

GOLDRUSH LEDGER



CHARLOTTE GEM & MINERAL CLUB

MARCH 2012

the Prez Sez ...

We've been getting a number of e-mails related to the upcoming field trip to Diamond Hill Mines (Saturday, April 7th). There are lots of questions about how the trip will be organized, costs, what to bring, etc.. The comments have expressed excitement and eager anticipation of this event. Specific information will be forthcoming the week of March 5th so stay alert for the Diamond Hill blasts to follow.

One aspect of these e-mailed queries that has me really fired up are the questions coming from newer members who have never been on a dig before and/or are asking about suitability for kids. Most of the older members like to tell stories about how they became rockhounds at an early age, often under the guidance and motivation of a parent or grandparent. Young girls may collect dolls and boys might collect baseball

cards but as they get older, these hobbies typically fall by the wayside as the kids move on to electronic games, texting and internet social media. Somehow the excitement of collecting and enjoying distinctive rock and mineral specimens stays with a person well into their adult years. You become busy developing a career or raising a family but when the clouds finally part and circumstances allow, curiosity about the earth's bounty surfaces again and the search renews.

For those who have never participated in a field trip before, whether 10 or 110, let me assure you a good time will be had by all. There are three major aspects to most digs:

1.) Being outdoors for hours in the fresh air and (hopefully) sunshine. Even if it's raining, as long as you're properly dressed the ex-

citement and expectation still runs high. Experienced rockhounds know that digging in the rain has its advantages as the rain washes away dirt and uncovers specimens. Suddenly what looked like pieces of mud or dirty rocks starts to take on a sparkle after the rain stops.

2.) People on digs share - they often give freely of

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their experience and offer advice to those who are less experienced. Many are the trips where we've been invited to dig by a stranger who has found a productive area and is willing to share in the experience (of course, he might also need your help in moving that large, heavy specimen to his car).

3.) If you hit it right, a dig can provide you with rock and/or mineral specimens, and the stories of discovery that go with them, that can be enjoyed for many years to come. Linda and I have one particular grandson who became excited about rocks at an early age. Unfortunately he lives in Atlanta and is very busy with high school football, so our dig opportunities with him have become rather rare. He's currently working on his father to give him a ride to Diamond Hill on April 7th.

The Diamond Hill trip offers more than the opportunity

for fresh air and new specimens for your collection. We are fortunate to have Scott Forward available to guide us on this one. Scott is a certified geologist who has been to Diamond Hill a number of times. Not only will he be able to point out the sites with the best potential, he will also offer advice on how to dig more efficiently (with less damage to your specimens) and identify the treasures you have unearthed. An interesting side note for this trip is the fact that the week before we get there they will be turning over about 4 acres of land with backhoes in an area that has never been dug before. This represents a unique opportunity for a truly rewarding dig experience and I hope to see a lot of you there on April 7th.

Murray

past and current president of the CG&MC, recently named "Man Most Likely to Secede"



Known as Mary Ellen Jasper - it's a fossilized stromatolite from MN. The veins are hematite. Among the oldest life forms on earth.

Charlotte Gem & Mineral Club Monthly Meeting

March 15, 2011 Thursday -- 7:00 pm --

Location: Tyvola Senior Center
2225 Tyvola Rd.
Charlotte, NC 28210
(704) 522-6222

North Carolina Gold and Mining History

presentation by **Michael Scott**

He is a Historic Interpreter with this State of North Carolina Historic Site. Michael's presentation is a great source of regional gold mining history and operations, and he will also provide information on a potential field trip. The Reed Gold Mine has been featured on many national broadcasts (ABC, CBS, and others), and recently highlighted the renewal of interest in gold panning on an ABC program.

A link to the WEB site: <http://www.nchistoricsites.org/reed/>

Charlotte Jr. Rockhounds

**Saturday, March 24th, 2012
10-11:00 a.m.**

Topic: Gemstone Precious & Semi-Precious

Location: Matthews Community Center
100 McDowell St.
East Matthews, NC 28105
704-321-7275

Contact: Mary Fisher for further
information at: mefisher@att.net

Special Note: this is not the last Saturday of the month, the meeting was scheduled so as not to conflict with school holidays

Jewelry Making Class

by Linda Simon

We had a fun filled day at Linda's in February with cabochons, clay, wine glasses and beads. All 6 students created a finished cabochon pendant and covered a wine glass with patterned polymer clay. A few made beads and finished a necklace to coordinate with their pendant.

Our next class will be at the Simon home on Sat., March 17th.

Please let Linda know if you are planning to come and she will set up the tables accordingly. Class starts at 10:00 and ends around 2:30. Bring a sandwich. Cost will be \$15 or \$20 depending on the amount of supplies provided. We usually plan to create a pendant using a cabochon that Ron or Murray has provided.

If you have a project you want to tackle, fill free to bring it and ask for advice. Call Linda at 704-543-6651 to reserve your space and get directions.



notice a similarity between Linda's vest and the covered wine glass?



Dues are now officially past due!

Ok, last reminder for this year, your club dues are now officially past due if you have not yet paid them. Starting next month we'll no longer be mailing the newsletters to those who are not paid-up, and notifications will cease.

Look at the fun you'll be missing at Linda's place without that payment. (See pix to the left <-- that's Linda)

By the way you cannot attend our super-duper fieldtrip in April unless you are a paid member. See last month's newsletter of all the info on the Diamond Hill mine and field trip for April.

Murray also told me that unless I paid my dues immediately, my gasoline price would go up to over \$4.00 a gallon. *I got the message* and paid right away! They're still holding just below \$3.90 like he promised!

You can pay at the next meeting or download the form from our WEB site and mail it in.



Please turn in stamps to Pat Walker

Pat is still collecting stamps for the SFMS scholarship program and asks that you *please* turn them as soon as possible. If not she said she'd "poke you in the eye!" *You betcha I got my stamps turned in right away!*

Gemstone ID

by ron gibbs

So how do you differentiate a yellow citrine from yellow topaz? Gemstones have physical properties and we use them as a guide to help us identify them.

The first and probably easiest thing we use is color. A gemstone type has a distinct range of colors that help define it. For instance if we find a red stone, it doesn't tell us if it's sapphire, garnet, or spinel, but helps us rule out or eliminate quartz, and iolite.

Next is specific gravity. This is related to density and provides us with a means of determining which stone is heavier for roughly the same volume. Thus topaz would be heavier than quartz if both stones were roughly the same size.

Another tell-tale is refraction. Some stones have multiple refraction. When viewed down the axis these stones will show double sets of reflections and hence we know they are doubly refractive. Again this helps eliminate some possibilities.

If you have a refractometer then you can actually measure the refractive index of a stone. Although the meters are not inexpensive this is one of the best tools for differentiating similar looking stones.

Hardness is another physical characteristic of gems, but is less useful because it requires either scratching the stone or letting it scratch something else. Either way there is the possibility of damage.

Determining what a gemstone is, often uses the method of elimination rather than direct detection. By making a series of measurements you are able to eliminate more and more types until there is only one likely candidate remaining.

Magnetism is actually beginning to be used. Spessartine garnets will actually jump to a strong magnet other red-orange garnets will not.



spessartine on magnet



Saturday Cabbing Class

Sarah Lee Boyce has another cabbing class scheduled for this Saturday at 10AM and there is room for 2 more students. She leaves to teach at the William Holland School of Lapidary Arts at the end of March so this represents one of the last opportunities to study under this remarkable teacher. Call her at (704) 827-1431 (between 10AM and 8PM) to reserve your spot.

Gemstones - a crystalline mineral by any other name?

by ron gibbs

Before we tackle the slippery issue of what is a "precious gemstone" versus a "semi-precious gemstone" maybe we should first define the word "gemstone".

The precise definition of gem or gemstone is hard to pin-down, because there always appear to be exceptions after each round of definition. In general it is often thought to be, "a mineral or crystalline material that is cut or shaped to be placed in jewelry or used for adornment". But that's not quite correct because we also use pearls, amber, wood, and a variety of other non-geologic materials in jewelry.

We also use other non-crystalline geologic materials like lapis lazuli, obsidian, agate, jasper, and rhyolite (to name only a few) materials which are rocks. They may or may not be crystalline (obsidian, opal, etc.) and are not minerals, but rather rocks (lapis, agate, jasper, etc.)

So maybe the word gem or gemstone is not based solely on the material. The one thing that seems to tie the general definition to the various objects used is the fact that they are used in adornment and the creation

of jewelry. They are often cut or shaped to enhance the design, but that is not always the case either. Sometimes a natural crystal shape is used in a piece of jewelry without further modification. So cutting or shaping is not a requirement.

I bring all of this up to simply point-out that the true definition of what a gemstone is, may be defined more by a "marketing" function rather than a geologic definition. Gemstones are traditionally "shiny, pretty things, that are coveted above other similar less coveted things." When we call something a gem, we impart additional value to it. Take for example the phrases, "it was a gem of an idea", or "he was a gem of a man", and here the term "gem" is used to imply extra value.

The word gem itself may be derived from the latin *gemma* meaning bud. Like the bud of a flower. So a "budding" stone or new growth of stone.

So maybe we can only say that a "gemstone" is a stone with extra value. The word "gem" is used to imply the increased worth of the item, and "stone" is pretty



citrine



amethyst



sillimanite



owyhee jasper/black jade

generic for something hard and usually found under foot.

Ok, now that I have totally confused you let's discuss the *value* of a gemstone. These two terms are often used to further differentiate the value of gemstones, "semi-precious" and "precious". So I shall try to further confuse you by illustrating that these terms also have very flexible definitions.

Most jewelers will tell you that the precious gems are diamond, ruby, sapphire, and emerald. (keep firmly in mind this is marketing terminology.) All others are considered to be semi-precious. By their standards it's the general cost structure of the stones, on a per carat basis. That is the cost of the stone by weight, a carat being 1/5 of a gram.

Market availability and demand generally set the prices. So where does this break down? Well on the availability issue, if we turn back the clock (say just before 1492 AD - you remember Columbus sailed the blue ...) we would have found that amethyst was considered one of the precious stones. Fine amethyst was rare in the "old world" and it was not until huge deposits were uncovered in Brazil, Uruguay and other "new world" areas that

it became quite common (hence semi-precious").

If you look at diamond, the price has been mostly fixed by a single corporation. The DeBeers Company has traditionally had a monopoly on diamond market availability. They continue to hold vast quantities of diamonds in their reserve inventories, and they can very effectively set the price of diamonds world wide. Although more recent discoveries of diamonds in both Australia and Canada are now outside their direct control, there is a general advantage to keeping the prices stable and high for all concerned.

Large diamonds or those of unique color (blue, green, certain shades of yellow, and the most rare, red) will continue to command extraordinary prices as they will likely never be common. Other colors like black and brown (chocolate diamonds) are really just marketing fads to help spur sales. The majority of diamonds mined today are dark color and used mainly in cutting tools. About 80% of all diamonds are in this category.

What about stones that are more rare than the traditional "precious" stones. There are other stones that are high priced per carat than all but a handful of colored diamonds (see the

above list of rare diamond colors). True color change alexandrite (a rare form of chrysoberyl) can demand higher prices than the "precious gems". Premium alexandrite remains among the rarest of gems. It is not listed as a precious stone because of that rarity. There is not enough of it outside of fine museums to create a market demand with any but collectors.

Moderately recent mining in the state of Paraibia, Brazil, uncovered a new color of sky-blue tourmaline. The mines have produced stones with higher values than the same sized white diamonds. Just as this stone was beginning to make market headway, another discovery of similar color was claimed in Africa. Due to the rarity of the color this might have had an advantages effect on the market, but the validity of the African discovery and whether or not the new material is "treated" has put a damper on the sales and marketing.

So availability is a key criteria for considering a gemstone "precious" in the marketing sense. Thus the term "precious" as applied to gemstone may well change from time to time as new materials are discovered, or new quantities of older gemstones are uncovered.

So by general definition a

semi-precious gemstone must then be one that is "less precious" than a precious one. The list of such stones is long indeed. Again traditionally the list of such stone might include, tourmaline, aquamarine (all beryls other than emerald), tanzanite, citrine, amethyst, zircon, garnet, topaz, and opal. (This list could go on and on.) Just keep in mind that certain varieties of these stones, like tsavorite garnet or black opal may command prices higher than most of the precious stones.

What I'm trying to impress on everyone is that the terms we often associate with gemstones are derived more from marketing than from any physical property of the stone. We live in a computer age where we tend to like precise definitions, and the concept of "gemstone", and its value, is a slippery one that has changed and continues to change with time.

Commercial terms which place a value on a stone are not based solely on physical properties or rarity. They tend also to be driven by marketing and culture. Buy stones because you like them, buy them because you enjoy collecting them, buy them because the color pleases you, but be very careful buying them as an investment unless you really educate yourself about them!

Buyer Beware - man-made good and bad

by ron gibbs

Many gem materials can now be synthesized in the laboratory. These materials have the same chemistry and crystallinity as the natural materials.

Virtually all the natural colors of quartz have now been synthesized in the lab, citrine, amethyst, and clear. (Many colors never found in nature have also been created) Often the synthetics are more pure than their natural counterparts, and are useful in industrial applications. This can be the driving force for their synthesis.

Sometimes the desire is to create synthetic gemstones. Carroll Chatham and Piere Gilson independently created systems of growing emerald for the jewelry trade. They produced synthetic emeralds and sold them as such.

A note here: a *synthetic* stone has the same chemistry and crystallinity as the original natural stone. Thus Chatham emerald is a synthetic emerald.

A *simulant* stone is made to mimic the original, but is chemically different. For example cubic zirconia (never found in nature) is used as a diamond *simulant*. It is chemically different but appears similar.

A third variety, a *treated* gem, is one that was originally mined and then treated to enhance color or clarity. An example is the use of leaded glasses to make non-gem quality rubies into saleable stones. The same general practice uses a beryllium compound to enhance the color and clarity of sapphire.

The problem today is that many materials coming into the market are now *treated*, *synthetic* or *simulant* but claim to be natural. Much of the gemstone market created on E-bay has now become a dumping ground for unscrupulous dealers selling these mislabeled materials.

There is nothing wrong with treating sub-par gemstones to raise their value, but the treatment should *always* be disclosed. One example - these were sold to me as natural-color topaz, but were irradiated. On exposure to daylight the stone became colorless.



bottom stone - 8 hours of direct sunlight