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

Rockhounds Herald

920 Yorktown Road, Dothan, AL 36301-4372

www.wiregrassrockhounds.com

November 2015

Words from…

The President

At our October meeting, we got updates on various members who recently had surgery and couldn't be with us. We had a great Show & Tell—as usual—and Ben Childress gave us a class on fossils and fossil hunting. He has a great deal of experience collecting in or near the wiregrass. It was a great talk. Thanks, Ben.

We also discussed a list of potential classes that will start after the holidays. The first will be on gem trees. See the announcement below for details. While at JoAn and Arnie Lambert's to get some rocks for tumbling, I got to see all the beautiful trees they have made. I also got a few ideas for projects. If you would like to teach a class, please let me know. We will publish the date and list of supplies in the newsletter.

As a courtesy, our sister club in Mobile asked that we point everyone to their website which has details about their November show (www.mobilerockandgem.com). As for us, our speaker for the November 22nd meeting will be Arnie Lambert. Arnie is going to teach us about florescent minerals and how to photograph them. Hope to see everyone there. Pat

Announcement

March 2016 Show Reservations *– Show Chairman, Jeff DeRoche has asked that members who want to reserve tables for next year's show, please call him (334-673-3554) no later than* ***Saturday, November 21st.*** *Members have priority, but spaces will be released to the general public after that date. Don't miss out.*

Dogwood Gem Tree Class – In January (date to be determined), JoAn will conduct the first of multiple work sessions showing us how to make a gem tree. You'll need: 1 roll of gold wire (28 or 26 weight), little pink and white shells (not the smallest ones, but the next size up), a wirecutter and a pair of pliers for twisting wire. You will also need glue for sticking your shells together – JoAn recommends E6000. Arnie will provide a selection of items for the tree bases, but if you already have something you'd like to use, bring it along. Should you have any questions, feel free to give JoAn a call at 334-792-7116.

Upcoming Shows

NOV 20 – 22	**Columbia, Gem & Mineral Society**	**Columbia, SC**
NOV 21 – 23	**Cobb County Gem & Mineral Society**	**Marietta, GA**
NOV 21 – 22	**Gem & Mineral Society of the Palm Beaches**	**West Palm Beach, FL**
NOV 27 – 29	**Roanoke Valley Mineral & Gem Society**	**Salem, VA**
NOV 28 – 30	**Mobile Rock and Gem Society**	**Mobile, AL**

Source: http://www.amfed.org/sfms/club-shows-789.html and http://www.the-vug.com/educate-and-inform/mineral-shows/

Meeting Minutes – October, 2015 – by Secretary

The meeting was called to order at 14:09 by President Pat LeDuc. There were 21 club members in attendance. Happy Birthdays were wished to all our October babies. Pat reported that Laurel Meint's shoulder surgery was delayed at least until the end of December, due to Laurel needing a special replacement joint containing no nickel alloys in the metal bits. Jeff DeRoche reported that Christina was home and recovering from sinus surgery that was performed this last Friday.

CORRESPONDENCE: AMFS Newsletter.

MINUTES & TREASURER REPORT: Minutes from September were approved, as is. Diane Rodenhizer presented the latest of the thrilling treasurer's report series—soon to be a major motion picture—which was also approved.

OLD BUSINESS: No old business, per se, was discussed.

SHOW BUSINESS: Jeff has already been talking to vendors inside and outside the club about table rentals for the 2016 show. He says that space will go fast, so club members must let him know how many tables they want by the end of November, or risk being shut out of the show. Jeff reminded us that the Farm Center would be hosting the 2016 Highland Games on the same weekend as the show, which occasioned several coarse and common suggestions, all un-supportive of the dignity of men.

Joan Blackwell reported on the costs for bookmarks that could be ordered in quantity and used as marketing/promo pieces, e.g., as leave behinds for local Libraries. These will be printed without a show date so extras can be used from one year to the next. Prices for both regular card stock and glossy card stock were provided, but no motion was made.

Arnie Lambert made a motion that the table prices be the same for club members and outside vendors. This motion was seconded and passed. Club members still have first pick, but only until the end of November, as previously mentioned.

"Save the Date" reminder cards will be going out in this next month.

Diane suggested that local motels be approached about giving special prices to vendors and out-of-town visitors. Arnie had talked to a couple of the local chains in previous years, and he will see if he has any notes about who was receptive.

NEW BUSINESS: No new business, per se, was discussed.

SHOW AND TELL: A dazzling array of pieces! JoAn Lambert had two wonderful "paintings" where the landscapes were actual colored rocks/crystals. Jeff had an interesting item made of various pieces of scrap materials assembled to look like a robot. This is one of a series Jeff has planned. Elliott Whitton had some pieces from a dig he did at Graves Mountain, managing to just beat last week's rains. LJ Ward had some very nice slabs to show us, as well. Arnie brought in some handsome crystal pieces, amethyst and such.

PROGRAM: Ben Childress gave a program based on the many beautiful fossils he had collected recently in Alabama, Georgia and Florida. Thank you, Ben!

The meeting wrapped up with food and the presentation of the door prize, which went to Joe Cody. Yea!!

Respectfully submitted by B. Fizzell

Mineral Resources – Region 1, con't.

Avalon Rocks

Mineral Deposit Processes

Hydrothermal processes associated with active Precambrian to Early Cambrian volcanic activity in the Avalon Rocks (before they were attached to North America) produced numerous deposits of sulfides (copper, lead, and zinc), gold mineralization, iron and manganese formations, barite, and a major tungsten deposit. Many of these deposits were modified, and in some cases further concentrated, by hydrothermal processes accompanying the Acadian and Alleghanian mountain building events.

Volcanic activity and igneous intrusions in the Avalon Rocks were often accompanied by hydrothermal alteration so intense that economic deposits of aluminum silicate minerals of the kyanite family were formed.

Metallic Mineral Deposits

The Avalon Rocks hosts a wide variety of metallic mineral deposits, but many are clearly associated with Precambrian to Cambrian volcanic activity and igneous intrusions that occurred before the terrane was attached to North America. Among the most interesting geologically and historically are the gold deposits.

Gold was first reported in North Carolina in 1774, but the Carolina Gold Rush began after 12 year old Conrad Reed found a 17-pound gold nugget on the family farm in 1799. Early gold mining in the Southeast exploited placer deposits and shallow enriched zones, using primitive, labor intensive techniques with little scientific or engineering consideration. Mining was largely a secondary, part-time enterprise in the agricultural Piedmont. Despite these limitations, mining had begun at deposits in five North Carolina counties by 1820, and 500 ounces of North Carolina gold arrived at the U.S. Mint in Philadelphia during 1824. Mining experts and engineers were recruited from Britain, Germany, Italy, and South Africa, and miners came to the Southeast from more than a dozen countries. New mining and milling technologies were introduced, including the first stamp mill in the United States, erected at the Capps Mine near Charlotte, North Carolina in 1829. The Carolina Gold Rush spread through the Southeastern Piedmont from Virginia to Alabama and westward across the Blue Ridge by 1830, and included the deposits of the Inner Piedmont.

Total gold shipments to the US Mint in Philadelphia from North Carolina during 1834 were over 18,000 ounces, with another 20,000 ounces from Georgia. Under intense lobbying pressure, Congress voted in 1835 to open a new US Mint in New Orleans, with branch mints in Charlotte, North Carolina and Dahlonega, Georgia. The Charlotte Mint was opened in 1837 to purchase the gold being produced in the piedmont of the Carolinas and Virginia and mint gold coins. The Dahlonega branch opened in 1838 to mint gold coins from the gold produced in the piedmont of Georgia.

Figure 5.11: Gold mining districts in the Avalon Rocks.

Major gold mining districts in the Avalon Rocks include the Gold Hill District (160,000 ounces) and the Charlotte District (100,000 ounces) in North Carolina, the Haile-Brewer Area (350,000 ounces) and Dorn Mine (50,000 ounces) in South Carolina (Figure 5.11). The deposits are volcanic hydrothermal gold and base metal sulfide mineralization, probably enhanced by tectonic-metamorphic hydrothermal processes.

CA Gold Rush

Some miners from the Southeast Piedmont joined the gold rush to California in 1849, although North Carolina gold production peaked that year. Spectacular placer discoveries were largely a thing of the past in the Southeast, and lode mining was hard, dangerous work. Many of the miners who joined the CA Gold Rush were looking for quick, easy riches. The thousands of miners who remained continued to work successfully until the beginning of the Civil War in 1861.

Modern-day Gold Rush

South Carolina was the scene of a modern-day gold rush between 1985 and 1999, with four major open-pit mines in operation, plus widespread exploration. At the peak of activity, the Ridgeway Mine (Fairfield County), Barite Hill Mine (McCormick County), Brewer Mine (Chesterfield County), and Haile Mine (Lancaster County) were in production. South Carolina produced about 400,000 ounces of gold from 1827 to 1939. Total production of about 1,650,000 ounces between 1985 and 1999 brings the total gold production for South Carolina to over 2 million ounces. Total gold production from the entire Southeastern Piedmont through 1969 is estimated at 2.7 million ounces. South Carolina production from 1985 to 1999 increases this figure to about 4.35 million ounces of gold.

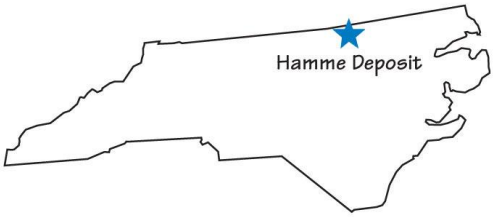


Figure 5.12: The Hamme deposit of North Carolina was an important tungsten mine.

In addition to gold, mines of the Avalon Rocks produced minor copper, zinc, lead, silver, and tungsten before 1939. Production came from numerous small (<500,000 tons) sulfide deposits and vein deposits of hydrothermal origin. Iron and manganese were produced during the 18th and 19th centuries. Like the gold deposits, these ores were from a combination of hydrothermal processes associated with volcanic activity and igneous intrusions, often concentrated by hydrothermal fluids associated with the Paleozoic mountain building events. The Hamme deposit in Vance County, North Carolina was the largest tungsten mine in the U.S. from 1951 to 1958, and produced over a million tons between 1942 and 1963 (Figure 5.12). The primary tungsten mineral is huebnerite and occurs in quartz veins as a result of hydrothermal processes associated with Precambrian igneous intrusions. Considerable reserves of tungsten ore remain in the area.

Banded iron formation deposits extend for almost 85 miles through the Avalon Rocks in North and South Carolina. Hydrothermal in origin, the iron was deposited as sediments on the ancient seafloor. These deposits were first mined for local forge products just before 1760, and supplied iron for the weapons of the Continental Army during the American Revolution. The profitability of these and similar small districts were greatly reduced after 1855 with the discovery and development of the vast iron deposits of the Lake Superior District in Michigan. The Avalon Rocks banded iron formations were a major source of iron for the weapons of the Confederate armies during the Civil War, including shot, cannonballs, and armor plates for naval ironclads. Production declined after the war and ended around 1900.

Weathering and stream erosion have produced residual deposits of heavy mineral concentrates in the eastern Avalon Rocks, especially in association with granite intrusions. Monazite deposits form an "Eastern Monazite Belt" in North Carolina and Virginia.

Non-metallic Mineral Deposits

Extensive deposits of barite (Fe3O4) are present in the Avalon Rocks, associated with gold and base metal mineralization, as well as extensive areas of hydrothermal alteration. Because it is heavy, soft, and chemically inert, barite is widely used as an additive and filler, largely to increase the density of lubricating muds used in oil and gas drilling.

The hydrothermal aluminum silicate deposits of the Avalon Rocks often contain a remarkable and highly prized assortment of rare and unusual minerals, formed by the concentration of insoluble elements in the host rock and the introduction of new elements. Some of these minerals, in addition to kyanite and pyrophyllite, include rutile, topaz, lazulite, diaspore, tourmaline, and pyrite. Many of these deposits contain abundant pyrite, sometimes in crystals up to eight-inches across. Major deposits of kyanite, pyrophyllite, and andalusite are also present in the Avalon Rocks. Major pyrophyllite deposits in the Avalon Rocks include those at Hillsborough, Snow Camp, Glendon, and Robbins in North Carolina and Boles Mountain in South Carolina. Important kyanite deposits include Henryís Knob, South Carolina and Graves Mountain, Georgia.

Aluminum Silicate Minerals

The kyanite family of minerals includes kyanite, sillimanite, pyrophyllite, and andalusite. All have the formula Al2SiO5 and are polymorphs, minerals with the same composition but different crystal structures. These different crystal structures form under different conditions of heat and pressure, and reflect the geologic history and degree of metamorphism of the rocks in which they are found. Pyrophyllite, kyanite, and sillimanite form a metamorphic progression of aluminum silicate minerals formed at increasingly higher temperature and pressure. Andalusite forms at high temperatures but low pressures. All of these minerals form mullite when heated to very high temperatures. Mullite is used in manufacturing glass and ceramics that can withstand very high temperatures.

Triassic-Jurassic Rift Rocks

Mineral Deposit Processes

Sedimentation was the dominant process occurring in the Mesozoic Basins. Igneous intrusions and local volcanic activity in the Jurassic was also accompanied by minor hydrothermal activity, and the formation of small deposits of copper and iron mineralization. Low temperature rift basin hydrothermal circulation of groundwater formed a few small copper deposits, and a major uranium deposit.

Metallic Mineral Deposits

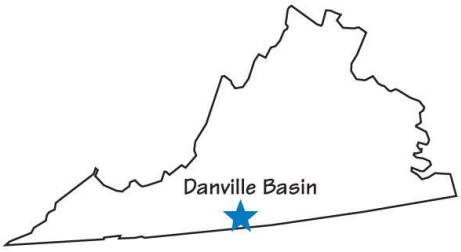


Figure 5.13: Virginia's Danville rift basin contains a uranium ore body.

Scattered small occurrences of copper sulfides and hematite (Fe3O4) formed in association with hydrothermal activity in the rift basins, and low temperature hydrothermal circulation of groundwater through the sediments, but none are of major economic importance in the Southeast.

In 1982 the Marline Uranium Corporation announced the discovery of a 30-million ton deposit of uranium ore in Pittsylvania County, Virginia. The ore body is developed in an intrusion of gneiss in the Danville rift basin (Figure 5.13). Uranium originated in the rift basin sediments, and was transported in dissolved form by groundwater, and deposited. The Uranium deposit was never developed, due to a drop in uranium ore prices and local opposition to the project.

Sources: http://geology.teacherfriendlyguide.org/index.php/minerals-se
http://geology.teacherfriendlyguide.org/index.php/minerals-se/region-1-blue-ridge

Picconi, J. E. 2003. The Teacher-Friendly Guide to the Geology of the Southeastern U.S. Paleontological Research Institution, Ithaca, NY.

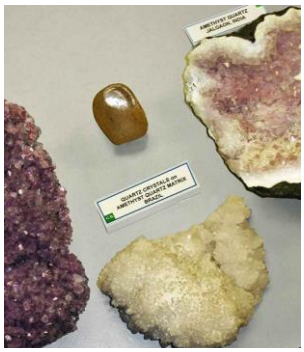
Club Meeting – October 2015

Photos by Pat & Bruce

Busy meeting. Lots of sharing.

Club Meeting – October 2015

Photos by Pat & Bruce

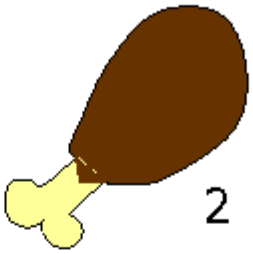


Quite a nice collection!

FOSSILS+

Kid's Corner

Thanksgiving Sudoku

	 4	 2	
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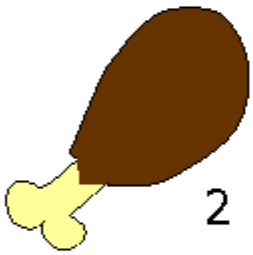
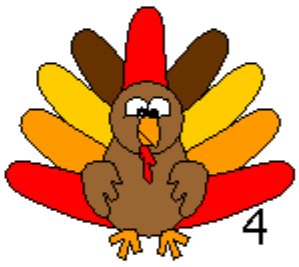
 2			 4
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Source: http://www.dltk-holidays.com/t.asp?b=m&t=http://www.dltk-holidays.com/thanksgiving/images/c-sudoku.gif

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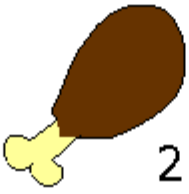 2

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Thanksgiving Word Search

R E L A T I V E S T I F S M F

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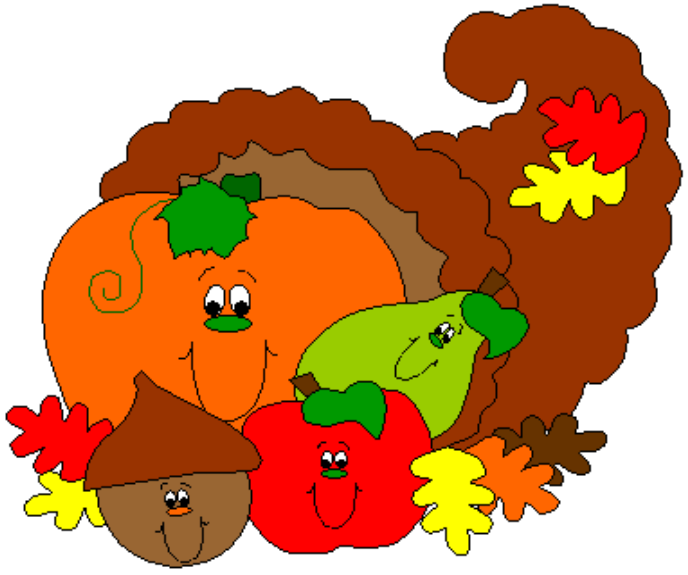

Source: http://www.dltk-holidays.com/t.asp?b=m&t=http://www.dltk-holidays.com/thanksgiving/images/cwordsearch.gif

Who What Where When Why How

November Birthdays

NOV 4 Patti Wilson
NOV 9 Janie Schings
NOV 15 Ronald Patton
NOV 19 Ken Wilson
NOV 21 Diane Resavy
NOV 22 Brooke Brown

Random Rock Facts

Two gems are appropriate for November birthdays - Topaz and Citrine. *Topaz* is a gemstone available in a rich rainbow of colors. Prized for several thousand years in antiquity, all yellow gems in antiquity were called t*opaz.* Often confused with citrine quartz (yellow) and smoky quartz (brown), quartz and topaz are separate and unrelated mineral species. The most prized color of topaz is called *Imperial topaz* after the Russian Czars of the 1800s and features a magnificent orange body color with pinkish undertones. Topaz also comes in yellow, pink, purple, orange, and the many popular blue tones.

Reprinted with permission from the American Gem Society
Source: http://www.americangemsociety.org/november-birthstones

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

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: Tsavorite7@aol.com

Annual Dues

Single $15
Family $20

Officers

President – Pat LeDuc
334-806-5626

Vice President – Garry Shirah
334-671-4192

Secretary – Bruce Fizzell
334-577-4353

Treasurer – Diane Rodenhizer
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Membership Chair – Diane Rodenhizer
334-447-3610

Show Chair – Jeff DeRoche
334-673-3554

Field Trips Chair – Bruce Fizzell
334-577-4353

Hospitality Chair – Vacant

Club Hostess – Laural Meints
334-723-8019

Club Liaison – Garry Shirah
334-671-4192

Refreshments

NOV 22 – Potluck Refreshments

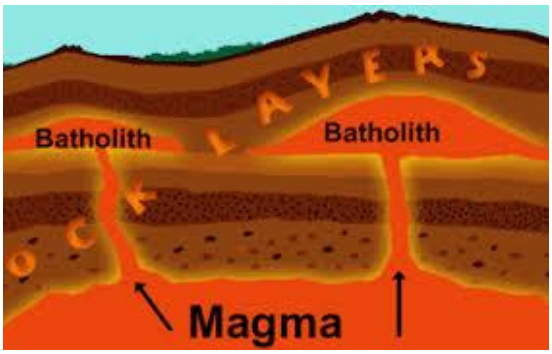
ROCKHOUNDS HERALD
Editor – N. J. Blackwell
28 Lakeview Trail, Apt. C
Daleville, AL 36322

www.wiregrassrockhounds.com

DOTHAN GEM & MINERAL CLUB, INC.

Where you might hear…

Batholith – very large mass of intrusive (plutonic) igneous rock that forms when magma solidifies at depth. A batholith must have greater than 100 square kilometers (40 square miles) of exposed area.



Source: http://www.geocaching.com/geocache/GC4TQX1_derrybawn-rocks?guid=71dbec85-2336-4974-9b00-c2dd631b39b9

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