

GOLDRUSH LEDGER



CHARLOTTE GEM & MINERAL CLUB
AUGUST 2011

the Prez Sez ...

To badly paraphrase a famous quote – Ask not what your club can do for you but what you can do for your club. Last month I tried to deliver a pep talk on Mathews Alive and how important an event it is for our club. At last week's general meeting we had an opportunity to listen to a presentation by one of the bright young UNCC students who received a scholarship from our club in 2010. The funds for that scholarship came from our geode cutting efforts at last year's Mathews Alive as they have from previous events over the past 30+ years.

We will once again be doing surgery on geodes this Labor Day weekend with the funds raised to be given in the fall to scholarship-needy students. If you haven't already signed up to work at this worthwhile event please contact Leslie Thompson at www.lathompson@hotmail.com

My current effort at inspiration and motivation is focused on our second club fundraiser in September – Mint Hill Madness [MHM]. This will be our first ever participation in an event that is over 20 years old. Last year's MHM saw 22,000 people attend, many of them

(sluice-crazed) children. More than 30,000 are expected this year. That volume of people over a two day span means two things for our club:

MHM represents an exceptional opportunity to gain new members and raise funds for club programs! We're going to need a heck of a lot of you to help run our booth!

Maybe one of the reasons it's called "Mint Hill Madness" is because it runs from 5PM to 11PM on Friday and 8AM to 11PM on Saturday (September 23 and 24). When we asked about those rather strange hours we were told that the original founders of the event wanted to do something a bit weird. I wonder if they suspected that something a bit weird would one day attract such large crowds.

Our efforts at MHM will focus mainly on sluicing with some cutting of small geode thrown into the mix. At any given time throughout the event we will need approximately 8-10 people to run the sluice, sell sluice bags, wrap geodes, talk to spectators about the Charlotte Gem and Mineral Club and sing in the club choir ("Hi Ho Hi Ho, it's off to dig we go!").

While volunteering for this particular event may seem like signing up for a brief stint in the Foreign Legion, it represents a unique chance to get to know your fellow club members better and to hear all the stories from customers about their childhood love of rocks. In addition you will have an opportunity to improve your wardrobe when you receive the official CG&MC emerald green tee shirt to wear during your hours of service. (or any social event thereafter).

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The fact is, working at these events is a great way to get out of the house (Free Cokes for all!), meet new people and demonstrate what our club means to you and to the community.

One of our greatest unmet needs at the moment is for volunteers on Friday afternoon (September 23) to help unload our vehicles and set up the site. We will start the process at about noon and it shouldn't take more than 2 or 3 hours to complete the task. With an event starting time of 5PM, you'll have a couple of hours to wander around and see what's for sale in the other booths

(a clever segue into "Come spend Friday night sluicing with us"). I can state without fear of contradiction that the board of directors of this club (and others) are working harder than ever before in preparing to make these two events the highlight of the year. If you're not there to see it in action you will be missing something quite special! Once again, the person to contact about volunteering is Leslie Thompson at www.lathompson@hotmail.com. I look forward to having a great time with Y'all.

Murray Simon - prophetic master, sublime potentate, President of the Charlotte Gem & Mineral Club

Notice from the Editor

by ron gibbs

So you may have noticed a slight theme this month in the newsletter, basically man-made or synthetic materials. Hope you enjoy learning a little history and knowing a bit more about the "less natural" side of our universe.

I will be spending the remainder of this month at the William Holland school where I am teaching my class in Macro Photography. Hopefully in a cooler environment with some nice mountain breezes.

Linda Simon will be having her pre-meeting class in jewelry-making, with a copper bracelet on the schedule for this month. The session will begin around 5 pm and continue until just before the regular meeting.

By the way this month's speaker comes to us from a club in South Carolina, and is the current presi-

dent of the SFMS organization. You don't know what the SFMS is? Well, that's what she's here to tell us., what it is, why it is, and what it does to benefit our club.

You can think of her (if it makes you happy, as it does me) as Murray's boss, second in line only after Linda of course!

The last page of the newsletter holds the key to "free eats." What more could you ask for? September will be a super busy month for the club, then we can take most of October off, and collapse under all of the profits from our September efforts. Looking ahead, well have our November auction, and our December end of year holiday party.

Rejoice, by then the temperatures should be down to the low 80's!

Charlotte Gem & Mineral Club Monthly Meeting

August 18, 2011 Thursday -- 7:00 pm --

**Location: Charlotte Nature Museum
1658 Sterling Road Charlotte,
NC, 28209 (704) 372 - 61261**

“SFMS and what it is for the local club”

by Barbara Green

President of SFMS

Barbara Green, owner of GreenTop Jewelry has been creating & selling jewelry for the past 15 years. She looks to nature for her one of kind designs using glass beads, gemstones, pearls and metal component to make her. She teaches seed beading at William Holland School of Lapidary Design.

When asked to be the program speaker for the Western SC Gem & Mineral Society, (WESCAGEM) many years ago, she and her husband realized this was a group which was a natural fit for them. After becoming Vice President and then President of WESCAGEM, Barbara became involved with SFMS which lead her to becoming President for 2011.

Editors notes:

SFMS - stands for Southern Federation of Mineralogical Societies - among other things, they sponsor the Wild Acres and William Holland SFMS retreats each year, put out the monthly Lodestar newsletter and are the regional center for the Rock & Gem clubs in the Southeastern United States.

Charlotte Gem & Mineral Club Jr. Rockhounds

They continue their current hibernation until cooler weather prevails in September.

For more information on the group contact Mary Fisher: mefisher@att.net

Victoria Stone - when man-made is worth as much as natural

Crazy Cabbers Gina Webb CM

Taken from the August edition of the High County Glemmings newsletter of the Henderson County Gem & Mineral Society



This is a cab I recently cut from this material.

There aren't many designer cabochons cut from Victoria Stone that truly showcase the phenomenal patterns and chatoyant character of this material. In fact, there are very few cabochons cut from this material at all, relatively speaking. The reasons for this are twofold. Number one, there is only a limited supply of this material left in the world for reasons I will address shortly. And, two, much of this material was decompressed hastily and improperly which rendered it useless for any lapidary purposes.

Production of Victoria stone ceased upon the passing of its creator, Japanese scientist Dr. S. Limori, in the 1980's. Yes, it is a lab created mineral and the secret of its formula was lost with his passing.

It is not, however, considered to be a synthetic or simulated gemstone, but rather a re-constructed stone made from a very laborious process using natural raw minerals (quartz, feldspar, magnesite, calcite, fluor spar, etc.). The entire process took months to complete. The final result was an entirely new mineral similar to nephrite jade, but the arrangement of actinolite crystals is quite different. Instead of the crystals interlocking and tying together as they do in jade, they have crystallized into fan-like shapes that provide the chatoyant patterns that characterize this material.

and tedious process to decompress the boules properly.

Victoria Stone has a hardness of 5.5 to 6.0 on the Moh's scale, a specific gravity of 3.02, and a refractive index of 1.62. It is said to have been created in 20 different colors, but evidence of only 15 has been found. Produced from 1960 to the 1980's, they are - green, sky blue, reddish purple, yellow green, blue green, sky indigo, chocolate, yellow, deep indigo, white, quiet green, quiet yellow, quiet blue, grey, and black.



The raw minerals were first heated to extremely high temperatures into a molten magma to which special crystallizers and crystal habit regulators were added in a controlled environment. The magma was then poured into boules and placed under incredibly high pressures, around 2000 pounds of pressure to be more precise, and then cooled over a period of about 35 to 40 days during which time the chatoyant crystals were formed. Upon completion, the boules were sold with specific instructions on how to decompress the material for use in lapidary purposes. It was a difficult

There was also a transparent, or translucent, variety of Victoria Stone that was created for faceting purposes. It was cooled down in one day so that it wouldn't crystallize to form chatoyant patterns. It came in 8 different colors, including sapphire blue, emerald green, amethyst purple, ruby red, topaz, aquamarine, garnet, and peridot green.

Many have spent thousands of dollars trying to reproduce this material, but none have succeeded. So, alas, Dr. Limori's secret formula remains a mystery. Not even his son

could reproduce it. All that remains in the world is what was produced and purchased 30 to 50 some years ago (that which was decompressed properly, that is).

Hence, its value remains steady and rising, even in this economy.

In Japan, Victoria Stone is considered to be a sacred mineral and purported to bless that which it touches. I'm not sure about that, but I do love working with this material. I find it to be quite easy to cut and polish. It is a relatively soft stone, not as soft as, say, Onyx, but enough so that the 80 grit grinding step may be skipped altogether when rough shaping a cabochon. In fact, I would suggest that due to its coarse grit that it be skipped, but that's a personal call.

A good starting point is the 120 or 180 grit wheel, although you may start at the 100 grit grinder if so desired, but be careful as this material grinds away fairly quickly. Once a decent rough shape is acquired, the remaining steps are usually a breeze. Next, I proceed to the 220 grit grinder to smooth out what will be the final shape, also making sure I have a well rounded dome at this point, before beginning with the pre-polishers.

Pre-polishing starts with the 320 grit belt, moving on to the 400 grit belt, and ending with the use of the 600 grit belt. It should take no more than about a minute or so at each pre-polishing step. After pre-polishing, I then use a 3000 diamond grit polishing belt, taking my time at this step to achieve maximum desired results.

A final polishing option is the use of Linde A polishing powder on a special buff, but this step is not really required for this material. I usually have a very nice high sheen after finishing with the 3000 diamond grit. I've read that polishing Victoria Stone can also be done using a dry leather buff with tin oxide, but I haven't tried that method.

I hope this has been informative. I really enjoyed researching this material further and learned even more this time around. When you get the opportunity, please take the time to stop by the lapidary workshop in the back of the Mineral and Lapidary Museum and check out for yourself what we're working on or, better yet, come work in the shop yourself. The supervisors are very helpful and newcomers are always welcome.

FIELDTRIP UPDATES

By Doug True, AFMS Fieldtrip Chairman

WARNING- The Rules for fieldtrips and collecting are changing on public lands. Actually these rules are for any organized group using our public lands. The rules are open for interpretation, but most districts are saying a planned trip by two or more people and the schedule of your trip is published or posted, and then you must apply for a recreation permit. You must find the local district you are going to collect in, determine if it is BLM or USFS then request a recreation permit form 2930-1, in that application you will have to furnish maps (topographical) A written plan of your function, area you are

camping and what you are collecting, estimated number of attendees.

You will also be required to show a certificate of insurance naming the BLM or USFS as insured. In some cases they may require you to supply Porta-Potties. In your report you should indicate specific areas where you plan on collecting, indicate if you will be digging or surface collecting.

You have a much better chance if you plan on surface collecting, if you're digging, the selected area will be scrutinized by a number of departments, Archeological, Paleontology, Endangered plants, etc, etc. After a review of your proposal, all or part of your request might be turned down.

You need to work with the recreation officer and plan your trip together as this gives you a better chance of being successful. In talking with different BLM districts their numbers seem to vary as to what constitutes a group. There will also be a processing fee of around \$100 dollars. If you are planning a trip to public lands, **PLEASE CHECK TO SEE IF YOUR GROUP TRIP** is good to go.

Other Editor's Comment: This article was published in April, May, June 2011 issue of the American Land Access Association's newsletter (see www.amlands.org).

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Carborundum®, Moissanite, Silicon Carbide

by Zeb William Rike III

from *The Pineywoods Rooter* 11/2009 via *Backbender's Gazette*, 3/2010

Whatever you call it, silicon carbide was an amazing discovery, and it has revolutionized the world. It was the first man-made abrasive and has made possible our present way of life and the lapidary hobby.

“The Man Who Didn't Know When He Had Failed” (1)

Our story begins with Dr. Edward Goodrich Acheson who in 1891, in a tiny shop and laboratory in Monongahela City, PA, filled a small iron bowl with a mixture of clay and coke, stuck a carbon arc electrode in the middle, and wrapped one wire around the bowl and the other around the electrode. These were connected to uninsulated wires that went through holes in the floor to a generator in the basement. He then closed the switch and waited a few hours, then turned off the current and examined his results.

When the material had cooled, he was painfully disappointed as he had only a dull gray mass of fused material. He removed the carbon electrode and examined it, and his trained eye detected a few tiny sparkling crystals, which he scraped off into the palm of his hand, sensing their extreme hardness and sharpness. He collected them on the end of a lead pencil and drew them across a piece of broken window glass and found they scratched it as easily as would a diamond.

He repeated his experiment and



produced enough to try as an abrasive. He sprinkled a few crystals into grease on an iron plate in a lathe and ground a facet on the diamond in his ring. Chemical analysis showed the material was silicon carbide, SiC, a hitherto unknown compound. He scaled up the furnace and soon was making ounces per day, and he demonstrated it to gem cutters in New York who saw it as a substitute for diamond dust. They ordered several ounces of the new abrasive at \$0.40 per carat (\$880 per pound), whereas diamond dust sold for \$0.70 per carat.

He trade-named the material Carborundum® (from his mistaken initial belief that it was a compound of carbon and corundum), formed a company with stockholders, and enlarged his capacity until he was making 45 tons per year. Initial large-scale uses were as grinding compound for grinding-in or seating of steam valves, and as tiny grinding wheels used by dentists on teeth.

They had a vision of really large uses, so moved to Niagara Falls, NY (for cheap electrical power) and set up to produce it in furnaces 50 feet long, where a mixture of coke (carbon), sand, salt (as a flux), and sawdust (to bum out to leave porosity) was heated to 4000°F by passage of an electric current. Carbon and silicon (from the sand) react to give silicon carbide vapor which crystallizes in cooler parts of the furnace. $\text{SiO}_2 + 3 \text{C} \rightarrow \text{SiC} + 2 \text{CO}$

Thus the abrasive became cheap enough to produce grinding wheels (bonded with clay and fired) for grinding and finishing of castings and precision grinding and shaping of metals too hard to be shaped in a lathe; up till this time, grinding wheels made from emery were used only for tool sharpening.

Other Uses of Silicon Carbide (1, 2, 3)

Silicon carbide (along with fused aluminum oxide) is used for not only grinding wheels but as loose abrasives to finish and polish monument stones, as “sandpaper” and “sand cloth” for the finishing and polishing of wood and metal objects of all kinds—from car bodies to pen points.

Porous vitrified silicon carbide is used as a filter medium in water purification, in filtration of hot gases, and many like areas.

Silicon carbide is chemically inert and very heat resistant while at the same time being an excellent heat conductor. So it can be used

as furnace walls to separate the flame from the material to be heated. It will not melt at any temperature or pressure but sublimates directly to a vapor. It can conduct electric current and is used in the form of heating elements for glass melting furnaces, etc. It also can be used as a semiconductor to make high power, high temperature electronic devices. Early in the 20th century, it was used to make rectifiers for some of the first radio sets and was made into light-emitting diodes.

Mechanical Uses

Silicon carbide is used in high-temperature bearings, disc brakes in high-performance cars (some of the Ferrari, Porsche, Audi, Bugatti, Bentley, and Lamborghini models), as diesel particulate filters and in composite (Chobham armor) and as ceramic plates in bullet-proof vests ("DragonSkin").

Optical Uses

Silicon carbide is very strong, dimensionally stable with heat and a good heat conductor and has been used in parabolic reflecting mirrors in a number of space telescopes. These are made by chemical vapor deposition and ground and polished to the right curvature. The Hershel space telescope, launched in 2007, has a primary mirror 3.5 meters (11.5 feet) in diameter and was ground to a thickness of 2.5 mm (ca. 1/10 inch) and polished to within 3/100,000th of a millimeter of the calculated shape.



Uses as a Gem

Silicon carbide is rare on earth, being found in traces only in some kimberlite and corundum deposits and in some meteorites, but it is common in space, being a major constituent of "star dust." It was named Moissanite after the discoverer Dr. Ferdinand Henri Moissan. Colorless SiC is called "Synthetic Moissanite" or simply "Moissanite" and is faceted as a gem. It is not quite as hard as diamond (9-9.5 vs. 10 for diamond) but has a higher refractive index (2.65-2.69 vs. 2.42), hence more brilliance and more fire than a diamond. It is also more heat resistant than a diamond, so it can be "set" in the wax preform used in "lost wax" casting, and molten gold can be poured around it without damage. It must be cut at the proper angle from the crystal to minimize birefringent effects.

Footnotes

1. The Romance of "Carborundum"©, The Carborundum© Company, Niagara Falls, New York, NY, 1945

2. http://en.wikipedia.org/wiki/Silicon_carbide http://www.esa.int/esaSC/SEM-7W1PGQD_index_0.html

What is Dichroic Glass?

by Steve Weinberger

(Chipper's Chatter, Vol 52, No. 1, 2008
- Newsletter of the Chesapeake Gem & Mineral Society.)

Most of us have seen the fabulous jewelry objects made with dichroic glass, and some of us have worked with it. Like many of the synthetic materials we've used in lapidary and jewelry, dichroic (Dye-Cro-Ick) glass was developed for another use other than jewelry. The word dichroic comes from two Greek roots - "di" for two and "chroma" for color. Thus, dichroic literally means "two colored".



First developed by NASA in the 1950's for use in satellite mirrors and optical filters, the glass is made by evaporated onto glass in a vacuum chamber. That golden sheen you see on the face mask of our astronauts as they do their space walks is really a dichroic coating meant to protect against the glare of natural and obviously unfiltered sunlight.

The various ultra-thin coatings are metallic oxides. Gold, silver, titanium, chromium, aluminum, zirconium, magnesium, and silicon are the metals used. As the oxides are exposed to high temperatures and a high voltage electron beam, they are vaporized and deposited onto the surface of the glass. Each metal oxide produces different colors on

the glass. Often several different oxides are deposited on the glass to produce varying effects. These thin layers have a total thickness of three to five millionths of an inch!

The dichroic coating itself has no color. The colors are created by light striking the coatings on the glass. Each piece has three colors associated with it a reflected color, a transmitted color and a third reflective color that can be viewed at a 45 degree angle. This is what causes the glass to change color when you turn the piece.

The resulting plates of glass can then be fused with other glass in a kiln. Certain wavelengths of light will either pass through or be reflected, causing an array of color to be visible. Colors vary, even with using glass from the same larger piece because of variations in the firing process and thus, each piece of fused dichroic glass becomes unique.

Although dichro is an expensive material due to the high cost of manufacture (a 4" x 4" clear piece can cost about \$14 while some patterned or textured sheets of the same size can run as much as \$65 each), the resulting jewelry can be very striking. Dichro is available from many sources.

References:

Becky Edmundson, instructor at Wildacres

Wikipedia <en.wikipedia.org/wiki/Dichroic_glass>

Artisan Dichroic <www.artisandichroic.com>

Trezora Glass <www.trezora.com>

Almost FREE hot dogs!

This is it, the big pre-event, event! The kick-off to the 2011 club season. On Saturday August 20th the club will be sponsoring a "bag - fill" and "sluice try-out." We need some volunteers to participate in an afternoon event wherein we will attempt to fill some, maybe many, or even more, quart bags for use in our new sluice.

Have some dogs, a cool drink, maybe get a bit wet (or not), and play a bit in the sand and pebbles ... Get a preview of the treasures we'll be releasing at Mint Hill Madness ...

The Date: August 20th, 2011

The time: noon to 5 pm

The place: Jack King's abode
20409 Island Forest Dr
Cornelius, NC 28031

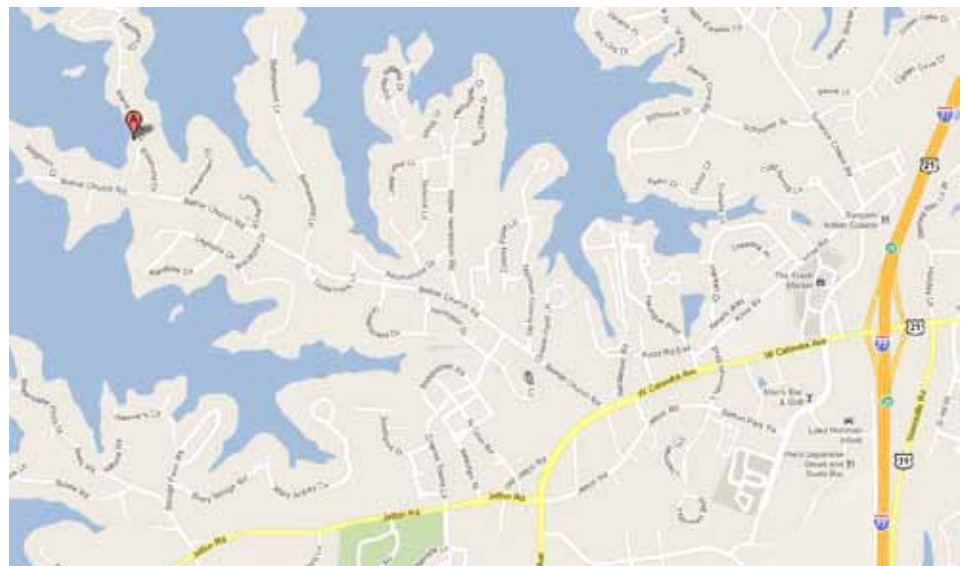
From Charlotte take I-77 N to exit 28, Cornelius. Come to top of ramp and turn left. Come 1/2 Mile and turn right at BETHEL CHURCH RD.

You will see a Walgreens .

Continue on Bethel Church Rd. for 1 1/2 miles and turn right on PINEHURST. You will see the ISLAND FOREST community sign on your right.

Come about 200 yards and you will come to a STOP SIGN at ISLAND FOREST DR.

Turn right and immediately back into the first driveway on the left. BRICK HOUSE with open carport. If the driveway is filled, park on the street. 704-892-7608



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