



Miami Mineralogical and Lapidary Guild



Where South Florida Really Rocks!

THE GEODE – The MMLG Monthly Newsletter

Volume 66, Number 5

(Numbering system skips pandemic period)

June-July-Aug 2022

No, it's not the monthly newsletter – it's a MID-SUMMER bulletin!

Every summer, the Guild's activities slow down dramatically because this is the time that many of our members usually travel to northern gem-and-mineral shows and festivals – but, this year especially, no-one wants to travel too far from home due to incredibly high gasoline prices, record-breaking high temperatures, and the outrageous behavior of drivers in the post-pandemic surge of automobile traffic. So, we have historically not scheduled regular monthly meetings in June, July, and August.

Some of our more limited activities continue – such as our Lapidary Workshop (several blocks from Tropical Park) and the twice-a-month Beaders' Meetings. We've also confirmed the dates for our Fall Show – Dec 3 and 4 – once again at Evelyn Greer Park in Pinecrest. (More details about the Show will follow in September.)

And, as some of you may remember, we still have tentative plans for at least two mineralogical one-day field trips here in Florida. If any of you have ideas for local field trips or are able to put together an educational presentation for our membership meetings, please let us know: webguy@mmlg-inc.org

We plan to resume our regular meetings in September. We'll give everyone notice ahead of time.

Did ya know?

Illinois got its official state rock (Dolostone which provides valuable nutrients to the soil) on June 6, 2022. The project began with teacher Jennifer Lauermand and her 5th graders who researched and conducted voting among other Illinois schools and interested organizations, and who finally were able to present it to the state legislature. ("State Stones" was MMLG's most recent scavenger hunt subject for our May 2022 show. The "hunt" included minerals and rocks.)
- submitted by Dianne Mielke

An Educational Resource for You

We here at MMLG try not to endorse any commercial entities in our communications. However, there is sufficient educational value in one such organization that we appreciate its usefulness. We're talking about JEWELRY TELEVISION, aka JTV – a 24-hour-a-day cable channel. Specifically, they have two regularly-recurring educational programs that provide a breadth and depth of gem (and sometimes mineral) information. One is JEWEL SCHOOL which is designed for the beginner lapidarist, and the other is GEM DISCOVERIES to educate gemstone aficionados. You can find out about these programs by accessing their online site at www.JTV.com.

For those of you with cable or satellite access, JTV can be found on these channels:

dish network 227

direct tv 313

xfinity (Comcast) 1011 or 1018

AT&T (Uverse) 197 or 1056

plus Youtube, gemstones.com, and live-streaming from JTV.com

Florida's "Gemmy" Minerals

By Sandy Mielke

Many of us gem-and-mineral enthusiasts here in Florida have long lamented the fact that we do not have close-by access to natural deposits of gemstone minerals - or so we thought. It turns out that the State of Florida lists 26 minerals occurring within its borders. (Please remember that a mineral is defined as a solid compound with a precise chemical composition and a specific crystal structure that occurs naturally in pure form.) "Gemmy" minerals are usually understood to be transparent or translucent to the naked eye. The State list is shown below at the conclusion of this article. Also, please note that most of the traditional gemstone minerals are listed with an asterisk - indicating that they are present only as microscopic particles.

There are, however, some minerals on the list that can be termed "gemmy": Vivianite, Wavellite, Florida Agatized Coral, and Florida Dogtooth Spar Calcite. It's interesting to note that all these four have been found in an area of Florida (northwest of Lake Okeechobee) known to geologists as the "bone valley formation" – incorporating parts of Pasco, Hillsborough, Polk, Hardee, and Manatee Counties.

VIVIANITE

Vivianite ($\text{Fe}^{2+}\text{Fe}^{2+}_2(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$) occurs as crystals or as masses or concretions. The crystals are usually prismatic parallel to the c crystal axis, and flattened perpendicular to the b axis. Equant crystals are rarer. They may also occur as stellate (star-shaped) groups, or encrustations with a bladed or fibrous structure. Unaltered specimens are colorless to very pale green, but they oxidize on exposure to light to blue, then darker green, brown, purple and purplish black. The streak is white, altering to dark blue or brown. Crystals are transparent to translucent with a vitreous luster, pearly on the cleavage surface, or dull and earthy.

My own experience with this gemstone is that it is clearly not suitable for use in jewelry as its transparency and color both change when exposed to daylight – from colorless clear through blue, green, brown, and purple to opaque black. As well, the Central Florida mining companies DO NOT want rockhounds rambling around in their phosphate strip mining pits.



Wavellite

Wavellite is an aluminium basic phosphate mineral with the formula $\text{Al}_3(\text{PO}_4)_2(\text{OH}, \text{F})_3 \cdot 5\text{H}_2\text{O}$. Distinct crystals (such as those found in Florida) are rare, and it normally occurs as translucent green radial or spherical clusters. My own experience has shown that most specimens found in Florida are too small and delicate to be used for jewelry. (Photos on next page.)



Florida Agatized Coral

Florida Agatized Coral occurs when dissolved silica (SiO_2) in the ocean water hardens into chalcedony quartz, replacing the outside limestone skeleton of dead coral. This long process (20-30 million years) results in the formation of a "pseudomorph," meaning that one mineral has replaced another without having lost its original form. (In 1979, Agatized Coral was designated the official Florida State stone).

While this mineral (yes, it's technically quartz in this form) can be found in many localities in Florida, collecting it is prohibited by State law – except on the shores of Tampa Bay, between the high water mark and the low water mark. As a practical matter, most of what reaches the market today comes from the “spoil piles” generated by the US Army Corps of Engineers when it dredges the bottom of Tampa Bay to facilitate commercial shipping access to ports.

My own experience is that excellent specimens of “Florida” Agatized Coral may be collected legally (in Georgia) from the Withlacoochee River bottom, some 17 miles from the Florida-Georgia border. I've also used that material to create scores of artisan jewelry pieces – which I have then sold at our semi-annual shows.



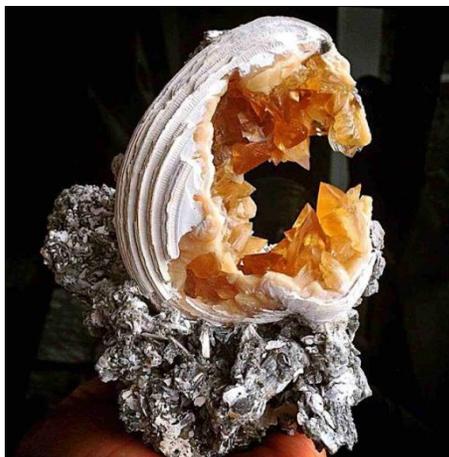
Florida Dogtooth Spar Honey Calcite

High quality specimens of Florida Dogtooth Spar Honey Calcite are most often associated with the well-known location of Ruck's Pit near Fort Drum in Central Florida. At that site, it occurs most often in fossilized Mercenaria Clams, but it can also be found in a wide range of other marine mollusk fossils.

Calcite is the most stable polymorph form of Calcium Carbonate (CaCO_3) and represents the most commonly-collected mineral from Florida. As most of Florida is underlain by Tertiary to recent marine limestones, the potential for crystal finds exists just about anywhere these limestones are exposed – most prominently in active limerock quarries. The highly desirable honey-color is a result of microscopic iron oxide (rust) particles mixed into the Calcium Carbonate solution which precipitates into crystal form.

Most Calcite crystals in Florida limestone formations range from colorless transparency to milky translucence . I have personally collected specimens in such diverse locations as the Gainesville side of Payne’s Prairie in Alachua County and the long-closed Everglades Jetport site some 70-plus miles west of Miami along the Tamiami Trail.

Few jewelry artisans choose to work with Calcite – for two reasons: (1) it’s extremely soft and easy to scratch [a Mohs hardness of 3] and (2) it deteriorates easily when exposed to even weakly acidic moisture, such as a soft drink. Nonetheless, some folks do fabricate jewelry from it.



So, it turns out that we do indeed have gemstones in Florida, although not in the commonly accepted commercial perception. Still, it’s nice to know that with little bit of travelling and a modicum of diligence, you can pursue your own crystal dreams here in the Sunshine State.

Happy Gem Rockhounding!

State of Florida

MINERAL IDENTIFICATION TABLE

Compiled from Bishop and Dee (1961) and Hurlbut (1963).
*Denotes heavy mineral species; found in Florida only as sand-size grains.

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MINERAL	COLOR	STREAK	HARDNESS	SPECIFIC GRAVITY	REMARKS
Anhydrite CaSO ₄	white, gray	white	3-3.5	2.89-2.98	absorbs water and changes to gypsum over time
Aragonite CaCO ₃	white, yellow	white	3-5.4	2.95	"mother of pearl" in shells
Calcite CaCO ₃	white, gray, yellow	white	2.5-3	2.72	reacts with cold HCl acid
Dolomite CaMg(CO ₃) ₂	gray, brown	white	3.5-4	2.85	poor reaction with cold HCl acid
Francolite Ca ₅ F(PO ₄) ₃	green, blue, brown, violet, colorless	—	5	3.1	phosphate forming mineral
Garnet* (Ca,Cr,Fe,Mg,Mn,A1) (SiO ₄) ₃	red to black	—	6.5-7.5	3.5-4.3	Complex silicates of varying composition
Gypsum CaSO ₄ • 2H ₂ O	white, gray, yellow, brown	white	2	2.32	see Anhydrite
Illite KAl ₂ (OH) ₂ (AlSi ₃ (O,OH) ₁₀)	—	—	—	—	clay mineral
Ilmenite* FeTiO ₃	—	—	5.5-6	4.7	
Kaolinite Al ₄ (Si ₄ O ₁₀)(OH) ₈	white, gray	—	2-2.5	2.6	clay mineral
Kyanite* Al ₂ SiO ₅	—	—	5-7	3.56-3.66	

- more on next page -

Mineral ID Table Continued -

Leucoxene* FeTiO ₃	—	—	—	—	an altered form of ilmenite
Limonite FeO(OH) • H ₂ O	brown, yellow black	yellow-brown	1-5.5	3.6-4	low grade "iron" ore
Mica KAl ₃ Si ₃ O ₁₀ (OH) ₂	white, black	colorless	2-2.5	2.76-3.1	platy, small, shiny flakes
Monazite* (Ce,L,a,Y,Th)PO ₄	yellowish to reddish-brown	—	5-5.5	5.0-5.3	phosphate of rare-earth metals
Montmorillonite (MgCa)O • Al ₂ O ₃ • 5 SiO ₂ • H ₂ O	—	—	—	—	clay mineral, "swelling clay"
Palygorskite (Al,Mg)O • SiO ₂ • H ₂ O	—	—	—	—	clay mineral (fuller's earth)
Pyrite FeS ₂	yellow	black	6-6.5	5.02	"fools gold"
Quartz SiO ₂	white, varies	white	7	2.65	other forms = chert, opal, agate, flint, chalcedony
Rutile* TiO ₂	red to black	—	6-6.5	4.18-4.25	
Sillimanite* Al ₂ SiO ₅	brown	—	6-7	3.23	
Staurolite* Fe ₂ Al ₉ O ₇ (SiO ₄) ₄ (OH)	red to black	—	7-7.5	3.65-3.75	
Tourmaline* (Ca,Na,Al,Fe,Li,Mg) Al ₆ (BO ₃) ₃ (Si ₆ O ₁₈) (OH) ₄	brown, black	—	7-7.5	3-3.25	complex silicate of varying composition
Vivianite Fe ₃ (PO ₄) ₂ • 8H ₂ O	clear, turns dark blue on exposure to light	gray-blue	1.5-2	2.58-2.68	prismatic crystals
Wavellite Al ₃ (OH) ₃ (PO ₄) ₂ • 5H ₂ O	white, yellow green, brown	colorless	3.5-4	2.33	radiating aggregates
Zircon* ZrSiO ₄	colorless	—	7.5	4.68	glassy

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Special Notice

Each time we have one of our semi-annual SHOWS, we feature a raffle at the Admission Table. We're sad to say that each time, one or two winners are not able to claim their prizes because there is some type of error in the contact info on the drawing ticket. So, referring to this past SHOW in May, if JEN or ROBYN could email us at webguy@mmlg-inc.org with her ticket number, we can make arrangements to get these prizes to their respective winners. Thanks.

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