iron oxides. The reason one can still find it discussed in mineralogy classes is that once mineralogists describe something, they hate to let go of it. It is also a handy field name because one can't determine the specific mineral composition of bauxite without sophisticated analytical tests. Bauxite is our major source of aluminum. Aluminum is one of the most common elements in the earth's crust, but it usually occurs in minerals that are difficult to process, such as feldspar. Aluminum is handy stuff. It's light, relatively strong, and corrosion resistant. Charles Martin Hall, an industrial chemist and founder of what was later to become ALCOA, first learned to extract aluminum commercially in 1886. He used a rare mineral called cryolite, found mostly in Greenland. Cryolite was later supplanted by bauxite as the major aluminum source. The production of aluminum really expanded after World War II, when more uses were found for it.

Bauxite is a type of ancient soil or regolith. It requires tropic to sub-tropical climates in order to form. Bauxite will form only over rocks that are already rich in aluminum but poor in silica - such as nepheline syenites or clay-rich limestone. Then strong weathering is required over a long period of time. This leaches out anything even remotely soluble, leaving behind only the very insoluble aluminum hydroxides. Thus bauxite is a good indicator of areas that have in the past experienced very warm, moist climates. Not surprisingly many economic sources of bauxite are in tropic areas such as Surinam, Brazil, New Guinea and Jamaica.

Bauxite was first described in 1821 for deposits at Les Baux, St Remy, Bouches de Rhone, France. France is not known for a tropic climate, so a good question is why did bauxite form there? The answer is that the bauxite formed when the climate was much different from today. Much bauxite worldwide formed during the Cretaceous and early Tertiary periods, from 50 million to 150 million years ago. This is when the large deposits in Arkansas formed. Often this is ascribed to the effects of plate tectonics. Areas that are not now in the tropics were moved through such climates as their plates shifted. During the Cretaceous, for example, Minnesota was at the same latitude as present-day Spain. But there is a second factor. During that period of geological time, the earth was experiencing a large-scale greenhouse effect.

A startling picture of this period of earth history is emerging from new studies of sediments laid down then on land and in the sea. During this time, CO₂ levels were over 1000 ppm and perhaps as high 4000 ppm. (For comparison today's values are about 380 ppm, and may go up to 750 ppm by the year 2100.) The source of this ancient CO₂ is thought to be from excessive volcanism. The world had a very different climate in Cretaceous and early Tertiary times. It was warm enough that continental temperatures may never have dropped below freezing. Crocodiles and palm trees grew at latitudes now occupied by the Arctic Ocean. There was likely no polar ice. Sea surface temperatures were very warm. In places in the equatorial oceans during the Cretaceous, sea surface temperatures was 95oF, and locally as high as 107oF. Today, sea surface temperatures at the equator are about 82oF. At the latitudes of Newfoundland sea surface temperatures were about 86oF, compared to 37-39oF today. If this sounds good, realize also that the ocean often went stagnant for periods of time, and that sea level was 300 to 600 feet higher than today. This was enough to put a major seaway across the Dakotas, give Minnesota monsoons and cause Gulf of Mexico waves to lap at to the tip of Illinois. In such a warm climate, weathering conditions to make bauxite were much more widespread, and it's not surprising to find it formed in areas we think of as non-tropic.

Bauxite-like materials that formed at this time can be found in western Minnesota. Glaciers distribute this material widely in gravel pits where rock hounds often pick agates. This turns out not to be true bauxite. It's mostly clays (kaolinite), so weren't leached quite enough to get rid of the silicate minerals. Still, its formation in the local bedrock also speaks to this large-scale climate change, giving us a window into a very different past, and perhaps a model of the future.

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

References:

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Setterhom, D and Morey, G.B., 1989, An extensive Pre-Cretaceous weathering profile in east central and southwestern Minnesota, U.S. Geological Survey Bulletin, 1989 H, 9p.

Takashima, H. et. al., 2006, "Greenhouse World and the Mesozoic Ocean", Oceanography, vol. 19, #12, p. 94-103



Stolen Gems *St Croix Rockhounds Leaverite News*

Specimen Wrapping—Use an old phonebook for wrapping your small specimens. It can be kept in your vehicle's trunk so the pages can be torn out as needed. *from Quarry Quips Newsletter 07/06 via pick and pack 08/06*

Faceting Tips - If you have problems with scratching when polishing a faceted stone, perhaps this technique described by Paul D. Oakey in the Lapidary Journal will help. He had trouble with his polish "balling up" and scratching the stone and remedied the problem by using a solution of 1 oz. of vinegar to 16 oz. of water. He recommended cleaning the lap first with a toothbrush and vinegar solution while the lap is turning at high speed. This procedure rejuvenated an old discarded Lucite lap. The solution should contain a little soap for a wetting agent. He dripped this slowly on the lap while polishing, and thus ended his scratching problems. Oakey said this gave good results with quartz, beryl, and YAG using either tin oxide, cerium oxide, or Linde A. To polish a large table, he mixed polish, vinegar, karo syrup, and soap into a creamy paste and applied it to the lap without a drop.

To remove cutting oil from slabs, first place them in kitty litter to absorb the oil, then put them in warm water with a dishwashing detergent. *from Pick and pack 05/07*

Lapidary Arts - A "lapidary" is a craftsman who cuts, polishes and engraves stones. The word comes from the Latin *lapis*, meaning stone. The Art of Lapidary is one of the oldest known to man. It can be traced in history to 5000 BC. When precious stones were cut and polished for the Pharaohs of Egypt, according to the Bible, it was quite common to use precious stones as personal ornaments and gems were mounted in the garments of the priests. We read of Solomon's equipping a fleet which returned from Ophir laden with precious stones.

Cesar's wife's earrings were reportedly valued at \$778,000!

The Israelites and the Egyptians used emery powder for polishing as early as the 4th millennium BC.

For many years, lapidaries were employed only by the nobility and high ranking clergy. During this time, the art of lapidary became a very secretive trade.

A sapphire point was used in cutting until about 3000 BC when the bow was introduced in Assyrian and Babylonian work. Modern gem cutters use a lathe with a point or disk or soft iron, coated with diamond dust and oil. *from Chip and Lick via Tulip City via Agate Explorer 5/06*

If you have sore hands from hard rock mining, soak you hands in warm vinegar water and the swelling and soreness will disappear. *from Rock rollers via Emerald Gems 10/05.*

If you drop a stone in the workshop, get down on your knees with a flashlight and shine the light across the floor, rather than down. It should pick up a sparkle or shine. *from Chats And Chips 05/96 via The Coral Geode Apr 98 via Ventura Gems 07/98.*

In some displays, you want a slab to show how it looks before polishing. Water won't stay wet, grease looks greasy, some waxes turn white under heat. If you rub the surface with liquid detergent and wipe it off there is no shine and the pattern will show. *from Breccia via ESNews via Achates 7/05*

Les' Shop Hint – we have talked about some unorthodox tumbling methods, Such as, Les using the clay from class five gravel. Les told me about another method he has tried. Diatomaceous clay and soap stone in the polishing cycle of his tumbler. I have seen the results on some amethyst and some petrified wood. WOW! It is one of the finest finishes I have seen. *from Agate Explorer 9/05*

The End of an Era – Turnstone - In late July, De Beers announced the closure of the last three diamond mines in the Kimberley area. This is a truly momentous occasion as it was from here that the great De Beers diamond empire and monopoly were built in the nineteenth century. De Beers, ever with an eye for the main chance, have decided to spend R50m. on developing the historic, 2330 feet deep "Big Hole" into a visitor attraction. *From Rockcollector 10/05 via NWLMS FACETS 09/005 via Stoney Statements 10/05*