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

Rockhounds Herald

920 Yorktown Road, Dothan, AL 36301-4372

www.wiregrassrockhounds.com

May 2015

Words from…

The President

Our April meeting was a short one. We found out that some of our club members' homes and shops were damaged by the big storm with high winds that rumbled through Dothan. Downed trees and public notices asking people to avoid driving if possible, kept our meeting numbers low. Those of us who were able to get to the meeting were grateful and relieved to hear that none of our fellow club members were injured.

I wanted to let everyone know that the Tannehill Gem, Mineral & Fossil Show is quickly approaching. It will be held June 6 – 7, from 9 AM to 5 PM both days. Also, the Southeast Federation of Mineralogical Society has the week of June 7 – 13 booked at the William Holland School of Lapidary Arts in Young Harris, GA. There were 14 different classes scheduled for that week, the last time I checked. I had a great time in the Gem & Mineral ID class there and would like to encourage our club members to take a class or two. http://www.sfmsworkshops.com/Class_Schedule.html

Our next meeting is May 24th. Though that is Memorial Day weekend, I hope to see everyone there. And, bring your newly acquired shiny things for Show and Tell.

Pat

Announcement

Public Expression of Thanks – Show Chairman, Jeff DeRoche, has issued a special acknowledgement for the tireless efforts put forth by Diane Rodenhizer and Ellen and John Webber in making the 2015 show a great success. According to Jeff, they were there every step of the way and he says he couldn't have done it without their help. Thanks to Diane, Ellen and John, and thanks to everyone who played even a small part in the process. It really does take everybody working together to make it happen.

Upcoming Shows

May 22 – 24	**Harrison County Gem & Mineral Society, Inc.**	**Biloxi, MS**
June 6 – 7	**Tannehill Gem, Mineral, Fossil & Jewelry Show**	**McCalla, AL**
June 13 – 14	**Tellus Science Museum**	**Cartersville, GA**

Source: http://www.amfed.org/sfms/club-shows-456.html

Meeting Minutes – April 2015 – by Secretary

The meeting was called to order at 14:05 on 4/26/2015 by President Pat LeDuc. Nineteen members were in attendance and there were no guests. Birthdays for April were forgiven due to heavy rains and strong winds that smashed into the Wiregrass the day before. Dothan was hard-hit by winds that knocked down trees and power lines. All our thoughts and prayers go out to members who may have been trapped or inconvenienced by these strong storms.

Note: Today's meeting was held in an abbreviated format due to the absence of many key members. President LeDuc used this state of affairs and her emergency powers to appoint herself Queen of the Wiregrass Rockhounds in perpetuum et unum diem. Thanks Pat!

CORRESPONDENCE: AMFS Newsletters were the only correspondence.

MINUTES & TREASURER REPORT: Minutes from March were held in abeyance due to many of our key members being absent on account of storm damage. Diane Rodenhizer presented the treasurer's report, which was approved and passed.

OLD BUSINESS: No old business.

NEW BUSINESS: No new business, though a few show related topics were discussed.

SHOW BUSINESS: Jeff DeRoche reported that vendors were happy with space and layout for the show, and with the number of visitors/sales made. As show chairman, Jeff believes we should book the same building again for 2016, since adding more vendors may dilute sales for everyone. If we can increase attendance numbers, a larger space for more vendors becomes more realistic. Diane put forth the proposition that we shift the show date to the 3rd week in February so it does not compete/conflict with Palm Sunday, Easter, Azalea Fest, Bar-B-Que Fest and such. Jeff agreed to talk to the Farm Center and see what can be arranged. On the topic of membership, we picked up two new families who signed up at the show.

Jeff sent out a BIG "Thank You" to Diane Rodenhizer and Ellen and John Webber for all they did before, during and after the show, and especially to John for staying late on Sunday to help vendors get packed up and on the road.

PROGRAM: No program this month.

SHOW AND TELL: Jeff showed us the "New and Improved Door Prizes" he picked up during the show, as well as, a cabochon of polished "Mother of Bowling Ball" in a striking shade of aubergine that would absolutely send Martha Stewart to heaven. Janie Schings sent along an interesting aluminum stencil for making cabs and offered to loan it out as a template for folks who want to make one for themselves. As usual, the meeting wrapped up with food. The first door prize from the new supply went to Ken Wilson.

Respectfully submitted by B. Fizzell

Rocks of the Blue Ridge & Piedmont: Region 1

The Blue Ridge and Piedmont are distinct areas within the Southeast, but share similar types of crystalline igneous and metamorphic rocks (Figure 2.5). The border between the Blue Ridge and Piedmont provinces is often considered the Brevard Fault Zone. The rocks have been crushed and ground by the tremendous pressure of thrusting along the fault zone, creating "cataclastic" rocks (Figure 2.6). The Blue Ridge rocks are the spine of the Appalachian Mountain chain, forming the western part of its crystalline core, whereas the Piedmont rocks form the foothills of the mountains, and include the eastern part of the Appalachian Mountains' crystalline core. Most of the ancient Blue Ridge rocks are related to the geological events of the Precambrian and Cambrian periods, from the Grenville mountain building to the Cambrian rift basins. Most of the Piedmont rocks actually formed somewhere other than North America and were attached to the side of the continent in a patchwork of volcanic islands, fragments of land and former ocean bottom sediments.

Figure 2.5: The Blue Ridge and Piedmont.

Figure 2.6: Cataclastic rocks along the Brevard Fault Zone and other faults where the rocks have been crushed by faulting pressure.

Many Piedmont rocks are metamorphosed to varying degrees and it is commonly difficult to determine their origin or determine when they formed (Figure 2.7). The Piedmont has two basic divisions: the Iapetus Rocks (also known as the Inner Piedmont) which include the sediments

deposited in the ancient Iapetus Ocean, the Taconic volcanic islands (including the “Piedmont Terrane”) and sediments shed from the volcanic islands; and the Avalon Rocks (also known as the Outer Piedmont), recording the distinctive rocks of the Avalon microcontinent and sediment in the adjacent ocean basins.

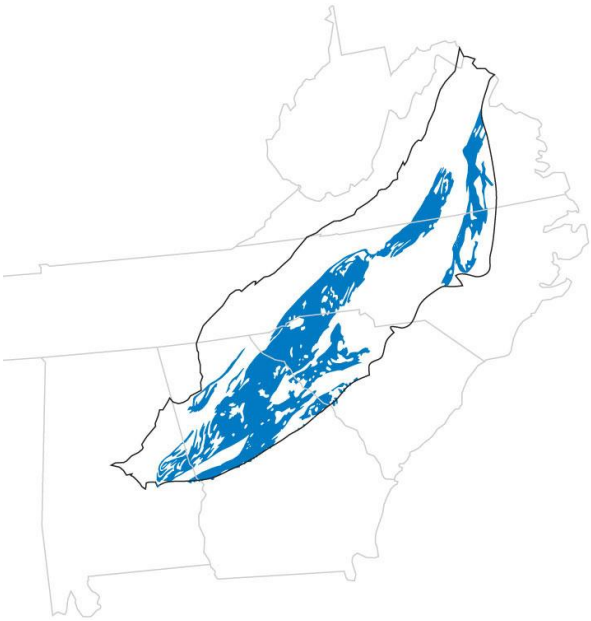
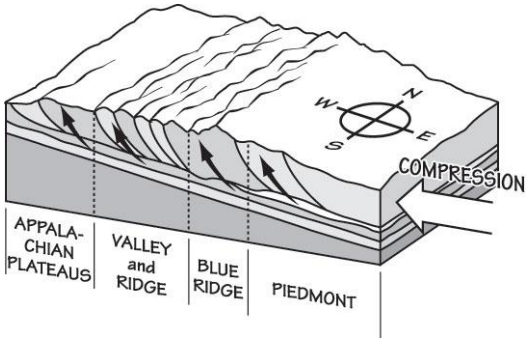


Figure 2.7: Blue Ridge and Piedmont rocks which are metamorphosed to a degree that is difficult to differentiate their origin or when they formed.

During the Paleozoic mountain building event the Blue Ridge and Piedmont Region was compressed into folds, faulted, intruded by magma, sheared, uplifted, and metamorphosed. Both the Blue Ridge and Piedmont were pushed over one hundred miles west, telescoping into a series of folded, thrusted crustal sheets. The Piedmont was thrust over the Blue Ridge, and the Blue Ridge was thrust over the rocks further west (Figure 2.8). In some areas of the Blue Ridge and Piedmont, ancient Grenville basement rock is exposed in windows where the overthrust Piedmont rocks have eroded away. Elsewhere Grenville rocks are buried deep beneath the Earth’s surface (hence the term “basement.”)

Figure 2.8: The crust was "telescoped" by the compressional forces of the Paleozoic mountain-building events. Slices of crust were thrust over each other, stacking like a deck of cards.



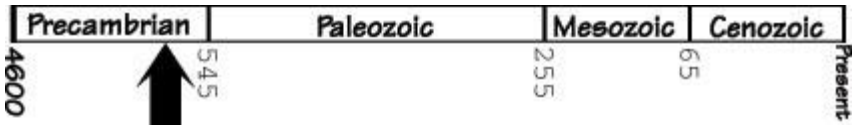
Most commonly, older rock layers were thrust over top of younger rock layers. Erosion has removed part of the overthrust crust (of older rocks) in some areas of the Piedmont and Blue Ridge, exposing the younger buried rock beneath. These “windows” (or fensters) allow us to look through to the younger rocks below the overthrust rocks (Figure 2.9). Older rock on top of

younger rock is the exception to a general rule in geology, the Law of Superposition: younger rocks are usually found above older ones. The exception to the rule only happens when folding overturns rocks or when older rocks are thrust on top of younger ones. How do geologists figure out whether the youngest is on top? If the rock has been overturned in a giant fold, clues such as mud cracks or fossils on the bottom of a layer of sedimentary rock may suggest the rock is upside down. Thrust faults may have fossils or unique rock components out of the order they normally occur in every other known locality. Often it is necessary to determine which layers are older by looking at the overall structural geology of the region or using radiometric dating.

Figure 2.9: Outstanding geologic windows of the Southeast.

The Blue Ridge and Piedmont Region was at the center of the mountain building events throughout the Paleozoic and many of the rocks were originally formed deep below the surface as cooling magma. Thus, it should be no surprise that this region is highly metamorphosed (especially the Blue Ridge and inner Piedmont). The uplifting, folding and faulting of the mountain building activities exposed the ancient metamorphosed Blue Ridge rocks, which are the core of the mountain range. The inner Piedmont closest to the Blue Ridge is also highly metamorphosed, having been nearly at the center of the continental collisions. The outer Piedmont is more variably metamorphosed. The only sedimentary rocks or sediments within the Blue Ridge and Piedmont region are modern (Quaternary age) deposits from rivers and streams, and rift basin deposits, which formed during the Triassic and Jurassic periods when the ancient supercontinent of Pangea split apart.

Precambrian Rocks



The Blue Ridge is dominated by Precambrian rocks, including rocks from more than one billion years ago associated with the Grenville mountain building event, and late Precambrian rocks associated with proto-North America breaking away from a supercontinent. Precambrian rocks

are also sometimes found in the Piedmont where overthrust layers were eroded to expose the ancient bedrock.

The oldest rocks in the Blue Ridge and Piedmont Region are known as Grenville Basement, which is composed of highly metamorphosed igneous and sedimentary rocks that were formed during the Precambrian Grenville mountain building event more than one billion years ago. Grenville-aged rocks were originally sandstone, shale and limestone deposited in a warm, shallow ocean along the eastern margin of proto-North America (the Grenville Belt). These are the oldest rocks found at the surface in the Southeast (Figure 2.11). As the Precambrian supercontinent formed, the sedimentary rocks of the Grenville Belt were squeezed and pushed up onto the margin of proto-North America, forming the Grenville Mountains. Due to the intensity of the squeezing, the sedimentary rocks were metamorphosed. The sedimentary rock sandstone became the metamorphic rocks quartzite, gneiss or schist; limestone became marble; and shale became gneiss and schist.

During Grenville mountain building, magma created by friction between the converging plates rose up into the overlying crust. Some blobs of magma rose high enough to push through the overlying sedimentary rocks, but remained well below the surface. The blobs eventually cooled and crystallized, forming igneous rocks such as granite, anorthosite and, less commonly, gabbro. As the Grenville Orogeny continued, the cooled igneous blobs and the sedimentary rocks of the Grenville Belt were later buried under as much as 30 kilometers of sedimentary cover! With that much crust overhead, the pressure and temperature on the buried rocks was extremely high, causing further metamorphism.

For millions of years following the Grenville mountain-building event, the Grenville rocks were worn down and buried by layers of sedimentary rock. Grenville-age rocks are present in many other parts of the Southeast besides the Blue Ridge, but are generally deeply buried by younger overlying sedimentary rocks. The Precambrian rock is visible at the surface in the Blue Ridge and Piedmont region only because of intense thrusting and subsequent erosion of the area during the Paleozoic mountain building events (especially the Alleghanian), which uplifted layers of rock that were once buried beneath many kilometers of crust.

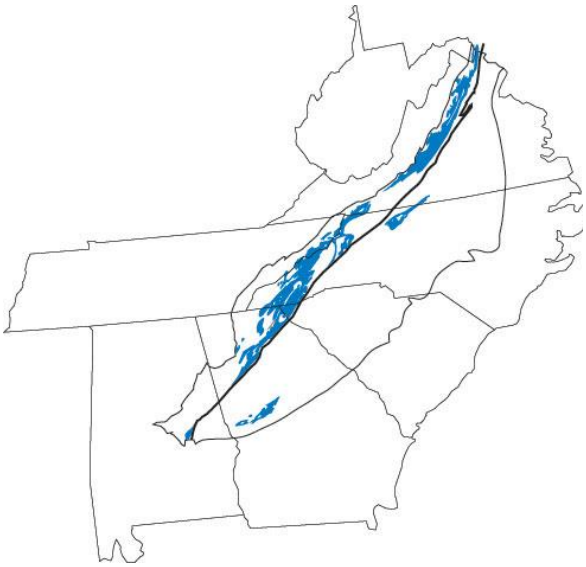


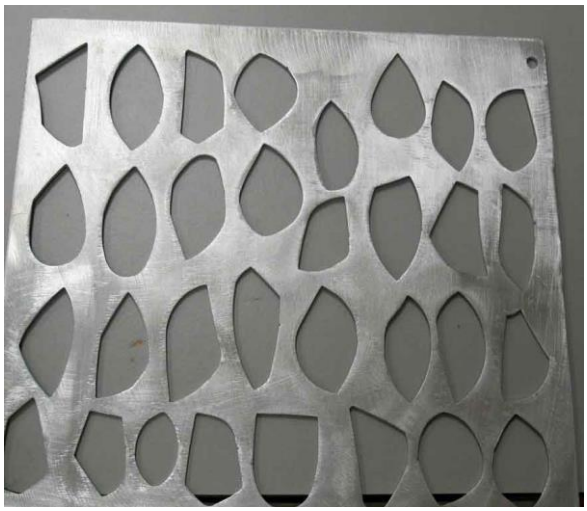
Figure 2.11: Precambrian Grenville basement rock of the Blue Ridge and Piedmont Region. These are the oldest rocks at the surface in the Southeast.

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

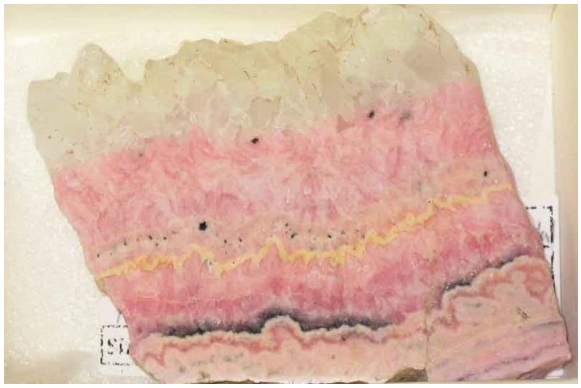
Source: http://geology.teacherfriendlyguide.org/index.php/how-to-use-the-guide-se

Club Meeting – April 2015

Photos by Pat & Bruce



Small crowd at the meeting due to the previous night's storm, but we had some really interesting items to look at and discuss. Check out Jeff's aubergine cabochon made from a piece of bowling ball (top right) and Janie's "free form" cabochon template (mid-left)!



Club Meeting – April 2015

Photos by Pat & Bruce

A box of treasures, along with a few close ups…and Bruce!

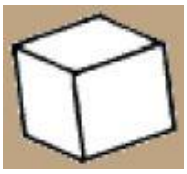
Kid's Corner

Mineral Cleavage & Fracture

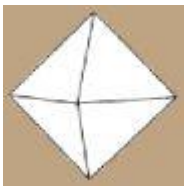
Cleavage and fracture are descriptions of how a mineral breaks into pieces. **Cleavage** describes how a mineral breaks into flat surfaces (usually one, two, three or four surfaces). Cleavage is determined by the crystal structure of the mineral.

Fracture describes how a mineral breaks into forms or shapes other than flat surfaces. Not all minerals have cleavage, however, all minerals will have some form of fracture.

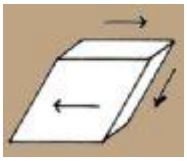
Common Cleavage Descriptions



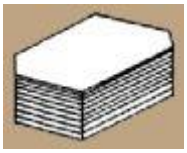
Cubic – when a mineral breaks in three directions and the cleavage planes form right angles (90 degrees to each other). Results in pieces in the shape of a cube.



Octahedral – when a mineral breaks in the form of a diamond, resulting in 8 nearly equal faces.



Rhombohedral – when a mineral breaks in three directions and the cleavage planes form angles that are other than 90 degrees. The shape formed is called a rhombohedron.



Pinacoidal – when a mineral breaks in one direction, leaving a single flat surface (cleavage plane). When a mineral breaks into very thin sheets, like mica minerals, the pinacoidal cleavage is called micaceous.

Common Fracture Descriptions

1. Conchoidal: describes a curved, nearly rounded, smooth fracture that looks like the inside of a shell. This is seen best in the igneous rock, obsidian, but also in massive pieces of the mineral quartz.

2. Fibrous: describes minerals (like chrysotile asbestos) that break into fibers.

3. Splintery: describes minerals that break into stiff, sharp, needle-like pieces.

4. Hackly: describes fractures that have rough edges.

5. Uneven or irregular: describes minerals that break into rough, uneven surfaces.

Sometimes one person might identify a fracture as hackly and another would describe the same specimen as irregular because they are fairly close to each other in appearance. With more experience, a mineralogist can easily tell the difference between these two fractures.

Source: http://www.kidsloverocks.com/html/mineral_cleavage.html

We Use a LOT of Minerals!

In a lifetime, the average American will use a LOT of stuff.
Much of this "stuff" comes from minerals.
In his lifetime, Corundum Carl will use . . .

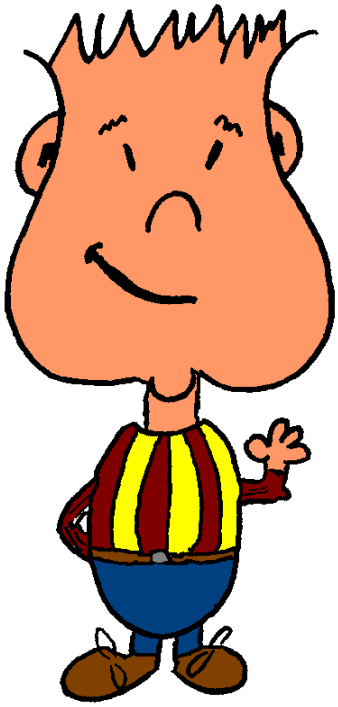
1,600 pounds of Copper
(from azurite, malachite, cuprite)

32,300 pounds of salt
(halite)

920 pounds of zinc
(from sphalerite)

42,000 pounds of iron ore
(hematite and magnetite)

68,000 pounds of cement
(cement is made from lime-stone, sand and gravel. Limestone contains the same material as calcite—calcium carbonate)



1.7 Troy ounces of gold

5,700 pounds of aluminum
(from bauxite)

1,000 pounds of lead
(from galena)

20,500 pounds of phosphate rock

61,000 pounds of other minerals
(like gypsum, spodumene, sulfur, silver, quartz, and fluorite)

You will use this much, too!!

*This information is from The Mineral Information Institute, Golden, Colorado.

Source: http//www.kidsloverocks.com/pdf/MineralFacts1.pdf

Who What Where When Why How

May Birthdays

MAY 4 Joe Polakoski
MAY 6 Nancy Miller
MAY 8 Joe Cody
MAY 8 Laural Meints
MAY 10 Lory Hodges
MAY 14 Garry Shirah

Random Rock Facts

As the birthstone for May, the emerald, a symbol of rebirth, is believed to grant the owner foresight, good fortune, and youth. Emerald, derived from the word *smaragdus*, meaning *green* in Greek, was mined in Egypt as early as 330 B.C. Today, most of the world's emeralds are mined in Colombia, Brazil, Afghanistan, and Zambia. The availability of high-quality emerald is limited; consequently, treatments to improve clarity are performed regularly.

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

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
334-447-3610

Bulletin Editor – Joan Blackwell
334-503-0308
Tsavorite7@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

Refreshments

MAY 24 – Potluck Refreshments

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

www.wiregrassrockhounds.com

Where you might hear…

Tuff is a volcanic rock made up of a mixture of volcanic rock and mineral fragments in a volcanic ash matrix. Wherever there are explosive volcanic eruptions you can expect to find tuff.

Tuff forms when some combination of ash, rock and mineral fragments (pyroclastics or tephra) are blasted into the air, then fall to the ground as a mixed deposit.

Most of the rock fragments tend to be volcanic rocks that were once solidified parts of the volcano that erupted to produce the tuff, but sometimes other types of rock are blasted out and incorporated into the tuff as well.

Sometimes erupted material is so hot when it reaches the ground that it fuses together to produce a welded tuff.

Source: http://geomaps.wr.usgs.gov/parks/rxmin/gtuff.html

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