



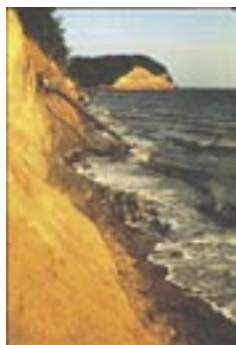
# Chippers' Chatter

Newsletter of the Chesapeake Gem & Mineral Society  
Baltimore, Maryland <chesapeake.rockclub.us>

## APRIL PROGRAM

by Richard Hoff

We're in for a real treat this month as Gil Charlton, aka "Da Prez" tells and shows us all about the fossils that can be found at Calvert Cliffs and Virginia.



Gil has been an avid collector for many years. Besides fossils, Gil collects rocks, minerals, Indian relics, Civil War artifacts and antiques. He has donated fossils from Calvert Cliffs, Cavetown, MD and Guantanamo Bay, Cuba to the Smithsonian Institution. In addition, Gil enjoys sharing his collection with various scout groups.

If you have specimens from Calvert Cliffs, why not bring them along so others may enjoy them as well. They certainly would be a fine complement to Gil's talk.

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## HONORS...KUDOS...GOOD NEWS!!

by Carolyn Weinberger

Steve and I were pleased to represent the club at the EFMLS Convention in Jackson, MS at the end of February. Although the weather was on the cool side, we did get a chance to preview spring with a few open magnolia trees and lots of blooming daffodils to smile upon us.

The meetings went smoothly and about the only major business transacted was to approve an increase in Federation dues from \$1.25 to \$1.75 per voting member. This increase will take effect for 2009. 25¢ of that increase is expected to be needed to offset an raise in AFMS member dues from \$.50 to \$.75 so it's really just a pass through for EFMLS. The remaining 25¢ will be used by EFMLS to offset rising costs to its own programs.

The club show was a good one and appeared to be well attended. We got to visit with old friends - Floyd & Val Carpenter who used to have a shop in Havre de Grace (Treasure Chest) were dealers at the show. Floyd is now 80, and runs a shop in Springfield, MO where he and Val moved several years ago.

We attended all the EFMLS functions - Cracker Barrel, meeting, auction, Awards Banquet and Editors' Breakfast - and had a wonderful time. One of our "assignments" from the club was to attend the Editors' Breakfast and pick up any awards that our club authors had earned.

A word about the Editors' Breakfast for the uninitiated. The EFMLS sponsors an annual contest for authors and editors of club bulletins.

Editors have the opportunity of submitting a few articles for the contest as well as their own club bulletin. The only stipulations this year were that the articles or bulletin had to have been produced during 2007 and that they were first published in the bulletin of the club submitting them.

Steve and I were pleased to be able to represent the club at the breakfast and pick up awards for... drumroll please....

**Paul Senstad**

Honorable Mention  
Mineral of the Month - Copper

**Mike Hakulin**

9th Place  
A Brief History of Lacquered Brooches

After receiving the awards for articles, all eyes were focused on the awards for the club bulletins and...

another drum roll please...

our own

**Becky Kays**

earned a 1st place award  
for Chippers' Chatter

Congratulations to Paul, Mike and Becky on jobs well done! Needless to say, we're all proud of you.





CHESAPEAKE  
GEM & MINERAL SOCIETY

Members of the Eastern Federation of Mineralogical & Lapidary Societies Affiliated with the American Federation of Mineralogical Societies.

The Chesapeake Gem & Mineral Society was established in order to allow its members to gain knowledge and skills in various phases of the Earth Science field. Through field trips, exhibitions, and cooperation with other societies, we endeavor to further not only our own knowledge, but also that of the general public.

Meetings are held on the 2nd Friday of each month except August at the Women's Club of Catonsville, St. Timothy's Lane & Frederick Rd in Catonsville, MD. Meetings begin at 7:30 P.m. and visitors are always welcome.

Dues are \$10 for individuals \$15 for husband and wife, and \$20 for family memberships.

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Deadline is the 15th of each month.

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**FROM THE RECTANGULAR OFFICE**

*by Gil Charlton, President*

There were great items to bid on at the March auction. Many people went home with special treasures including the beautiful carved knives by Ken. I especially want to thank the auctioneers for their enthusiasm and humor in describing the items. I am sure that all felt that each item presented was a priceless treasure to be had.

Having two of Ken's daughters in attendance was especially nice as they were able to see their father's superior creations so admired and sought after. More of Ken's items will be up for bid in coming auctions.

See you at the April meeting.

Gil

**MARCH MINUTES**

*by Earle Pftzing, Secretary*

The March meeting of the Chesapeake Gem & Mineral Society was called to order at 7:30 P.M. by President Gil Charlton who welcomed the approximately 86 members and guests.



In the interest of time, the usual meeting routines were dispensed with and only two announcements were made.

- Bernie Emery welcomed two of Ken Boulter's children and noted how much Ken had meant to the club.

- Lynne Luger encouraged all to pick up and distribute fliers for our May gem and mineral show at Ruhl Armory.

The business meeting was adjourned and was followed by a lively auction. The meeting was adjourned at 10:20 P.M.

submitted by  
Earle Pftzing, Secretary

**GOODIES 'N SUCH**

*from Liz & Wendy Stanne*

Many thanks to all who brought refreshments to our wonderful Auction Night in March!

Thanks to Tony Wilner, Sharon Becker and Dave Fordyce for signing up to bring the refreshments for April.



**MINERAL OF THE MONTH**

*by Paul Senstad*

In conjunction with our talk on fossils this month, we're going to have fossilized teeth (shark, horse, ray, fish, etc.) as our mineral of the month.



## PERSONALS

by Lynne Luger

Linda and Al have recovered from the flu. We were sorry they had to miss the auction.



Milton Bereson is recovering from his surgery and progressing with his therapy. They will be back in Baltimore this month. Hopefully we will see them at an upcoming meeting or at our show.

Condolences to Phyllis Dyer on the unexpected passing of her cousin in North Carolina.

Becky finally got some good news from her New York doctors and will be returning there shortly for a surgical procedure that should relieve her headaches and muscle weakness. Let's keep good thoughts going for her.

## MARCH MADNESS!

by Lynne & Bernie

What a wonderful auction it was!



We had an abundance of great material for sale, and a sizable crowd of buyers. We give a round of applause to our auctioneers as well.

Let's keep the momentum going for the one in June.

We will again have items from the collections of Ken Boulier, the Leitch's and the Schreters, but we do need more things for the club side however, so please keep that in mind. Thanks.

## SHOW TIME!

by Bernie & Lynne

I know you've already marked your calendar - Saturday, May 24th - for our 19th annual show. We're excited about the new location - Ruhl Armory.

I will have sign up sheets at the April meeting for our committees: Information, Silent Auctions and the Children's table. Giving an hour or two of your time is a fun way to help the club and it's not hard work at all.

I have given out the bulk of the show flyers at the Delaware and Gaithersburg shows and to Phyllis for the mailing list. But if anyone needs a large number of flyers to give to an organization or group, please call me and we will have more printed. I just need notice to do so.

If you have any questions or needs for the show let us know.

Thanks,

Lynne and Bernie

## HINTS & TIPS

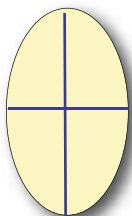
via RockCollector, March 2008

### Paint It Red!

To identify and grind out pits in a cabochon, spray the rough cab with red enamel from an aerosol can, then grind the paint off with a light touch. Pits and lines will stand out as bright red spots, making it unnecessary to wipe the cab to see if the pits are out. This is especially helpful when grinding free-form cabs from fire agate.

### Working Out a Flat Area on a Cab

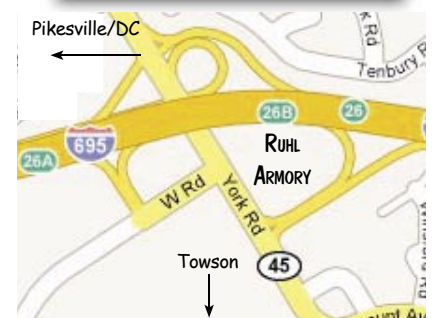
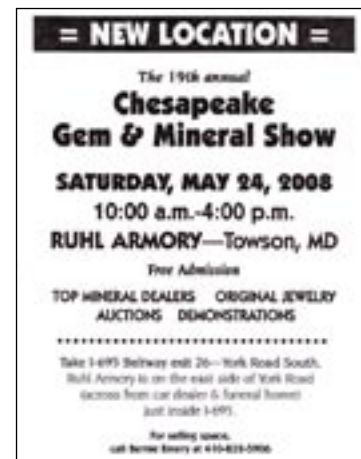
We all know this hint, but maybe we've forgotten to put it into practice. To work out a flat area in the center of a cabochon, mark the pre-form with intersecting lines form-



ing a cross at the center. When you have ground and shaped the stone to its proper curve, the cross will have disappeared and the flat spot along with it. (Sounds easy since flat spots are the curse of making a good cabochon.)

### Cutting Tips

Turn your blade around (multi-directional blades only) and sharpen it after every 25 hours of use. This will extend the life of the blade and help prevent dishing and warping. You may find you need to sharpen your blade more often. To sharpen a blade, cut a sharpening stone. These are usually made of aluminum oxide. For blades 10" and smaller, use a 0.5"x 0.5" stone. For blades 12" and larger, use a 1"x 1" stone.



## WILDACRES IN SEPTEMBER

by Steve Weinberger

After a long hot summer in Baltimore, September is the perfect time to get away and relax for a week in the Blue Ridge Mountains of North Carolina. We have the perfect place for you - Wildacres Retreat - located just north of Asheville, NC.

I've shared the wonders of Wildacres in the past, but want to add just one more enticement to the mix - Denise Nelson. Denise has traveled extensively for her jewelry and gem business and just recently returned from an exciting trip to South Africa where she was fortunate enough to spend time with the DeBeers organization. One of her talks, as featured guest speaker at the September Wildacres Workshop, will be on that trip. She had access to places that most people never get to see and people that most never get to speak with. Sounds like a terrific talk. In addition, she'll give 5 other talks on things like pearls, and evaluating jewelry and gems.

The dates for the September workshop are the 8th - 14th. Cost for the week is \$330 and you'll not only have the opportunity to hear and meet Denise, but also to take classes in one or two hobby related areas.

Interested? See me at a meeting or visit the EFMLS website <[www.amfed.org/efmls/wildacres.htm](http://www.amfed.org/efmls/wildacres.htm)> for a full list of classes, a registration form and more information.



C o m e join us for a week of fun, relaxation and learning in one of the most beautiful places on the east coast - Wildacres.

## THE PERFECT DIAMOND

by Mark Villaneuva, from Back Bender's Gazetteer, January 2008

Over the past nine years as a Gemologist and Jewelry Appraiser, I have had the privilege of viewing many types of jewelry. I have appraised jewelry ranging from antique costume jewelry to fancy colored diamonds weighing over 25 carats, and I had yet to hold a perfect diamond.

On December 1, 2007 a friend came to me for a jewelry appraisal and said, "Guess what I just bought—a perfect diamond."

Growing up as a kid in a middle class family, I was always told that there was room for improvement and that nothing was ever perfect. I carried this attitude into my professional life. I would always find an imperfection when grading diamonds. Whether it was the cut, color, or clarity grade, there was an imperfection to be found. My friend handed me a diamond that was almost nine carats in weight. I ignored what he said and proceeded to grade the diamond.

When grading diamonds, you hear and read about "The Four Cs" of a diamond. Cut, color, clarity, and carat weight determine the value of the stone, but what is perfect? I start with the gem itself, knowing that only 20% of all diamonds are of gem quality.

Diamonds are almost pure carbon that formed over millions and sometimes billions of years ago. Just a slight variation in chemistry, structure, or conditions of formation impacts whether the stone is of gem quality or is industrial grade. When diamond crystals grow about 75 to 100 miles below the earth's surface, they frequently incorporate atoms of other elements.

Nitrogen is a common trace element found within diamonds. When nitrogen atoms replace just 1 out of every 10,000 carbon atoms, the resulting diamond has a faint yellow tint. The more nitrogen atoms, the more yellow the tint becomes. Most people think of diamonds as colorless, but the majority range from near-colorless to faint yellow. Similarly, if a diamond has traces of boron, the result is a blue-tint diamond.



In the past, there was no color standard to refer to for diamonds, and dealers made up names such as Cape White, Top White,

Blue White etc. Over 2000 years ago, diamond color was referred to by numerical value—the lower the number, the higher the value of the diamond.

The Gemological Institute of America (GIA) developed a Diamond Color Grade Scale (DCGS) that is widely used in the U.S., and it is the standard upon which most other grading systems are based. The GIA DCGS consists of 23 letter grades. It begins with the letter D (colorless) and continues through Z (light yellow, grey, or brown). About 95% of the diamonds that are large enough to cut range from nearly colorless to faint yellow.

Nature adds features on the inside of diamonds called clarity features or inclusions. There are 11 GIA clarity grades: Flawless (FL) is the top, and Included 3 (I3) is the lowest. Diamonds are clarity graded at 10X with a gemological microscope and 10X diamond grading loupe. There are diamonds that have minute exterior inclusions that are very rare.

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## PERFECT DIAMOND

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These diamonds are called Internally Flawless (IF). This means it may have a slight blemish feature on the exterior of the diamond. This type of diamond could be polished again to increase the clarity grade from IF to Flawless but that is rarely done. There are IF diamonds that because of their atomic structure will never achieve the clarity grade of flawless. If the diamond is polished too much, it will get a burn from the diamond wheel and the grade and value are now decreased. Depending on the size of the diamond, this can result in a financial loss of thousands of dollars. Very few skilled diamond polishers can perform this task.

Five factors determine the overall clarity grade of a diamond. The five clarity grades are size, number, position, nature, and relief. The diamond proportions (cut) and finish (polish and symmetry) are graded as well as the color and clarity.

There are also five grades: poor (P), fair (F), good (G), very good (VG) and excellent (EX). These grades go into much further detail by measuring in hundredths of millimeters. A diamond can be graded EX, EX on the polish and symmetry but still receive an overall cut grade of VG.

In 1914 the U.S. Congress created the Federal Trade Commission (FTC) to protect American consumers from unlawful business practices. In 1957 the FTC published the Trade Practice Rules for the Jewelry Industry. This FTC publication specifically defines a diamond and the use of the words "flawless" and "perfect."

To be defined as "Perfect," a diamond must achieve the following: the color grade of D-colorless, the clarity grade of Flawless with the overall cut grade EX, and the polish and symmetry grade of EX (known as triple

## BE SAFE — BE WELL

by AFMS Safety Chair Don Monroe from AFMS Newsletter, April  
Help from Members

More and more I receive suggestions and assistance with our safety articles. At the recent SFMS annual meeting in Biloxi several people came up with great subjects for future articles. I also read a large number of bulletins from many sources and I want to share one with you that was published in the "Rockhounds Tale" from the Panama City Gem & Mineral Society.

"Vegas On your Mind?"

Would you guess one of our club members would end up needing eight stitches from a shard knocked off of a boulder with his own sledgehammer? Odds are, it was bound to happen sooner or later. What are the odds of another club member being peppered with three tiny, sharp & dangerous shards immediately ABOVE his eye (some bleeding, needed pressure to stop it) just three weeks later at another sledgehammer party at a different location? Personal safety begins to invade your conscious mind and makes you wonder, "Well, it's possible, not necessarily probable". Then guess the likely odds of the first injured club member having bought some shin protectors, failing to wear them on dig #2 and ending up with ANOTHER large cut from yet another sharp flake - finally, you can decide the odds of this happening again. If anyone gives you mere even odds this will happen a third time to "scar leg", JUMP on this bet without delay. I'll be dragging my knuckles on the ground before I'll ever put my eyes or legs at risk on a rock dig again. You can take that to the bank while my wife says "well it is about time".

EX, EX, EX). Technically speaking it is against the law for a jeweler to refer to a diamond that is not D-Flawless Triple EX as "perfect."

After grading my friend's diamond for color, clarity, and cut, I gave it back to him later in the day. He asked what I thought, and I told him it was Perfect. He replied "I know. The GIA laboratory said the same. Just checking." The appraised value of this diamond is \$1,500,000.

References:

The Nature of Diamonds by George E. Harlow  
Diamonds by Vicky Paterson  
Rough Diamonds, Internal and External Features by Nimaz Peters  
The Diamond Makers by Robert M. Hazen



This safety issue is noteworthy only because we now all know someone who has been seriously hurt during a dig. Many times over the years had I not been wearing glasses that were badly scratched at a dig by flying chips and pebbles, the alternative might have been an eye loss. It was only a matter of time. Safety will one day become a paramount issue to our hobby as it grows, leading to more digs and the inevitable injuries; that is a sure bet!"

By Herb Whittington

At the November SFMS meeting, I met Herb Whittington and we discussed his story and I saw the scars. They were real and it was scary. As Paul Harvey would say "and that is the rest of the story".

## GLASS & COLORS

by Ed Matson from *The Vug Examiner*, January 2008

While doing some arranging in my collection, I came upon some obsidian and "apache tears". Thinking back to what I read and know, obsidian is a natural glass. The common dark color, as well as any sheen or other colors, according to most sources, are caused by some of the dark minerals that make up what would otherwise be a granite type rock, start crystallizing before it hardens. These crystals are visible under electron microscopes.



I live next to two older churches and both have stained glass windows. Stained and clear glass are our man made analogs to obsidian, common opal and some forms of quartz. Glass has been around for much of human history and until the advent of modern mass production, was highly prized and more so was clear glass. Both were extremely expensive in relation to their times and one had to be of a certain income level to afford such a luxury. Hence, either glass was limited to the wealthy nobility and the churches. At one time in Colonial America, you were taxed on how many panes of glass you had in your windows, so the thrifty owner would take out windows and close up the opening and use smaller windows where he could, assuming he could afford real glass in the first place.

In fact, glass is one of the few items in our lives that have dropped drastically in price over time since mass production was developed. The most told story of its discovery has it being found under a campfire on a beach in the Mideast 4 or 5 thousand years ago. Unfortunately, science has shown that the typical campfire cannot come near the melting point of quartz beach sand, which is around 2,300 C. More than likely, it was found in a early pot-

tery kiln, where it is easy to obtain such temperatures. However, glass is a mix of quartz, sodium carbonate, or today, calcium carbonate and other compounds which melt at a far lower temperature, about 1,500 C. These compounds can easily be found in some of the clays and glazes and even the enclosing furnace, so an accidental mix can happen and the potter would find drips, runs, slags or puddles of crude glass in his kiln. So I thought an

article about what minerals and elements are commonly used to color stained glass would be of interest, as many of the same elements color natural minerals.

Colors in glass (and many minerals) may be caused by addition of metals and/or other chemical compounds and how they interact with the glass and the way said colorants form in the glass itself and interplay with the light shining through. There are about four theories as to the cause of colors in glass as well as minerals, but they are not germane to this article.

Iron oxide makes a bluish-green, used for green beer bottles and the tint in common window glass. With chromium added, a richer darker green color as in wine bottles.

Sulphur and carbon and iron salts make amber glass running from yellowish to almost black. In high tech borosilicate glasses, adding sulphur gives a blue color. Adding calcium gives a deep yellow color.

Manganese in trace amounts will cancel out the common green tint given from iron, or make an amethyst color. In a very slow process, this manganese compound converts to sodium permanganate, which is a dark purple color. In some areas of the country, houses built more than 300

years ago have window glass which became lightly violet colored due to this change and are collectibles.

Selenium, as with manganese, is used to decolorize glass, or to a make reddish color. This creates many pink and red glass colors. If cadmium sulfide is added, a brilliant red color known as "Selenium Ruby" is the result.

Cobalt in as little as 0.025 to 0.1% yields the famous cobalt blue glass. The best color is achieved with a touch of potash. Trace amounts are used for decolorizing.

Tin oxide blended with antimony and arsenic oxides create an opaque white glass which we call milk glass. When first rendered by the Venice glassmakers, they made an imitation porcelain with it.

A mere 2 to 3% of copper oxide creates a turquoise color. Ironically, pure copper metal makes a very dark red, opaque glass, and is sometimes used as a substitute for gold in the making of ruby-colored glass.

Nickel metal used in varying amounts, can cause a blue, or violet, or even black glass. Lead crystal with nickel makes a purplish color. In reverse, nickel together with cobalt was used for decolorizing lead glass.

Metallic chromium is a extremely strong colorizing agent. Depending on the amount, it will make a dark green or a black color. In cahoots with tin oxide and arsenic, emerald green glass is made. Chromium "aventurine", in which aventurescence was achieved by causing growth of large parallel chromium oxide plates suspended in the glass. Cadmium and sulphur makes in deep yellow color, often used as a glaze. However, cadmium is well

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## GLASS

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known as a toxin.

The high tech metal, titanium produces a yellowish-brown glass, which can be called an amber glass. However, titanium is rarely used by itself, and is used mainly to intensify and brighten other colorizing additives.

Metallic gold to the amount of around 0.001% makes the well-known, rich ruby-colored glass, called Ruby Gold or Ruby Glass, and lesser amounts make a less intense red, often marketed as "cranberry" glass or in the Northeast, Cape Cod Cranberry Glass. The color is created by the size and dispersion of individual gold particles in the glass. Ruby gold glasses are usually made of lead glass with some added tin.

The infamous and deadly uranium in the amounts ranging from 0.1 to 2% give glass a fluorescent yellowish to greenish color. There is typically not enough radiation from uranium glass to be dangerous, but if ground into a powder, and inhaled, it can be carcinogenic. Interestingly, when used with its direct opposite, lead, as in lead glass with very high proportion of lead, it produces a deep red color.



(Nancy's note--Uranium compounds in ceramic glazes make the famous burnt orange color of Fiesta™ ware of the post war era.)

Silver, as always, is the beautiful and mysterious lady at the Gala party. Silver compounds, notably silver nitrate, can produce a range of colors from orange-red to yellow. The way the glass is heated and cooled can significantly affect the colors produced. The chemistry involved is complex and even today, is not well understood.

## FINDING ROCK HUNTING MAPS ON THE INTERNET

by Glen Miller, via CFMS Newsletter, February 2008



Here are some tips for locating free online maps (primarily USA). The good news is that there is a federal program that publishes digital products online that will provide complete national coverage. The bad news is that it is a federal program, subject to manpower and funding constraints, but it is a very good start. The Internet is a source for many maps of other countries. I have viewed geological maps of Oman and even the Moon and Mars online.

Geological and Geophysical Maps - Finding The Map you need:

Traditionally, one went to a state bookstore to purchase a paper map, hoping it was still in print. The trend today is to publish them online with free access! Tennessee will no longer be printing maps in advance. Maps that aren't online can be purchased for \$20 a map, printed straight from a digital file.

"About.com" is the quick and easy solution for links to state geological maps. About.com pre-searches and assembles all types and classes of information. If you go to their Geology or Maps sections and poke around, there are pages for state geological maps and state geological organizations. There is also <geology.com> with similar sources. They also list state authorities and links to their websites. Once in those websites, you may frequently find a free downloadable map for the local area you are looking for. The USGS has taken great steps to centralize the search for geological maps.

## ENHANCED, TREATED, HEATED, DYED, STABILIZED, CREATED AND IRRADIATED - FAKE?

by Deborah Pfianz, from RockCollector, December 2007

Gemstones and semi-precious stones have been fiddled with for centuries to make them 'more': colorful, more eye-catching, and easier to work. This does not make them 'fake', however one should know what some of those terms and treatments mean.

Heat Treated: this is the most common treatment and is as old as fire. Humans heated agate and jasper so as to be able to knap the stones for tools. Humans also heat gem materials to enhance, clarify or create color in a stone. Amethyst is heated for citrine and ametrine. Zircon is heated to clarify the stone to clear white. Sapphires are heated to get the most amazing pinks and blues. Tigereye is turned blue or red. Carnelian turns orange red. Aqua-

marine may go from green-blue to blue. Rubies may lose a purplish tint. Iolite may be turned a deep blue. It is also used to enhance the 'color change' gems such as tanzanite.

Dyed: this is also a very common practice. Agate is dyed to get fancy pinks, purples, orange and blues - eye catching and very saleable. Chalcendony is often dyed; black is sold as onyx and green is sold as chrysoprase. Howlite is often dyed to look like turquoise, lapis, sodalite and charoite. Turquoise and jadeite are often dyed to enhance the natural color. Alabaster, coral, banded calcite, and marble

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## ENHANCED, TREATED, HEATED

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are dyed to enhance their color or to imitate other semiprecious stones.

**Irradiation:** while topaz is currently the most commonly irradiated gemstone (to get various shades and tones of blue) this is also how one gets those fabulously colored diamonds. In fact diamond was the first gemstone color treated with radiation.

**Stabilized:** opals are often stabilized - either by filling such as with Opticon resin (or similar agent) or by capping either as a doublet or triplet. Emerald has a long history of fracture filling due to its popularity and its tendency to be highly included and fractured. While natural oils have traditionally been used for fillings and stabilization, modern synthetic resins are now being used, such as Opticon, which are more permanent than the natural oils were. Turquoise and coral are also stabilized in such a manner so as to make them a bit more durable.

**Created:** this is a touchy subject. Much like farmed pearls are real with a center of plastic or mother of pearl rather than sand. Still real, still a pearl, just helped to grow by a human. Laboratory grown crystals of ruby, sapphire, diamond, emerald, and star sapphire are real semiprecious stones. They just weren't grown in the earth. So what is the answer: Real or Fake? This 'real vs fake' can be argued with all sides being technically correct. That is not the most important information one can have. The really important bit about this from a lapidary or jeweler's point of view is disclosure. Does one know up front that the stone you are getting has been 'helped along' by the human touch? Do you as a lapidary artist, gemsmith, jeweler or craftsperson know what you are using? The beauty and art that we create with these stones is being helped along by our touch, much as it was to first get our attention. There is beauty in the knowing - be sure to share with those around you.

## HOW MINERALS ARE FORMED

by Carol Jones, from Rimstone Review, February, 2008

Most of us have learned that one of the characteristics of minerals is their inorganic origin, that they are not products of biological processes. Dr. William D. Nesse, in his introduction to Mineralogy, calls this criterion an "historical en-crustation" that should be tossed overboard. So let's do that. Splash!

Studies of bacteria, including those living near deep-sea "smokers," indicate that bacteria have been for a long time important in the formation of useful minerals and ore deposits. Iron ore seem to be such a case.

The story begins some 2,800,000,000 years ago, or perhaps earlier. Some group of bacteria living in shallow seas developed chlorophyll, a photosynthetic pigment that uses solar energy to extract energy from the chemical bonds holding the water molecule together and so to form organic compounds. These are the blue - green bacteria nowadays. A product of this form of photosynthesis is molecular oxygen,  $O_2$ . The oxygen released during photosynthesis dissolved in the seawater, causing other sorts of bacteria to burrow into the mud, hide in deeper water, die, or adapt by developing ways to detoxify oxygen.

Among the survivors were bacteria preserved in the Gunflint Chert of southern Ontario, northern Michigan, and northern Minnesota. This chert is some 2,000,000,000 years old and rich in fossil microorganisms. Among the fossils are forms that look very much like modern metallogenic bacteria. As a result of their biologic processes these modern bacteria secrete tiny strands of rickrack composed of  $Fe(OH)_3$ . This compound can be converted to hematite,  $Fe_2O_3$ , and to magnetite,  $Fe_3O_4$ .



suggested that the ancient metallogenic bacteria lived on a fairly shallow part of the sea floor where oxygen was not entirely plentiful. During the warmer seasons, while the blue-greens flourished and produced  $O_2$ , the metallogenic bacteria produced lots of iron-bearing rickrack: in less favorable seasons they produced less. Hence the thin layers. Some of these fossil bacteria have been found in hematite.

It seems probably that the iron ores we use are the product of zillions of ancient metallogenic bacteria. When you stir your coffee with a stainless steel spoon think of them.

The Gunflint Chert is a small part of a body of iron ore, a banded iron formation (BIF for short). BIF were deposited in large quantities on many continents between 2,700,000,000 and 2,000,000,000 years ago. These iron deposits, which account for some 90% of useful iron ores, consist of alternating thin layers of hematite-rich and magnetite-rich sediment. It has been



# DEEP THOUGHTS

from sources as noted all via **SCRIBE, 2008**

## The Joys of Aging

I have become quite a frivolous old gal. I'm seeing five gentlemen each day. As soon as I awaken, will power helps me out of bed. When he leaves I go to see John. The Charley Horse comes along and he takes a lot of my attention. When he leaves, Arthur Ritis shows up and stays the rest of the day. HE doesn't like to stay in one place very long, so he takes me from joint to joint. After such a busy day, I'm ready to go to bed with Ben Gay. What a day!

via Gem Time, Dec.. 1996

After several practice fire drills, the employees of a northeastern company's regional office invited the fire chief and his staff to watch them go through a drill. With the ringing of the fire alarm, the 600 employees evacuated the four-story building in four minutes and ten seconds. Everyone was proud and pleased - until the buzzer sounded for quitting time that afternoon and somebody timed the evacuation. This time the building was cleared in two minutes flat.

via Rockhounder Jan., 1996

It doesn't have to make sense. It just has to work.

When talking nonsense try not to be serious.

You know you're spending too much time on the computer when your spouse had to send e-mail to you to announce it's time for dinner.

via Smoke Signals, Dec. 1996

## A Word on Taxes

When speaking of taxes, we're reminded that humorist Will Rogers said: "The income tax has made more liars out of the American people than golf has."

via Gem Time Nov. 1996

Of all the things you wear, your expression is the most important. You can't change the past, but you can ruin a perfectly good present by worrying about the future.

via San Diego Lapidary Soc.. 11/96

If your looking for a helping hand, it's on the end of your arm.

A politician is someone who divides his time between running for office and running for cover.

A city without trees isn't fit for a dog.

Television is really becoming educational--it's driving people to read books.

The optimist is as often wrong as the pessimist, but he is far happier.



## Committee Chairpersons

Auctions - Lynne Luger and  
Bernie Emery

Directory (address changes)  
Lloyd & Arlene Gleeson

Field Trips - Dave Fordyce

Greeters - Ray Petrisko  
Al Pribula, Earl Pftzing

Hospitality - Liz & Wendy Stanne

Legislation - Dave Fordyce

Library - Tony Wilner

Mineral of the Month -  
Paul Senstadt

Personals/Announcements/  
Sunshine - Patricia Smith and  
Lynn Luger

Programs - Richard Hoff,  
Keith Kaneda and Tony Wilner

Safety - Johnny Johnsson

Show - Bernie Emery & Lynne Luger

Showcase - Steve Dyer

Telephone Chain  
Lynne Luger

Phyllis Dyer

Dawn Johnsson

Mary Chandler

Liz Stanne

Wendy Stanne



Carolyn Weinberger  
PO Box 302  
Glyndon, MD 21071-0302



## MARK YOUR CALENDAR

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April:

10-13: Rochester Mineralogical Symposium; Radisson Inn, Henrietta (Rochester) NY.

11: Chesapeake club meeting at the Women's Club - 7:30 P.M. Come and hear the Prez speak on fossils.

15: IRS Celebration Day (they celebrate, not us!)

16: Balto. Mineral Soc. Meeting at the Cockeysville Library. - 7 P.M.

May:

6: Gem Cutters Guild meeting at Meadow Mill - 7:30 P.M.

9: Chesapeake club meeting.

24: Chesapeake Gem & Mineral Show at Ruhl Armory 10 - 4 p.m.

## THE WONDERS OF A CRYSTAL

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from Rock Scoop, Feb. 2001

A crystal is one of the strangest objects of nature. It is not alive, yet it grows. A crystal attracts the same



kind of materials of which it is composed, arranges them with great accuracy in geometrical forms, cements the parts together and holds them. Place a crystal in a liquid, or vapor composed of the same ingredients as the crystal and the process of accumulation immediately begins. If a crystal was broke in two parts and placed in a bath of liquefied crystal, the broken surface will be repaired and each part will grow into another crystal, providing the other conditions favorable for crystal growth are present.

Even after a crystal has been worn until it is but a rounded grain of sand, it will speedily become a crystal again if placed in a solution containing the ingredients of which it is composed. There is no known limit to the ability of a crystal thus to repair itself and resume its growth.

Under a microscope a crystalline solution can be seen forming into crystals, and it is a wonderful sight. First, innumerable dark spots form in the fluid; they stand still and then begin to move. It is soon seen that the movement arranges the spots in straight lines, like beads. The beads speedily coalesce into rods, and the rods arrange themselves into layers until a crystal is created. The process proceeds so rapidly that it is almost impossible to follow closely.