



THE GOLDRUSH LEDGER



CHARLOTTE GEM & MINERAL CLUB

JANUARY 2016

THE PREZ SAYZ

This past weekend I had the pleasure of sitting in on the first of what we hope will be a long series of CG&MC lapidary classes at the Dairy. We couldn't have inaugurated this important new club program on a stronger note. Our own Sarah Lee Boyce, an acclaimed teacher at the William Holland School of Lapidary Arts, taught a Cabochon I class to four CG&MC member students. The class began at 9AM and finished at 4PM. Each student left with a beautiful completed cabochon and a better understanding of the equipment and techniques necessary to turn a piece of rough into a potential piece of jewelry.

With its funky décor and quasi-outdoor petting zoo (you have to



see it to understand), the Dairy comes across as a totally unique environment in which to learn something new, improve on existing skills or just get away from the trials and tribulations of the day. While a class is in session people wander in from other studios in the building to see what's up with all those humming/spitting machines. From such impromptu

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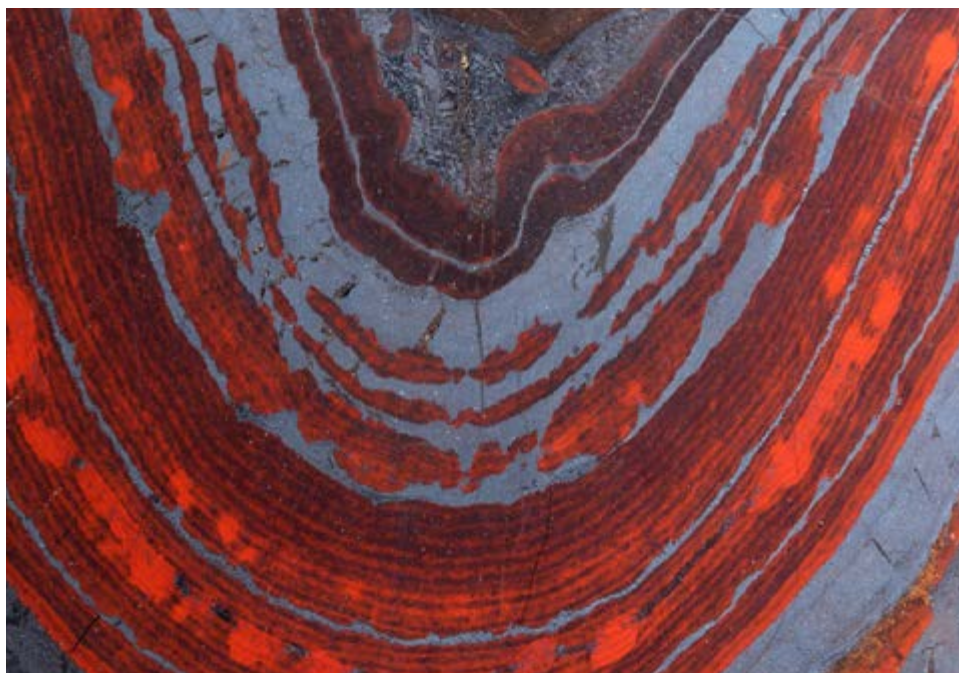
Mary Fisher



contacts are future students created.

In this, our inaugural month, we will put on two cabbing classes, one polymer clay class and a seed beading class. These classes will generate fees that will cover the January studio rent. There are already students signed up for February. At this point classes are on Saturday but as demand increases and classes are added (faceting, wire wrap, casting, etc.), the schedule may be modified. In order to keep up with the Dairy schedule, go to our website and click on "Workshops at the Dairy". If you've got any questions, you know how to reach me. Hope to see y'all there.

*Murray Simon: President
Charlotte Gem and Mineral Club*



Charlotte Gem and Mineral Club Monthly Meeting

Thursday January 21, 2016

Social Hour from 6:00 - 7:00

Meeting to Start at 7:00

Location:

Tyvola Senior Center

2225 Tyvola Rd. Charlotte, NC 28210 (704) 522-6222

Our Monthly Presentation:

Shelley Pawlyk will discuss the current opal industry in Queensland, Australia. You will learn about this gem's geological origins, specimen types, mining locations, appraisal and purchasing. With comments from her friend, the VP of the Queensland Mineralogical Society and curator of the Brisbane Mineral Exhibit.

There will not be a jewelry making class before the meeting. Sign up for a jewelry class at the Dairy workshop.

**Yearly dues are due. Please have your
dues at this meeting.**

\$25.00 - Family Membership

\$20.00 - Individual Membership

WORKSHOPS AT THE DAIRY

Location:

Art in The Dairy
7701 Tuckaseegee Rd.
Charlotte, NC 28214

Currently scheduled classes:

Jan 23 – Beaded Bracelet with Martha Rogers (2 openings)
- \$30 class fee & \$20 materials fee

Feb 6 – Cabochon Making with Sarah Lee Boyce (3 openings)
- \$40 class fee

Feb 6 – Polymer Clay with Linda Simon (4 openings)
- \$40 class fee & \$20 materials fee

Feb 13 – Beaded Pendant with Martha Rogers (4 openings)
- \$30 class fee & \$20 materials fee

Feb 20 – Cabochon Making with Sarah Lee Boyce (4 openings)
- \$40 class fee

Feb 20 – Polymer Clay with Linda Simon (4 openings)
- \$40 class fee & \$20 materials fee

Feb 27 – Beaded Cabochons with Martha Rogers (4 openings)
- \$30 class fee & \$20 materials fee



Contact Linda Simon to register for a class.

Email: lsimonnc@gmail.com

Call: 704-543-6651.

ROCK OF THE MONTH

HEMATITE

Hematite, also spelled as **haematite**, is the mineral form of iron(III) oxide (Fe_2O_3), one of several iron oxides. Hematite crystallizes in the rhombohedral lattice system, and it has the same crystal structure as ilmenite and corundum. Hematite and ilmenite form a complete solid solution at temperatures above 950 °C (1,740 °F).

Hematite is a mineral, colored black to steel or silver-gray, brown to reddish brown, or red. It is mined as the main ore of iron. Varieties include *kidney ore*, *martite* (pseudomorphs after magnetite), *iron rose* and *specularite* (specular hematite). While the forms of hematite vary, they all have a rust-red streak. Hematite is harder than pure iron, but much more brittle. Maghemite is a hematite- and magnetite-related oxide mineral.

Huge deposits of hematite are found in banded iron formations. Gray hematite is typically found in places that can have still standing water or mineral hot springs, such as those in Yellowstone National Park in North America. The mineral can precipitate out of water and collect in layers at the bottom of a lake, spring, or other standing water. Hematite can also occur without water, however, usually as the result of volcanic activity.

Clay-sized hematite crystals can also occur as a secondary mineral formed by weathering processes in soil, and along with other iron oxides or oxyhydroxides such as goethite, is responsible for the red color of many tropical, ancient, or otherwise highly weathered soils.

Etymology and history

The name hematite is derived from the Greek word for blood αἷμα *haima* because hematite can be red, as in rouge, a powdered form of hematite. The color of hematite lends itself to use as a pigment. The English name of the stone is derived from Middle French: Hématite Pierre, which was imported from Latin: Lapis Hæmatites around the 15th century, which originated from Ancient Greek: αἱματίνης λίθος (*haimatitēs lithos*, “blood-red stone”).

Ochre is a clay that is colored by varying amounts of hematite, varying between 20% and 70%.^[5] Red ochre contains unhydrated hematite, whereas yellow ochre contains hydrated hematite ($\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}$). The principal use of ochre is for tinting with a permanent color.

The red chalk writing of this mineral was one of the earliest in the history of humans. The powdery mineral was first used 164,000 years ago by the Pinnacle-Point man possibly for social purposes. Hematite residues are also found in old graveyards from 80,000 years ago. Near Rydno in Poland and Lovas in Hungary, palaeolithic red chalk mines have been found that are from 5000 BC, belonging to the Linear Pottery culture at the Upper Rhine.

Rich deposits of hematite have been found on the island of Elba that have been mined since the time of the Etruscans.

Magnetism

Hematite is an antiferromagnetic material below the Morin transition at 250 kelvin (K) or -9.7 degrees Fahrenheit (°F), and a canted antiferromagnet or weakly ferromagnetic above the Morin transition and below its Néel temperature at 948 K, above which it is paramagnetic.

The magnetic structure of α -hematite was the subject of considerable discussion and debate in the 1950s because it appeared to be ferromagnetic with a Curie temperature of around 1000 K, but with an extremely tiny moment ($0.002 \mu_B$). Adding to the surprise was a transition with a decrease in temperature at around 260 K to a phase with no net magnetic moment. It was shown that the system is essentially antiferromagnetic, but that the low symmetry of the cation sites allows spin-orbit coupling to cause canting of the moments when they are in the plane perpendicular to the c axis. The disappearance of the moment with a decrease in temperature at 260 K is caused by a change in the anisotropy which causes the moments to align along the c axis. In this configuration, spin canting does not reduce the energy. The magnetic properties of bulk hematite differ from their nanoscale counterparts. For example, the Morin transition temperature of hematite decreases with a decrease in the particle size. The suppression of this transition has also been observed in some of the hematite nanoparticles, and the presence of impurities, water molecules and defects in the crystals were attributed to the absence of a Morin transition. Hematite is part of a complex solid solution oxyhydroxide system having various contents of water, hydroxyl groups and vacancy substitutions that affect the mineral's magnetic and crystal chemical properties. Two other end-members are referred to as protohematite and hydrohematite.



Enhanced magnetic coercivities for hematite have been achieved by dry-heating a 2-line ferrihydrite precursor prepared from solution. Hematite exhibited temperature-dependent magnetic coercivity values ranging from 289 to 5,027 Oe. The origin of these high coercivity values has been interpreted as a consequence of the subparticle structure induced by the different particle and crystallite size growth rates at increasing annealing temperature. These differences in the growth rates are translated into a progressive development of a subparticle structure at the nanoscale. At lower temperatures (350–600 °C), single particles crystallize however; at higher temperatures (600–1000 °C), the growth of crystalline aggregates with a subparticle structure is favoured.

Mine tailings

Hematite is present in the waste tailings of iron mines. A recently developed process, magnetation, uses magnets to glean waste hematite from old mine tailings in Minnesota's vast Mesabi Range iron district. Falu red is a pigment used in traditional Swedish house paints. Originally, it was made from tailings of the Falu mine.

Mars

The spectral signature of hematite was seen on the planet Mars by the infrared spectrometer on the NASA Mars Global Surveyor ("MGS") and 2001 Mars Odyssey spacecraft in orbit around Mars. The mineral was seen in abundance at two sites on the planet, the Terra Meridiani site, near the Martian equator at 0° longitude, and the Aram Chaos site near the Valles Marineris. Several other sites also showed hematite, e.g., Aureum Chaos. Because terrestrial hematite is typically a mineral formed in aqueous environments or by aqueous alteration, this detection was scientifically interesting enough that the second of the two Mars Exploration Rovers was sent to a site in the Terra Meridiani region designated Meridiani Planum. In-situ investigations by the Opportunity rover showed a significant amount of hematite, much of it in the form of small spherules that were informally named "blueberries" by the science team. Analysis indicates that these spherules are apparently concretions formed from a water solution. "Knowing just how the hematite on Mars was formed will help us characterize the past environment and determine whether that environment was favorable for life".

Jewelry

Hematite's popularity in jewelry was at its highest in Europe during the Victorian era. Certain types of hematite or iron oxide-rich clay, especially Armenian bole, have been used in gilding. Hematite is also used in art such as in the creation of intaglio engraved gems. Hematite is a synthetic material sold as *magnetic hematite*.



From Wikipedia, the free encyclopedia



Dixie Mineral Council Field Trips

The Southeast Federation of Mineralogical Societies, Inc



The Friendly Federation - Founded in 1976 to serve
DMC Program of the SFMS Field Trip Committee
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An Official Field Trip hosted by the Athens Rock & Gem Club

Saturday, February 27, 2016

Stoney Bluff

Girard, GA

9:00 AM

TRIP: Stoney Bluff is located about 30 miles south of Augusta, Ga and just east of the small town of Girard. We will assemble in Girard at 9 am in the vacant lot just south of the Post Office (do not park in the Post Office parking lot). The collecting site is only a few miles away at the end of Stoney Bluff Rd.

COLLECTING: "Savannah River Agate"

BRING: Colorful, agatized material can be found on the surface at the site, but many people usually bring light digging tools and small pry bars to free larger boulders from the sandy soil. Leather gloves are recommended. Bring plenty of water and dress for the weather.

DIRECTIONS AND WHERE TO MEET:

Directions from I-20 in Augusta, GA.

- From I-20 in Augusta get onto I-520 (Bobby Jones Expressway) and head toward the south end of the expressway. When you reach Exit 9 (Mike Padgett Hwy), exit and head south (most likely Hwy 56 at that point) approx. 15 mi. to McBean, GA. Just beyond McBean turn left onto Hwy 23 and follow it SE about 14 mi. to Girard. Ga.

Directions from I-16 just west of Savannah, GA

- Exit I-16 at US301/US25 (Exit #116) and head north approx. 10 mi to Statesboro, GA Continue north on US 301 from Statesboro approx 20 mi to Sylvania, Ga. Continue north on US301 from Sylvania about 5 miles to junction with Hwy 24. Turn left onto Hwy 24 and drive 14 mi to Sardis, GA. In Sardis pick up Hwy 23 and drive 6 miles to Girard, GA.

CONTACT: Trip chairman: Jim Maudsley 706-353-1792 or jamesm24@charter.net

UPCOMING SHOWS

Jan. 23-24—PANAMA CITY, FL 32404, FLORIDA: Annual show; Panama City Gem & Mineral Society, Central Panhandle Fairgrounds; 2230 E. 15th St.; Sat. 8 -5 , Sun. 9 -4 ; Free Admission; Minerals, Fossils, Wire wrap Jewelry, Beads & Beadwork, Super Door Prize. We would love to see you there.; contact Steven Shipton, 5113 E. 13th Ct, Panama City, FL 32404, 850-867-0586; e-mail: shipton3@comcast.net

Jan. 30-31—DURHAM, NORTH CAROLINA: Annual show; Intergalactic Bead Show, Durham Convention Center; 301 W. Morgan St. ; Sat. 10-5, Sun. 10-5; Admission \$5; Looking for a relaxing way to spend the weekend? Then shop the Intergalactic Bead Show! Intergalactic Bead Shows unites beaders, jewelry makers and enthusiasts with some of the world's finest and rarest beads as well as precious stones, gems and finished jewelry from all over the world. We provide buyers with a relaxing, beautiful ambiance in which to shop as well as high quality products from some of the best artisans in the industry. ; contact Shawna Whitson; e-mail: Info@beadshows.com; Web site: Beadshows.com

Feb. 6-7—DULUTH, GEORGIA: Annual show; Intergalactic Bead Show , Gwinnett Center; 6400 Sugarloaf Pkwy ; Sat. 10-5, Sun. 10-5; \$5 Admission; Looking for a relaxing way to spend the weekend? Then shop the Intergalactic Bead Show! Intergalactic Bead Shows unites beaders, jewelry makers and enthusiasts with some of the world's finest and rarest beads as well as precious stones, gems and finished jewelry from all over the world. Experience the world of Intergalactic Bead Shows and enjoy the luxury that only earthly treasures can bring. ; contact Shawna Whitson; e-mail: Info@beadshows.com; Web site: Beadshows.com

Feb. 19-20—CORDOVA, TENNESSEE: Annual show; Intergalactic Bead Show, Woodland Hills; 10000 Woodland Hills Dr. ; Fri. 10-5, Sat. 10-5; \$5 Admission; Looking for a relaxing way to spend the weekend? Then shop the Intergalactic Bead Show! Intergalactic Bead Shows unites beaders, jewelry makers and enthusiasts with some of the world's finest and rarest beads as well as precious stones, gems and finished jewelry from all over the world. Experience the world of Intergalactic Bead Shows and enjoy the luxury that only earthly treasures can bring. All shows are wholesale/retail. ; contact Shawna Whitson; e-mail: Info@beadshows.com; Web site: Beadshows.com