

## March Meeting At the Museum of Arts and Sciences on Monday, March 06, 2017 at 7:30pm.

The speaker for the March meeting will be Hank Josey. Hank will be speaking on his trips to manmade islands caused by dredging the Savannah River and the assortment of fossils he has found so far on the island.

## President's Message

We had a good turnout this month. Michael Runzi gave a great presentation on casting and casting techniques.

I have been doing research on the iron industry in Georgia and have found it an interesting history. However, I have not been able to find much on the iron industry in Middle Georgia though- I am still looking for more....

During 1807, Elias Earle had been eyeing some property in the Cherokee nation where he was interested in establishing a furnace for smelting iron. He, along with his partner, Adam Carruth, were going to start an iron works where they could create an armory and were hoping to land Federal contracts for weapons and supplies. Carruth would operate his foundry and iron works until 1822 when he started having problems with his Federal

contracts. Earle had sent men to build a furnace near the confluence of Chickamauga Creek and the Tennessee River they were turned around near Taylor's Crossroads (now called Ringgold, Georgia) Catoosa County. The state of Tennessee then held up ratification of the treaty giving Earle the land and Earle's plan collapsed. Prior to the establishment of the smelting furnaces, a number of bloomeries were established around the state. They were found in Elbert, Warren, Habersham, Bartow, Union, Murray, Walker, and Dade counties.

A bloomery is a chimney shaped device in which it is filled with charcoal. There are fresh air pipes towards the base in which air is forced in via bellows. After the charcoal is fired and is at temperature, then more charcoal is added from the top with pulverized iron is added. This is usually done on a one to one basis. Inside the furnace, carbon monoxide from the incomplete combustion of the charcoal reduces the iron oxides in the ore to metallic iron, without melting the ore; this allows the bloomery to operate at lower temperatures than the melting temperature of the ore. As the desired product of a bloomery is iron which is easily forgeable, it required a low carbon content. The temperature and ratio of charcoal to iron ore must be carefully controlled to keep the iron from absorbing too much carbon and thus becoming unforgeable. Cast iron occurs when the iron melts and absorbs 2% to 4% carbon. Because the bloomery is self-fluxing the addition of limestone is not required to form a slag.

The small particles of iron produced in this way fall to the bottom of the furnace, where they combine with molten slag, often consisting of fayalite (*aka: iron chrysolite*), a compound of silicon, oxygen and iron mixed with other impurities from the ore. The mixed iron and slag cool to form a spongy mass referred to as the bloom. Because the bloom is highly porous, and its open spaces are full of slag, the bloom must later be reheated and beaten with a hammer to drive the molten slag out of it. Iron treated this way is said to be *wrought* (worked), and the resulting iron, with reduced amounts of slag is called *wrought iron* or bar iron. It is also possible to produce blooms coated in steel by manipulating the charge of and air flow to the bloomery.



In the early history of the iron production in the southeastern United States, statistics show that 41% of the ores came from the north Georgia area. The first blast furnace was the Sequee furnace near Clarksville, in Habersham County. It was built prior to 1832 but was abandoned by 1837. Then a number of furnaces sprang up over the area over the next half-century only to last a few years before being abandoned.

Roller mills, nail mills, spike mills began to appear. A roller mill was located at Etowah and one in Atlanta, aka *Gate City*. Gate City was eventually shuttered, dismantled and moved to Rome.

Schofield Iron Works, which produced cotton presses, cane mills, steam engines, boilers, and general machinery, was founded on Fifth Street by J. S. Schofield in 1850. By 1866, it was one of Macon's leading industries. During the Civil War, Schofield's and its fellow foundry, Findley's, melted down church and school bells to produce shot and shell for guns and cannons for Macon's defense. Schofield's eventually became Taylor Iron, which operated until the 1970s.

This is but a small portion of the iron industry in Georgia. As we know from our digs, it is also found south of us at the Jones Pit mine where we find the Georgia queen jasper and the goethite.

Once again, I want to give everybody the heads up to be careful while digging. Do not reach into holes or places you can't see where a snake might be hiding. Look before stepping over logs and rocks and make sure you are stepping into a safe area.

If any one has a suggestion for a dig or program, feel free to contact myself, Phil Hargrove or Jay Batcha.

Phil Hargrove,  
cell: 478.862.5327  
e-mail: [susanbphilh@pstel.net](mailto:susanbphilh@pstel.net)

Jay Batcha,  
cell: 478.957.5002  
e-mail: [rocky1s@cox.net](mailto:rocky1s@cox.net)

Don't forget to bring a friend with you to the next meeting.

Thank you,

Jim Souter  
cell: 478.454.7273  
e-mail: [jgsouter@windstream.net](mailto:jgsouter@windstream.net)

## February Minutes

The meeting was called to order at 7:41 PM by Jim Souter with 14 members/guests present.

### Old Business

The treasurers' report was read and approved. Everyone is asked to collect additional material for grab bags for the fair.

### New Business

This month's mineral was magnetite and several members brought in specimens to share. Magnetite is a naturally magnetic mineral. There is an upcoming mineral symposium at the Tellus Museum on March 25 with 2 digs to follow on the 26<sup>th</sup>. The largest diamond (1111 carats) discovered in the last 100 years was unearthed in Botswana, Africa recently.

Our own Michael Runzi was our speaker for this month. He won the scholarship this past year for a week at Wild Acres. The talk was quite informative and provided some insights into what he learned and showed off some of the projects he had completed. His talk focused mainly on different methods used in the metal casting class. The most widely used method is sand casting which utilizes sand as



the mold material. The sand is typically contained in a frame called a flask. Investment (similar to plaster of paris) is mixed and poured into the flask filling it. It hardens and then is burned out. Another method that he mentioned was lost wax casting. Lost wax casting is a process by which a duplicate metal sculpture is cast from an original. This technique can be used on any material that can burn, melt or evaporate to leave a mold cavity. In dentistry, gold crowns, inlays and onlays are made using this technique. Also discussed was vacuum molding, which is when the sand is held in the flask via a vacuum. Michael also discussed pickling which is a surface treatment to remove impurities. This process requires using a strong acid to clean the metals. A question and answer session was provided at the end of his talk. The meeting was adjourned at 8:57 PM.

By: Richard Arnold

*Some of the material information was excerpted from Wikipedia.*

## Science Olympiad coming up on March 18<sup>th</sup> 2017

Our club has been asked to run the Rock Hound part of the Middle Georgia RESA Elementary Science Olympiad again, the same as last year. It will be held at Rutland Middle School located at 6260 Skipper Road in Macon on March 18, 2017 from 8:30 to 4:30. We did not have to stay the entire time last year, I believe we left by 12:00 noon last time. I need

some help running this Rock Hound event. Please give me a call if you can help or you have any questions about it. Call Jay at 478-957-5002

## Mineral of the Month Lazulite

- **Chemistry:** (Mg, Fe)Al<sub>2</sub>(PO<sub>4</sub>)<sub>2</sub>(OH)<sub>2</sub>, Magnesium Iron Aluminum Phosphate Hydroxide.
- **Class:** [Phosphates](#)
- **Uses:** Mineral specimens, ornamental stone and as a rare [gemstone](#).

Lazulite is a relatively rare mineral that gets easily confused with other, more well known, minerals. Not only does it sound like the [silicate](#) mineral **lazurite**, it looks like it too! Well, at least it has very similar color to lazulite as well as the carbonate, [azurite](#). The beautiful azure-blue color that is seen in all three of these minerals makes them very desirable as ornamental stones. Azurite is reactive to acids and lazurite forms infrequent and different crystals than lazulite.

Lazulite is in a solid solution series with the mineral [scorzalite](#). A solid solution series is a set of two or more minerals that have a couple of elements that substitute freely for each other. The lazulite-scorzalite series ranges from the magnesium rich lazulite to the iron rich scorzalite. The rarer scorzalite does not differ appreciably, except that it tends to be darker, less transparent and denser than lazulite.



Lazulite is named from an Arabic word for *heaven* in allusion to its sky blue color. Crystals are more common than massive forms, but localities with gem grade crystals are scattered and scarce. The crystals can be well shaped and show a nice monoclinic dipyramidal to tabular form. Lazulite although most crystals are dull, some exceptional specimens can be quite spectacular.

### PHYSICAL CHARACTERISTICS:

- **Color** is dark azure-blue to a bright indigo blue or even a pale sky blue.
- **Luster** is vitreous to dull.
- **Transparency:** Specimens are translucent to less commonly transparent.
- **Crystal System:** Monoclinic; 2/m
- **Crystal Habits** include a dipyramidal form that comes close to looking like a distorted octahedron, usually flattened to the point of being a tabular crystal. Also granular and massive.
- **Cleavage** is distinct in one direction.
- **Fracture** is uneven.
- **Hardness** is 5.5 - 6.
- **Specific Gravity** is approximately 3.1 (average for translucent minerals)
- **Streak** is pale blue to white.
- **Other characteristics:** Clear gemmy crystals show strong pleochroism (yellowish, clear, blue) and crystals are only slightly soluble in warm hydrochloric acid..
- **Associated Minerals** are [quartz](#), [rutile](#), [kyanite](#), [andalusite](#), [garnets](#), [muscovite](#), [corundum](#), [wardite](#), [brazilielite](#) and [siderite](#).

- **Notable Occurrences:** Western Austria; Zermatt, Switzerland; Minas Gerias, Brazil; Lincoln Co., Georgia; Inyo Co., California and Yukon Territory, Canada.
- **Best Field Indicators:** color, poor reaction to acids, crystal habit, associations and localities.



The Arkenstone, iRocks.com

Lazulite Graves Mountain, Lincoln County, Ga.



*Field trips coming up, time to do some digging!!!*

An Official Field Trip of the Mississippi Gem



and Mineral Society (Florence, MS) (HOST)  
An Official Field Trip of the Mid-Ga Gem and  
Mineral Society

**Saturday, March 25, 2017**  
**Hammett Gravel Pit**  
**Redwood, Mississippi**  
**Depart meeting site at 8:15 Central**  
**Time in caravan**  
**Collect approximately 9:00 a.m. to 2:00**  
**p.m.**  
**Registration Required by March 22**

**TRIP:** This is an active gravel pit producing sand and gravel for industries. The site has igneous, metamorphic and sedimentary rocks. The hunt site includes “oversize” rocks culled from commercial gravel. Citronelle gravel is mined from a layer 40 feet below Ice Age loess soil. The abundance of agate, coral and other fossils made this site a favorite last year.

**COLLECTING:** Expect to find agates, coral and other fossils, geodes, chunks of petrified wood and Sioux quartzite. A few unusual finds included a magnificent Petoskey stone and a piece of St. Francois Mountain rhyolite.

**BRING:** We’ll hunt around and on tall piles of gravel. Bring a bucket, bag or backpack for collecting as you climb on the gravel piles. A walking staff is helpful but not necessary. Wear close-toed shoes to protect feet. If you need ankle support, wear hiking boots. An extra pair of “muck” boots might be helpful if there is mud. Wear clothes that you won’t be afraid to

get dirty and bring a change of clothes. Weather may be cold and/or windy. Bring a coat and dress in layers. Expect cold mornings and warm afternoons. If you have allergies or require medication, please bring your medication. Bring water, snacks and drinks. Pack a lunch if you expect to stay until 2 p.m. Bring gloves, hat, sunglasses, sunscreen and a chair.

**REQUIREMENTS:** The collecting area will be limited to specific gravel piles that will be announced on site. Participants must stay off equipment, away from slopes adjacent to ponds, out of ponds and away from loess walls.

**SPECIAL CONDITIONS:** We will not park close to the hunt piles. Unless you are very selective, you will make multiple trips to your auto to deposit your finds to avoid potential injury. Footing on the gravel piles can be tricky. People who have stability issues should stay at the bottom of the gravel piles. It will still be good hunting. Walking and digging on steep slopes can lead to slides. Be aware that gravel slides are possible. Care must be taken when around the ponds. Stay away from the edge of rock piles against the ponds. This is a remote area and there will be little or no cell phone reception.

**REGISTRATION REQUIRED:** Registration deadline is Wednesday, March 22. Please let us know if you will attend and the best way to contact you. In case of bad weather or weather damage



to the site, we might have to cancel. Spring in Mississippi can bring heavy rain, sleet, or snow as well as crisp, breezy or wonderfully warm weather. Contact: Rosina Echols: 601-825-5752 or [rosinae@bellsouth.net](mailto:rosinae@bellsouth.net).

**CHILDREN:** Children are allowed - minimum age 8 years. Adult supervision is required at all times. Children may not throw rocks or run at the site, especially on the gravel piles. Care should be taken when around the ponds. No climbing on equipment is allowed.

**PETS:** No pets are allowed.

**FACILITIES:** No stores or facilities are close to the collecting site. A portable toilet will be on the site. At the meeting place before the convoy goes to the site, there will be drinks, snacks, some prepared breakfast/lunch food items, and restrooms.

**ADDITIONAL INFORMATION:** The meeting place is nearly midway between Vicksburg and Jackson, Mississippi. Hotels and restaurants are available in both locations, If you would prefer to stay in the Jackson area, there are a variety of hotels and restaurants available at Exit 48 (Pearl). The Pearl location is a nice area. Vicksburg is a historical area with casinos.

Attendees are invited to attend the MGMS monthly program meeting on Friday, March 24. Our meetings are held at the

MGMS Lapidary School, 176 Tazan Avenue, Florence. (Pearl is approximately 10 miles from the MGMS Lapidary School.) MGMS monthly program meetings start at 7:30 p.m.; gathering begins around 7:00. Although the address is Florence, the School is located in a residential area just south of Richland. Detailed directions to the MGMS Lapidary School can be found on the MGMS website - [www.missgms.org](http://www.missgms.org).

**DIRECTIONS AND WHERE TO MEET:**

We will meet at 8:00 a.m. Central Time at the Chevron Truck Stop on the south side of I-20 at Exit 27 (Bolton exit). This is west of Jackson and Clinton / east of Vicksburg. Please sign in when you arrive. Prior to departure, there will be a short discussion of the plans for the day. We will leave the truck stop at 8:15 a.m. We will drive approximately 10 minutes west on I-20, then travel on gravel roads to the hunt site for about 30 minutes. If you have trouble, call Trip Leader David Kraft, 601-613-7360.

**CONTACT:**

Registration Contact: Rosina Echols — 601-825-5752 or [rosinae@bellsouth.net](mailto:rosinae@bellsouth.net)  
Trip Leader: David Kraft – 601-613-7360 or [david@truckservicesms.com](mailto:david@truckservicesms.com)



Citronelle gravel



Fossils



Petrified Palm Wood



**Check website**

<http://www.amfed.org/sfms/>

**for more shows coming up in the Southeast and other great information!**

**March 10-12, 2017 Augusta, GA  
 29th Annual Aiken-Augusta Gem,  
 Mineral & Fossil Show**

**Always Held: 2nd Weekend in March**

Vendors that offer a wide variety of jewelry, rare fossils and mineral specimens, gems of all colors shapes & sizes, lapidary and much more.

Member Show Cases, Lapidary Demonstrations, Educational Resources, Grab Bags, Treasure Dig, Geode Sales & Cutting, Mineral Panning, Hourly Door Prizes and a Grand Prize that will be awarded at the end of the show on Sunday. .

Show Contact: Richard McNutt 706-650-8280

Sponsoring Clubs: Aiken Gem, Mineral and Fossil Society [www.aikengmfs.org](http://www.aikengmfs.org) and the Augusta Gem and Mineral Society [www.agam.club](http://www.agam.club)

Fri & Sat 10AM-6PM / Sun 11AM-5PM  
 Julian Smith Casino / 2200 Broad St. / Augusta GA.

Admission: \$3 per adult or \$5 Weekend pass- Children under 12 Free with an Adult.

**March 18 and 19, 2017  
 Gem and Mineral Show  
 Dothan Gem and Mineral Club**



Sat: 10 am to 5 pm; Sun: 9 am to 4 pm

Houston County Farm Center  
1701 East Cottonwood Road, Dothan, AL

Show features minerals, gems, fossils, lapidary rough, beads, and handcrafted items, such as, jewelry and knapped knives. This is a family friendly event, which includes hourly door prizes and a silent auction. Free admission and parking.

For more information contact Jeff De Roche, show chair, 334-673-3554

E-mail contact: [arlambert@comcast.net](mailto:arlambert@comcast.net)

Visit our website:

<http://www.wiregrassrockhounds.com>

**March 25-26, 2017**

**Lexington Rock Gem & Jewelry Show (Annual Show)**

**Lexington, KY - Sponsored by Blue Grass Gem & Mineral Club**

Clarion Hotel, 1950 Newtown Pike, Lexington, KY.  
Near Exit 115 off I-75/I-64.

Hours: Sat March 25, 9AM-6PM, and Sun March 26, 11AM-5PM.

Show includes minerals, jewelry, equipment dealers, exhibits, KY Agate, fluorescent displays, hourly prizes.

Admission: \$2 Adults, \$1 Children, \$5 Max Family. Scouts in uniform free.

For Information:

Jane Volk - [lexgemshow@outlook.com](mailto:lexgemshow@outlook.com)

Allen Ferrell - [kyrock2010kentucky@yahoo.com](mailto:kyrock2010kentucky@yahoo.com),

or [www.bggamc.homestead.com](http://www.bggamc.homestead.com)

## Tidbits

### Make Your Own Stone Cloth

Ever notice how quickly a polished stone starts to lose its luster when passed around and shown off? Many things contribute to this phenomenon, but two common elements are skin oils and microscopic abrasive particles. Professional gem dealers carry a "stone cloth" like the type available from the Gemological Institute of America. But unless you are GIA alumni, you probably don't know where to start looking; and when you do find cloths available, the asking price is often a little hard to swallow! The good news is that you can make your own! Buy some felt (tight-grained is better) at any fabric or craft store (think of the fabric on the outside of a Sterling Silver polishing cloth). Simply cut to the size and shape you desire, then mist one side with 100,000 grit diamond spray (available at lapidary or rock shops, or occasionally available from faceting friends - good ones, anyway!). Let dry overnight. Use the side without diamonds first, to remove oils, then rub the stone well with the diamond impregnated side. You (and all onlookers!) will be pleasantly impressed! You can use diamond spray of larger grit size (50,000 works well); but be certain not to use a grit size larger than your final polishing stage, or you'll "erase" your beautiful original finish! If you polish with an oxide compound (cerium, alumina, etc.), don't use any grit size larger than 50,000 (note that "larger" translates to a smaller number in this regard). This works well for almost any material, though it works particularly well for agates and jaspers - and their "evil" habit of losing luster over time!

*Source: Strata Gem—July/Aug 2012*



**Mid-Georgia Gem Clips**  
**Official Bulletin of Mid-Georgia Gem and**  
**Mineral Society**  
**Macon, Georgia**

The Club meets on the First Monday of each Month, at The Museum of Arts and Sciences, in Macon, Georgia. Except: No meeting January, July, and August. The annual Christmas Party is the first Monday in December. September the first Tuesday of the Month

**Purpose:** To promote the earth sciences, the lapidary arts, and the collection, study and display of rocks, minerals, and fossils; to promote the public awareness of these efforts in educational and recreational activities.

**Club Officers:**

**President / Web Master:** Jim Souter,  
 ph. 478-454-7273, [jgsouter@windstream.net](mailto:jgsouter@windstream.net)

**Vice President:** Phillip Hargrove, 478-862-5327  
 Cell 478-550-8199 [susanbphilh@pstel.net](mailto:susanbphilh@pstel.net)

**Secretary / Photographer,** Richard Arnold,  
 ph. 678-682-9860 [rarnold216@charter.net](mailto:rarnold216@charter.net)

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**Education Chairperson:** Tuell Walters,  
 ph. 478-922-7200  
[firecomet46@gmail.com](mailto:firecomet46@gmail.com)

Club year begins November 1<sup>st</sup>, a grace period of three months will be given before membership lapses.

**Mid-Georgia Gem & Mineral Society**  
**Application for Membership**

Name(s) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Address \_\_\_\_\_  
 \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip Code \_\_\_\_\_

Phone \_\_\_\_\_

Adult(18+) \$10.00 Junior \$2.50 New

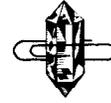
Renewal \_\_\_\_\_

E-mail

Address \_\_\_\_\_  
 \_\_\_\_\_

List your interests and reasons for joining \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Make checks payable to:  
 Mid-Georgia Gem & Mineral Society  
 Mail to the Treasurer (listed on this page) or bring to a meeting.



**Mid-Georgia  
Gem Clips**

**Official Bulletin of Mid-Georgia Gem and  
Mineral Society  
Macon, Georgia**

**Member of Southeast Federation of  
Mineralogical and Lapidary Societies  
Member of American Federation of  
Mineralogical Societies**



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