



# Snoopy Gems

Volume 43 Number 5 May 2017

Mississippi Gulf Coast Gem & Mineral Society Inc.



MGCGMS Established in 1974

Email: [mgcgms@bellsouth.net](mailto:mgcgms@bellsouth.net)

## Presidents Message

### Ode to Rocks

Ode to rocks that are everywhere  
Ode to rocks that are just sitting there  
Smooth or rough, big or small  
Pretty or ugly, cube or a ball  
All that matters is that it is a rock

Ode to rocks that are many shapes and colors

Ode to rocks that are just like the others  
Green or blue, black or red  
Small as a mouse or as big as my head  
All that matters is that it is a rock

Ode to rocks that are big and shinny  
Ode to rocks that are dull or tiny  
Quartz or calcite, agate or sandstone  
I don't care, but I really like dinobone  
But yet again all that matters is that it is a rock

### Ode to ROCKS!!

Written by Lilyth Amelia Cave, age 14  
from Stone Chipper, February 2015  
1<sup>st</sup> place AFMA Junior Poetry contest  
winner and reprinted in May 2017  
AFMS Newsletter

As "rock hounds" we enjoy learning about rocks whether their composition makes them diamonds, fossils, limestone or quartz in a myriad of colors, and locations. Think about your childhood when you found a pretty rock and put it in your pocket. Do you still have it? See you at the next meeting!

Liz Platt  
MGCGMS President

## May Workshop:

I have chosen the 7-wire bracelet for the May workshop because it is a simple design which has endless possibilities using different types of wire, beads and other items. Once you get the basics of the design you will be able to impress friends and family with your stunning bracelets. It can be made in silver for less than \$15.00 or gold filled for less than \$20.00. You cannot buy a nice gift for a friend at less prices and believe me they will cherish your gift.

Tools needed are a ruler with metric units (mm), marking pen, tape, wire cutters, flat nose pliers, and round nose pliers. I will have a bracelet mandrel to help in shaping and a tumbler to harden the bracelet. Also copper wire for the project will be available for \$0.50 or you can bring your own wire. A pattern for the project is available in the attached file and if you can print it please bring a copy.

David Cook  
111 White Blvd.  
Ocean Springs, MS 39564-5022(c)  
228-341-9944



# MGGGMS Club Picnic 2017



# Happy Birthday!



**Brian Fitch   Helen Hutchinson   Wanda Sigler   Buddy Shotts**

## Emerald



Emerald, the birthstone of May, carries the rich green color of Spring and radiates a beautiful vivid tone. They are considered to be a symbol of rebirth and love. Emeralds are the rarest gemstones and are typically mined in Colombia, Brazil, Afghanistan and Zambia.

### **Geological information:**

**Emerald** is a gemstone and a variety of the mineral beryl ( $\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$ ) colored green by trace amounts of chromium and sometimes vanadium. Beryl has a hardness of 7.5–8 on the Mohs scale. Most emeralds are highly included, so their toughness (resistance to breakage) is classified as generally poor. It is a cyclosilicate.

### **ALL ABOUT EMERALD**

Besides Emerald, the mineral Beryl also has other important gem varieties, including blue Aquamarine, pink Morganite, and yellow Heliodor/Golden Beryl Pure Beryl is white; the green color of Emerald is usually caused by chromium impurities, and occasionally by vanadium impurities. Emerald is by far the most valuable gemstone variety of Beryl, being one of the few precious gemstones.

Emeralds are notorious for their flaws. Flawless stones are very uncommon, and are noted for their great value. Some actually prefer Emeralds with minute flaws over flawless Emeralds, as this proves authenticity. Flaws are often hidden by treating the Emeralds with oil or synthetic lubricants, and this is a common practice in the industry. Though Colombian Emeralds have traditionally been the highest quality Emeralds with the finest green color, a new source of Emerald from the African country of Zambia has been producing deep green Emeralds with fewer flaws.

Many Emerald fakes and doublets are known. Two pale colored stones may be glued together with a deep green paste, creating a stone resembling Emerald. Faceted green glass also resembles Emerald, and it may be coated with a hard substance to mask its low hardness. Synthetic Emeralds are also sold to unwary buyers without them knowing the stone is synthetic. Experts can distinguish all these fakes, and it is especially important to only purchase Emeralds from reliable dealers. Experts can also determine if an Emerald was treated with oil or a lubricant to mask internal flaws.

A rare and unusual form of Emerald, known as "Trapiche Emerald", is characterized by star-shaped rays that emanate from the center of a stone in a hexagonal pattern. These rays appear much like asterism, but, unlike asterism, are not caused by light reflection from tiny parallel inclusions, but by black carbon impurities that form in a star-shaped pattern. These Trapiche Emeralds are only found in the Boyaca Emerald mining district of Colombia, and are cut into cabochons.

Though Emerald has good hardness, it is a brittle stone. It may develop internal cracks if banged hard or if subject to extreme temperature change. Emeralds that were treated to mask internal flaws should never be cleaned with an ultrasonic jewelry cleaner, nor should they be washed with soap. These practices may remove the oiling treatment and expose the hidden internal flaws.

Source: [www.minerals.net](http://www.minerals.net)

## A NEW DISCOVERY OF EMERALDS FROM ETHIOPIA



Figure 1. This suite of untreated emeralds is from a new find in Ethiopia's Seba Boru district. The largest faceted stone weighs 10.64 ct. The largest rough crystal weighs 63.12 g. Photo by Robison McMurtry, courtesy of Michael Nemeth Inc.

In recent years Ethiopia has gained considerable attention in the gem trade for large amounts of high-quality opal from an area near Wegel Tena (B. Rondeau et al., 2010, "Play-of-color opal from Wegel Tena, Wollo Province, Ethiopia," Summer 2010 *G&G*, pp. 90–105). Apart from opal, emeralds have been sporadically mined, near Dubuluk, for more than a decade. This deposit is located about 80 km from the Kenyan border. Gemfields has been exploring this deposit since July 2015 (Fall 2012 *GNI*, pp. 219–220).

A new deposit of high-quality emeralds (see figure 1) has been found in the rural villages of Kenticha and Dermi, in the Seba Boru district (figure 2). In November 2016, author MN and business partner Daniel Kifle visited the local trading town of Shakiso, where Ethiopian gem merchants gather to legally buy and sell emeralds that are mined several kilometers away. Shakiso is located about 160 km north of the Dubuluk emerald deposit. The mining area is divided into a few "associations." Each consists of a manager and several members who control the actual mining and distribution of the emerald rough. After the rough has been sorted, it makes its way first through Shakiso before being sold to dealers in the capital city of Addis Ababa, about a 12-hour drive from the mining area.



Figure 2. The new deposit of Ethiopian emerald is located near the town of Shakiso, about 12 hours from Addis Ababa.

According to Tewoldebran Abay, the mineral marketing director of the Ministry of Mines, Petroleum and Natural Gas, more than 100 kilograms of emerald rough have been produced to date. Mining still is done the traditional way using hand tools, without heavy machinery.

Samples from the new deposit, acquired from multiple independent sources, were examined at GIA's Carlsbad and Bangkok laboratories. Even though most of the material is commercial grade, lighter in saturation, and moderately to heavily included, fine gem-grade crystals of exceptional size, color, and clarity (see figures 1 and 3) are obtainable and can produce stones that do not require clarity enhancement. Many of the rough crystals were completely covered in dark biotite crystals, but had an extremely pleasant green color when examined with transmitted light. However, these Ethiopian crystals often do not yield large clean stones because their interior is riddled with dense, dark biotite mica crystals. Some show a double termination, but most are broken and heavily included on one end. Usually only one end of the crystal is clean enough to yield faceted gems. The matrix minerals attached to some of the emeralds were identified as dark brown to black biotite flakes, quartz, and kaolinite.

Continued on page 5:



Figure 3. Author Michael Nemeth sorts through parcels of gem-quality rough emeralds from the open market in Shakiso. Rough crystals can weigh more than 20 g, with reports of some weighing almost 100 g. Photo by Michael Nemeth.

These emeralds are very similar in appearance to other schist-hosted emeralds—in particular, those from Brazil and Zambia. Among the faceted and rough samples examined, blocky multiphase inclusions and irregular biotite crystals were the most common microscopic features observed (figure 4). Otherwise, the gemological properties were very consistent with emeralds, including an average specific gravity of 2.73 and a refractive index of 1.581–1.589. These emeralds were generally inert to long- and short-wave UV exposure due to their moderately high iron content, which is typical of schist-hosted emeralds. UV-Vis-NIR spectroscopy results (figure 5) were consistent with emeralds colored by chromium and vanadium. The Fourier transfer infrared (FTIR) spectrum was consistent with beryl, as expected, but did not reveal any other diagnostic features.

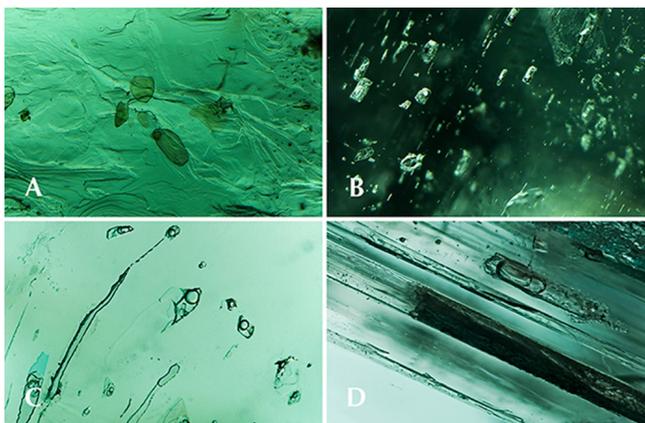


Figure 4. Microscopic observation of the Ethiopian emeralds revealed (A) biotite crystals; (B) blocky multiphase inclusions; (C) multiphase inclusions containing a liquid, gas, and multiple daughter crystals seen parallel to the c-axis; and (D) a multiphase fluid inclusion showing liquid and gaseous CO<sub>2</sub> phases and an immiscible aqueous liquid (parallel to this inclusion are several growth tubes). Photomicrographs by Nathan Renfro (A and B) and Victoria Raynaud (C and D). Field of view 2.04 mm (A), 1.79 mm (B), 1.07 mm (C) and 1.03 mm (D).

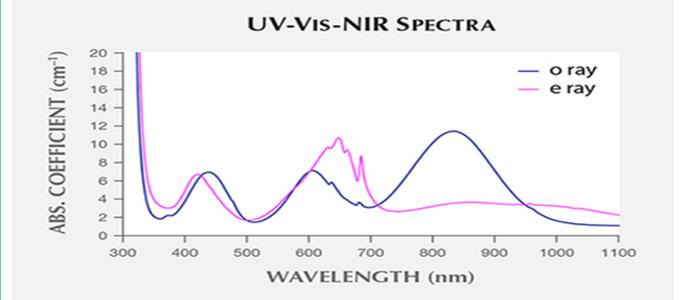


Figure 5. The characteristic UV-Vis-NIR spectra of the new emerald production from Ethiopia.

Quantitative trace element chemical analysis was performed with a Thermo Scientific iCap Q inductively coupled plasma–quadrupole mass spectrometer combined with a New Wave Research UP-213 laser ablation unit. The analyses were compared to data from other known sources using GIA reference samples, including Zambian and Brazilian schist-hosted emeralds. Based on the results, it was possible to separate the new find of Ethiopian emeralds from other sources by comparing trace alkali metals and some transition metals (figure 6).

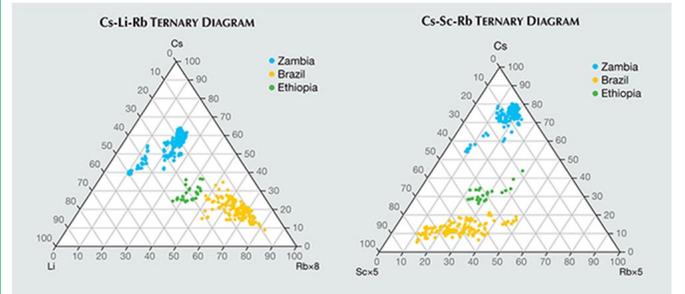


Figure 6. LA-ICP-QMS quantitative trace-element composition analysis of alkali and some transition metals (measured in ppmw) proved useful in separating this new deposit of Ethiopian emeralds from Brazilian and Zambian schist-hosted deposits.

Due to heightened tensions and fear of price instability, most of the mine area was temporarily closed by a joint effort of the mining associations and the local government from early November through December 2016. It has been reopened, but now all dealers, including Ethiopian dealers, need written permission to enter the Shakiso area for buying. The law is vigorously enforced, and penalties are severe.

This exciting discovery in Ethiopia will provide a new source of large, high-quality emeralds for the gem and jewelry trade. So far, this deposit appear to be quite promising, as significant production was seen in the recent gem shows in Tucson, Bangkok, and Hong Kong. Only time will tell how significant this deposit will be.

See this article @: <https://www.gia.edu/gems-gemology/spring-2017-gemnews-new-discovery-emeralds-ethiopia>

## Snoopy Gems

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**Annual dues are:**

**\$16 Individual**

**\$20 (2) Members in same house hold**

**\$6 Junior**

## 2017 Workshop/Meeting Dates

January 14 OS Library 9:30-4:45

February 11 OS Library 1:00-4:45

\*March 11 TBA 930-4:45

\*April 8 Club Picnic TBA

**May 13 OS Library 9:30-4:45**

June 10 OS Library 9:30-4:45

July 8 OS Library 9:30-4:45

August 12 OS Library 9:30-4:45

September 9 OS Library 9:30-4:45

October 14 OS Library 9:30-4:45

November 9 After Vendor Dinner 7ish

December 9 Christmas Party TBA 11:00am-  
4:00pm

\*Be sure to check Dates each month! \*

\*\*The November meeting is the Thursday evening of the gem show after the dinner for the dealers at the Jackson County Fairgrounds Civic Center Building. December will be our Christmas Party and Installation of Officers \*\*

# May 2017

**Su M Tu W Th Fri Sa**

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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



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<http://www.mgcgms.org>



The Mississippi Gulf Coast Gem & Mineral Society is a Non-profit Organization Dedicated to Education, Science, and the Lapidary Arts and Crafts

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