Wayne County Gem and Mineral Club News

March, 2019

Always Looking for Places to Dig!

Kaleidoscope Stone (see page 4)
Photo by R. Webster

http://www.wcgmc.org

FACEBOOK link

Workshop fun in February (see page 5)

March Meeting

Friday March 8th, 7:00 PM

Park Presbyterian Church, Maple Court, Newark, NY

Program: SAND COLLECTING

By Jim Rienhardt

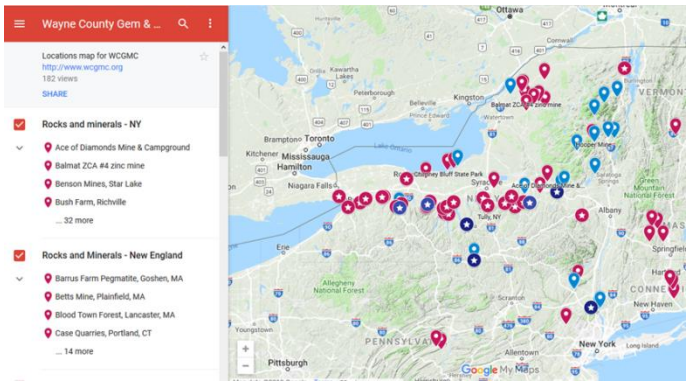
Rocks and shells on the Earth's surface weather and erode, often transitioning into sand. Where these little grains gather, people are there to scoop them up for study or for pleasure. Sand grains reveal geological stories if you know what clues to look for. Jim Rienhardt will bring some samples of his sand collection to the meeting and describe their diverse origins, textures and compositions. You may recall Jim's article about his somewhat unique collecting interest in the November 2019 newsletter.

If you have collected sand anywhere, consider bringing your samples to the meeting.

Upcoming WCGMC Workshops
March 16th and April 20th

When: 10:00 AM til mid-afternoon
Where: The Weiler's Barn /Club Workshop
6676 E. Port Bay Rd, Wolcott, NY
Rules: Bring your own rocks.
Training on equipment is available.
Eye protection is required.
$5/adult to offset maintenance costs.

Online Map of WCGMC Collecting Sites



At the March meeting the club will be introducing a members-only tool, an online site which deploys Google Maps to show locations and collecting information for all sites the club has visited in past years. Mineral and fossil sites are included from all over the eastern US and Ontario.

For those who pre-ordered the new club T-shirt, you will be able to pay for them and pick them up at the March meeting also. Bring cash or check.

An Inconvenient Truth:
It is winter in western New York

Should weather decide to interfere with club activities in the coming months, an e-mail note will be distributed and we will post to Facebook and our webpage. You can also contact Linda Schmidtgall, Fred Haynes or Bill Lesniak for the latest update. Their contact information is on page 8.

President's Message

Linda Schmidtgall

Wow, our winter auction keeps getting bigger and better each year. Much of that is due to the many members who come and share in the fun (and the bidding). We hope everyone went home happy with their new possessions. The club raised over $1400 that will be used for as many as seven new display cases. Glenn has acquired all the wood, glass, and lighting and is busy building them. You will see them at GemFest in June, maybe even use one to display your collection?

But nearer term, perhaps you picked up something at the auction that needs grinding and polishing? The club's equipment gets a lot of action each month and I thought I'd pass along a few pointers on using that equipment. Few of us are experts (most notably me), but with experience comes learning.

The first attribute you must have while polishing stones on any of the club's machines is a healthy dose of patience. Incomplete grinding with the coarser wheels will not allow a final polish to be obtained. Put another way, you cannot remove scratches with the polishing grits on the right side of the machines.

Bill Chapman works with the coarsest of 6 wheels on the newer of WCGMC's two six-wheel machines. The Cab King has 280, 600, and 1200 grit wheels on the left and polishing wheels on the right of 3,000, 6,000, and 12,000 grit. The wheels are 8" in diameter and the pads are 2" across.

Our older Diamond Pacific Machine has 6" diameter wheels and 1.5" wide wheels. From left to right they are 80, 220, 280, 600, 1200 and 3000 grit. With this machine you must not allow the water to get too dirty as it is re-circulated. Work the left side wheels first checking as you go along, but after the 3rd wheel THOROUGHLY clean and DRY the stone. You should only see a haze, but no scratches. If a scratch is visible on the dry surface, you need to remain on the left side wheels and work out the scratch before moving to a finer grit.

Work your piece in progression, and for courtesy, it is requested that you finish each piece before moving to another. Then if no one is waiting to use the machine, go back and start another piece. You want to keep the piece moving in a spinning matter using the full wheel, not just the center of the wheel. This is best for your piece and it will prolong the life of the wheel. Wheels can cost more than $100 to replace. Keep an even pressure without excess pressure. Pushing too hard can create scratches.

You must also pay attention to what the grit is on each wheel. This is particularly true if you switch machines as the grit sizes on the machines are noticeably different. Go up one grit size at a time, without skipping any. Always clean your stone AND the next wheel with water before advancing.

For the initial shaping of a stone or for rounding corners prior to sphere making, you may wish to start on this big older machine with 50 and 80 grit. It is a lot faster.

Just remember, your patience moving across the machines and your care to keep the wheels clean as you go will be rewarded in your final product.

See you at the next workshop.

Your President, Linda

The Calcite and Aragonite Sea Cycle

calcite

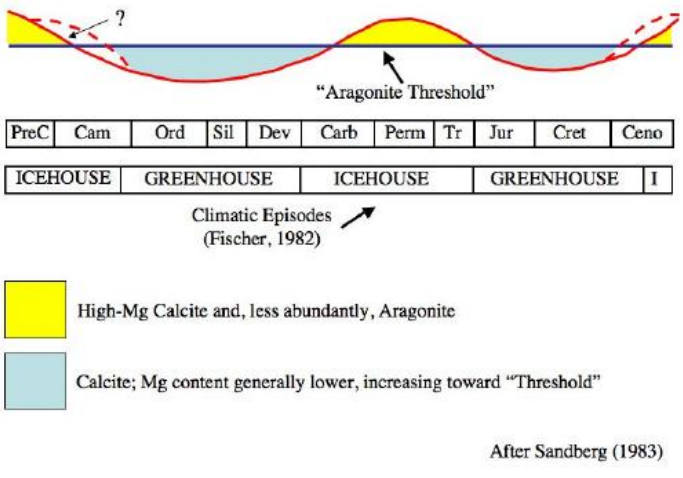
By Dan Krisher

aragonite

This article was first published in November, 2018, Rochester Academy of Sciences Bulletin, v. 72, #9.

The chemistry of earth's oceans has varied throughout geological time and these changes have had a profound effect on the development of the ocean's ecosystems. Perhaps the most significant aspect of changing ocean chemistry has been the quantity of low magnesium calcite and aragonite/ high magnesium calcite dissolved in the ocean water. Calcite and aragonite are termed polymorphs. They have the same chemical composition, $CaCO_3$, but calcite exhibits a trigonal crystal structure whereas aragonite has an orthorhombic structure.

The difference in crystal structure has a significant effect on the stability of the two polymorphs, with calcite being substantially more stable than aragonite. The ratio of these polymorphs has been cyclical throughout earth's history and this cyclicity has given rise to the concept of calcite and aragonite seas as shown by the chart below. A calcite sea has a large portion of its $CaCO_3$ in the form of low magnesium calcite with lesser amounts in the form of aragonite/high magnesium calcite. In an aragonite sea this ratio is reversed with aragonite/ high magnesium $CaCO_3$ becoming more important.



A primary driver of the cycle appears to be the rate of seafloor spreading. An active phase of seafloor spreading increases the amount of basalt being created at the mid-ocean ridge spreading centers. The minerals in the basalt react with the magnesium dissolved in the seawater and pull it out of circulation thereby driving ocean chemistry into a calcite sea phase. A slowdown of seafloor spreading allows increased amounts of magnesium to remain dissolved in the ocean water thereby pushing ocean chemistry into an aragonite sea. Increased seafloor spreading and the attendant increase in volcanism also increase the amount of CO_2 in the atmosphere and dissolved in the oceans. The increased CO_2 increases the acidity of the ocean and also favors the formation of a calcite sea. As can be seen from the chart to the left, the increased CO_2 also results in a greenhouse (warmer) phase for the earth's climate in correlation with the calcite sea.

Biomineralizing organisms in the oceans are significantly affected by the calcite – aragonite ocean chemistry cycle. The creation of a hard shell or skeleton is energetically expensive and organisms which secrete skeletons or shells chemically similar to the prevailing ocean chemistry are always favored. Brachiopods, rugose corals and tabulate corals produce shells and skeletons of calcite and are naturally favored in a calcite sea. Mollusca such as clams (bivalves) and snails (gastropods) and scleractinian corals produce aragonite shells and skeletons and are favored in aragonite seas. This does not mean aragonitic organisms cannot occur in a calcite sea, only that it is energetically more expensive for them to create their shells or skeletons leaving them at somewhat of a physiological disadvantage.

Now let's go full cycle and bring this back to our passion for collecting well-preserved fossils. Did you ever wonder why it is often easier to collect brachiopods and corals than perhaps gastropods or bivalves? Well, the fossil preservation record itself is impacted by the calcite-aragonite sea cycle. Calcite fossils are inherently more stable in a calcite sea and more likely to be preserved with the same being true for aragonite fossils in an aragonite sea. This effect can be observed when collecting Middle Devonian fossils in New York. The Devonian was a time of calcite seas and the calcite brachiopods and corals are typically well-preserved while the less stable aragonitic bivalves are often just molds or impressions with little or no original shell material.

References:

Sandberg, P.A., 1983, An oscillating trend in Phanerozoic nonskeletal carbonate mineralogy, Nature, 305, 19-22.

Kaleidoscope Jasper, or is it ?

by Fred Haynes

Rob Webster arrived at the February workshop with 11 pounds of colorful rock he had recently acquired and slabbed. He had purchased it online, where it had been identified as "kaleidoscope jasper" (or agate) from Utah. It did not, however, appear to be jasper and Rob said it had cut really easily. So, I took a picture and went home to investigate.

Unpolished slabs of Rob's mystery rock at the February workshop. Field of view about 8 inches across

It did not take me long to find this on the internet, a short note dated February, 2018 within a forum thread on the rocktumblinghobby.com webpage.

> *"There are two different materials being marketed under the kaleidoscope moniker, one from Oregon, a predominately red and orange jasper, and one from Utah, which is not agate at all, but a mix of fluorite in shades of blue/green/purple. I really feel that the folks selling the Utah stuff as "agate" are really doing disservice to the lapidary community by not being upfront and telling people what it actually is"*

Rob's piece, and now slabs clearly came from the Utah location. My interest was piqued to learn more.

I quickly learned about kaleidoscope jasper from the volcanic flows in central Oregon as several rock club newsletters have run stories in the past decade. The story of its discovery is interesting and is best documented on a Facebook page authored by the man who found the material during the winter of 2007-2008. Dale Rhode and his family went about the process of staking claims and legally "mining" the material over the next several years. Because of the remarkable coloration and the variety of colors/patterns exhibited by the jasper they coined the name "kaleidoscope jasper". As the material was collected they added additional descriptive terms like "tapestry", "owl eye", "picture", "flame", and others. The Austin, TX mineral club published a thorough review on the discovery and the many names in its August 2012 newsletter.

True kaleidoscope jasper from central Oregon
from the Kaleidoscope Jasper Mines FB page

But Rob's piece(s) are not this jasper from Oregon. So I looked further. Unfortunately, I could not find details on the location or type of deposit of the Utah occurrence, but I did find folks discussing it. Those who recognized it to be some sort of hydrothermal vein deposit rather than jasper referred to it as "Kaleidoscope Stone", or simply fluorite with associated copper minerals. It is a very colorful stone dominated by purple fluorite, but with sufficient chrysocolla, malachite and azurite to be attractive both in raw specimens and in polished section.

You can see Rob's cabochon and the piece from which he cut it on page 1. Because the primary mineral is fluorite it polishes easily. The added color from the dispersed copper minerals adds to its desirability as a lapidary stone. Some suggested that it tended to fracture during preparation, but Rob had little trouble with the slabs he has cut and polished.

I guess this is just another example of the vagary of naming conventions used for lapidary material.

References:

Austin Gem and Mineral Society Aug 2012 newsletter
Kaleidoscope Jasper Mines Facebook page
RockTumblingHobby.Com

February 9th was a winter workshop day for WCGMC

Pretty nice, eh?

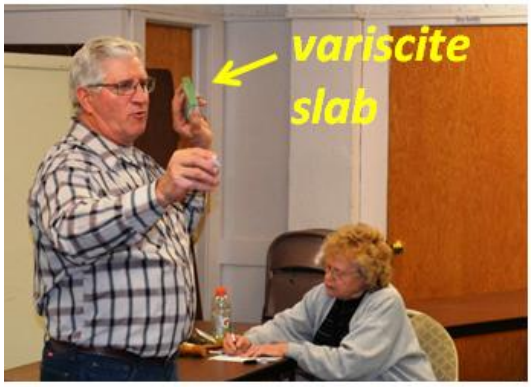
Harlan is polishing his Botswana agates.

Brody was busy just about everywhere in the shop.

WCGMC Winter Auction

The club held its annual winter auction on Friday February 8th. The church meeting room was packed with 48 members and the action was a lot of fun for all, or so we hope. Linda had arranged four styles of auction (plus a kids' table restricted to the 6 youngsters in attendance). Every item was bid on and found a new home. Most of the specimens came from the club collection, but we also thank folks who offered pieces to be auctioned.

The auction raised $1412! This year we are using the money towards materials to build seven new display cases to replace (or augment) the old ones currently in use. Glenn is building them for us (in fact I believe they are virtually completed). They look much sharper than the older ones, they will be much easier to set up and take down, and the lighting will be significantly improved. We'll be seeking folks who wish to use them for display at our upcoming meetings.



Glenn called ("I've got $20 in the back, do I hear $25", going once .... "), Linda recorded. I see two folks bidding against each other in the back.

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Buffalo Geological Society
51st Annual Gem/Mineral/Fossil Show
March 23 (10 AM - 6 PM)
March 24 (10 AM – 5 PM)
Erie County Fairgrounds, Hamburg, NY
Adults - $6, children under 12 are FREE

featuring
"Herkimer diamonds"

The BGS Press release states:
"Our annual show provides an instant museum of Buffalo Geological Society Members fossils, minerals, and jewelry; demonstrators; the famous Mini-Mine for young collectors; mineral and fossil identification; and a variety of non-profit exhibitors. This highly educational family event affords attendees the opportunity to interact with demonstrators who work with minerals and gems. Demonstrators include soapstone carvers, jewelry designers, and other lapidary artists. In addition, over 30 dealers selling gems, beads, minerals, fossils, and jewelry will be selling their items from around the world. A food vendor and hourly door prizes will be available."

Visit https://bgsny.org/annual-show/ for additional details

Wayne County Gem and Mineral Club 2019 Schedule *last update Feb. 27*

We are still early in our field trip planning, but are asking folks with possible interest in any of the summer multi-day trips to "sign-up". This helps us understand the level of interest in each trip and also plan the length and even possible sites to visit. You can do so at any March or April event and also by sending Fred Haynes an e-mail. When some detail is known about each, those who had expressed interest will receive it. Expressing interest is not a commitment.

March 8th Friday meeting, PROGRAM: **Jim Rienhardt** will bring his sand collection and describe the hobby of collecting sand (see November 2018 newsletter)

March 16th WCGMC Workshop Saturday

March 23rd -24th TWO shows to visit, one each day! Buffalo and Che-Hanna (see info on pages 6 and 7)

April 1st - Yup, you guessed it … Opening Day at Ace of Diamonds and we will be there

April 12th – Friday Meeting, Program: Radioactive Minerals (Kathleen Cappon) – *details next month*

April 20th - WCGMC Workshop Saturday

April 25th -April 28th (Thursday thru Sunday): A few of us plan to join the Buffalo Geological Society on its annual trip to the Cincinnati area for fossil collection. WCGMC member and BGS field trip leader Jerry Bastedo is planning/leading this trip. *Contact Jerry or Fred Haynes for details.*

May 4th(?) **–** *Penfield Open House is not yet confirmed for this date.*

JUNE 1 and JUNE 2: GEMFEST in Canandaigua (Friday May 31 is set-up day and we will need help)

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TENTATIVE MULTI-DAY TRIPS THAT WE ARE WORKING ON FOR THIS COMING SEASON
(To receive further information when it becomes available we'll have sign-up sheets at the meeting or you can send an e-mail to Fred Haynes)

June 21st to 24th - southern Vermont/western and central Massachusetts – sites TBA

July ?? - tentative 4-7 day trip to Maine – dates and sites TBA

July 31st to August 10th – Upper Michigan. This tentative trip includes the Ishpeming Show on August 3rd and field trip locations associated with both that event and with the Keweenaw Days the following week: copper country and more

August 30th – Sept 3rd - central Kentucky with CVGMC. We may add sites en route and on return.

September (middle of month) – a long weekend in the western lowlands of the Adirondacks

Day trips to Ilion, Herkimer country, and to local fossil sites will be added each month. If anyone would like to suggest a location or would like to plan/lead a trip let us know.

50th ANNUAL GOLDEN GEM & MINERAL SHOW
Presented by
Che-Hanna Rock & Mineral Club, Inc.
A (501c3) not-for-profit organization
MAR. 23, 2019 9 a.m. – 5 p.m.
MAR. 24, 2019 10 a.m. – 4 p.m.
**** GREAT LOCATION ****
WYSOX VOL. FIRE CO. SOCIAL HALL
111 LAKE ROAD, WYSOX, PA

Wayne County Gem & Mineral Club
Gem Fest 2019
Sat. June 1 10-5 Sun. June 2 10-4
Greater Canandaigua Civic Center
250 N. Bloomfield Rd, Canandaigua
$3 Admission, Kids under 12 FREE
Vendors, Exhibits, Free Prizes, Sluice
Art Crafts, Scavenger Hunt, Demos, UVBob
Visit www.wcgmc.org for details

Wayne County Gem & Mineral Contacts

ELECTED OFFICERS (NEWLY ELECTED)

President - Linda Schmidtgall
lees@tds.net 315-365-2448
Vice President - Fred Haynes
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debbiegb55@hotmail.com 585-289-6989
Treasurer - Bill Lesniak
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Past President - Glenn Weiler gwexterior@gmail.com

Visit us on Facebook:
https://www.facebook.com/groups/1675855046010058/

APPOINTED POSITIONS

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Bill Lesniak – Website Coordinator
Glenn Weiler – Workshop Coordinator
gwexterior@gmail.com 315-594-8478
Linda Schmidtgall – Collection Curator
Eric Elias: GEMFEST Show Chair
thecrystalnetwork@hotmail.com
Fred Haynes – Facebook Administrator

Club meets 2nd Friday of each month starting in Sept.
Social meeting at 6:30 PM Regular meeting at 7:00 PM
Park Presbyterian Church, Maple Court, Newark, NY
Website – http://www.wcgmc.org/

Dues are only $15 individual or $20 family for a full season of fun. Renewal is in October. Send to:
WCGMC, P.O. Box 4, Newark, NY