

The official bulletin of the Dothan Gem & Mineral Club, Inc.

ROCKHOUNDS HERALD

920 Yorktown Road, Dothan, AL 36301-4372

www.wiregrassrockhounds.com

July 2016

Ruby Al₂O₃

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Words from...

The President

Our 1st Summer Social was nice. We played bingo for a huge pile of prizes. Everyone eventually won, so it was a fun time. I want to thank everyone who brought the great food and donated the wonderful prizes.

I have been looking for dig opportunities and found a weeklong event coming up at the end of the month. The 13th Annual Western North Carolina Rockhound Roundup hosted by the Mountain Area Gem and Mineral Association (M.A.G.M.A) will be July 25 – 31. They have quite an agenda planned and it coincides with the numerous gem and mineral shows that are taking place in Franklin, NC. The group will be leading field trips each day to various mines and they will also have groups going to the various gem shows in Franklin, NC.

Digs are planned at the Crabtree Emerald Mine in Mitchell County, NC on Tuesday the 26th. There is an alternative trip to the Sinkhole Mine in Mitchell County. On Wednesday the 27th, there will be a trip to the Little Pine Garnet Mine in Madison County, NC. On Thursday the 28th, groups will be visiting the various gem and mineral shows taking place in Franklin. On Friday the 29th, there will be a trip to the Sharpes Emerald prospect in Hiddenite, NC. There will be tables set up throughout the week for people to buy, sell and trade. There will also be more digs on Saturday. This roundup is open to all clubs and anyone visiting the area from out of town. For more information, go to <http://www.wncrocks.com/magma/magmaupcomingevents.htm>

I would like to encourage everyone to consider going to the roundup. You don't have to spend the entire week, but if you do there will be plenty to keep you busy. Please keep your eyes & ears open for other collecting opportunities and let the group know what you find. Hope to see everyone at 2:00 PM on Saturday, July 23rd for the next Summer Social.

Pat

Announcement

Summer Socials – The second of our three summer socials is scheduled for July 23rd. Please note this is the Saturday immediately preceding what would have been our normal meeting day. As with our regular meetings, the gathering time at the fellowship hall is from 2:00 to 4:00 PM. Aside from another great potluck meal, the July social will feature an auction to benefit the club. Everyone is asked to bring items to donate.

The third and final summer social is scheduled for August 27 and will feature an auction where members can bring items to sell and pocket the cash.

Upcoming Shows

None planned in our southeastern neighborhood until September.

Safety Never Takes A Holiday

On a recent trip to Hogg Mine I spent the night before inspecting my tools and safety gear to be sure I was ready for a fun day in the field. Last thing I want is to suffer an injury and bring it to a quick close. In the past 2 years I've investigated numerous on the job injuries but 2 that stuck in my head while getting ready that evening involved a piece of metal separating from the tools, passing through the users' clothing, penetrating deep into their muscle. So I dressed out all my chisels so they are fresh for the season. Dressing the chisels is removing the mushroom heads that develop from being pounded on. So if your chisels look like the ones in these pictures it is time to get them dressed to make them safe.

So the next day in the field I observed two ladies trying to obtain a nice piece of rose quartz from a large boulder. They were using the chisel point of a rock hammer as their chisel and striking the flat end of the same with another hammer. I offered them my tools and explained that you never strike hammer faces together or any hardened metal. The force of the two faces coming in contact can be enough to cause the crystalline structure of these metal surfaces to fracture off shards at high velocity and sharp enough to penetrate your clothing, skin and muscles like a bullet. Saw that happen just recently when a worker was hammering on a large chain link.

One last note, make sure you have safety glasses. Look for the "ANSI Z87" marking on the temple frame of your glasses to be sure they are up to the task of protecting your eyes from flying chips. Not all eyeglasses and sunglasses can protect you. Take a few minutes in the evening during the week to get your chisels in order for the next field trip and keep it fun.



How and Where Gems Form, Part 1 of 2

A specific, and unlikely, combination of five factors account for how and where gems form. Temperature, pressure, space, chemical elements and time are required for the formation of each kind of gem. This is why gems are, in general, rare—but some are rarer than others.

Gems, in nature form from: 1) solutions by precipitation, 2) melts by crystallization, or 3) vapors by condensation.

Solution/Precipitation Gem Formation

Both near-surface cooler waters, and warmer waters from lower depths in the Earth can dissolve certain minerals from rocks or sediments, and carry, mix, and concentrate them until conditions change, ultimately precipitating them as solids (crystals or amorphous materials).

Near surface environments: Near surface waters, like rainwater, move down or up through soil or rock as the local cycles of precipitation and evaporation dictate. Such water has carbon dioxide from the air dissolved in it, which creates a weak acid solution (carbonic acid) in which many minerals are soluble. If the environment contains sandy soils or sandstone rock, then silica will be dissolved and certain silicate gems such as aggregate quartzes (e.g., agates or amorphous opals) may form as the water evaporates.

Commonly, layered or banded patterns are seen in the agates, indicating cycles of formation from waters of slightly different chemistries. The botryoidal habit is also frequently seen in gems formed under near surface conditions. Likewise, ocean water or other brines can evaporate as climate changes leaving behind dissolved minerals like halite (the mineral name for sodium chloride, table salt). Other waters containing sulfur may evaporate and leave behind sulfate minerals like gypsum.

If the rocks or soils contain aluminum and copper in addition to silica, then copper containing minerals like azurite, malachite and turquoise may form.



[Near surface silicate gems: agate cabochon showing layered structure, botryoidal carnelian, precious opal in rock seam, common opal nodule]



[Amethyst stalactite: note layered structure of both aggregate and single crystals]



[Minerals from briny evaporates: "cranberry halite" from Nevada, green halite from Australia (color is due to pigments from crustaceans and microorganisms that lived in the salty water), gypsum "roses": Images courtesy of Las Vegas Jewelry and Mineral]



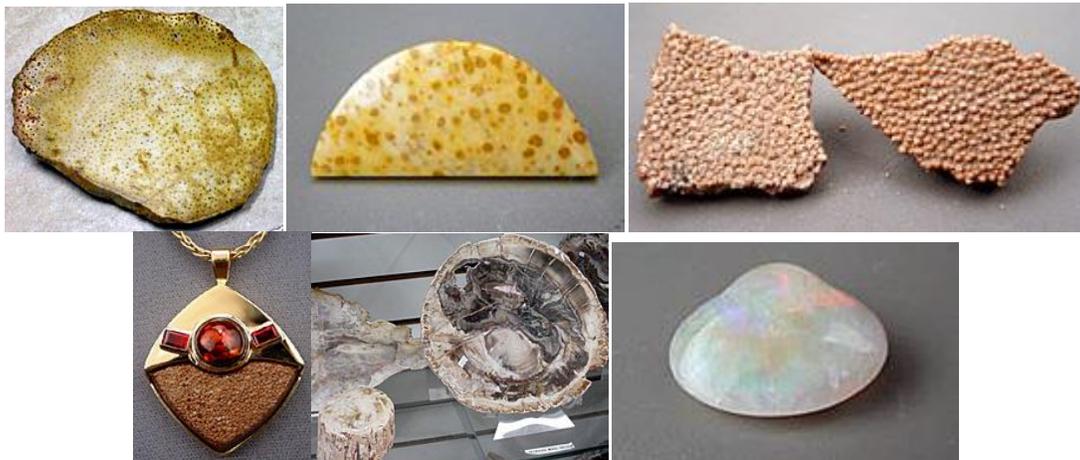
[Turquoise bearing rock, from Nevada: Image courtesy of Las Vegas Jewelry and Mineral, rare occurrence of single turquoise crystals from Virginia 50x, malachite, turquoise and chrysocolla veins in an Arizona rock: Image courtesy of Dr. Barb Dutrow, slice of a malachite and chrysocolla stalactite: Image courtesy of www.barlowsrocks.com, azurite crystals from Utah]

Think about where you imagine miners finding agates, opals, and copper minerals. You probably already know that the best deposits occur in rocky, sandy areas with an arid or semiarid climate. Most of the world's precious opal, for example, comes from the Australian desert, and the Western USA and Mexico are well known sites of turquoise and agate deposits.



[Map of some of the major turquoise mines in the Southwest (photo taken at the Las Vegas Natural History Museum)]

Petrifaction: Sometimes the hard, organic remains of plants such as wood or cones, or the bones or shells of animals are buried in lava or sediments before they can decay. Such burial restricts oxygen supply, and decomposition processes slow to a snail's pace. Silica laden waters can, ever so slowly, fill and replace any cavities or structures that are present with agate or opal, preserving a replica of the original form in solid rock. Many fossils are the result of this process, known as *petrifaction*.



[Examples of petrification: slice of fossil palmwood: Image courtesy of www.barlowsrocks.com, cabochon of fossil palmwood from Texas, fragments of fossilized dinosaur eggshell, pendant with red spinel, fire agate and fossilized dinosaur eggshell, fossil wood slices from Oregon: Image courtesy of Las Vegas Jewelry and Mineral, opalized clam fossil (opal solution filled the cavity of the clam shell and solidified before the shell decayed. Remnants of the fossil shell were then cut and polished away, revealing a perfect "cast" of the original shape)]

Deeper Environments: Waters from deeper in the Earth are often heated from contact with hot rock, and are sometimes highly acidic or alkaline, making an even better solvent for more types of minerals. Environments where water of this type is found are termed "*hydrothermal*". Usually, rates of cooling and/or evaporation are slower than in near surface environments giving time for single, larger crystals to form. Many of the world's highest quality mineral specimens and metal ores have come from such hydrothermal sources. Emeralds, rock crystal quartz, amethyst, and fluorite are gems commonly formed when hydrothermal fluids solidify (as veins or crystals) in the cracks or pockets within rocks, or between rock layers.



[Hydrothermal amethyst crystals from Mexico: Image courtesy of www.irocks.com, gold veins in quartz: Image courtesy of California Geological Survey, native copper veins in Arizona rock: Image courtesy of Dr. Barb Dutrow, hydrothermal fluorite crystals, dendritic silver in quartz: Image courtesy of www.irocks.com, Natural hydrothermal emerald crystals in matrix: Image courtesy of www.yourgemologist.com]

Geodes: Cavities dissolved into sedimentary rock, or gas pocket cavities in igneous rock are prime sites where crystallization from hydrothermal solutions occur. The results, known as geodes, usually contain agate or quartz, and are one of the favorite finds of rock hounds.



[Small quartz geodes, huge amethyst "cathedrals": Images courtesy of Las Vegas Jewelry and Mineral, the outside and inside of a rare azurite geode from Arizona]

Source: <http://www.bwsmigel.info/lesson10/de.gem.formation.html>
Reprinted with permission from Dr. Barbara Smigel

Club Social – June 2016

Photos by Pat & Bruce



After scoping out the selection of donated prizes, it was soon clear there was something for everyone.

Club Social – June 2016

Photos by Pat & Bruce



Lots of great stuff went to new homes as a fun afternoon of Bingo rocked on during the June Social.



The Kids Love Rocks Fun Club

"It has often been said that every kid at one time in their Life will have a rock collection!! We at Cold River Mining Company want to do everything we can to produce programs and activities that ignite the passion for collecting and discovery that is ingrained in all of us.

The Kids Love Rocks website was our first step in this pursuit. This website is free for kids and full of information, projects, and fun facts concerning rocks and fossils. Many kids have gone to the site, read through all of the information, and are now ready for the next step.

Kids have been after us to expand our research and produce additional programs and activities so they can continue to learn and have more fun with the rocks and fossils that they discovered in one of our mining bags.

Therefore, step two of our plan has begun, and kids can now continue to study about Geology, Paleontology and Mineralogy by becoming a member of the **Kids Love Rocks Fun Club**.

The main goal of the club is to promote and disseminate knowledge of the earth sciences directly to kids. We strongly advise kids to ask their parents about signing them up to become an active member right away.

There is no other publication like it for young mineral enthusiasts.

Throughout the year you will receive interesting articles about minerals, crystals, and collecting as well as fun activities (like crossword puzzles, word searches, cut-and-fold crystal models, coloring pages) to experience at home. There will be crystal drawings to color, interviews with important mineral collectors of our day, and always suggestions on how to build and take care of a mineral collection. We often include mineral art, mineral photography and articles by young mineral collectors. All for just \$20.00 per year delivered electronically to your email address each month!

Join today!!"

Editor's Note: Kids, you can find some really interesting rock-related information—that's free—at the following website: http://kidsloverocks.com/html/guide_to_collecting.html

If you think you'd be interested in receiving a monthly newsletter with even more information, and activities have your parents check out this link to sign you up for the Kids Love Rocks Fun Club: http://kidsloverocks.com/html/fun_club.html



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Gemstone Word Find

L D M E W G Q H L Q D E T I N
E D E I N I I Y G A I Y H S E
Y Z W Z L I J L N J A H Z E I
A E S E A Y R E K D M S C S Z
X K D L R P R A P L O F L I I
X P X O U I O E M R N U B O G
A M E T H Y S T M A D P P U Y
G V N P O P A L J E U E K Q E
F K P T E N R A G P R Q K R F
E A K Y X P W E H I O A A U S
S M B B J N Z F D K D C L T C
F U J O L H C O W N H O D D T
R O F G L Q T L A V O U Z H S
I Z V K F N A T S V W H H P A
M A V L Z C U E M Z J D N F U

AMETHYST

EMERALD

PEARL

SAPPHIRE

AQUAMARINE

GARNET

PERIDOT

TOPAZ

DIAMOND

OPAL

RUBY

TURQUOISE



Who What Where When Why How

July Birthdays

JUL 15 Carlos Merino
JUL 16 Ellen Webber
JUL 21 Tina Polakoski
JUL 22 T. J. Moore
JUL 25 Diane Tetzlaff

Random Rock Facts

When the light from an ultraviolet lamps reacts with the chemicals of a mineral and causes the mineral to glow; this is called *fluorescence*. If the mineral continues to glow after the light has been removed, this is called *phosphorescence*. Some minerals will glow when heated; this is called *thermoluminescence*. And there are some minerals that will glow when they are struck or crushed; this is called *triboluminescence*.

Source: http://www.galleries.com/Fluorescent_Minerals

Meeting Information

Time: 2:00 PM
Date: Fourth Sunday of each month (except June, July and August)
Place: Fellowship Hall – Tabernacle United Methodist Church
4205 S. Brannon Stand Road
Dothan, AL

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334-671-4192

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Show Chair – Jeff DeRoche
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Field Trips Chair – Garry Shirah
334-671-4192

Hospitality Chair – Vacant

Club Hostess – Vacant

Club Liaison – Garry Shirah
334-671-4192

Website: www.wiregrassrockhounds.com

Objectives

To stimulate interest in lapidary, earth science and, when necessary, other related fields.

To sponsor an educational program within the membership to increase the knowledge of its members in the properties, identifications and evaluations of rocks, minerals, fossils and other related subjects.

To cooperate and aid in the solution of its members' problems encountered in the Club's objectives.

To cooperate with other mineralogical and geological clubs and societies.

To arrange and conduct field trips to facilitate the collection of minerals.

To provide opportunity for exchange and exhibition of specimens and materials.

To conduct its affairs without profit and to refrain from using its assets for pecuniary benefit of any individual or group.

Classified Ads

Looking for an item to round out your rock collection?

Got a specimen, tool or handicraft for sale or trade?

Submit the pertinent details to me by the 10th of each month and your inclinations will be made known to the membership in the next bulletin.

N. J. Blackwell
28 Lakeview Trail, Apt. C
Daleville, AL 36322
Phone: 334-503-0308
Email: Tfavorite7@aol.com

Annual Dues

Single \$15
Family \$20

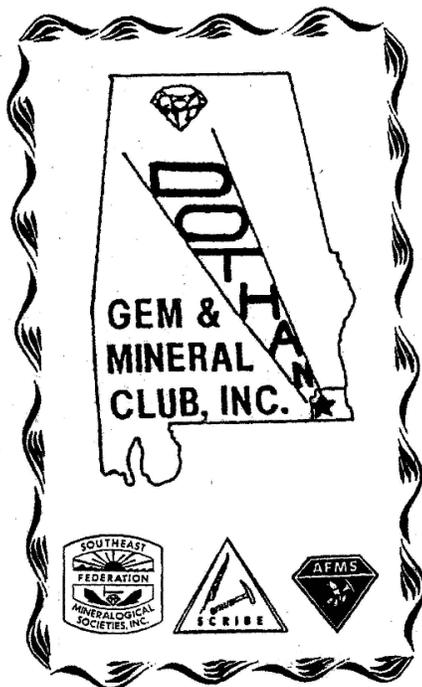
Refreshments

JUL 23 – Social

ROCKHOUNDS HERALD

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Where you might hear...

Forms of inclusions that occur in gems and minerals:

- Solid
- Liquid
- Gaseous
- Optical

Methods of inclusion formation:

- Antegenic – formed before the host crystal
- Syngenetic – formed at the same time as the host crystal
- Epigenetic – formed after the host crystal

Source: <https://www.cigem.ca/inclusion/inclusions.html>

Member of
Southeast Federation of Mineralogical Societies, Inc.
American Federation of Mineralogical Societies