

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

# ROCKHOUNDS HERALD

920 Yorktown Road, Dothan, AL 36301-4372

[www.wiregrassrockhounds.com](http://www.wiregrassrockhounds.com)

**March 2015**



## Words from...

### The President

I was mistaken about our meeting date in March. We **will** have a meeting the 22<sup>nd</sup>, the Sunday before the show. It will give us a chance to make sure that Jeff has all the help he needs for the welcome tables, kitchen and other areas. If you are donating items for the silent auction or door prizes, don't forget to bring them to the meeting. That will give us an accounting of what more we need to add.

Spring will arrive a week before our show. I am excited that warmer weather is on the way and that our show is just around the corner. I hope everyone is as excited about our upcoming show as I am. A whole weekend surrounded by shiny things. Could it get any better? Hope to see everyone at the meeting and the show.

Pat

## Announcements

**Kid's Corner** – We have something special for the kids in this issue, and it is just in time for Easter. Learn to grow your own “crystal geodes” inside egg shells. Of course, they won't be real geodes like the ones you'd find in the ground on a rock dig, but the principles that make this experiment work with eggs are somewhat similar to the principles that helped create the real geodes. Try it for yourself. While everybody else at the egg hunt will have dyed or decorated eggs, you'll stand out from the crowd with your “crystal geode” eggs. Just don't try to hide them. They're both beautiful AND fragile.

**Gems, Minerals & Meteorites Online** – The American Museum of Natural History in New York City has placed a small selection of pictures from they're permanent exhibits online. Go to <http://www.amnh.org/exhibitions/permanent-exhibitions> and scroll down to the Earth and Planetary Sciences Halls section where you can click on links to see some of their meteorites, gemstones and minerals. Editor Note: I was privileged to see the entire collection in person while in the city on a business trip last December. My advice: go early and stay late. I didn't allow nearly enough time.

## Upcoming Shows

March 20 – 22

Rome Georgia Mineral Society

Rome, GA

**March 28 – 29**

**Dothan Gem & Mineral Club**

**Dothan, AL**

April 25 -26 Memphis Archaeological and Geological Society

Source: <http://www.amfed.org/sfms/club-shows-123.html>

# Meeting Minutes – February 2015 – by Secretary

The meeting was called to order at 2:04 PM by president, Pat LeDuc. There were 33 club members and 1 guest in attendance. The guest, Tom Elms, came with Brooke Brown and Christian Holderith. Happy Birthdays were wished to our many members born in February.

**CORRESPONDENCE:** Pat brought in the recent AMFS publications and a William & Holland brochure for 2015. She also brought in a complete notebook regarding the AMFS Children's Program for our members to review.

**MINUTES & TREASURER'S REPORT:** Minutes from January were approved and Diane Rodenhizer presented the treasurer's report, which was also approved. Anne Trice arrived with beautiful red flower bouquets to spiff up today's meeting. Your secretary is unable to correctly identify these blooms and disavows all knowledge of local flora.

**OLD BUSINESS:** Pat repeated her request for names for a possible children's group; suggestions are to be submitted via e-mail. A group name is needed if we are to move forward utilizing the AMFS guidelines. Children would come in handy, as well. Various means for attracting children to the club are under consideration – suggestions and ideas are welcome. Regarding names, sadly, "Pebble Pups" is gaining traction. Arnie is looking further into the idea of uniting a children's group with local Boy Scouts so both groups can work on collecting rockhounding-related badges.

**NEW BUSINESS:** The group voted on and approved proposals that the club spend \$200 for both next year's show door prize and that we change our own meeting door prizes to ones of higher quality, but fewer in number. A total of 9 door prizes are needed for our meetings in a calendar year.

**SHOW BUSINESS:** Our Show Chairman, Jeff DeRoche, brought in yard signs and flyers to distribute. A sample of the large banner signs was presented and approved. Twenty-eight Wolf FM Radio Spots were approved. Wolf FM is the only station the club has used since Hector was a pup and it was suggested that Jeff look into additional radio stations for the 2016 radio spots. Joan Blackwell and Diane have been handling the Dothan Eagle/Progress, The Enterprise Ledger/Southeast Sun, the Daleville Sun-Courier and the Army Flier. Meredith Capshaw will be checking into and placing notices in the Geneva County Record/Opp News. Pat and Joan are placing notices on the interwebs and some social media. Pat noted that, if past indicators holds true, more and more web sites and media will pick up and mention our event as the show date approaches. The speaker for our TV spot will be Christian Holderith with Abby Pollan acting as emergency back-up.

Setup for the show will start at noon on Friday, March 27. Jeff hopes to have the tables unloaded and in position on Thursday, March 26. Arnie Lambert brought in a large number of table covers to be given to our members and possibly sold to outside vendors for a small sum. Ham was volunteered, for which the club thanked Laurel Meints, but Jeff did not want to impose on Laurel's time, since she will be among the members setting up tables and vending. Ellen Webber mentioned, and Jeff noted, that the club should continue to feed the outside vendors since this has been a much appreciated courtesy at previous shows. John Webber reported that he was able to find a public address system for us to use on the show site. Arnie reminded us that the venue has a large cooler and the plan, for now, is to fill this with ice and soft drinks for sale to vendors at about \$1 per can. Abby and Neil Pollan brought in a large box of material for kiddy grab-bags. These pieces were donated by a nice fellow from Oregon.

**PROGRAM:** No program this month.

**SHOW AND TELL:** A dazzling array of pieces! Turquoise! Cabs! And our new member, Sam Merrill brought in some of her custom silver pieces.

The meeting wrapped up with food and the presentation of Door Prizes. Door prizes went to Ken Wilson, Sam the New Kid, Gary Meints, David Jones, John Weber and Tom Elms.

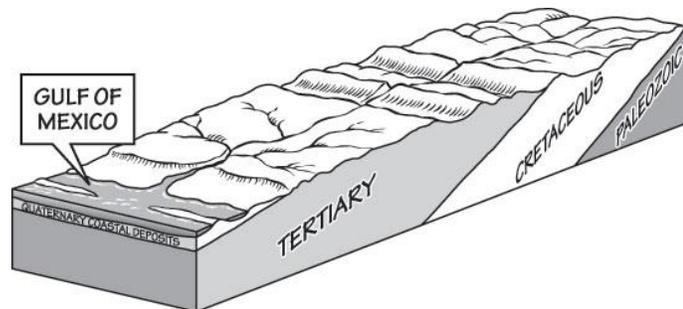
Respectfully submitted by B. Fizzell

## Rocks of the Coastal Plain: Region 3



The Southeast Coastal Plain region exposes Cretaceous, Tertiary and Quaternary rocks of the Atlantic and Gulf Coastal Plains, which sweep in a wide arc through Virginia, around the point of Florida, and up through the Mississippi Embayment and across Texas. The Atlantic Coastal Plain continues northward through New England, and the Gulf Coastal Plain wraps west around the Gulf of Mexico. Overlying the ancient bedrock of the Blue Ridge & Piedmont region, Coastal Plain sediment forms a wedge of gently dipping layers of sediment and sedimentary rock that thickens towards the Atlantic Ocean and Gulf of Mexico (Figure 2.32). At its innermost edge (bordering the Piedmont), the wedge of sediments is very thin. Under the continental shelf out in the Atlantic Ocean, the wedge of sediment is as much as 4000 meters thick. On the Gulf Coast, the sediment is up to 12 kilometers thick.

Figure 2.32: The weight of millions of years of sediment accumulation in the basins caused the coastal areas to subside, creating a gentle slope eastward toward the Atlantic and southward toward the Gulf of Mexico. This tilting, though slight, exposes the older Cretaceous units that would otherwise be buried by younger sediment.

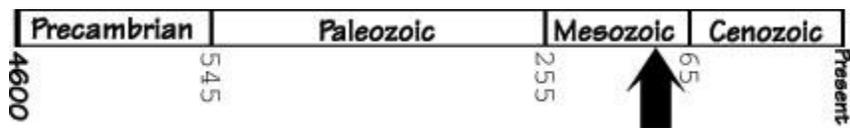


### Tilted Rocks

Why are the Coastal Plain sediments exposed at the surface younger and younger as you move out toward the Atlantic Ocean or the Gulf of Mexico? As the Atlantic Ocean and Gulf of Mexico basins widened following the breakup of Pangea, new sediment was deposited in the basins. The weight of millions of years of sediment accumulation in the basins caused the coastal areas to

subside, creating a gentle slope eastward toward the Atlantic and southward toward the Gulf of Mexico. The Mississippi River Valley also was subsiding during the Mesozoic and Cenozoic, causing a similar tilting of Coastal Plain sediment toward the Mississippi Embayment. This tilting, though slight, exposes the older Cretaceous units that would otherwise be buried by younger sediment. (Figure 2.32)

## Cretaceous Rocks



The sediment and rock of the Coastal Plain is geologically very young, ranging in age from Cretaceous (at the end of the “Dinosaur Age”) to Quaternary. The sediment and rock include gravel, sand, silt, clay, marl, limestone, and uncommon layers of concentrated shell material called coquina. Much of the Coastal Plain “rock” is unconsolidated sediment that has not had time to be lithified, cemented or compacted enough to become hard. It may be tens or hundreds of millions of years before the unconsolidated layers of sediment are turned to rock, depending on the rates of cementation and compaction. Not all of the Coastal Plain rocks, however, are unconsolidated sediment. Some formations are more compacted or cemented than others, particularly the Quaternary Ice Age, also greatly contributed to coastal deposition and erosion. During the middle Mesozoic, when the Atlantic Ocean formed, a shallow sea connecting the Gulf of Mexico and the Atlantic Ocean covered the area that is now Florida. During the Cenozoic and Quaternary falling sea level exposed the Florida Peninsula. It was also during this time that the Mississippi Embayment was filled with sediment.

Cretaceous deposits are the oldest sediment deposits exposed at the surface in the Coastal Plain and are found along the inner edge of the region (Figure 2.33). The Cretaceous units record the erosion of the Appalachian Mountains and transportation of sediment by rivers to the coast, building up successive layers of gravel, sand, silt and clay that fanned out onto the continental shelf. A variety of clays are found in the Cretaceous rocks of the Southeast, including montmorillonite, which has been interpreted as a weathered volcanic ash that was perhaps coming from central Mississippi or the Rocky Mountains. Another kind of clay found in Alabama, Georgia and Florida is kaolinite, a valuable economic resource that is mined in certain areas of the Southeast. Triassic and Jurassic rocks, exposed at the surface, exist in the subsurface of the Coastal Plain and are studied using drill cores.

Why would there be volcanic ash in the Coastal Plain region? Two thousand nine hundred feet beneath Jackson, Mississippi, a set of igneous rocks and ash deposits attests to the volcanic past of the Southeast. During the Cretaceous, the Gulf of Mexico was widening as South America separated from North America. The divergence of plates caused significant volcanic activity in the area and volcanoes were located along the rim of the modern Gulf Coast. The volcanoes spewed ash that settled in layers at the surface. Far below the surface was magma that formed the cores of the volcanoes. The magma eventually cooled to form igneous rock. Though the igneous rocks are not seen at the surface, they are evidence of a now long-extinct volcano. Jackson,

Mississippi is unique: no other US State capital or large city is situated on top of an extinct volcano! Also at this time in geologic history, the Rocky Mountains were being uplifted with much volcanic activity and ash that could have spread as far as the Southeast.

Figure 2.33: Cretaceous rocks of the Coastal Plain.



Toward the end of the Cretaceous period, sea level was very high worldwide, allowing the deposition of marine sediment across much of the Coastal Plain. "Greensand" was deposited in these marine settings during the Cretaceous and Tertiary. The greensand gets its color from the green mineral, glauconite. Since the mineral glauconite is associated with modern marine environments, its presence is a clue to geologists that sediment was deposited in a marine environment. Other clues to the marine origin of the late Cretaceous Southeast sediment include thick deposits of chalk. A soft variety of limestone, chalk forms from the build up of microscopic plates from one-celled algae. The plates, small as grains of clay, are called coccoliths. Chalk deposits are common in Cretaceous deposits worldwide and represent deeper ocean waters in which the shells of tiny organisms settled to the bottom upon death and accumulated as layers of calcium carbonate. When clay particles are also settling to the bottom and are mixed with the layers of calcium carbonate, marl forms. While chalk deposits are white, marl deposits are gray to green because clay mud is mixed with the calcium carbonate mud. In the Southeast, thick chalk and marl layers are found in Alabama and Mississippi in a region known as the Black Belt.

Although there are no Cretaceous rocks exposed at the surface in Florida, the carbonate sediment deposited during this period created the foundation of the modern Florida Platform. Following the breakup of Pangea in the Jurassic, a basin formed in the region of Florida where the continents separated and new ocean crust was forming. The basin was very gradually sinking, allowing reef communities to flourish and build on top of each other as sea level slowly rose (as the basin sank!). Sediment eroded from the Appalachian Mountains did not reach the carbonate platform because of the Gulf Trough in northern Florida. Currents moving through the trough swept away sediment coming from the north, thus protecting the corals and other organisms on

the carbonate platform (Figure 2.34). The skeletons of reef communities were composed of calcium carbonate, which formed the modern carbonate platform. Carbonate sediment continues to build up on parts of the Florida platform (such as the seaward side of the Florida Keys) because similar conditions prevail today: warm, sub-tropical climate, and clear, shallow water that allow organisms with calcium carbonate skeletons to thrive and grow.



Figure 2.34: The presence of the Gulf Trough contributed to the Cretaceous carbonate deposits in Florida.

## Depositional Environments

Sedimentary rock and sediment hold clues that lead geologists to recognize the environments that existed when the Earth materials formed. Geologists can recognize river or marine environments in deposits of gravel, sand and silt using evidence such as fossils, sedimentary structures, sediment size and other tools. For example, in some Cretaceous units paleosols are found. Paleosols are ancient soils. We can tell they are soils because they contain preserved mud cracks, root traces, and iron and manganese oxides, which indicate sediment exposed to the air and oxidized. The type of soil structures formed depends on climate and the amount of time the sediments were exposed. Paleosols can be compared to modern soils to determine ancient climates. In some areas, such as central Alabama and Northeast Mississippi, the paleosols have been heavily eroded and the colorful oxide layers look similar to the Badlands of South Dakota. Paleosols can also be found in older rocks of the Appalachian Plateau, and Valley and Ridge, and even in rock cores cut far below the surface in oil or gas wells.

Source: <http://geology.teacherfriendlyguide.org/index.php/rocks-se/region-3-coastal-plain>

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

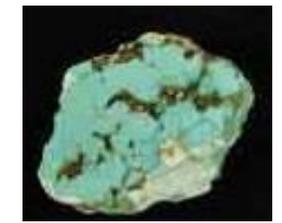
# Club Meeting – February 2015

Photos by Pat & Bruce



# Club Meeting – February 2015

Photos by Pat & Bruce



# Egg Geodes Experiment

By Rachelle

Today we're experimenting with **egg geodes**. This experiment is set up to engage children in the steps of the scientific method, which could easily make this a fun and successful **science fair project**. Not only is the process of making these beautiful geodes engaging for kids, but the end-result has a huge wow-factor. Give yourself at least two-three days to achieve the greatest results.

## Set up the Egg Geodes Experiment

### Supplies

- Eggs
- Rock Salt
- Sea Salt
- **Borax\***
- Other substance that could be tested for crystallization such as sugar, epsom salts, cream of tartar, baking soda, or **alum\***
- Mini-muffin pan
- Food Coloring



*\* Borax and alum are not food products, and using these ingredients with small children should be closely monitored, as ingestion can be fatal. Please use common sense and close supervision with such substances. My children were watched at all times and did not come in direct contact with borax in the process of this experiment.*



I tapped a **knife around the top of the eggs** to remove a bit of shell, and then emptied the eggs and cleaned them with water. Using a finger, it's important to gently rub around the inside of the egg to **remove the membrane** because the membrane can discolor crystals as they form.

If you happen to have a **mini-cupcake pan**, it's like they were made for this job. We heated a pot of water (not quite boiling) and then poured 1/2 cup into a mug. We added 1/4 cup of kosher salt into the first mug and mixed it until it dissolved.



The kosher salt was stubborn and wouldn't dissolve, so Nutmeg handed the mug to me for some rigorous mixing. Still no luck.

We moved on to the next mug: 1/2 cup hot water + 1/4 cup sea salt. The sea salt dissolved quickly and then we added a bit more. The idea is to saturate the solution without putting in too much of the dry ingredient.

And then the final mug: 1/2 cup hot water + 1/4 cup borax. Dissolved.



We added a couple drops of food coloring to each mug and then made a chart so we wouldn't lose track.

Then we poured the liquid into our eggs. Each solution made just enough to pour into two eggs. Perfect!

And then you wait 5 days for the liquid to mostly evaporate.

We couldn't that long, but after 1 day salt crystals evaporated through the egg shell, and after 2 days our eggs looked like this...

### **Kosher Salt**

Through the process of diffusion, the salt actually passed through the permeable shell. Gorgeous, isn't it?

### **Sea Salt**

### **Borax**

With opposite results of the salt-solutions, borax created the most sparkly, crystal-looking egg with crystals inside the egg and nothing on the outside.

And of course, things like this are irresistible to little hands. My toddler wanted to pick all the crystals off the shells, and I had to pull them away because not only will she break them into a gazillion pieces, but substances like borax are safe for looking, not for touching.

## March Birthdays

MAR 1 David Jones  
 MAR 7 Jeff DeRoche  
 MAR 7 Thomas Merino  
 MAR 8 Harold Newman  
 MAR 14 Karen Stokes  
 MAR 16 Ginger Merino  
 MAR 19 Grady Dunn  
 MAR 19 George White  
 MAR 19 Lisa Wisham  
 MAR 21 Billy Johnson  
 MAR 23 JoAn Lambert  
 MAR ?? Ben Ferguson

## Random Rock Facts



The name *aquamarine* is derived from the Latin word *aqua*, meaning water, and *marina*, meaning *the sea*. This gemstone was believed to protect sailors, as well as to guarantee a safe voyage. The serene color of aquamarine is said to cool the temper, allowing the wearer to remain calm and levelheaded. Its pale, cool color beautifully complements spring and summer wardrobes. Aquamarine is most often light in tone and ranges from greenish blue to blue-green; the color usually is more intense in larger stones. This gemstone is mined mainly in Brazil, but also is found in Nigeria, Madagascar, Zambia, Pakistan, and Mozambique.

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

## Officers

**President – Pat LeDuc**  
 334-806-5626

**Vice President – Garry Shirah**  
 334-671-4192

**Secretary – Bruce Fizzell**  
 334-577-4353

**Treasurer – Diane Rodenhizer**  
 334-447-3610

**Bulletin Editor – Joan Blackwell**  
 334-503-0308  
 Tfavorite7@aol.com

**Webmaster – Pat LeDuc**  
 334-806-5626

**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

**Website:** [www.wiregrassrockhounds.com](http://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 10<sup>th</sup> 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

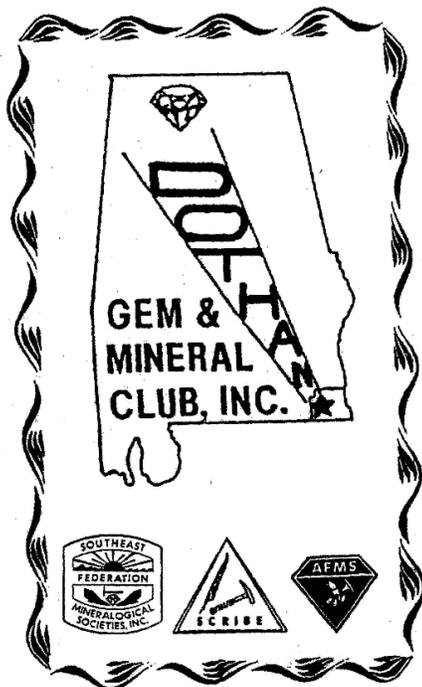
## Refreshments

MAR 22 – Potluck Refreshments

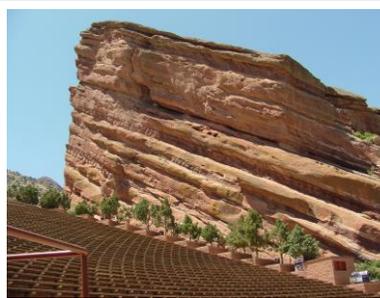
# ROCKHOUNDS HERALD

Editor – N. J. Blackwell  
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## Where you might hear...



Geologic tilting, also known as tectonic tilting, occurs when the earth's surface layers begin to tilt or slant irregularly. Geologists have studied the tilts of land, lakes and other bodies of water for hundreds of years and developed different theories to account

for geologic tilting. Although there is disagreement about certain causes of tilting, it is generally accepted that tilting can occur as a result of faults (vertical and horizontal), angular unconformity and disturbances to the earth's magnetic field.

Text Source: [http://www.ehow.com/info\\_12141180\\_causes-geologic-tilting.html](http://www.ehow.com/info_12141180_causes-geologic-tilting.html)

Image Source: <http://www.grisda.org/colorado/2009.htm>

Image Location: Red Rocks Amphitheater, west Denver --- Tilted layers of Fountain Formation are sand and conglomerate deposited from erosion of the ancestral Rocky Mountains.

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**Southeast Federation of Mineralogical Societies, Inc.**  
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