

THE BADGER DIGGIN'S

***The Badger Lapidary and Geological Society, Inc.
Monroe, Wisconsin
Devoted to the Earth Sciences***

Vol. 54, No 2

February 2018

President's Message – Laurie Trocke

Hi Badgers,

Hope everyone that could join us had fun and learned something at the January meeting. Much thanks to Teri & Jordan for their awesome fossil presentation!

We also had a nice turnout for the field trip to the Mississippi River Museum in Dubuque. It's a great museum and aquarium and well worth checking out if you have never been there.

The February meeting will be on Saturday, February 10th at 10:30. We will have the meeting first and then anyone that is interested can stick around and try out the lapidary equipment.

We'll be filling out the volunteer spots for helping with the show ... it's just around the corner and coming up super fast! If you have any agenda items or questions on the upcoming show, just let me know.

Hope to see you there!!

Laurie Trocke
BLGS Pres

Our Next Meeting

February 10, 2018
10:30 a.m.

Mystic Moraine Minerals
500 W. Milwaukee St.
Janesville, WI

**Lapidary Day at Jack's
Bring rocks to cut and polish
And a potluck dish to share**

From the Editor – Teri Marché

Folks are sending me articles taken directly from the Internet, and while it would be easy to just cut and paste them in, usually a mess of junk comes with them. If you wish to have them published, re-write them in your own words. Take a look at what I have done with two related Internet articles in this issue as an example.

In the meantime, many thanks to those who submitted articles for this month! Keep them coming!

Next Due Date, February 28

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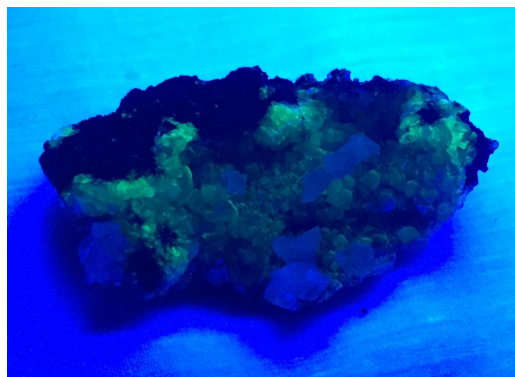
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Calendar, 2018

Feb. 10	Meeting - Lapidary Play Day
Feb. 24	Fieldtrip - Burpee Museum
Mar. 10	Meeting - Fishpond Bagging
Mar. 24,25	Annual Show
Apr. 14	Meeting - Wire-Wrapping
Apr. 28	Fieldtrip - Wausau Moonstone
May 12	Meeting - Rock/Mineral ID
May 26	Fieldtrip - Indiana
June 9	Picnic - Shullsburg
June 23	Fieldtrip - Bellvue, IA & Crystal Cave
July 14	Fieldtrip - South Dakota
July 28	Fieldtrip - Mazon Creek Area
Aug. 11	Fieldtrip - U. P. Michigan
Aug. 25	Fieldtrip - Dodgeville Roadcut HWY 23 Quarry
Sept. 8	Meeting - Show & Tell
Sept. 22	Lapidary Day
Oct. 13	Meeting - Soapstone Carving
Oct. 27	Fieldtrip - Prairie du Chien
Nov. 10	Meeting - Video/Freeport Show

Thanksgiving

Dec. 8 Annual Party



ADAMITE - hydrous zinc arsenate (yellow under short wave UV light). Dark areas are limonite and pale blue are calcite crystals. Named for French mineralogist Gilbert-Joseph Adam (1795-1881). Submitted by Dave Reese (doorprize!)

Minutes of the Last Meeting

10:00 a.m.: We began with a program on Fossil Identification by Jordan and Teri Marché, that finished at 12:00 noon.

Meeting called to order at 12:10pm

Members Present: With no new members

Treasurer's Report: With new Treasurer, Jack Hoxie, not present, past Treasurer, Dan Trocke, brought us up to date. He spelled out a number of financial obligations due each year, as a prelude to an issue that will be raised under New Business. However, for the time being, we are in good shape.

Announcements: Deb is organizing an MSHA refresher course. Members agreed that February 17 would be good.

Teri announced that all submissions for the newsletter are due on the last day of each month.

First Door Prize: David Reese won a Fluorescent Adamite specimen from Mapimi, Mexico.

Old Business: None.

New Business: Based on information presented in the Treasurer's Report, Dan Trocke moved that we raise our dues by \$5.00 in each category. This was seconded by Deb Wehinger.

Dan calculated that this would just cover our yearly dues for Midwest Federation and for club insurance. This would go into effect for the 2019 dues. Motion passed overwhelmingly.

A further discussion centered on the idea of getting sponsors for our show each year. This was met with some skepticism, as we would need to print ads somehow, and that times have changed for advertising since the old show flyers were printed with such ads.

This led to a discussion about having a club presence on social media. Laurie already has set up a FaceBook account for the club that can provide for live chats and ongoing announcements. It is a private site, and she will provide access for members who request it.

Kim Hoxie volunteered to take over the What's Rockin' Table for our meetings .

A discrepancy was noted between meeting start times announced in the newsletter and what Laurie announced in her email reminder. Teri moved, with Dan seconding, that meetings now start at 10:30 a.m. The later time is needed due to our move to Janesville. The motion carried.

Second Door Prize: Bob Gilbert, Fossil Fish, no locality noted.

Show Business: Deb had lots to report: almost all the dealers have paid, kitchen is a go, she will bring longer tables for demonstrators. However, she came looking for volunteers.

To organize and solicit folks to fill slots on the Sign-up Sheets -

To make up the Scavenger Hunt- Teri Marché

To organize and run the Club Sales Table – Kim Hoxie

To do Website Advertising – Troy Nelson

Deb also passed around a sign-up sheet for display cases, and cautioned members not to sign up for a case and then neglect to fill it.

Third Door Prize: Mike Glass, Brazilian Agate slab, donated by Cliff Thomas.

Fourth Door Prize: Dan Trocke, Tumbled Bryozoa.

Motion to Adjourn by Teri was seconded by Mike. Meeting ended at 12:58

Respectfully submitted: Cliff Thomas (Note taker)
Teri Marché (Scribe).

From the Showchair – Debbie Wehinger

Hi Everyone,

We are a month and a half away from our show and it sure doesn't seem like it. It's coming up rather quickly. We need to get people signed up for shifts, to work the show in every aspect. The show dates are March 24th and 25th. Saturday 9–5 and Sunday 9-4. If you are planning to sell at the club table – please email me at jdrules3@gmail.com and let me know, so that

we have a count of who is selling. I have dropped off "save the date" quarter sheet flyers and full size flyers for the show at Jack and Kim's store in Janesville – Mystic Moraine Minerals. If you have a chance, stop by and grab some and start plastering them everywhere. Let's get the word out for our show!

Remember, we can't run a show without everyone's help. Kim Hoxie has graciously agreed to be the "wrangler" for the sign up sheets. Please email or see Kim for time slots.

Thanks!

Speakers needed for the show!

Jordan Marché

Have you had any interesting rockhounding and/or collecting experiences lately? Have you been teaching yourself about any unusual minerals or fossils, and how they may be recognized or identified? Have you visited any geologically special places (e.g., state or national parks) in the recent past?

If you can answer "Yes!" to any of the above questions, please consider giving a talk about your experience at the next show. We're looking for speakers on Saturday and Sunday, at 1:30 and 3 p.m., and will provide a computer, digital projector, and screen. You may also/instead exhibit specimens of your finds during a 'show and tell' presentation.

If interested, please contact Jordan by e-mail: jdmarchei@gmail.com, to discuss your possible talk. Thank you!

What's Rockin'? – Kim Hoxie

At the January 2018 club meeting members brought many beautiful specimens to exhibit on the What's Rockin' table.

Johnny Fay brought several amethyst clusters collected from Thunder Bay, Canada.

Troy Nelson displayed a jellyfish from Mazon Creek, a rasmussen oyster from Texas, a fossil coral piece from Tampa Bay, a baculite-compressed ammonite from Alberta, Canada, and a conularid from an unknown location.

Dan Trocke presented a Silurian age *Bumastus* trilobite from the Vulcan Quarry in Racine, a *Pentamerus* fossil from northwestern Illinois, an agatized coral from Tampa Bay, FL, a *Prasopora* with crinoid holdfasts from the Maquoketa shale deposit, and a floating crinoid bladder fossil (scyphocrinite?) from North America.

These items were displayed in addition to the beautiful collection of fossils presented by Jordan and Terri Marche in conjunction with their fossil identification class.

Granite – David Cress

Granite is Wisconsin's state rock. Here are a few facts about this most common igneous rock, which we find on all our field trips. Granite is composed of feldspar, quartz, and mica, plus it can have small quantities of many other minerals; it can even have gemstones like tourmaline or uranium. Feldspar is the most abundant mineral in the earth's crust (41%) and quartz is the second most abundant. The feldspar is the lighter opaque mineral in granite, usually pink, white or gray (composing 40% to 80%). The quartz is translucent and not crystalline and looks gray (composing 20% to 60%). The black biotite mica or other dark mineral comprises 0% to 20%. The hardness is between a Mohs 6 to 7. Granite is a favorite stone for buildings because of its durability (due to the quartz) and high resistance to weathering. Mount Rushmore's presidents are carved from granite.

A Note About Membership

Here's something I forgot to include in the January newsletter:

Our membership list includes many folks who are not current with dues. If that is you, it is time to rectify that. Because we get many new members signing up at the annual show, we plan to purge the list immediately thereafter. So, I guess you actually have until then to get your dues in.

An Opportunity to Share

My name is Monica and my son Zach is a boy scout from Janesville and we are wondering if anyone in the club is able or willing to do a geology merit badge class or even some other merit badge class. My son who loves going to your club show is also a member of troop 405 and they are having a merit badge clinic on April 7th. The clinic will be held at First Lutheran Church, right across the street from the fair grounds. If anyone is interested in doing a merit badge class, or has questions, they can either contact me at ibeme@charter.net, or text me at (608) 312-9685 or can contact our scout master Chris at (608) 201-3873.

Here are just a few of the of the 120+ merit badge available:

Archaeology, Indian lore, Insect study Collections, Environmental Sciences, Nature, Landscape Architecture, Oceanography, Entrepreneurship, Forestry, Soil and Water Conservation, Bird Study, Law, Mining in Society, Reptile and Amphibian Study, Nuclear Science.

For a complete list of all the merit badges available, go to Scouting.org.

Thank you, Monica, ibeme@charter.net

The Race to the Oldest ?

Two Internet articles that were submitted this month are so closely related that they beg to be joined. Dealing with the earliest signs of life on primordial Earth, they both demonstrate the use of carbon isotopes in identifying the presence of organic material in rocks. In addition, because the life thus discovered survived in some pretty un-earthly conditions, they also point to the possibility of life on other, unearthly, planets. The first one, sent by

Dan Trocke (doorprize) also has a local connection.

Oldest fossils ever found show life on Earth began before 3.5 billion years ago

Excerpts from an article by Kelly April Tyrrell For News Media December 18, 2017

Researchers at UCLA and the University of Wisconsin–Madison have confirmed that microscopic fossils discovered in a nearly 3.5 billion-year-old piece of rock in Western Australia are the oldest fossils ever found and indeed the earliest direct evidence of life on Earth.



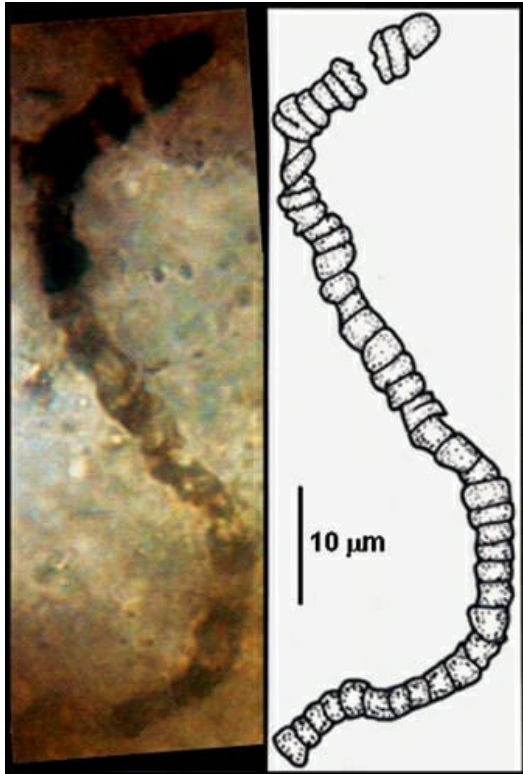
An epoxy mount containing a sliver of a nearly 3.5 billion-year-old rock from the Apex chert deposit in Western Australia is pictured at the Wisconsin Secondary Ion Mass Spectrometer Lab (WiscSIMS) in Weeks Hall. Photo: [Jeff Miller](#)

Originally collected by J. William Schopf of UCLA in 1982 in the Apex Chert of Australia, the rocks contained cylindrical and filamentous microstructures identified by Schopf as fossils. Others, however contended that they were just mineralization.

This is where UW–Madison comes in, in the person of John W. Valley and his team. After collecting more samples on a 2010 field trip to Australia, the UW team painstakingly ground and polished extremely thin slices of fossil embedded in quartz without actually destroying the fossils.

Then, using a secondary ion mass spectrometer (SIMS) at UW–Madison called IMS 1280 — one of just a handful of such instruments in the world — Valley and his team were able to separate the

carbon composing each fossil into its constituent isotopes and measure their ratios. They teased apart the carbon-12 from the carbon-13 within each fossil and measured the ratio of the two compared to a known carbon. “The differences in carbon isotope ratios correlate with their shapes,” Valley says. “If they’re not biological there is no reason for such a correlation. Their C-13-to-C-12 ratios are characteristic of biology and metabolic function.”



The team identified 11 microbial specimens from five separate taxa of the Archaea. There were phototrophic bacteria that would have relied on the sun to produce energy, giving off methane, and gammaproteobacteria that consumed methane, a major component of Earth’s early atmosphere before oxygen was present. While some of these represent now-extinct bacteria and microbes, others are similar to microbial species still found today.

Because several different types of microbes were already present by 3.5 billion years ago, life had to have begun substantially earlier — nobody knows how much earlier — and confirms it is not difficult for primitive life to form and to evolve into more advanced microorganisms.”

The second article comes from Dave Zimmerman, currently living among the Canadians in Vancouver.

Oldest evidence of life on Earth found in Canadian rocks

Emily Chung · CBC News

September 28, 2017

<http://www.cbc.ca/beta/news/technology/oldest-earliest-life-labrador-1.2503953>

Rocks of the Uivak Gneiss in the Saglek Block of northern Labrador, a small remnant of a very ancient continent, have been found to contain the oldest known evidence of life on Earth. However, they contain no actual fossils.

As the oldest metasedimentary rocks (3.95 billion years old) in the world, they were formed from sediments deposited by water. This adds to evidence that the Earth at that time had surface water and other conditions to support life. The "meta" part of the word indicates that the rocks have been "metamorphosed" or transformed by heat and pressure, which makes them harder, but not impossible, to analyze.

The key element here is graphite, a form of pure carbon that can be formed from chemical reactions of inorganic materials. But it can also be formed when decaying organic matter gets heated up to several hundred degrees.

Once again, the issue comes down to the type of carbon isotopes, carbon-12 and carbon-13. Because organisms tend to take in more carbon 12, graphite that comes from living things tends to be lighter than graphite from inorganic sources. To figure out whether graphite came from a living or non-living source, researchers use instruments to compare the ratio of carbon-12 to carbon-13.

Moreover, the carbon signature can also indicate what kind of metabolism those organisms had, in this case it is the oldest evidence for “autotrophs” — organisms that can produce their own food, by using inorganic compounds in their environment. These organisms appear to use a metabolic pathway similar to modern microbes that turn carbon dioxide into methane and acetate.

The discovery "suggests not only that there may have been life, but there may have been abundant enough life that you could get carbon-rich sediments not much more than 500 million years after the Earth formed, about 4.5 billion years ago.

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