

December 2010

THUMBlickER

Newsletter of the Central Florida Mineral and Gem Society

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Tom & Kay Benham

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The Central Florida Mineral and Gem Society is a member of the Eastern Federation of Mineralogical and Lapidary Societies.

The CFMGS was established in 1961 and now has 192 members and sponsors two (2) large Mineral and Gem shows each year.

We are planning our 50th anniversary celebration for next November.

We are still looking for information about the history of Society.

Who were the first members? Where were they located? Who are the Life Members? Who has served on the board through the years.

e-mail me at oakleymail@gmail.com

“December 21st Meeting”

The general meeting was called to order at 7:30pm by Michelle Bogle
Then we pigged out.....

The Treasurer, Gordon Oakley, reported the December Mineral and Gem show results:
Net Profit: \$6214
Total Visitors: 321 plus 30 children
This was half what we expected.

From the President

Hi everybody,

Hope you had a great Christmas. I wanted to touch base with all the club members. Since elections, we have had a lot going on with our club. So I am going to go back a little before I move ahead.

First of all, thanks to everyone who came to the cookout & auction on Oct. 31st. We had a lot of fun as usual. There were some great pieces of equipment auctioned off. I know everyone who participated was extremely happy with what they got. Also, thanks to all who brought food!! It was Good! And I want to give an early invite to all members who missed our annual cookout. It's a great time to get to know other members and catch up on what's been happening at our club. Plus the food's always good. Did I mention that already?

As for our December show. Well, first I want to apologize to all vendors. When we lost our show chairman, things didn't go the way they should have. I want to thank John Piziak for taking over that position at a crucial time. And I say crucial because it was just prior to the show. John went in kinda blind, not knowing what had or hadn't been done. Also, our sign up list for volunteers was extremely sparse to say the least. He had a lot on his plate just to make things happen. As most of you know, I have been a vendor with our club for about 9 - 10 yrs. So I know how we fared at this show. But the good news is, we have been discussing new venues for advertising. Next show, our annual spring show will be much better. John has an assistant, Fred Tunderman, working with him to make sure everything goes the way it should. With people out Christmas shopping, and the economy not helping any, December probably isn't the best time to host a show. So next fall, we'll look into another month.

I want to remind all members that without our shows, we would not have a workshop. Especially one as nice as we have. Our club boasts some of the finest equipment in Lapidary. Our shows help to pay our financial obligations thru-out the year. So

please, donate a few hours of your time to help out. We need people to help set up the day before. Generally putting table covers on tables, setting up the food area and helping to move stuff around. Also, our shows have been three days long. So we need more people to get involved with helping on one or all of those days. The kids corner and the sluice is a lot of fun to work. If you just want to come in and sit around, then being in charge of the door is perfect for you. Volunteering a few hours of your time helps to insure future shows. Without volunteers, there can be no show! Take my word for it, it's really not like going to work. It really is fun. My two teenagers help out wherever they can. Usually the sluice or even silent auction. They enjoy it!! So if you have kids, maybe you would consider letting them help out. We can always use them.

Congratulations to all the Jewelry Artists that placed in our first competition!! I was duly impressed with all the creative Jewelry pieces I saw. The craftsmanship was as professional as you see in any competition. I so look forward to doing that again.

Well, if you missed our Christmas party, shame on you. Oh, I mean, what a shame. As always, the food was great!! And a lot of it too! I was very pleased to see a nice turnout. And also to see some members that have been members since almost the start. Jan & Bill Burrage graced us with a wonderful cake and the pleasure of their company. Jan & Bill have been members for many years. I'll let you know how many in the near future. They both have put a lot of themselves into this club. Glad to see you both looking so well. Our past President, Tara Bartol showed up for some food and presents. She got a salt lamp! Nice gift! It's always good to see her smiling face. Our 'ask the experts'; Tom and Kay Benham came for food & fun. Well, I can keep going with the list, but do we really have that much time to read it all. Be sure to come to the next one so you won't have to read about it. The gift exchanges were a lot of fun. Some neat stuff given out this year. Hope to see you next year!

Okay, moving forward. Back in November, I realized our club will be turning 50 in 2011. That's along time. This club has had its ups and downs like most clubs have. We have survived! So in the new year, I would like to reflect back. I am hoping to get enough history on prominent past members to honor them thru-out the year. With each newsletter, I am hoping to be able to mention past members and remember their deeds. I know that we have newsletters that date way back, but I don't know

how far. I know we had Charter members. but don't know who they were. If you can help with this, please contact me. Without these past members, where would our club be now? I think they should be remembered on this anniversary. But not just past members, present members that have put themselves out for the benefit of our club will be honored too. Also, sometime during the year, I would like to have an event to commemorate our 50th. This is something that will take some thought and alot of help. I would like this event to be a public one. So if you have any ideas and would like to get involved, please let me know. Who knows, maybe the President in 25 - 50 years from now will honor you. A legacy for the grandkids.

I am hoping to continue the mineral of the month articles now that we have our newsletter going again. Some months I may not be able to post it, but will when I can.. If anyone would like write an article, please feel free to send it to Gordon Oakley so he can post it.

I haven't had the chance to thank Gordon publicly for his efforts in getting our website and newsletter going again. Our newsletter is our backbone. We have all felt it when we lost our editor and the newsletter stopped. So thank you Gordon for picking it up and getting it out. Anyone who would like to get involved with the newsletter, I am sure Gordon would appreciate any help you can offer. He has his hands full with being secretary and webmaster too.

At our October meeting, there was a young man who volunteered to set up a face book for our club. We haven't heard back from you. If you are still interested, please contact myself or Gordon. If we don't hear back from you, then we will need someone to set up a face book and be in charge of handling advertising of our upcoming shows and events on it.

That's all for now. Hope to see everyone in the near future.

Have a Happy New Year!

Sincerely,

Michele Bogle

President - CFMGS

In place of the 'Mineral of the Month' article, I would like to post the

educational information packet I put together to hand out to teachers at the Central Fla. Fair a couple of years ago. For those of you who don't know this, the fair has a fieldtrip day. Hundreds of elementary school kids come by our booth. We usually give them a mineral specimen. Which that year were small keokuk geode halves. These geodes range in size and can be really beautiful. Hopefully this information will encourage you to place some in your collection.

Enjoy,

Michele Bogle

KEOKUK GEODES

Keokuk, Iowa

and Tri - state are



Keokuk, Iowa is known as "the geode capital of the world" for very good reason. A virtually countless number of geodes has been collected from the Keokuk area over especially the last 150 years. There are no less than 300 outcrops of the 'Warsaw Formation' that the geodes are found in within a 100 mile radius of the city. The main exposures are found in streambeds that are tributaries of the Mississippi

River. (Sinotte, 1969; Hess et al. 1998). The two predominant types of rock in the Lower Warsaw Formation are argillaceous dolomite and dolomitic mudstone. The geodes found loose in creek beds originated in the Lower Warsaw Formation, but over time weathered out of the rock and fell into the creek, with many being transported downstream away from their source. In some locations where the Lower Warsaw Formation is right along the creek bank or even in the creek itself, it is advantageous to collect geodes right after a heavy rain that may cause a rise in both the creek level and the water current as fresh geodes may be loosened or dislodged from their host rock due to the faster-moving water (for your safety, wait until the water goes back down, however!).

Many contain multi minerals inside. Most common is Quartz and/or Calcite. Smokey Quartz is common. Also may contain Pyrite, Marcasite, Sphalerite, Ferroan Dolomite (light tan to brown coloring). Blue Barite is common as a secondary mineral, which is usually tabular. The white clay in some is Kaolinite.

The smooth bubbly mineral in some geodes is Chalcedony (pronounced: cal sid knee).

Quartz- Lines almost all geodes. Clear, smoky, sea-green, iron-stained (orange), and pink or cherry tinted geodes are found (see photos below). Clear and iron-stained geodes are the

most commonly seen type of quartz geode. To date, research findings have not confirmed the presence of "citrine" geodes in the Keokuk, Iowa area. All such samples have been identified as iron-stained geodes. Many iron-stained Keokuk geodes can be cleaned with any iron-removing product or various acids. In the samples where the orange/yellow coloring does not clean out, it was found that the samples had successive layers of quartz on top of existing iron-stained quartz, but due to the transparency of the quartz crystals, the orange color still showed through. Many geode samples have also been identified with "rings" of pyrite in the geode rind, indicating successive growth stages of quartz, then pyrite, then quartz again, etc.

Calcite-



Probably one of the prettiest minerals and comes in the most varied crystal structures found in Keokuk geodes. It comes in white, colorless, pink, black, brown, and yellow colors. Many forms of calcite exist, such as the basic rhombohedron, scalenohedron, barrel (prismatic), tabular, and many other more scientifically oriented terms

with modifications to the primary crystal type and also varying forms of twinning at some sites. Several different stages of crystallization may occur in the same geode making for beautiful specimens. The brown coloring in the Calcite is different from the brown coloring in the Dolomite as it is more 'gemmy' in the Calcite.

. Pyrite-



Pyrite is found as black, golden, or reddish crystals in geodes. They are found as being primarily cubic in nature and little more than specks in appearance, but also capillary crystals to 3" occur at some sites, and octahedral crystals occur in addition to modifications of these basic crystal types. Some geodes contain so many pyrite crystals it appears the geode is lined with pyrite versus quartz or calcite. Pyrite is also frequently found as clusters of crystals scattered about in the lower Warsaw Formation and as a coating or crystal cluster on top of geodes. Excellent clusters and

lines of pyrite several inches long were frequently found in the "old mine" at Sheffler's and also at the Canton, Missouri roadcut, but they also exist at many other locations as well.

Marcasite- This is an interesting mineral commonly mistaken to be pyrite, but there is a difference collectors! Marcasite comes in one form, the capillary crystal. The difference between the pyrite and marcasite is marcasite has protrusions from the main crystal, referred to as resembling a TV antennae (Hess et al. 1998) and also appear as sword-shaped crystals but with very small or no protrusions (different crystal structure). Magnification is not always necessary but recommended to discern between marcasite and pyrite.

Gypsum ("Selenite") - Gypsum is a lesser found mineral than the ones listed above, but the "old mine" at Sheffler's was probably one of the best sites for finding this mineral especially in the very top layer of geodes in the mine (brown skins) and also in the far west end of the pit but it is also found at scattered exposures along the Fox River in Clark County, Missouri and was occasionally found in the US 61 Canton, MO roadcut in quartz and brown calcite geodes in addition to widely scattered locations throughout the Keokuk area. These crystals are clear, rod-like crystals up to 2" in length. The difference between gypsum and aragonite

(discussed next) is gypsum has a beveled or almost frayed edge at the termination, versus the aragonite which ends at a point. Barite crystals may also resemble gypsum, but have a different termination than gypsum. See Sinotte (1969) for good pictures of the difference in terminations among gypsum, aragonite, and barite.

Aragonite- Aragonite is not found on a widespread basis in Keokuk geodes, but presently is locally abundant at specific sites. It is a clear, rod-like crystal that resembles gypsum ("selenite"), but ends at a point at the top. Usually associated with ferroan dolomite but not always, and in our experience, makes up a sizeable percentage of the interior mineralization in terms of coverage vs. just a cluster or a few single crystals as in gypsum. Aragonite, in our experience, forms its best and heaviest clusters of aragonite in more poorly formed geodes or geodes with a weaker, thinner skin.

Barite-



Barite comes in blue and yellow crystal colors, and are mostly tabular in nature, with some groupings of tabular crystals forming rosettes of barite are also common. Most barite crystals are an inch or less across an edge, but some exceptionally large and well-formed crystals (for Keokuk geodes) up to and over 2 inches have been found recently. Usually, but not always, the larger crystals are yellowish in color, with the smaller crystals being a white or blue (caused presumably by kaolinite that stunted the growth of the crystal - Sinotte (1969)). Some crystals are nearly white due to extreme ingestion of kaolinite.

Sphalerite- Found in geodes as black crystals up to 4 inches across in some geodes, but are typically found as massive crystals, especially in mudders (concretions) or flattened geodes. Sphalerite is quite common in geodes from specific sites in the Keokuk area, especially those locations where the upper sub-unit of the lower section of the Warsaw Formation is observed and especially certain locations where higher zinc contents are present in the overlying bedrock (Sinotte, 1969). Exceptional sphalerites up to 2 inches have been found recently at a location in Hancock County, Illinois where the cavity was of sufficient size that the sphalerite did not overwhelm the cavity.

Kaolinite- Kaolinite is always found with sphalerite to some degree, but

does occur by itself in many geodes. It is a white, powdery mineral, associated with calcite crystals also. Some geodes contain calcites that have ingested kaolinite or are pseudomorphs of kaolinite after calcite. These were quite common at the "old mine" on Sheffler's property in the northern section of the mine, and are found at scattered locations in the Keokuk area, especially in Clark County, Missouri and in the Nauvoo and Hamilton, Illinois area. Kaolinite has been observed to be a "key player" in the formation/alteration of several other minerals in Keokuk geodes, notably changing crystal habits/colors in calcite, altering the color of sphalerite and ferroan dolomite, and minimizing growth and changing the color of barite.

Pyrolusite- This is found under the microscope in crystalline form, but also as very iridescent rods at Sheffler's Mine (unconfirmed and questionable). It also makes some chalcedony geodes jet black in color (decomposition - Sinotte 1969). Research of pyrolusite in Keokuk geodes is ongoing due to the lack of quality and also many questionable samples containing this mineral. It may or may not be more frequent in occurrence than currently given credit for.

Goethite- This is a very unique mineral forming 1/2" maximum rods in quartz lined geodes, jet black in nature. Also found as orange stains in geodes, especially at locations where goethite occurs (decomposition

- Sinotte 1969). Goethite is not widespread in the Keokuk area, and is known at only a handful of sites, but is quite common at the sites that it does occur.

Hematite- Hematite is the product that causes pink to cherry tinted quartz geodes (see above in quartz section), but also found as red or brownish granular substances as well as small, blood colored crystals in geodes. A very common mineral presently at select locations in the Keokuk area.

Smithsonite- Smithsonite is found as crystals on sphalerite or an odd color on sphalerite faces due to weathering. The crystals or weathering product are usually a brown, tan, or peach color. Well-developed smithsonite crystals were found at the Highway 61 roadcut near Canton, Missouri on sphalerite crystals but it is also found at nearly all other locations where sphalerites are encountered.

Dolomite/Ferroan Dolomite- Very interesting saddle shaped crystals in white, brown, orange, pink, yellow, and black crystals occur. Ankerite has not been positively identified in Keokuk geodes (Sinotte 1969) despite previous/recent published works due to the lack of enough iron in the dolomite (even in very dark dolomite crystals). Research continues on the possibility of ankerite in some Keokuk geode samples.

Chalcopyrite- This mineral is found as very small or microscopic crystals in golden form. It has been found at many locations in Hancock County, Illinois, especially in the Warsaw and Nauvoo area, and at a few locations

in Clark County, Missouri. Frequently malachite is found in association with the chalcopyrite as a weathering product and the presence of malachite (greenish crystals or coatings) is a dead giveaway that the iron mineral in the geode is chalcopyrite. Weathered pyrite and marcasite do not produce malachite as a weathering product. Crystals are rather small, so identification is best seen under at least 10x magnification.

Jarosite- Actually reported by Sinotte (1969) to be a very common mineral in geodes found as microscopic crystals, but mostly found as a granular powder or stains appearing yellow in especially chalcedony geodes. Due to the lack of larger crystals visible to the naked eye, jarosite is not well-known but again is likely much more frequent than currently given credit for.

Malachite- Malachite is found as green crystals in geodes that contain quartz and/or brown calcite linings (weathering product), and as crystals/coatings on chalcopyrite crystals.

Stilpnosiderite- This "mineral" has been reported to be responsible for producing the peacock iridescent hues in brown calcite lined geodes. Some question has been raised recently, however, if stilpnosiderite is actually possible or responsible for the iridescent hues in Keokuk geodes or if just plain iron in/on the calcite is responsible. Further research is required and ongoing.

***Credits for this page are extended to Dr. David Hess, Professor Emeritus at Western Illinois University, Dennis

Haas, Steve Sinotte (1969), Mark Sherwood, and others who have contributed to the recent research on Keokuk geodes and who have helped in the crystallography of the Keokuk geode minerals listed on this page.

Info was taken from 'The geode gallery' website. Also, this is where I purchased the small geode halves given to the kids at the fair. They were super nice little geodes. The teachers loved them as much as the kids did. Be sure to visit their site and checkout their geodes.

www.geodegallery.com

We hope everyone had a Merry Christmas and a Happy New Year.

Please send in or bring your membership renewal as soon as possible.

Gordon Oakley
Secretary, Editor, Webmaster