

FORSYTH GEM AND MINERAL CLUB, INC.

Nature's Treasures

February 20, 2020

*** Public Version ***



MEETING: The next meeting of the Forsyth Gem and Mineral Club will be held at **7:30 PM, February 20, 2020**, the third Thursday of the Month, at **Vulcan Materials Company's Training Center, 4401 N. Patterson Ave., Winston-Salem, NC**



Our speaker for the February meeting is Shaun Shelton, member of our club and vendor at our show. He is the co-owner of Backwoods Prospector and teaches Chemistry at Guilford Technical Community College. His program is entitled "Studying the Decomposition of Pyrite".



Refreshments: Refreshments for the meeting will be provided by the **Hebert and Gaskill families**. The Club will provide cups and napkins and ice for the refreshments. Those volunteering to provide refreshments need only provide sufficient drinks and snacks, such as, cookies, cakes, crackers, or donuts **and ice**

2020 Refreshment List

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|----------|---------------------------------------|-----------|---------------------------|
| January | Myers and Myers | July | Schlottman and Wilhelmi |
| February | Hebert and Gaskill | August | Picnic |
| March | Brouhle and McGilvary | September | Show |
| April | Lovelle and Fulcher | October | *** Two Needed *** |
| May | Whicker and Beck | November | Reed and Marion |
| June | Shelton and *** One Needed *** | December | Holiday/Show Dinner |

If you enjoy the refreshments, please be prepared to take a turn in furnishing them. NOTE: if you volunteer to bring refreshments, please do so. If you are unable to attend for any reason, contact Vickie or Al Gaskill prior to the meeting so that alternate arrangements can be made.

Note: Due to equipment issues in the meeting area kitchen, it will be necessary for the refreshments providers to also bring ice for the drinks, at least for the next couple of months.

Dates To Remember:

September 11 – 13, 2020 – Annual Show



DON'T FORGET YOUR NAME TAGS



Inclement Weather Procedure

If inclement weather is a possibility, plans are to try to make a go/no-go decision by the day before the meeting. If the decision is made to cancel, an email alert will be sent out, as well as a notice posted on the club web page. Members who do not have email or internet capability should call one of the officers.



FGMC February Field Trip Cancelled

Our field trip for February was scheduled for this Saturday February 15 to Douglas Lake in Tennessee. Due to all the rain and snow recently, TVA has been holding water in the lake to prevent flooding downstream. As of 7:00 pm on Thursday, the water level was only 5 feet below full pond, and expected to rise. Although the weather forecast looks pretty good, there will not be any shoreline to search. Therefore we are cancelling the trip for this Saturday and will try to reschedule at a later date.



Last Call on Dues

Membership renewals for 2020 are now past due. Any member who does not renew by the end of February will be dropped from the roster.

Remember that if you can't make it out to the meeting you can still mail your dues to the Treasurer.



FGMC Field Trip

Note: FGMC Field Trips are for club members and their families only. Liability issues mean that these trips cannot be attended by the general public unless otherwise noted.

The March field trip will be to Graves Mountain in Georgia. Charles Whicker will be presenting information on the trip at the February meeting to give our members plenty of time to make plans.

There is also a possible trip being considered to the annual Franklin, NJ "Super-Digg". This year's event is scheduled for Saturday, April 25. The trip requires advanced registration and registration opens on March 14. If any members are interested then further discussion will be held at the February meeting to plan for such.

Detailed information: <http://sterlinghillssuperdig.org/>



Tentative Field Trip Schedule

Members interested in participating in and helping out on the field trips met before the regular January club meeting. The meeting report is as follows:

1/16/20 FGMC Field trip Committee Meeting

Charlie requested that each field trip leader Email a basic document to him and the newsletter editor. Charlie will provide template to all leaders. Information will be printed in newsletter.

There will be a limit of 2 overnight or long distance field trips per year.

Any or all of the field trips may have a fee.

Dates may change.

All distances are approximate.

Possible field trips:

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|--------------|---|
| Feb | Weather permitting. Douglas Lake, Tenn. Quartz crystals. 3 ½ hour drive. |
| March | Graves Mtn., GA. (first day) and Diamond Hill Mine, SC. (second day) of the 2 day field trip. Rutile, quartz, smoky quartz, amethyst. |
| April | Little Pine Garnet Mine. Marshall, NC. 2 ½ to 3 hours from W-S. |
| May | Propst Farm. Lincoln Co, NC. Corundum- ruby and sapphire crystals. 2 hours from W-S. |
| June | Amos Cunningham Farm, Due West, SC. Aquamarine and beryl. 4 hours from W-S. |
| July | Black Mountain, NC. Private dig. Kyanite and rutile. 2 hours from W-S. |
| Aug | Club auction. |
| Sept. | Clapp Mine, Franklin, NC. 4-4 ½ hours from W-S. \$20-30 per person. |
| Oct. | Tellus Museum, Cartersville GA. Tour of museum on Sat. Sun.- Summerville, GA site- druzey quartz, banded agate. 6 hours from W-S. |
| Nov | Possible private site Oak Ridge NC area. |



Dixie Mineral Council Field Trip

**An Official Field Trip of the Alabama Mineral and Lapidary Society (HOST)
An Official Field Trip of the Forsyth Gem and Mineral Club**

Note: DMC Field Trips are for club members of DMC-affiliated clubs and their families only. Liability issues mean that these trips cannot be attended by the general public unless otherwise noted.

Sloss Furnaces

Birmingham, AL

Limited to 32 Attendees

Registration Required

Fee: \$5 per person

TRIP: The history of Birmingham is intertwined with the history of iron processing in Alabama. Sloss Furnaces is a unique glimpse into both histories. The furnaces operated continuously from 1882 to 1970. The site has been preserved and was designated as a National Historic Landmark in 1981.

TOUR: Field trip attendees will receive a special guided tour to learn about the materials, processes, and products at Sloss Furnaces. The tour will be tailored for this DMC trip only.

COLLECTING: Attendees will get a piece of slag from the iron processing.

SPECIAL WORKSHOP: The day before the field trip, Friday, February 28, the Sloss Furnaces Metal Arts group is offering a metal bowl making event called "Bowl-O-Rama" for \$45 per person. If you are interested in attending this event, you can register and purchase tickets on the Sloss Furnaces Metal Arts website here: <https://www.slossmetalarts.com/purchase-tickets>

ADDITIONAL INFORMATION: AMLS members will be available with samples related to Alabama iron works as well as information about iron processing in the area.

BRING: Bring a camera -- you are going to see some fascinating things! Wear comfortable, closed toe walking shoes, and because a lot of the tour will be outside, wear clothing appropriate for the conditions that day.

CHILDREN: This field trip is suitable for children but they must be supervised at all times.

PETS: No pets allowed.

FACILITIES: There are bathroom facilities on-site.

TERRAIN & ACCESSIBILITY: The tour will be in and around the furnace facilities. This site is ADA compliant, and most of the tour will be on hard, flat concrete surfaces. There is one area of the tour that has stairs to preserve the history of the site. It will be a leisurely 45 minute walk.



Reviewing: Arsenopyrite

From Geology.com/minerals

What is Arsenopyrite?

Arsenopyrite is an iron arsenic sulfide mineral with a chemical composition of FeAsS. It is the most abundant arsenic mineral and the primary ore of arsenic metal. In addition to being found in deposits that are large enough to be minable, arsenopyrite is widely distributed. However, it usually occurs in such small amounts and in such small particle sizes that it is easily overlooked. It is associated with other sulfide minerals in organic-rich sedimentary rocks, metamorphic rocks, and igneous rocks in many parts of the world.

Physical Properties of Arsenopyrite

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|-------------------------|--|
| Chemical Classification | Sulfide |
| Color | Silvery-white to steel gray |
| Streak | Black |
| Luster | Metallic |
| Diaphaneity | Opaque |
| Cleavage | Poor |
| Mohs Hardness | 5.5 to 6 |
| Specific Gravity | 5.9 to 6.2 |
| Diagnostic Properties | High specific gravity. A slight odor of garlic might be noticed when arsenopyrite is crushed, broken or scraped across a streak plate. A garlic odor is also released when arsenopyrite is heated to a temperature that causes alteration. The fumes produced by heating can be toxic. |
| Chemical Composition | Iron arsenic sulfide, FeAsS |
| Crystal System | Monoclinic |
| Uses | The primary ore of arsenic metal. Arsenic is toxic to many organisms, and that is its role in insecticides, herbicides, pesticides, chemical weapons and other poisons. Arsenic metal is used to produce specialty alloys. Oxides of arsenic are used to make pigments. Modern organic compounds are displacing arsenic from many of its traditional uses. |

Geologic Occurrence

Much of the arsenopyrite that has been mined formed as a high-temperature mineral in hydrothermal veins. It is often mined, together with other metallic minerals, from veins that might contain gold, silver, lead, tungsten, or tin. In these deposits arsenopyrite usually occurs in a granular massive form. It is often intergrown with other sulfide minerals such as chalcopyrite, galena, pyrrhotite, pyrite, and sphalerite; precious metals such as gold and silver; or other minerals such as scheelite, cassiterite, and quartz.

Arsenopyrite has also been mined from sulfide deposits formed by contact metamorphism. It is occasionally found in pegmatites. Well-formed crystals of arsenopyrite are most often found in pegmatites and in carbonate rocks that have been altered by contact metamorphism.

Significant amounts of arsenopyrite have been produced from deposits in Germany, England, Bolivia, Japan, Greece, Spain, Sweden, Mexico, and Japan. In North America deposits are located in Ontario, Canada, and in South Dakota, New Jersey, and New Hampshire in the United States.

Arsenopyrite and Glaucodot

In some deposits, cobalt will substitute for some of the iron in the arsenopyrite crystal structure. This produces a solid solution series between arsenopyrite (FeAsS) and glaucodot ((Co,Fe)AsS).

Weathering of Arsenopyrite

Arsenopyrite is unstable in most environments of Earth's surface. It easily alters from its silver-white or steel-gray color to yield a bronze to brown tarnish. If a geologist strikes the mineral with a hammer to view a fresh surface or does a streak test, an odor of garlic might be detected. This is a characteristic of many arsenic minerals and a clue that arsenopyrite might be present.

Arsenopyrite often oxidizes to form scorodite, a hydrated iron arsenate mineral with a chemical composition of FeAsO₄·2H₂O. Scorodite often weathers to limonite, an amorphous, hydrated iron oxide of variable composition. In areas where mining has exposed large amounts of sulfide ores, arsenopyrite can be a contributor to acid mine drainage problems.

Arsenopyrite as a Source of Gold

Arsenopyrite sometimes contains gold that is so small that it cannot be detected with a hand lens. This "invisible gold" can sometimes be recovered in economic quantities by crushing the ore, concentrating the heavy fraction, and treating the heavy fraction with cyanide to dissolve the gold.

The "invisible gold" occurs in two forms: 1) tiny particles of elemental gold; and, 2) gold that is chemically bound within the arsenopyrite. Elemental gold exposed by crushing can be removed with the cyanide. The chemically bound gold is more difficult to remove without smelting.

Arsenopyrite By Other Names

The name "arsenopyrite" is a contraction of "arsenical pyrites," an archaic name used for the mineral. "Mispickel" is another name for arsenopyrite.

Uses of Arsenopyrite and Arsenic

Arsenopyrite is the primary ore of arsenic metal, which is used to produce alloys. It was historically used to harden lead in ammunition, but this use has declined in the past few decades.

Much arsenic is recovered by smelting in the form of arsenious oxide. This is used to produce a variety of insecticides, herbicides, pesticides, and chemical weapons. Arsenic compounds are also used in medicines, as pigments in paints, and to produce color in fireworks and glass.



Meeting Minutes

1/16/20 FGMC Meeting Minutes

20 members attended the meeting.

Field trip planning meeting was held immediately prior to the club meeting.

The presentation was a video titled "The Basics of Plate Tectonics."

Refreshments were provided by Stephanie and Sandra Myers.

Door prizes winners: Ken Reed chose a meteorite specimen. Paul Albers chose a calcite "rose".

Sept. 10 (set-up day and dealer dinner), 11,12,13. FGMC show, W-S. Topic is Brazilian minerals, fossils, and gems.

.Respectfully Submitted,
Lisa Reed, Secretary



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Nature's Treasures is the monthly newsletter of the Forsyth Gem and Mineral Club.

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