

Summit Gem April 2019

Website: SummitLapidaryClub.com

Summit Lapidary Club, 244 Chestnut Blvd., Cuyahoga Falls, Ohio 44221

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Board Members: Pres. – Becky Kosco, V-President – Julie Fultz

Treasurer – Nancy J. Halloran, Secretary – Laura McElroy,

Trustees – Tom McLaughlin, David Rich, Bob Spore

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Mission Statement

To afford the opportunity to share interest in lapidary knowledge and working techniques



**Monthly Meeting: Tuesday, April 2nd
at 7pm
At the Quirk Center
1201 Grant Street Cuyahoga Falls**



Program: No program detail listed at time of publication
Hosts: Mark and Kristin Morrow and Barbara Kemper

Dues: Joining fee \$25 then \$48 per year

President's Message – by Becky Kosco

“Don't be a hard Rock when you are really a Gem” – Lauryn Hill

According to the calendar Spring is here. But Winter has not gone gracefully, fighting with snow and biting winds. This has been a difficult Winter for many of our members – either themselves or immediate family members. It seems the majority are in recovery – that we are grateful for.

We had our New Members Dinner in March where we welcomed 14 new members and the return of Helen and Bob Franks. Our love of rocks is contagious! Thanks to Dave Macseoinin for taking the lead. It was a fun night. I love seeing our club grow and grow.

The Gemboree is the end of the Month! There is much excitement to continue to draw large crowds to every show. Be sure to grab some flyers and hand them out to everyone you see. Sign up for your time slots – it's easier for Guy to know what coverage he has. The Gemboree is what keeps our club financially viable. Do your part!

Our show is popular with attendees and vendors – it is well run and our repeat success is because of everyone's hard work. As I mentioned earlier several of our members are not able to provide the same service as usual. We all need to watch for what needs covered and fill in where need be. I want to thank everyone in advance for all you do.

Keep 'rockin! - Becky

Summit Lapidary Club, March 5, 2019 General Meeting – Respectfully Submitted by Laurie McElroy, SLC Secretary

Becky Kosco, presided.

Thank you to Laurie McElroy, Lisa Troxel, & Sue Shoffner for hosting when there was no one signed up for today. Please volunteer to host a meeting. Everyone brings eats, & the host just needs to bring supplies & arrive early to make coffee, & pack up after the meeting.

Visitors, David Macseoinin: Bob Tucker & Michael Colton are both new members today. Joe (today's speaker) & Gail Martino & Mike Kosco.

Treasurer, Nancy Halloran: Dues are due. Bob Spore has volunteered to help as Membership Chair for now.

Sunshine, Mari Takai-Manley: Cathy Lee had a more extensive surgery than was planned a week ago. She is walking, but they are trying to regulate her digestion. John Tryon had a stroke & is in rehab at Edwin Shaw. Pat Powers is seeing some positive results from her treatments. JoAnn Harrison slipped on the ice & is recovering at home with fractured ribs.

Classes, Dave Macseoinin: 3/9 Advanced Polymer Clay with Mari Takai-Manley, 3/16 Beginner Polymer Clay: Calla Lily with Mari. 3/19 Wire Wrap Hot Air Balloon has been cancelled. On-going Torch Time the 3rd weekend of the month, but 3/17 is cancelled for St. Patrick's Day.

Gemboree, Guy Kotch: Vendors are covered. Tomorrow starts advertising. Flint needed to tumble for the Fall show, please. Sign-up sheets are out, and Rob Rothschild has his laptop here tonight to sign up online. The sign-up link was in an email & on Facebook. Mari Takai-Manley is in charge of display cases & needs two more filled, plus a waiting list.

Gemboree, Evelyn Tryon: Next Tuesday 3/12 workshop for mini gem trees for the Children's Table. Also, April 9. Flyers are available tonight to take with you & distribute, please.

GeoJr., Rob Rothschild: This Sunday is our next meeting. Need parents, GeoJr., & members to work the Children's Table at Gemboree. Last Gemboree gave us our largest group of new GeoJrs. yet.

Machine Maintenance, (David Moore): Guy fixed the trim saw. Another slab saw is down. It went down kicking & screaming, but Guy Kotch & Mark Cunningham kept cool, handled it, and notified David Moore.

Metaphysical Show, Mark Cunningham: This is a new event being planned. July 13 at Quirk. Monday, March 11 at 6:30 will be a meeting at the club for all interested.

New Members Dinner, Dave Macseoinin: Wednesday 3/27 at 7pm. Invitations are being sent to new members, & several members are being invited to speak. If you are a new member & want to make sure you're included, talk to Dave Macseoinin. If you are not invited don't show up.

Old & New Business:

By-laws change to add a Membership Chair as an Executive Board position was read.

A new projector for speakers to be able to use at our meetings has been purchased by SLC and AMS together for both clubs use.

The key box has a new combination lock box on it. Becky Kosco, Guy Kotch, Dave Macseoinin, & Julie Fultz have the combination.

GIA program: Richard Lee announced that the GIA meeting to be held at our club house has been changed to the Sheraton. Speaker is "Sherrie's Gemscapes", and our members are still invited to attend at half price, \$25 for lunch & program. He will let us know the date. Need to call ahead to reserve.

Paleo Joe as speaker? Organizing a joint AMS/SLC/GeoJrs. program. \$350 fee to split between AMS & SLC.

Big Dig June 1 at Flint Ridge.

Joe Martino is the speaker for tonight on how he uses rocks & gemstones in his mixed media paintings.

Motion to adjourn by Nancy Halloran, Guy Kotch 2nd. Passed.

Class and Events for April – More details posted with the sign-up sheets at the Clubhouse

April 2 nd	Tuesday – SLC Membership Meeting
April 9 th	Tuesday – Mini Gem Trees at 6:30pm – come one come all!!
April 13 th	Saturday – Polymer Clay, advanced 9am-noon with Mari
April 14 th	Sunday Geo Jrs
April 20 th	Saturday – Bag Rocks for Gem Mine 830-9am
April 20 th & 21 st	Saturday & Sunday – Torch Time beginning at Noon
April 26	Friday – Gemboree Set-Up
April 27 & 28 th	Saturday & Sunday – Gemboree Event & Tear Down
April 30 th	Tuesday – SLC Board Meeting

Gemboree Report – by Guy Kotch

Moving along, the April Gemboree Show (27th and 28th) is getting closer! Set-up will be on Friday the 26th. For those of you who do not know, we do have the sign-up sheets online now! They can be found at the following link, <https://www.signupgenius.com/go/70a0c4ca9af2ca6f94-gemboree1>. There are still openings for you.

SLC By- Law Change Notice

Article VI – Officers

Section 3 – Duties of the Officers

E – The president will appoint one of the trustees as an assistant to the treasurer

Shall be changed to:

E – Membership Chair – A board member position responsible for maintaining applications for membership , waivers and dues paid, and a list of membership. This chair will also work with the Gemboree Chair to maintain a list of members in good standing.

Geodes 2: Geodes in Sedimentary Rocks - by Bob Carnein, Lake George Gem & Mineral Club

From: *LGGMS Newsletter*, 4/2010 (2nd Place – AFMS Original Adult Articles Advanced)

In the March newsletter, we looked at geodes that occur in igneous rocks. This month, we will think about sedimentary geodes and the minerals that have been described in geodes of both types. As is usual with most scientific topics, explaining the origin of geodes isn't simple. But don't despair; bear with me while we explore some geology and a little bit of chemistry.

Although geodes are found in sedimentary rocks of various ages and types, by far the largest U.S. deposits occur in carbonate rocks (dolostone and limestone) of Mississippian age (about 350 million years). These are found in a broad band extending from eastern Iowa into adjacent Illinois and Missouri, and in similar-age rocks in Indiana, Kentucky, and Tennessee. There are even some occurrences in Georgia and Alabama.

The Mississippian geodes are concentrated in layers of the Warsaw Formation and other carbonate rocks of the same age. It and the Ramp Creek Fm. of south-central Indiana include geode-rich zones that have supplied literally millions of geodes to collectors. In some places, creek beds are clogged with "geodes", most of which are actually solid quartz nodules. Local residents sometimes even use them to construct walls and houses.

Good exposures of the Warsaw beds near Keokuk, Iowa, result in some collectors using the common name *Keokuk geodes*, or simply *Keokuks*. Quartz is the most abundant mineral, and the geodes range from an inch or so to nearly three feet across. Their shapes vary from nearly spherical to irregular or flattened in the plane of layering in the enclosing carbonate rocks. Some resemble a head of cauliflower.

Commonly, rock layers immediately above the geode zone contain abundant fossils and fossil fragments, suggesting

those rocks formed in an environment of shallow, turbulent, clear sea water with plenty of oxygen and nutrients. Fossils include mollusks (clams, snails, and cephalopods), echinoderms (sea urchins, crinoids, and blastoids), brachiopods, horn corals, and sponges. Most of these animals "filter" food particles suspended in the water. However, the geodes themselves typically occur in layers of finer grained dolostone with relatively few fossils. These rocks probably formed in somewhat deeper, quiet water lacking abundant oxygen.

Even today, controversy surrounds hypotheses on the origin of the Mississippian geodes of the Midwest. I will summarize two hypotheses, but you need to realize that we have here a textbook case of multiple working hypotheses—a fundamental principle underlying most geological research. The idea is that several researchers come up with competing

explanations for how a given feature (in this case geodes) forms. These researchers then "battle it out" in peer-reviewed publications and by presenting their results at meetings. Eventually, a consensus develops among researchers, and one or two hypotheses win approval. In the case of the origin of sedimentary geodes, the two "theories" summarized below may both be correct.



Outline of the Illinois basin, a major **Midwestern** sedimentary depression. aapg.org

Theory 1. The first theory suggests that geodes form by replacement of anhydrite (CaSO_4 , calcium sulfate) nodules by silica. It is well summarized in Barwood and Shaffer (see references below). Imagine a Mississippian shoreline area in what is now the Midwest (and extending along the margin of the Illinois basin 350 million years ago). The climate is hot and dry, similar to that in parts of the Persian Gulf today. Near the shore, wave action keeps the water stirred up and provides abundant oxygen. Marine invertebrate animals (most of which depend on suspended food particles for sustenance) thrive in this environment. Intense evaporation raises the salt content of the water, and brines form. (A brine is a solution that is saltier than "normal" sea water.)

In shoal (shallow) areas, waves break up shelly material, forming a coarse shell hash. The brines work their way downward through this coarse carbonate sediment and outward toward the center of the basin. As these oxygen-rich brines work their way out into the deeper, oxygen-starved water of the Illinois basin, they lose oxygen and encounter finer carbonate sediments deposited in deeper water. Here, a crucial chemical change occurs. The limestones, which are made of the mineral calcite [CaCO_3], are converted to dolostone, which is made of the mineral dolomite [$\text{CaMg}(\text{CO}_3)_2$]. Magnesium ions in the brines substitute for half of the calcium in the limestone. This process releases calcium ions into the brines, and this "extra" calcium causes the precipitation of anhydrite [CaSO_4] as nodules on the sea floor.

As this process proceeds, the lack of oxygen, combined with other features of the chemical environment, causes some of the anhydrite around the outsides of the nodules to break down. This does two things: it makes sulfur available to form sulfide minerals such as pyrite; and it raises the pH of the water (makes the water less acidic). Silica in sponge spicules, volcanic ash, or other sources is more soluble in water of higher pH, so, as the pH rises, silica dissolves into the water and becomes available to replace anhydrite and limestone. Deposition of silica on and in the rinds of anhydrite nodules forms a gelatinous layer that is the beginning of geode formation (it becomes the chalcedony layer that forms the outer shell of most Mississippian geodes). Over time, water seeping through the silica gel dissolves out the remaining anhydrite in the core of the nodule, at the same time depositing additional silica (forming a layer of coarser quartz crystals) and other geode minerals (including pyrite and other sulfides). Voila! You end up with a layer of fine grained dolostone peppered with geodes. In deeper water, the fine grained carbonate rocks are partly replaced by chert, and in shallower water, the carbonate rocks are coarse grained and contain little silica. As the environment shifts, geode and chert formation will shift too. As a result, the distribution of geodes is patchy, rather than continuous.

Theory 2. Some geodes are thought to be "geodized" fossils or "exploded" fossils. One hypothesis (see Smith, 2007) suggests that, instead of anhydrite nucleating to form a nodule (as above), it nucleates in a cavity inside of a dead invertebrate. This may occur because the decay of organic material uses up oxygen, producing local conditions like those described above. Quiet water is probably required for this to work. As the anhydrite grows, the host fossil "explodes", in some cases fragmenting to the point where it's barely recognizable. The anhydrite may even extrude through the side of

the fossil. Then, silicification takes over, converting the anhydrite-filled fossil into a geode (again, as above). All gradations, from easily recognizable silicified fossils to badly distorted examples, are known from rocks in Indiana (Beanblossom Cr., Brown Co.), Iowa (near Keokuk), Kentucky (near Louisville), Illinois (near Hamilton), Ohio (near Hillsboro), and Tennessee (near Nashville).

In a slightly different category, I would be remiss not to mention the "geodized fossils" from near Tampa and Fort Drum, FL. Near Tampa, Miocene colonial corals have been replaced by chalcedony, forming the beautiful "agatized" geodes commonly seen at mineral shows. At Rucks Pit, near Fort Drum, clams of the genus *Mercenaria* and other fossils are filled with gold-colored calcite crystals that are very fluorescent. Finally, clams and other fossils of the Crimean peninsula are famous for rare fillings of anapaite, barite, rhodochrosite, and vivianite.

At the end of this paper, I have listed some references that you can consult to read more about these hypotheses, plus several more. Some are readily available and non- technical; others are relatively advanced.

Minerals of Geodes. If you are a mineral collector, you might be interested to know what minerals, besides quartz and chalcedony, are reported to have been found in geodes. In the list below, I haven't tried to separate the minerals of igneous geodes from those of sedimentary examples. Having originally thought that 20 or 25 minerals might be found, I was surprised at the number. Some of the examples are definitely identified, while others are reported but not confirmed. Here's the (by no means complete) list:

Anapaite	gypsum	rancieite
Ankerite	hematite	retgersite
Apatite	hollandite	rhodochrosite
Aragonite	honessite	romanechite
Aurichalcite	jamborite	rutile
Barite	jarosite	siderite
Beidellite	kaolinite	smithsonite
Bimessite	magnetite	smythite
Calcite	manganite	sphalerite
Celestine	marcasite	sulfur
Chalcedony	millerite	szomolnokite
Chalcopyrite	mordenite	tenorite
Copiapite	nontronite	todorokite
Cryptomelane	pyrite	violarite-polydymite
Dolomite	pyrolusite	vivianite
Fluorite	pyrrhotite	wurtzite
Galena	quartz	zaratite
Goethite	ramsdellite	

In addition, gas, mercury, opal, and water have been reported.

References and Additional Reading:

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Sunshine News – by Mari Takai-Manley

- John Tryon has finished his first round of physical therapies. We heard that he has done very well with this round. He will be home for a short while and start another round at a different place near home. We send him well-wishing prayers to his way.
- John' wife, Evelyn continues her series of pain managements. She is very strong and determined. We wish her well and success with her program.
- Pat Powers has completed her treatment with chemo and is waiting to see her doctor to examine the result. We naturally hope for the best for her. We send our prayers to her way.
- Cathy Lee is back home and continues her healing. She needs to go back for another surgery later, but her attitude is good and strong. We wish her speedy recovery.

Just a Quick Note ... – by Pat Powers

- Big Dig! A Dig is sponsored by the Club and scheduled for June 1st. For every member in good standing the club will pay your admission to Flint Ridge (7.50) and will also pay for your 1st 20 pounds of flint. You will need to bring work gloves, eye protection, rock hammer and whatever you need for collecting flint. We have a pot luck lunch so bring something to share. More information to follow.
- Summer Picnic! Though we don't have General Meetings in July and August our club has a Summer Picnic. We provide Burgers and Dogs and ask that you bring something to share. The date will be Saturday July 20th at Galt Park in Cuyahoga Falls from Noon -5pm. You may want a lawn chair to sit outside and enjoy the beautiful park like setting.
- Becky states, - If you attended the March meeting you enjoyed a presentation by my friend Joe Martino using rocks in his mixed media paintings. Mari was so excited by the topic she brought in a bag of slabs for Joe to use. He was pleased she was so inspired and grateful for the slabs. He gifted Mari with a book about a workshop he took place in – a couple chapters explain his techniques. I can't wait to see her paintings.
- New polishing tools - Thanks to Guy Kotch we now have new Wheel Wetters for the grinding and polishing wheels downstairs. We also have a new Dop Pot. Between the new grinding wheels and these additions, we are in good shape for cabbing. Thanks Guy!

Nothing more to add see you next month!