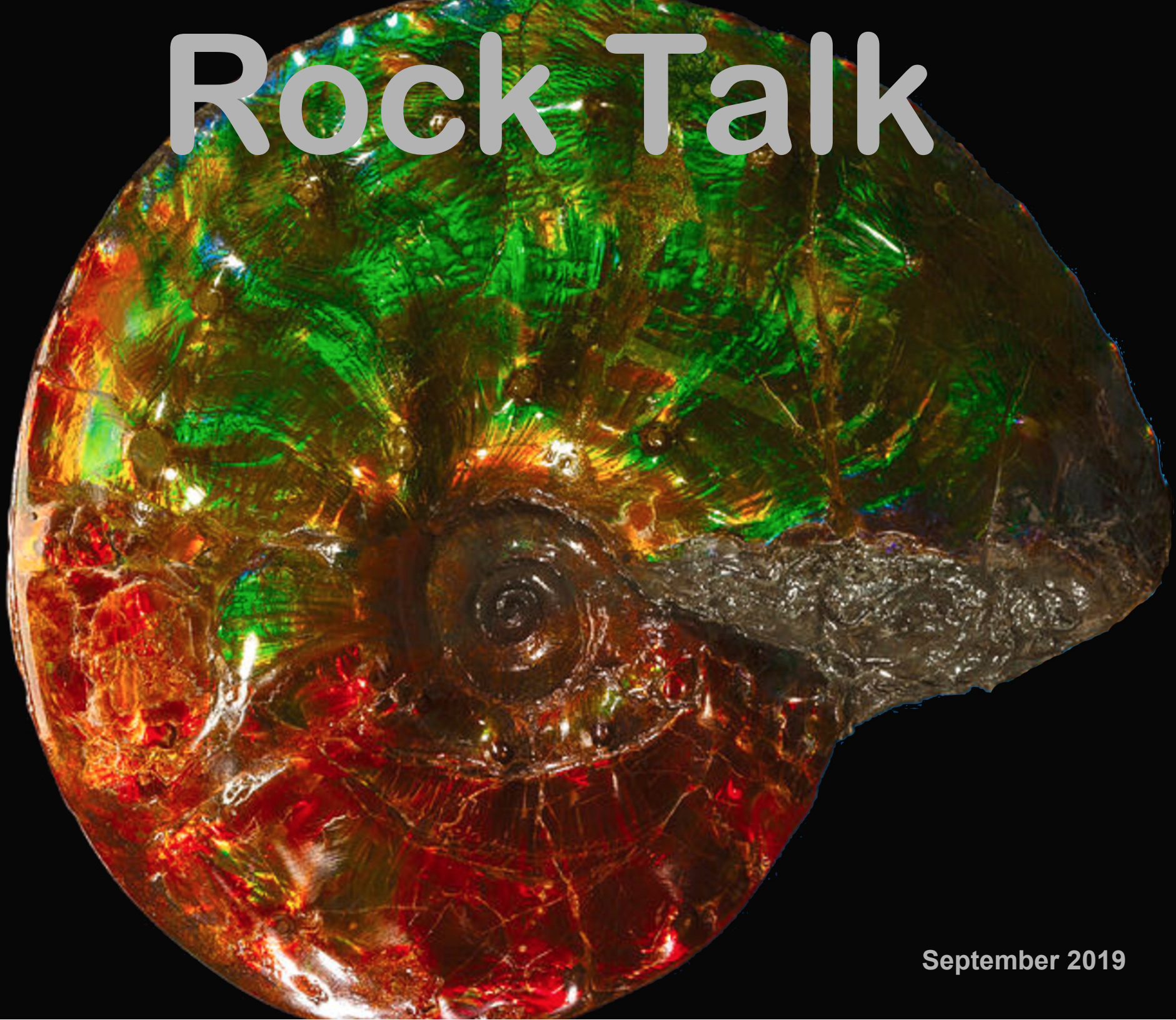


Rock Talk



September 2019



Rock Talk

September 11th Meeting Program

At our September meeting we will view a video from the Gemstone Adventure Series entitled "The Diamond Story". This video will take us from how diamonds are

formed, to diamond's place in history. Come and learn all about the Earth's hardest gem.

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- August Club Meeting Photos
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- What is it?
- Bench Tips

The Cover Photo

Iridescent ammonite

The Meeting as I Saw it



by

Dorwin Skinner



When I arrived at the meeting, the first thing I noticed was it was brighter inside. Someone had replaced the old room-darkening vertical blinds with new non-darkening Levolor blinds. Wow, what a difference it makes. Our globetrotter, Lauren was busy selling raffle tickets and acting as the official club greeter. She seemed to know what she was doing, so I headed back to my favorite territory, the snack bar. On the way, I saw Ryan and Dave examining rocks. Ryan collected them in Texas and brought them in to show. That's when I found that the new blinds were so bright that they made it very difficult to get a good picture. Sorry Ryan, your pictures ended up on the editor's floor, the background lighting was too bright. Eric and Colen had just come back from a visit to the Smithsonian and they were showing off some of their specimens. Jim Gugliotti had several specimens



Eric Kessel talking to the group about his trip to the Smithsonian Institution Natural History Museum.

from the Million Souls Mine in Wesley Chapel. Jim has been out there assisting in the excavation of coral heads. I looked over and there was Dick Drum with some of his silversmith castings. Roberta had a big display of some of her works.

Everyone needs to start thinking about Christmas. Our meeting would be a great place to pickup some of those one-of-a-kind gifts. Okay, it was time to get serious about the snack bar; people were talking about the great banana bread. I might have guessed, I spent too much

Continued on next page

Next Meeting, Wednesday, Sept. 11th, 7:00 PM at the Weeki Wachee Senior Citizens Center

The meeting from page one

time with pictures and gossip and it was gone. I checked my photos and sure enough I have a picture of the last piece.

All too soon it was time for the meeting to come to order. Mark could have used Judith to help bring the room to order, her voice gets everyone's attention quickly. Mark finally got control and things were on track once again. The Vulcan Mine will be opening again; field trips are being planned to some of the northern mines. The gem show is in early December. Our club is really going to be busy. Next up, I anxiously awaited the results of the 50/50 drawing only to be let down one more time. Then it was time for Eric Kessel's presentation of his trip to the Smithsonian. Excellent job Eric. That got me thinking; maybe our globetrotter Lauren could give a presentation about her recent visit. I will be absent for a while but I will be back for the December meeting.

Photos by Dorwin Skinner



Mark Moore running the meeting.



Specimens from the Million Souls Mine



Colon and Eric



Eric at the microscope



The snack line



Quite a turn out for a summer meeting.



Lauren Bell and her creations



Mark Moore at the front of the room conducting the meeting.



Dick and Bonnie Drum with Dick's castings

August Jewelry Class Photos

Photos by Lauren Bell



Tuesday Workshop

at the

Weeki Wachee Senior Citizens' Center

Withlacoochee Rockhounds is giving workshops on wire wrapping (stones), chain making (jump rings) and possibly other related skills at the Weeki Wachee Senior Citizens' Center in Spring Hill. The workshops are normally on the **first Tuesday of the month from 9:00 AM until 12:00 noon**. The cost per workshop is \$1.00. To participate in the workshops, one must be a member of the *Withlacoochee Rockhounds*, which covers dues to the *Weeki Wachee Citizens Club*.

Weeki Wachee Senior Citizens' Center.

3357 Susan Dr.

Spring Hill FL 34606

For more information call Judith at: 352-587-1702

Next Workshop

September 3rd at 9:00 AM—12:00 PM

The September workshop project will be



Hernando County, FL

Next Meeting, Wednesday Sept. 11th, 7:00PM at the Weeki Wachee Senior Citizens Center



West Texas University Panhandle Plains Historical Museum in Canyon



Panhandle Plains Historical Society Museum, Natural History Gallery

As some of you might know I spent three weeks out West visiting numerous museums, rock shops, and National Parks with my son, Scott. We continued traveling on our twelve western states adventure. On April 29th we settled in for the night just north of Austin after leaving Utah. We settled in for the night early. At 2:00 am I got up to use the bathroom and noticed water covering the floor. Apparently the up stairs bathroom plumbing leaked, so we pulled out at 3:00 am, venturing through west Texas not realizing we had less than a half a tank of gas. Fortunately we found a gas station at 5:00 am near Abilene. Our next scheduled museum visit was the West Texas University Panhandle Plains Historical Museum in Canyon.

I had made arrangements with Dr. Veronica Arias, Curator of Anthropology and Natural History, to have access to their rare saber tooth cat fossils in their archives. I was interested in studying their incredible fossil carnivore collections. These fossils were excavated from geological formations in the 1930's. There were several sites discovered including the Axtel fossils Site and the Cita Canyon Site. One of the rarest saber tooth cats was discovered at Cita Canyon. In 2011 paleontologist Dr. Larry Martin of the University of Kansas, co-authored a book naming a new saber tooth cat *Homotherium ischyryus* from Idaho. He included the Cita Canyon saber tooth cat skull WT1860 in their revision of the genus *Homotherium*. Formerly called "*Ischyrosmilus johnsoni*". WT1860 is now identified as *Homotherium ischyryus*, after a comparison to the Idaho specimen. I had tried to find quality photos of the Cita Canyon cat from various texts and photographic collections on the Internet for one of my future lectures but this material was never photographed in any detail.

When Scott and I entered their collection



Homotherium ischyryus skull formerly *Ischyrosmilus johnsoni* WT 1860



Homotherium ischyryus skull formerly *Ischyrosmilus johnsoni* WT 1860 lower mandible WT1239

room, Dr. Arias had almost all of the carnivore skull and jaw fossils laid out on a huge table. Before me lay one of the best North American carnivore collection ever discovered. There were

Continued on next page

Museum from previous page

two types of bone eating dogs as well. These bone eating dog species were formerly called "*Osteoborus*", but were revised in 2009 by Dr. Richard H. Tedford, Dr. Xiaoming Wang and



Borophagus diversidens skull



Borophagus diversidens lower jaws

Dr. Beryl E. Taylor and placed into the genus "*Borophagus*". These fossil dogs ranged from the late Miocene Period to the Early Pliocene approximately 3 to 9 million years ago. One of the earlier dogs from the Harrell Ranch, late Miocene fossil site was named *Borophagus hilli* and the more recent early Pliocene specimens are now referred to as *Borophagus diversidens*. These fossil jaws and skulls are the finest and most complete specimens ever recovered of these rare bone-eating hyena like dogs.



saber hip bones

In various cabinets were the remains of a very rare saber tooth cat called *Machairodus catacopis*. It has been recently re-studied by Dr. Maurice Anton of Spain from a near complete skeleton housed in the American Museum of Natural History in New York. This new *Machairodus* cat skeleton was discovered years ago in Kansas. The Panhandle Plains Museums specimen may very well be the largest cat fossils ever discovered. I was literally shocked by the immense size of its pelvis and hip bones. They were nearly the size of a small horse. This cat was every bit as large as a robust male Sibe-



sabre hip bones

rian Tiger. One other cat I looked at was represented by several jaws and a badly fragmented skull. I believe it might be a Pseudaeluran cat in the genus called *Nimravides*". These smaller primitive cats are poorly known and need further research and study.



Nimravides lower jaw

Museum from previous page



Nimravides skull Lower jaw

So what can I say? What a wonderful time I had reviewing this amazing collection with Dr. Arias. She spent most of her day allowing us to study this wonderful collection. Dr. Arias, thank you so much for your hospitality and access to one of the finest museums in the USA. I hope those of our club members who are traveling in Texas in the near future have the opportunity to visit the Panhandle Plains Historical Museum in Canyon, Texas, it is one of my most favorite museums.

I hope you all are enjoying the summer and getting out to search for rocky treasures. See you all at our September meeting.

Note: all photographs are property of the Panhandle Plains Historical Museum and are under copyright

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For Sale Items

Club members can post appropriate club-related type **for sale** items in the *Rock Talk* free of charge. Contact your editors by the 25th of the month to have your items posted in the next issue.

Mike Stone

n1ve@amsat.org

Withlacochee Rockhounds is now on Facebook

https://www.facebook.com/withlacocheerockhounds1/?ref=page_internal



Field Trips to the Vulcan Mine Begin

Our club will start going to the Vulcan mine in Brooksville on the second Saturday of each month, beginning on September 14th. Everyone is to be at the gate before 9:00 AM. Please make sure that you park off to the side of the road because of trucks entering and leaving the property. First we will go into the mine for a brief safety meeting. Then we have three hours to dig and collect specimens, or you can stay the full five hours. You may leave the mine either at noon or at 2:00 p.m. No one can leave the property before these times unless it's an emergency as a mine employee must escort us into and out of the mine.



We are expecting 80°+ temps with high humidity, so bring water, a hat, and sunscreen (also shade if you think you'll need it, because there is none in the mine). Sturdy shoes are helpful, also a rock hammer, chisel, eye protection, a bucket or other suitable container, and newspaper to wrap delicate specimens.

No bathroom, no water, no shade, please be prepared and dress accordingly.

Children are welcome with proper adult supervision. This is a retired limestone pit. There are sharp rocks, wild animals, insects, and other hazards to be mindful of.

Vulcan Mine Address

16313 Ponce DeLeon Blvd.

Brooksville, FL 34641

Lat./long. 28.656481, -82.457544



**From the
VP
Mark Moore**

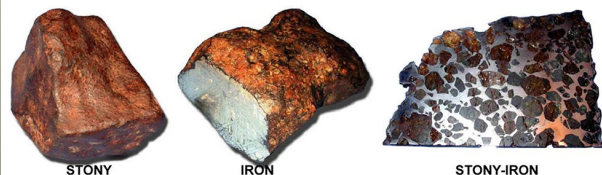
Meteorites Part II

Remember a while back we learned how Susie, a meteorite, was born and we followed her through her life stages of **meteoroid**, **meteor**, and finally upon impact on Earth where she became a **meteorite**. But what kind of meteorite was she? In this article we'll look at the possible type of meteorite she could be and finally decide, if possible, which one she was.

There are three general types of meteorites. **Stony**, which comprise about 94 percent of the meteorite found on Earth. **Iron**, which comprise about five percent and **Stony Iron** at about one percent. See Fig. 1. There is also another classification called a **micrometeorite**.

Meteorite Types & Percentage that Falls to the Earth

- **Stony meteorites**
 - Chondrites (85.7%) abundant chondrules
 - Carbonaceous (has carbon)
 - Enstatite (MgSiO₃)
 - Achondrites (7.1%) More metamorphism lacking chondrules
- **Iron meteorites (5.7%)**
- **Stony iron meteorites (1.5%)**
 - Pallasites
 - Mesosiderites



Stony meteorites are the most common meteorites found on Earth. There are two

main categories of stony meteorites, achondrites and chondrites, and there are many sub categories in each main group to differentiate and further categorized individual specimens. The most common stony meteorite is the chondrite, which contains small spheres called chondrules that have accreted into a solid matrix. See Fig 2. Chondrules are thought to have



Fig. 2 Section of a chondrite meteorite

been created as droplets of molten material in the very early formation of the dust cloud that became our solar system. Chondrules are believed to be the basis for all solid matter in this system and represent very old, if not the oldest matter in the Solar System. Chondrites are grouped according to the size of the chondrules. There are 15 main groups subgroups. Chondrules are composed of mostly silicates (olivine and pyroxene) and feldspar. The composition of the minerals in these meteorites can vary, and to find the exact composition, not only does each meteorite need to be analyzed but the material spread across each individual meteorite needs to be analyzed.

A achondrite meteorite is simply a chondrite that has been heated to the point where the chondrules are melted then re-solidified or have been melted and completely fused to

show no differentiation with nearby melted chondrules; the same process that creates metamorphic rock on Earth. When viewed close up there are little or no chondrules seen. The elemental composition can be the same, but the chemistry can be very different. For example, the surfaces of some are black in color, some are tan, and some are brown, but they are all achondrites.

Some stony meteorites show signs of rapid cooling (dendritic) while others show signs of slow cooling (porphyritic) which seem to have more even, smoother, distribution of the stony matrix. Both types contain large amounts of iron, usually as an oxide and are magnetic to varying degrees, depending on the amount of iron. The surface of stony meteorites can have several, in fact, many different forms. Some are smooth with no chondrules showing, some have distinct chondrules and some are anywhere in-between. Most stony meteorites, because of their iron content, will be attracted to a magnet, varying slight to fairly strong. But will have nowhere the magnetic attraction of the iron meteorite.

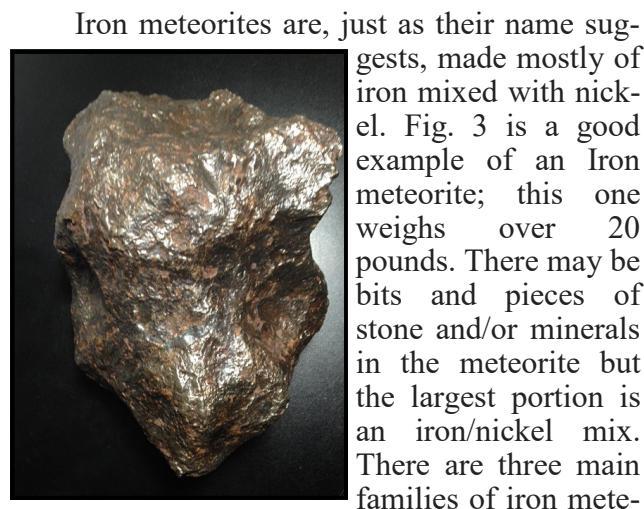


Fig 3. A 20 pound iron meteorite

Iron meteorites are, just as their name suggests, made mostly of iron mixed with nickel. Fig. 3 is a good example of an Iron meteorite; this one weighs over 20 pounds. There may be bits and pieces of stone and/or minerals in the meteorite but the largest portion is an iron/nickel mix. There are three main families of iron mete-

Continued on next page

orites mixes; iron meteorites with less than five percent nickel and are called hexahedrites, the most common iron meteorites, octahedrites, consist of a crystalline structure formed by a mixture of iron and nickel between five and thirteen percent nickel, and ataxites, which have a very high nickel content, usually greater than thirteen percent. The Octahedrites are by far the largest group and are the most common iron meteorite found. A larger percentage of Iron meteorites are found intact because they are stronger and survive entry into the Earth's atmosphere and subsequent crashing into the surface better than the stony and stony iron meteorites, which tend to break apart upon entry. The iron meteorite is very magnetic. Its surface usually, but does not always shows signs of heating from its entry into and passing through the Earth's atmosphere. Iron meteorites will rust if left in the open air and therefore require a treatment of a high viscosity oil to prevent decay by rusting. The iron alloys react each differently and some may not rust as quickly as others, but once removed from its resting place where it fell into earth it will rust.

The third and smallest group is known as the stony iron meteorite. Once again, the composition is just as the name says a mixture of iron and silicates (stone), generally about a 50-50 mixture. They belong to two main categories, commonly referred to as their type, pallasites and mesosiderites. The stony iron meteorites are, to me, the most interesting due to their variety and beauty. They are also the most rare of all meteorites comprising less than 1.5 percent of all known meteorites. The pallasites show embedded stone some of which can be gem quality olivine (in the form of peridot.) Fig. 4 shows an example of a pallasite. The mesosiderites, on the other hand, show a metamorphosed mixture of silicates and clasts (lumps) of iron, indicating a sec-



Fig. 4 Pallasite meteorite

ondary heating at some point in its existence. An example is shown in Fig 5.

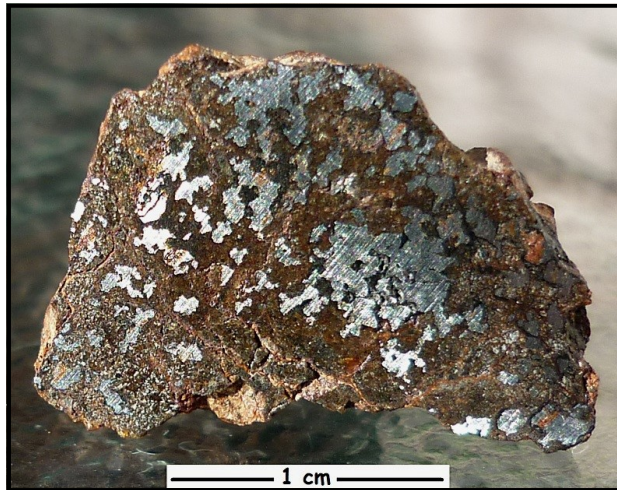


Fig. 5 Mesosiderite meteorite

Both Iron, and some pallasites can have what are known as Widmanstätten Patterns. These are figures of long nickel-iron crystals, found in the octahedrite iron meteorites and some Pallasites. These are thought to have formed over millions of years, as the meteorite cooled in the vacuum of space, allowing only very limited heat loss, thereby allowing the long crystals to form. A sample of these lines is shown in Fig 6. This is from the Internet, as I



Fig. 6 Widmanstätten Patterns

was unable to take a good photograph of the lines.

Lastly there are micrometeorites. These are bits of cosmic dust that enter Earth's atmosphere, some of the approximately 2500 tons a year, reach the surface of the Earth. These are very small particles the largest being up to two millimeters. Micrometeorites are found in generally undisturbed areas such as the Antarctic or the snowfields in the northern areas. Since I have no known samples there are no pictures to share in this article. Just imagine a tiny bit of dirt, and you'll have the general idea of what one looks like. It is very difficult to tell a micrometeorite from terrestrial dirt without analysis. When analyzed, the micros are found to have similar compositions as other space visitors. These little guys are very interesting and maybe a future article is warranted.

By the way, since we see that the stony iron pallasite is a meteorite of both exterior and internal beauty we can easily see that Susie is one of these rare beauties.....



Secretary's Report



by
Melody Steverson



Withlacoochee Rockhounds Monthly Meeting Minutes 8-14-19

- The meeting was called to order by club vice president Mark Moore at 7:00 pm.
- We all stood for the Pledge of Allegiance followed by a moment of silent prayer.
- There were three new members to recognize; Leisa Shelton, Dee Harvey, and Don Cuchinella.
- There were no guests in attendance.
- Dave Letasi made a motion to accept the minutes of our July meeting as printed in the newsletter, the motion was seconded by Ralph Barber, and it was passed by all members.
- Club treasurer Janet Wheeler gave the Treasurer's Report.

Old Business

- Club vice president Moore announced that we need help with ideas for advertising for the gem show and we also need many volunteers to help with the show. He asked members to come to the Board meeting on Tuesday if they feel they have anything to contribute. Mark asked Lauren Bell about the club Facebook pages. She said the show flyer will be displayed on the FB pages.

New Business

- Field Trip report, Lauren Bell stated that she had been to Australia and had brought some opals to sell. She went on to say the Vulcan Mine trips will start again in September. The Jackson Crossroads dig will be on Sept 7 and 8 for \$50 a head, and Graves Mountain will have a dig the first week of October, on Friday through Sunday. The cost is donation only, and to bring money to shop at the vendors and to tip the golf cart driver.
- Roberta Oldread added that the Vulcan Mine dig will be on Sept. 14 (always the second Saturday of the month), be there before 9:00 am. The directions will be on her club page.
- VP Moore reminded members about the Board meeting on August 20th at 6:30, and the Jewelry class on Tuesday, September 2nd.
- Roberta stated that the Farmer's Market in Brooksville has asked our club to do demonstration to promote our club.
- Lauren said there is a roadside cut with shell and fossil piles on route 19 in Leesburg where you can find large echinoids.
- Next month's refreshments will be provided by Lauren Bell, Bear, Suzie Letasi, Eric and Colen Kessell.
- Ralph Barber made a motion to adjourn the meeting, Mike Girdwood seconded the motion, and it was passed by all.
- The meeting was adjourned at 7:15 pm.

Minutes respectfully submitted by club secretary Melody Steverson.

Withlacoochee Rockhounds Board of Directors Meeting Minutes 8-20-19

- Attending Board members; Judith Birx, Ralph Barber, and Roberta Oldread. Also in attendance; member Cheryl Longenecker, acting secretary.
- The Board meeting started at 6:30 pm and was held at the Weeki Wachee Senior Center.
- Club president Judith Birx Gave Ralph Barber the returned vendor letters. There have been 27 tables sold so far.
- There was discussion about sending flyers to the vendors who have signed up for them to hand out.
- Judith Birx needs another copy of the flyer to duplicate. Roberta said she could get it off the website.
- Judith will drop the flyer off the flyers to Ralph and give them to Kelly as well. They are two per sheet. At Office Depot, if 100 copies are purchased, the price goes down. We might do some in black and white.
- The advertisement we did last year was one-quarter page for two weeks, November 7-14. It should run until the 28th this year.
- We discussed "Boost" on Facebook. The page must be an event first, Roberta and Ralph discussed the event page. Roberta put it on Ginny's page and she will try to copy it. Maybe she can boost it on her own page. No activity on Ginny's page, Roberta will fix it before the Boost is done.
- Someone will contact the people who printed the flier to determine the cost.
- Discussion of placing other ads; The Scene, Suncoast, Bargain Finder, the Beacon, and

Continued on next page

Next Meeting, Wednesday Sept. 11th, 7:00PM at the Weeki Wachee Senior Citizens Center

BOD Minutes from previous page

- others.
- We will gather information and make a decision at next meeting.
- Roberta Oldread brought up a need for a volunteer sign up sheet and duty list, and suggested that vendors set up on Friday morning instead of Thursday. The consensus was that vendors need more time and will continue to do it on Thursday.
- Facebook Boost: Start slow with Tampa group. Each year increase a boost.
- The meeting ended at 8:00 pm.

Minutes respectfully submitted by member Cheryl Longenecker

Another Club Tee Shirt on Amazon



This shirt is a takeoff on the Periodic Table of Elements. As with the other club shirts, I have priced this one at what amounts to wholesale. I "make" one cent on the sale of each one. It was the closest in pricing I could do without losing a cent on each one. Shirts are available in different colors, and men's, women's and kid's sizes. As there are no elements with names that with only an "R" or "D", so I "created" two new

Rockhounds elements for the Periodic Table....**Rock** and **Dendrite**. *Michael Steverson.*

\$13.08 & **FREE Shipping** on orders over \$25 shipped by Amazon

<https://www.amazon.com/dp/B07WYVRNPW>

Rock Art



My brother-in-law, Don Shawver, sent us this photo taken in a store n Wallace, Idaho. He wrote, "Wallace is a big mining down with lots of rocks for sale". editor

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September Monthly Newsletter of the Withlacoochee Rockhounds 2009





September 9th Meeting

The September meeting will be held on Wednesday, September 9th at 7:00 PM, at the Senior Citizen's Club of Hernando County, located behind Brewers Funeral Home on the east side of US 19 in Spring Hill, FL.

Gems on Gems
by Jerry Johnson G.G.

The birthstone for September is the lovely sapphire. This gemstone is a member of the corundum family of gems of which the ruby is also a member. The sapphire has a hardness of "9", so it is very resistant to wear. Sapphires are found in many colors, ranging from ink blue black to yellow and even light pink, with vibrant blue being the most valued. Sapphire prices ranging from \$5.00 to \$3,000 per carat.

The finest sapphires are from Kashmir, and other major producers are Burma, Sri Lanka, Thailand, and Cambodia. The gem is also found in many other locations around the world, including in the state of Montana. Almost every sapphire we see today in the marketplace has been heat treated to some extent. Synthetic sapphires are quite common but they are easily detected with a jeweler's loupe or a gem microscope. When we test a blue colored stone and suspect that it is a synthetic, we look for curved striae, which is one of the telltale indicators. Curved striae is the result of the manufacturing process. Blue synthetic sapphire is being sold as Tazantite. As usual, buyer beware, know who you are dealing with, and if you have any doubt, have the stone checked out by a professional.

Mike Stone and Peggy Burns

Summer is winding down here in Kentucky and before long we should be enjoying fine fall weather. We've heard about the oppressive heat and humidity in the Spring Hill area and are thankful that we've had temperatures for most of the summer in the 80s and occasionally in the low 90s. Kentucky has received an unusual amount of rain this summer and we're pleased to know that Florida seems to be working its way out of the three-year drought. The rain has been good for the farmers and it sure has given our new lawn a much-needed boost, but the rain has also been good for the parasitic bug population. We've spent some time out in the woods and bushes both geocaching and looking for rocks and fossils, but at this point the ticks, chiggers, and turkey mites are just too voracious for us, so we have postponed any more outings until the crisp fall weather arrives.

Our geocaching travels have taken us to areas in central Kentucky where we've had opportunities to pick up a

(Continued on page 2)

Next Meeting Wednesday, September 9, 2009 at the Senior Citizens Club of Hernando County Inc.

This month marks our tenth year as editors for the *Rock Talk*. The front page of the September 2009 issue is pictured above. That issue is posted on the club website, if you would like to read about what was happening in our club ten years ago. <https://nebula.wsimg.com/b05191b8f7125b917fb450ab804717a2?AccessKeyId=CD284D6E6296F742E7D2&disposition=0&alloworigin=1>

Several years back we changed the format *Rock Talk* by altering the orientation from portrait to landscape to allow for better displaying graphics on the cover page.

We welcome your suggestion for future issues. Let us know what we can do to improve the newsletter and please send us articles, photos, and links to interesting and relevant material that we can use for monthly issues.

Rock Talk editors, Mike Stone and Peggy Burns



ROCK TALK

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- The June meeting Program
- The May Club Meeting, as I saw it
- Different Settings for Rock Talk
- June Meeting Program-Minorals
- Field Trip
- Growing Rock Candy Crystals
- Bench Tips

June 2015

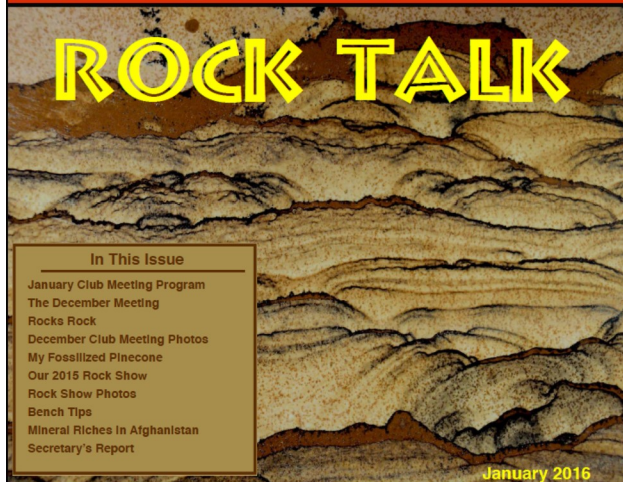


ROCK TALK

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- My Fossilized Pinecone
- Our 2015 Rock Show
- Rock Show Photos
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- Mineral Riches In Afghanistan
- Secretary's Report

January 2016

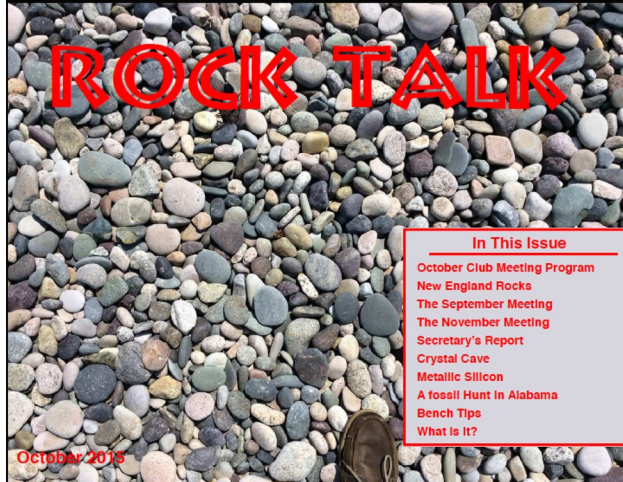


Rock Talk

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November 2017



ROCK TALK

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October 2015



Rock Talk

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September 2017

The Old Limestone Mine

by Mike Stone



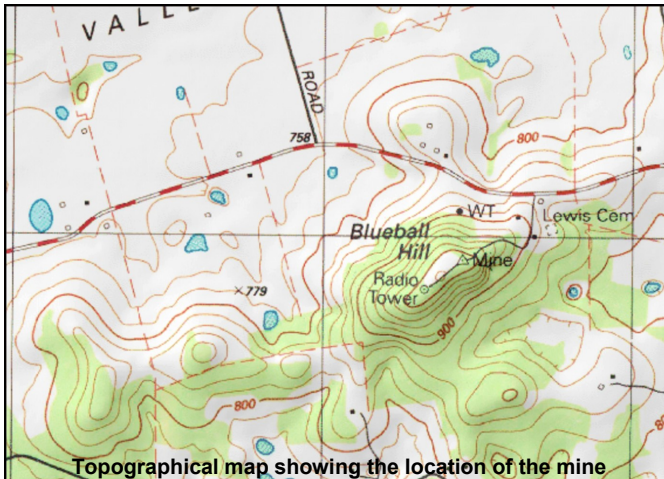
Near the entrance of the big cavern.

Part One

This summer we had friends, Sam and Brenda, from New Hampshire, visiting us. During a rare ten/ten weather day, Sam and I took the Mule (Utility Terrain Vehicle or UTV) a mile down the road from the house to Blue Ball Hill to check out a series of huge caverns that were cut into the limestone hill more than fifty years ago. We carried flashlights and also planned to use the headlights on the Mule to illuminate the inside of the caves, with their twenty-foot high ceilings and several interconnected caverns. Before we left, I put the chainsaw in the back of the mule in case blow-downs blocked our way through the narrow woods road that leads to the cave entrance.

It wasn't long before we had to stop and cut small trees, bushes, and vines that completely blocked the narrow road. After several minutes of cutting and moving the brush,

Continued on next page



Topographical map showing the location of the mine

Just ahead, the opening to the mine



Blue Ball Hill from the west.



Slick Kentucky mud from the mine.



Sam and the Mule in the mine.



A cluster of stalactites.

The Old Limestone Mine from previous page

we were again on our way to the caves.

The entrance to the massive cavern is at the base of a sheer vertical ledge that towers over the trees. The Mule is relatively narrow, so we were able to pass between boulders and climb a short steep slope to the entrance cavern that had been used as a gathering place by people, as evidenced by several stacks of purchased firewood, foldable seats and cots, and other items that would normally be found at a campsite.

The deeper we progressed into the caves, the darker the interior became, and soon the mud floor turned into a deep, soupy slop. I shifted into four-wheel drive and continued a little further, but I didn't want to sink and get mired down in the sticky clay, so we turned around. The caves were created years ago when limestone for building roads was mined from inside the big protruding hill that sticks up above farmland in north central Kentucky. The flat ceiling in the cave looks as if someone cut and scraped it into a perfectly level, horizontal plane. But of course, the flatness is a result of the layering of the limestone; when shells and hard body parts of sea life were deposited on the shallow, tropical sea bottom many millions of years ago. The weight of the seawater forced the layers of calcium carbonate material into a perfectly horizontal deposition and eventually transformed it into sedimentary rock. The walls of the cave were not very interesting since all I saw other than gray limestone was an accumulation of mud from dust and tiny droplets of condensed water.

As we were leaving the darkness of the caves and could see the brilliant sunshine and green foliage just outside the opening, I spot-

ted a chunk of rock that had been placed by someone on top of a piece of limestone. What caught my eye were the multiple, conical appendages. I stopped and Sam put the rock in the Mule. The interesting rock contained several small stalactites that must have broken off the ceiling of the cave.

I was impressed with the uniquely shaped specimen that obviously was formed by the deposition of dissolved minerals, one microscopic layer after another for many years.

Finding specimens often requires keen observation skills and actually getting out, getting down and dirty, and keeping one's eyes and mind on what is on the ground.

Part Two

About a week later, Peg and I went back to the caves to have another look around and to take photos. On the way, we used pruning shears to snip off bushes and small limbs hanging over the partially grown in limestone road. As we approached the big opening, a huge owl silently flew out of a tree, making a gracefully banked turn and somehow avoiding the limbs with its wings. Once inside the entrance to the big cave we looked closely at some of the rubble that had fallen off the ceiling and walls. We could see that though limestone was removed from the cave, flowstone and mudstone was also plentiful. Among the rubble on the floor of the cavern were a few odd looking pieces of what we presume were mudstone.

Near the entrance we walked around, looking at what people had left behind and soon found an old wood stove, a large galvanized water tank, a kitchen sink with a partial countertop, three five gallon buckets, a five gallon gasoline container, an old agricultural tractor tire, a couch, several black garbage bags filled with what I presume is garbage, deer, raccoon,

and either dog or coyote tracks. The only human tracks were ours.

“The ceiling in one area, was precarious looking with nothing to keep it from falling down on us.” Peg

Then we drove the Mule to the deepest section of the mine and checked out the wall for rocks other than we'd already seen. Black areas became visible under our strong LED flashlight, and upon closer inspection we saw that they were nodules of speckled black chert.



A nodule of chert imbedded in the limestone wall.

Flint or Chert?

Flint is a variety of chert. Although there is a lot of confusion about this, chert refers to cryptocrystalline or polycrystalline quartz that usually forms as nodules in limestone. Flint is reserved for the same material that forms in chalk or marl. Flint is simply a type of chert.

Continued on next page

We probably will return to the old mine and poke around to see what we can learn about the composition of the hill that has the designation as being the highest point in Hardin County

Part Three

A few days later we went back to the mine. Again we stopped along the road to cut limbs and small trees that were leaning over and onto the road. We had a ratchet drive anvil lopper that could snip off limbs and small trees a bit larger than one inch in diameter.

First we drove to the far rear section of the caves, and using a three-pound hammer and a chisel I knocked out several chunks of black chert from the big chert nodule we saw on the wall during our last trip into the mine. One of the pieces of chert included the edge of the nodule where the chert and limestone came in contact with one another. Next we turned the headlights and our flashlight off and I switched on the ultraviolet flashlight to look for fluorescent minerals. We haven't found any fluorescent minerals in Kentucky,



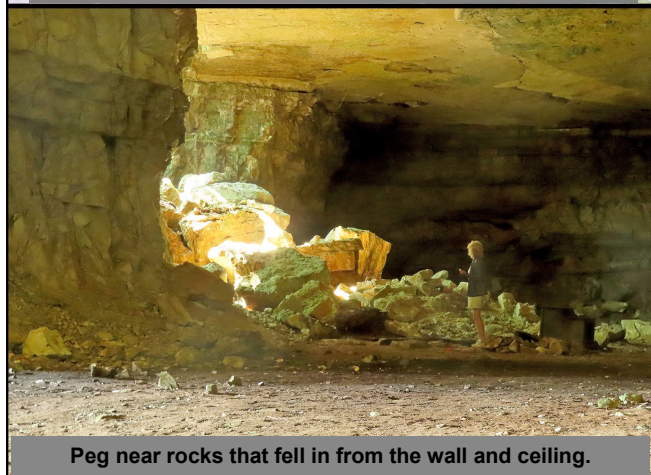
A mix of black and lighter colored chert, showing the curved edge of the nodule.



Peg standing under the dubious looking cave ceiling.



The back of the Mule loaded with rocks fallen from the ceiling.



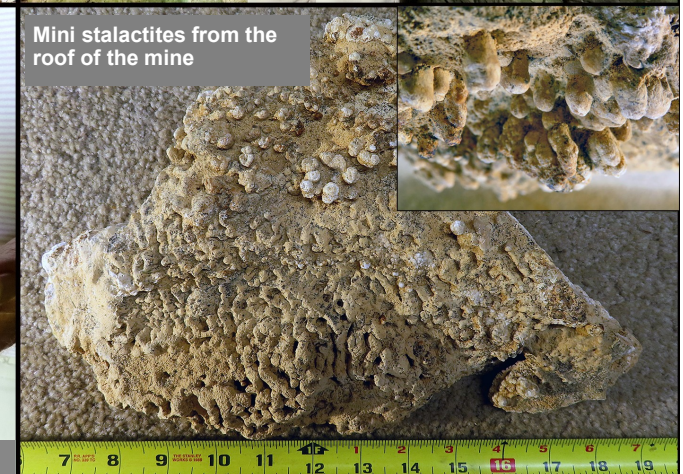
Peg near rocks that fell in from the wall and ceiling.



Peg with her large stalactite



The stalactite Peg picked up off the floor of the mine.



Mini stalactites from the roof of the mine

so we had no expectations for finding any today. Those expectations came true, because we saw nothing but the reflection of our light where it shined on bright white colored limestone.



Peg near the entrance to the mine.

We moved toward the entrance of the mine and walked among huge blocks of limestone that had fallen from the walls and ceilings, and areas where the roof had collapsed allowing clay, loam, and roots to pile up, and also resulting in sinkholes on the side of the hill. Peg picked up a peculiarly shaped rock and quickly realized that she had what looked like a complete stalactite in her hand. It must have started forming in a big void in the limestone well before the mine was in operation.

We also picked up a few of the smaller pieces of the ceiling that had fallen onto the floor. However, some of the chunks were over a foot thick and eight to ten feet long and four feet wide. Based on the approximate size of these chunks and the weight of limestone at 150 pounds per cubic foot, the massive section of the roof weighed well over two tons. The scary thought is if they fell from the roof of the cavern more than twenty feet above us, it's possible that others could fall at any time. A hard hat would have been of no use. I saw a smaller piece of the ceiling

that had fallen, and a corner of the ten-pound chunk was imbedded in the clay floor. Again, a hard hat would have offered no real protection.

Before we left, we loaded the back of the Mule with interesting pieces of limestone that had fallen from the ceiling. When we returned home, we used the pressure washer to clean these specimens to see if they revealed anything of significance for our collection. Other less interesting pieces will be used on our numerous stonewalls around the house.

It's nice to have access to the old mine just a short distance from the house. I am sure we will return to do more exploring, but we will keep our visits short because of the possibility of loose material breaking away from the sides and ceiling of the caves.



Cleaning specimens found in the mine with the pressure washer.

Two Carat Diamond Found at Crater of Diamonds State Park

A Nebraska teacher, John Lanik, found a two-carat diamond while visiting Crater of Diamonds State Park in Murfreesboro, Arkansas.

More than 75,000 diamonds have been found in the park since 1906, and 296 diamonds have been registered this year, totaling 53.94 collective carats.

Many visitors go to the park simply to do a little diamond hunting in the thirty-seven-acre diamond search area. However, it is unlikely for someone strike it rich.

Lanik and his family spent two hours in the area, before they found a small, brandy-colored, pear-shaped rock that was a 2.12 carat, brown diamond. The diamond is the size of a jellybean.



About 14 inches of rain fell at the park recently. In the days after the rainfall, park staff registered numerous diamonds having been found on the surface, including two weighing over one carat.

Lanik recognized that he found something unique because of its shine and because there weren't any sharp edges so it rolled in his hand. This is the largest diamond found in 2019. Because the value of diamonds vary greatly, its actual worth is unclear. *Sent to us by Michael Steverson*



Typical diamonds found at Crater of Diamonds SP

Getting to Know You
Withlacoochee Rockhound Member
Peggy Burns

Mike has asked for articles about club members' hobbies. We all, of course, enjoy joining everyone each month to talk about and view our rocks, minerals, fossils, and jewelry making. But, I'm sure there are dozens of members' hobbies we'd like to see and read about in the club newsletter.



I am glad to share my hobby of painting. I can't remember how far back when I was trying to draw and paint. I was a child after the war in London and was used to the fact that there just wasn't any white drawing paper readily available, so I'd draw small pictures on the edges of newspapers. I'd beg my mother to ask the butcher if I could have a piece of the paper he'd wrap the meat in. She'd reply, "Ask him yourself", but I never got up the courage.

Since then, I've tried oils with little success, pastels, acrylics, and watercolors. The latter being my very favorite and what most of my paintings are. I deal mostly in landscapes and living in Florida on a canal has given me opportunities to paint wildlife and passing shrimp and crab boats. I was able to snap a real close-up photo of a manatee that was floating alongside our canoe in the Weeki Wachee River, giving me the opportunity to do a painting of it in acrylics.

On the other hand, while we're here in



Kentucky during the summer months, the landscapes of hills, fields, and ponds, are spectacular. My last watercolor painting is of the farm across the street from us and next to a beautiful big pond. The choices for paintings in both states are endless.



Getting to Know You

Send us a few words about your interest(s) and/or hobby(s), whether or not they are related to rock hounding, we will print them in future issues of *Rock Talk*, and you might find that other club members have similar interests.

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 barbersbloomers@hotmail.com

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Mysterious Glass Beads in Clams, Point to Ancient Meteorite Strike Near Florida

<https://gizmodo.com>

Since their discovery 13 years ago, scientists have puzzled over the origin of tiny glass beads found inside ancient clam shells. New evidence suggests they are microtektites, a byproduct of meteorite impacts.

Ancient clam shells uncovered at a Sarasota County quarry in Florida are the unexpected repositories of microtektites, according to new research published in *Meteoritics and Planetary Science*. The research is still incomplete, but the discovery points to a previously unknown meteorite strike (or strikes) off the coast of Florida some two million to three million years ago. Tiny, spherical glass beads can be produced during the explosive impact of a meteorite smashing into Earth.



When a large impact occurs, the impactor, a meteorite or comet for example, mostly vaporizes, but so does the rock and soil it hits. Most rocks are composed of minerals that contain silica. The melted debris flies away from the impact site and cools as

it travels through the air, usually giving it an aerodynamic shape of some sort.

Eventually, these materials cool in the atmosphere and rain back onto the surface. Large pieces, called tektites, often form teardrop shapes, and small droplets, called microtektites, produce spheres. Over the course of time, these materials are transported via water and wind down to the sea, like any other sediment, this extraterrestrial material can then collect in clam shells. Eventually, the shells get covered in sediment, preserving their contents for protracted periods of time.



Microtektites found inside ancient clam shells

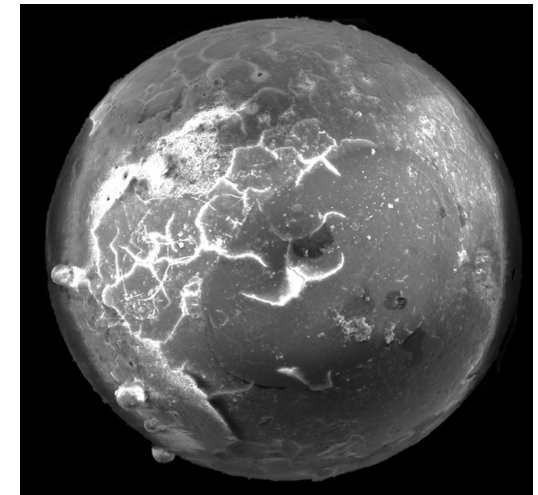


Microtektites

The investigation dates back to 2006, when University of South Florida students were scouring the Pinecrest beds of Florida in search of shells produced by single-celled organisms known as benthic foraminifera. Instead, they found dozens of glass beads inside of fossilized clams, most of them inside fossils of *Mercenaria campechiensis*, also known as southern quahogs. These particles were very small, measuring around 200 micrometers in diameter (about .007 inches). In total, 83 of these mysterious orbs were found. At the time, no one knew what to make of these transparent orbs, so the beads languished at the university for years.

Eventually they were analyzed using scanning electron microscopy, back-scatter imaging, and x-ray spectroscopy, which allowed the researchers to determine their composition. In addition, the researchers performed comparative analyses with other microtektites, cosmic spherules (also known as micrometeorites), and volcanic rocks.

Research is being conducted to definitively determine the method of formation of these tiny glass spheres. *Submitted by Michael Steverson*



Microscopic image of a microtektite

Withlacoochee Rockhounds



Bench Tips
by
Brad Smith



Bench Tips for Jewelry Making and Broom Casting for Creative Jewelry are available on Amazon

Foredom Stand

A quick and easy way to suspend a flexshaft over your jewelry bench is to use steel pipe components from a hardware store. You can buy it locally, and then attach it with a couple screws, and it will only cost about \$10.00



I use a 1/2 inch galvanized pipe and fittings. To build a stand that attaches to the top of your bench. All you will need is a flange and a thirty-inch length of the pipe. If you prefer a stand that attaches to the side of your bench, you will need a bit longer pipe than three feet, a flange, and a 90-degree street ell (elbow).

Make a hook that goes into the top of

the pipe to hang the motor. You can use heavy coat hanger wire or 1/8 steel rod from the hardware store, or 1/8" mild steel gas welding rod.

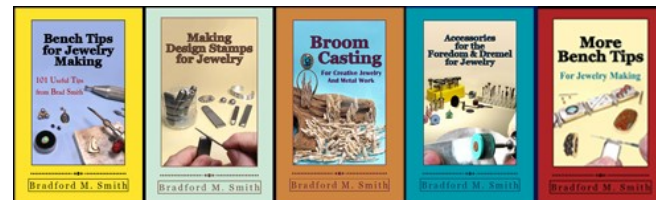


Broken Drills

Have you ever broken a drill bit off in a hole? Sometimes you can grab the broken end with pliers, but other times the broken bit is below the surface in the hole. If this happens, a quick fix is to dissolve the steel in a solution of alum or fresh pickle. The solution will not affect your silver or gold piece. Alum is typically available at a food store. It is used to preserve certain foods. Use about a tablespoon per cup of warm water. Submerge your piece so that the partially drilled hole

is facing up to let the bubbles float free and not block the hole.

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Next Meeting, Wednesday Sept. 11th, 7:00 PM at the Weeki Wachee Senior Citizens Center

September Rock Talk

For Sale

Smith Little Torch, acetylene and oxygen soldering outfit with a steel tank caddy. The tanks have fuel in them. The tanks are about twenty inches tall, with regulators. The outfit sells new for over \$600, asking \$300.

Richard Drum
727 862 7457
club member

Board of Directors Meeting

The next Board meeting will be held at the Weeki Wachee Senior Citizens Center on **September 17th** at 6:30 PM.

Arrive Early for Our Meetings

On the nights of our club meetings (second Wednesday of the month) the Weeki Wachee Senior Citizens Center is open at 5:30 PM. The rock grinding and cutting machines are set up early so members can use the equipment before the business portion of the meeting begins at 7:00 PM. If you have jewelry, rocks, minerals, fossils or equipment to show or sell, specimens to be identified; the best time to do so is between 5:30 PM and 7:00 PM. No equipment can be used during the business meeting or during presentations.

The Annual Withlacoochee Rockhounds Gem Show is Coming

Veterans Memorial Park
14333 Hicks Road
Hudson, FL 34669
December 6, 7, and 8, 2019



Club member volunteers are needed for the 2019 gem show committee. Sign up at the June club meeting..

What is It?

Can you identify the specimen below?



Answer in this *Rock Talk*.

Last month's "What is It?"

Gold Crystal



Cobalt Ore



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Withlacoochee Rockhounds

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Annual Dues: Individual member, \$20. 00. Under 18 years of age, \$5.00.
Check if new member

Please Print Clearly

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"Withlacoochee Rockhounds" to club secretary Janet Wheeler at a
club meeting. Or mail the form and your check to:**

Withlacoochee Rockhounds

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Rock Talk

Withlacoochee Rockhounds

Our monthly club meeting is held at the
Weeki Wachee Senior Citizens Club,
3357 Susan Dr., Spring Hill, FL 34606, on
the 2nd Wednesday of each month
from 7:00 to 9:00 PM



www.withlacoocheerockhounds.com

Your Business Card Size Ad in Rock Talk

The cost for non-club members to advertise their businesses in *Rock Talk* is \$10.00 per month. . Contact Mike Stone to set up an ad in both the club newsletter and our website. It will benefit both your business and our club.

Advertisers Needed

Please help us find advertisers for the *Rock Talk* and our website. The club can use the monthly income. Both the *Rock Talk* and our website have more exposure than only club members

Contact club treasure Janet Wheeler: ceecgirl@tampabay.rr.com
or send to:
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Withlacoochee Rockhounds

Purpose

We are a non-profit organization whose purpose is to foster interest and promote knowledge of minerals, gems, fossils, lapidary arts, and earth sciences, through regular meetings, informative programs, workshops, and field trips. PLUS our annual gem and mineral and jewelry show. Membership is open to anyone sharing such interests.

Dues

Dues are \$20.00 annually for adults and \$5.00 annually for children under 18 years of age.

Club Meeting Location and Time

Weeki Wachee Senior Citizens Center, 3357 Susan Drive in Spring Hill. The meetings are held on the second Wednesday of the month at 7:00 PM.

2019 Club Officers and Appointees

President.....	Judith Birx.....	352-587-1702.....	judithbirx@hotmail.com
Vice President.....	Mark Moore.....	352-586-9607.....	markles@bellsouth.net
Secretary.....	Melody Steverson.....	352-683-9496.....	melodye@designsbymelodye.com
Treasurer.....	Janet Wheeler.....	727-938-3644.....	ceecgirl@tampabay.rr.com
Rock Talk Editors.....	Mike Stone / Peggy Burns.....	603-524-0468.....	n1ve@amsat.org
Club Web Master.....	Mike Stone.....	603-524-0468.....	n1ve@amsat.org
Mailing Reporter.....	Janet Wheeler.....	727-938-3644.....	ceecgirl@tampabay.rr.com
Gem Bag Coordinator.....	Gloria DuPont.....	352-848-5199.....	ddupont@tampabay.rr.com
Audio/Visual Coordinator.....	Michael Steverson.....	407-376-5570.....	highlander56@gmail.com

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Roberta Oldread (2019)
Melody Steverson (secretary)

Ginny Steverson (2021)
Mike Stone (2019)
Lynn Walters (2021)
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