FORSYTH GEM AND MINERAL CLUB, INC.

Nature's Treasures

August 18, 2018

****** Public Version ******

MEETING: There will be no meeting of FGMC for the month of August. The club will instead have the annual club picnic.

PROGRAM: There is no program for August or September. Programs will resume at the October meeting.

Refreshments: There are no refreshments for August as there is no meeting.

.2018 Refreshment List

January Fulchers and Bakers	July Hughes and Roby
February Myers and Gaskills	August Picnic
March Goodes and McGilvarys	September Show
April Whickers and Becks	October Schlottmans and Heberts
May Brouhles and McGilvarys	November Marions, Reeds
June Caroline Jones and Daniel Bowles	December Holiday/Show Dinner

If you enjoy the refreshments, please be prepared to take a turn in furnishing them. NOTE: if you volunteer to bring refreshments, please do so. If you are unable to attend for any reason, contact Vickie or Al Gaskill prior to the meeting so that alternate arrangements can be made.

Note: Due to equipment issues in the meeting area kitchen, it will be necessary for the refreshments providers to also bring ice for the drinks, at least for the next couple of months.

Dates To Remember:

September 7-9 – Annual Gem, Mineral, Jewelry and Fossil Show

DON'T FORGET YOUR NAME TAGS

No Meetings in August and September

The club will not hold program meetings in August or September.

The August meeting is replaced by the annual club picnic.

The September meeting is replaced by the annual Gem, Mineral, Jewelry, and Fossil Show.

Program meetings will resume in October.

Show Display Cases

As a reminder, members are encouraged to set up displays at the show in the club's display cases. Displays do not have to be directly related to the theme of the current year's show, though such is encouraged when possible.

Displays must be set up no later than the dealer dinner on Thursday night, and cannot be taken down until the show closes on Sunday evening.

Members wishing to put in one or more displays should contact the display coordinator Alex McGilvary to let him know how many cases you would like to have. Actual case assignments will be done on setup day itself.

FGMC Field Trip

Note: FGMC Field Trips are for club members and their families only. Liability issues mean that these trips cannot be attended by the general public unless otherwise noted.

This month's field trip will be to the Crabtree Mine up in Spruce Pine

Volunteering For the Show

Arvil has reported that volunteers for the show are running VERY thin. We are in dire need of additional bodies throughout the event.

Volunteer signup sheets will be available at the club picnic. Those wishing to assist with the dealer dinner setup should contact Hospitality Chair Vickie Gaskill.

Arvil has asked that if it is at all possible that you contact him BEFORE the picnic this year. The vagaries of the calendar cause there to be a shorter time between the picnic and the show. In order to get the schedule worked out and get it to the newsletter editor in time to get published and distributed it will help immensely if the schedule can be as complete as possible prior to the picnic.

Remember that the show is the primary educational activity for the club and is a major factor in what allows the club to retain educational organization tax status.

For those new to the club and interested in helping out, the following are the functions:

Set-Up Day: This is done on the Thursday before the show starts (Sept 7). Set-up starts around 8:30 AM and goes until completed, usually some time in mid-afternoon. Work includes fetching the display cases and other materials from the storage site, setting display tables in position, covering the tables, and assembling the cases. There are a few other minor items. All of this is generally light to medium-duty efforts.

Dealer Dinner: FGMC sponsors an annual dinner on the evening of the set-up day. Members are asked to provide vegetables, salads, and desserts. (The meat is handled by the club.) Setup for the dinner begins around 5 PM with positioning the tables and chairs, and organizing the food as it is brought in.

Ticket Sales: This function is handled at the front door. Volunteers here will accept the money for tickets, receive complimentary tickets, pass out door prize tickets, and answer basic questions about the show.

Geode / Grab Bag Sales: This takes place in the club corner, where geodes are sold (free cutting) and grab bags are sold.

Geode Cutting: The cutting function cuts open geodes that customers have purchased, allowing them to find out what is inside them. (Note: Cutters must be trained – but training is provided by experienced cutters at the show.)

Take-Down Day: Take-down is the exact opposite of set-up day. Display cases are disassembled, table covers are picked up, other items are packed, and all materials are then carried to the storage site. Take-down starts immediately at the show closing on Sunday afternoon and is usually completed by early evening.

The show is an all-volunteer production. Without sufficient manpower to handle all of the tasks it may soon be necessary to consider whether the club can continue to put on the show. If you enjoy the show, please make every effort to assist in putting it on.

Upcoming Shows

August 31 - September 3, 2018 - Hendersonville, NC - Labor Day weekend -Henderson County Gem & Mineral Society 37th Annual Gem & Mineral Spectacular -Colorful World of Jaspers - Friday-Sunday 10 AM to 6 PM -Monday 10 AM to 5 PM - Whitmire Activiy Center, 301 Lily Pond Rd, Hendersonville, NC - *Demonstrations*Exhibits*Hourly Prizes*Refreshments Available* - *Raffle*Grand Prizes* - For more info check our website: http://HCGMS.com - Admission: $5.00 Adults - Children under 12 accompanied by an adult are free - $1.00 off admisson with coupon on our website!

Reviewing: Topaz

From Geology.com/minerals

A gemstone that occurs in a wide range of natural and treated colors.

Author: **Hobart M. King, Ph.D.**, GIA Graduate Gemologist

What is Topaz?

Topaz is a rare silicate mineral with a chemical composition of Al2SiO4(F,OH)2. It usually forms in fractures and cavities of igneous rocks such as pegmatite and rhyolite, late in their cooling history. It is also found as water-worn pebbles in stream sediments derived from those igneous rocks.

Topaz is also a well-known gemstone sold in a wide variety of attractive colors. Some of these colors are natural, while others are produced by treating pale or colorless topaz with heat, radiation, or metallic coatings.

Blue topaz is the most popular color in the market today. Most of it is produced by treatment. Many people like it because of its attractive color and low price.

Topaz is a traditional birthstone for the month of November, which contributes to the gem's popularity. Topaz jewelry can be found for sale in almost every jewelry store.

Physical Properties of Topaz

Chemical Classification	Silicate.
Color	Natural colors include: colorless, yellow, orange, brown, red, pink, blue, green. Occurs in a wide range of treated colors, most often blue.
Streak	Colorless - harder than the streak plate.
Luster	Vitreous.
Diaphaneity	Translucent to transparent.
Cleavage	Perfect basal cleavage.
Mohs Hardness	8
Specific Gravity	3.4 to 3.6
Diagnostic Properties	Hardness, prismatic crystals, sometimes striated, cleavage, specific gravity.
Chemical Composition	Al2SiO4(F,OH)2
Crystal System	Orthorhombic.
Uses	Gemstone, Mohs hardness index mineral.

One of the best-known physical properties of topaz is its hardness. It has a hardness of 8 on the Mohs hardness scale, making it the hardest silicate mineral. It also serves as the Mohs hardness scale index mineral for a hardness of 8. Every student who takes a physical geology course learns about the hardness of topaz. Diamond, corundum, and chrysoberyl are the only commonly-known minerals that are harder.

Most topaz is colorless to milky. Yellowish and brownish colors are also common. Natural pink, orange, red, purple, and blue topaz are rare and valuable if they are of gem quality.

When allowed to grow unrestricted, topaz forms orthorhombic crystals, often with striations that parallel the long axis of the crystal. It also has a distinct basal cleavage that breaks perpendicular to the long axis of the crystal. This cleavage makes topaz a more fragile gemstone than its hardness of 8 would imply. Hardness is the resistance to being scratched, but the ability to resist breakage is a property known as tenacity.

Topaz has a specific gravity that ranges between 3.4 and 3.6. This is quite high for a mineral composed of aluminum, silicon, and gaseous elements.

Use of Topaz as a Gemstone

The name "topaz" and many language variants have been used for yellowish gemstones for at least two thousand years. At that time yellowish gems were called "topaz" in many parts of the world. Many of the earliest gem traders did not realize that these yellowish stones were actually different materials.

Then, about two hundred years ago, people who traded in gems began to realize that these yellowish gems might be topaz, quartz, beryl, olivine, sapphire, or one of many other minerals. They also learned that topaz occurred in a wide range of colors other than yellow.

If you visited a jewelry store fifty years ago and asked to see topaz, you would likely be shown gems that were in the color range of yellow, orange, and brown. Starting in the 1970s and 1980s, the most common color that you would be shown began to be blue. This blue color was usually produced by treatments that converted colorless topaz into a more marketable gemstone.

Topaz Treatments

Today most topaz offered in mall and department store jewelry stores at low to moderate prices has been treated in a laboratory. Colorless topaz can be heated, irradiated, and coated with thin layers of metallic oxides to alter its color.

Natural blue topaz is extremely rare and is usually pale blue. Almost all of the blue topaz offered in stores today is colorless topaz that has been irradiated and then heated to produce a blue color. "Swiss blue" and "London blue" are trade names for two of the most common varieties of treated blue topaz seen in today's market.

Natural pink to purple topaz is also extremely rare, but these colors can also be produced in a laboratory. The starting point is a stone cut from colorless topaz. It is first heated and then coated with a layer of metallic oxide to produce the pink color. If coated stones are worn in jewelry, over time the coating can wear thin or wear through at points on the stone where abrasion occurs.

Some topaz is coated with a metallic oxide that gives the stone a multicolored iridescent luster. These stones, known as "mystic topaz," appear to change color if the observer moves the stone under a light or changes the angle of observation. These coatings are also thin and can be worn through during wear.

Radioactive Blue Topaz?

The type of irradiation used to transform colorless topaz into material with a blue color can cause some irradiated topaz to become slightly radioactive. Fortunately, the radioactivity level of the topaz begins to decline as soon as treatment is complete. It eventually declines to a level that is safe for the topaz to be handled during manufacturing and be sold to the public in jewelry.

In the United States, the Nuclear Regulatory Commission requires all irradiated gems and gem materials to be securely stored until their radioactivity decays to a level that is safe for manufacturing and sale. This is done to protect employees of the gem and jewelry industry and the jewelry-buying public.

All companies who distribute newly irradiated gems in the United States must be licensed by the Nuclear Regulatory Commission. They must also conduct radiological surveys of all materials in secure storage to be sure that no gems are released until their radioactivity declines to a level that will not pose any health risks.

The Nuclear Regulatory Commission has detailed information about irradiated topaz and other gemstones on their website. They also have answers to frequently asked questions. Two answers that we believe will be of interest to our readers are quoted in the box on this page. You can read the rest by visiting the NRC website.

Geologic Occurrence of Topaz

Topaz has a chemical composition of Al2SiO4(F,OH)2. The fluorine in its composition is a limiting factor on its formation. Fluorine gas in concentrations high enough to form minerals only occurs in a few geologic environments.

Most topaz grows as crystals within the veins and voids of igneous rocks. This topaz is then found in the cavities of a pegmatite, or in the vesicles and intergranular spaces of rhyolite. These topaz crystals grow during the late stages of magma cooling and while degassing releases the fluorine necessary for topaz crystal growth.

Precipitating in cavities, topaz sometimes develops nicely-formed crystals. These crystals can have excellent clarity and can be used as a gem material. Especially attractive crystals of topaz are popular with mineral collectors. They have the value of a mineral specimen and the value of a gem material.

Topaz is also found as water-worn pebbles in stream sediments derived from the weathering of pegmatites and rhyolites. These are often produced by placer mining.

Topaz is found in many locations worldwide where rocks like pegmatite and rhyolite are formed. It is only a minor mineral at these locations, and it is considered to be a rare mineral on the basis of its general abundance.

Brazil is the leading source of gem-quality topaz today. Sri Lanka is another important producer. Small amounts of topaz are produced in Nigeria, Australia, Pakistan, Russia, India, Zimbabwe, Madagascar, and Namibia. In the United States, Utah named topaz as its state gemstone in 1969.

Meeting Minutes

FGMC Minutes 7. 19.18.

24 members present

Marlene McAulee, a professor at Guilford College, presented a program on Pegmatites.

Next field trip is Saturday, July 21 to the Museum of Natural History in Raleigh. Chris Tacker, the senior geologist, will be our guide. Meet at 11 am at the main desk of the Nature Exploration Center.

Thanks to Ernie Hughes and Diane Robey for the tasty refreshments.

Volunteer needed for October refreshments.

August 18. Picnic and grab bag assembly. 4 pm. Sign up sheets will be available for volunteers to work at FGMC show. Set up and dealer dinner is September 6. Show Sept. 7 to 9.

Please sign up for display cases at the show with Alex McGilvary.

Franklin Gem and Mineral Show July 26 to 29.

Spruce Pine August 2 to 5.

Door Prizes. Julian Gonzales chose a geode.

Marcus Gonzales chose a selinite specimen.

Thank you note needs to be sent to property owners that allow our club to take field trips on their land.

Dixie Mineral Council expects each club to sponsor a field trip. Club consensus that January 2019 would be good timing. Options of trips are Douglas Reservoir, Graves Mountain, Diamond Hill, Cotton Patch, Granite quarry in Mt Airy.

Club President will have door key for building where our meetings are held.

Respectfully Submitted,
Lisa Reed, Secretary

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Nature's Treasures is the monthly newsletter of the Forsyth Gem and Mineral Club.

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