The LITHNICS

Volume 61 Issue 4
October 2023

THE LITHNICS

A QUARTERLY PUBLICATION OF
THE MID-OHIO MINERAL AND FOSSIL CLUB
MANSFIELD, OHIO

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VIDEO/BOOK LIBRARY ..... Carolyn Kelly
LITHNICS EDITOR ..... Bryan Summer
1290 Fairview Ave
Galion, OH 44833
bryansummer1@gmail.com

OUR CLUB

PURPOSE: The purpose of the Mid-Ohio Mineral and Fossil Club, is to create an interest in and study of the earth sciences and all lapidary arts and to afford an opportunity to share knowledge and working techniques with others.

MEETINGS:

General club meetings are at 7:00 pm on the first Monday of the month at:

Gorman Nature Center, 2295 Lexington Avenue, Mansfield, Ohio.

If the first Monday falls on a holiday we meet one week later.
Visitors are always welcome.

Special Interest Group (Classes) meetings are held September through May at 7:00 pm on the second Monday of the month. See Special Interest Chair, Mike McCullough.

CANCELATION OF A MEETING

If for any reason the club officers feel that a meeting should be canceled you will be notified by email as soon as possible. If Mansfield schools are closed so are we. If for any reason you don't feel safe to drive to a meeting, please, please stay home.

Annual dues are:

Adults	**$ 15.00**
Children under 16	**$ 5.00**
Family	**$ 20.00**

Dues are due Jan. 1st of every year. Whether you join in January, December, or any month in between, the cost is the same.
Everyone's dues are due again the next January 1st .

LITHNICS: Our quarterly newsletter.

Permission is hereby granted to use any original **LITHNICS** articles, whole or in part, as long as proper recognition is noted with the reprint.

Club members are encouraged to make contributions to the LITHNICS.

Contact: Bryan Summer (bryansummer1@gmail.com)

The Mid-Ohio Mineral and Fossil Club

Message from the President
Tom Kottyan

Fellow Mineral and Fossil Friends,

The leaves have turned and we are experiencing one of the most colorful Fall seasons we have had in recent memory. It truly is my favorite season . The colors, the warm days, very cool nights, and the beauty that nature provides us makes one appreciate living in Ohio.

It has been a true pleasure to be the president of one of the finest and most friendly clubs in Ohio or anywhere. We came through a difficult time with COVID. We have had many excellent mineral shows for the public. Our membership has grown in club strength and numbers, while most clubs have had serious member reductions. I have been proud to be your president. As a board member, as of January, I will look forward to the next chapter of the Club of getting a clubhouse building, so we can continue to grow as a club. Thanks to all of you who have supported me through several years as Club President.

Your President and fellow " Rock" Hound
Tom Kottyan

Tom Kottyan
Mid-Ohio Mineral and Fossil Club President

Upcoming Meetings – all meetings are at the Gorman Nature Center at 7:00 pm
Continue to watch for information about future meetings in your email.

- Monday, November 6 7:00 Meeting Gorman Nature Center
- Monday, December 4 5:00 Christmas Dinner at Golden Corral
- Monday, January 8 7:00 Meeting Gorman Nature Center

2024 Mid-Ohio Mineral and Fossil Show
Theme "Calcite"



The Major Varieties of Quartz

by Geologyin.com

Quartz is the most common mineral on the face of the Earth. It is found in nearly every geological environment and is at least a component of almost every rock type. It frequently is the primary mineral, >98%. It is also the most varied in terms of varieties, colors and forms.

The major varieties of quartz include rock crystal, amethyst, citrine, rose quartz, smoky quartz, ametrine, jasper, carnelian, and agate. These varieties of quartz are often used in jewelry and for ornamental purposes.

There are many different **varieties of quartz,** several of which are semi-precious gemstones. Since antiquity, varieties of quartz have been the most commonly used minerals in the making of jewelry and hardstone carvings, especially in Europe and the Middle East.

Some macrocrystalline (large crystal) varieties are well known and popular as ornamental stone and as gemstones.

- **Amethyst** is the purple gemstone variety.
- **Citrine** is a yellow to orange gemstone variety that is rare in nature but is often created by heating Amethyst.
- **Milky Quartz** is the cloudy white variety.
- **Prasiolite** is a leek-green gemstone variety that is rare in nature but is created by heating Amethyst from certain locations.
- **Rose quartz** is a pink to reddish pink variety.
- **Smoky quartz** is the brown to gray variety.

Cryptocrystalline (crystals too small to be seen even by a microscope) varieties are also used as semi-precious stones and for ornamental purposes. These varieties are divided more by character than by color.

The primary varieties of quartz

The primary varieties of chalcedony are as follows:

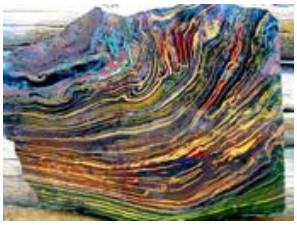
- **Agate** is a banded variety (sometimes with translucent bands)
- **Bloodstone** is green with red speckles

- **Carnelian** is yellow to orange
- **Chrysoprase** is green
- **Flint** is generally black with a fibrous microscopic structure
- **Jasper** is any colorful agate
- **Onyx** is black, white, or alternating black and white
- **Sard** is yellow to brown
- **Sardonyx** is banded, alternating sard and (usually white) onyx

Agate

Onyx

Jasper



Agate Multi-colored, banded chalcedony, semi-translucent to translucent. Although agates may be found in various kinds of rock, they are classically associated with volcanic rocks and can be common in certain metamorphic rocks

Onyx Agate where the bands are straight, parallel and consistent in size. A typical onyx consists of two or more black and white strata.

Jasper Opaque cryptocrystalline quartz, typically red to brow. The common red color is due to iron(III) inclusions. The mineral aggregate breaks with a smooth surface and is used for ornamentation or as a gemstone.

Tiger's eye

Aventurine

Amethyst

Tiger's eye is a chatoyant gemstone that is usually a metamorphic rock with a golden to red-brown color and a silky lustre. As members of the quartz group, tiger's eye and the related blue-colored mineral hawk's eye gain their silky, lustrous appearance from the parallel intergrowth of quartz crystals and altered amphibole fibers that have mostly turned into limonite. It is a classic example of pseudomorphous replacement by silica of fibrous crocidolite (blue asbestos). An incompletely silicified blue variant is known as hawk's eye.

Aventurine translucent chalcedony with small inclusions (usually mica) that shimmer. The most common color of aventurine is green, but it may also be orange, brown, yellow, blue, or gray. Chrome-bearing fuchsite (a variety of muscovite mica) is the classic inclusion, and gives a silvery green or blue sheen.

Amethyst is the purple variety of quartz and is a popular gemstone. Amethyst is a semiprecious stone and is the traditional birthstone for February.

Rutilated quartz

Citrine

Prasiolit

Rutilated quartz is a type of quartz that contains acicular (needle-like) inclusions of rutile. It is used for gemstones. These inclusions mostly look golden, but they also can look silver, copper red or deep black. They can be distributed randomly or in bundles, which sometimes are arranged star-like, and they can be sparse or dense enough to make the quartz body nearly opaque. While otherwise inclusions often reduce the value of a crystal, rutilated quartz is valued for the quality and beauty of these inclusions.

Citrine is a variety of quartz whose color ranges from a pale yellow to brown due to ferric impurities. Natural citrines are rare; most commercial citrines are heat-treated amethysts or smoky quartzes.

Prasiolite (or vermarine) is the name for any quartz crystal or cluster that is green in color. It is a rare stone in nature; artificially produced Prasiolite is heat treated amethyst.

Rose quartz

Milky Quartz

Smoky Quartz

Rose quartz Pink, translucent, may display diasteris. The color is usually considered as due to trace amounts of titanium, iron, or manganese, in the massive material.

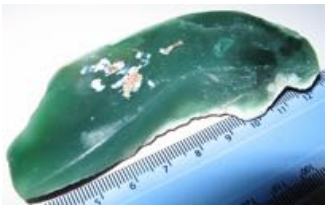
Milky Quartz is any quartz crystal or cluster that is white in color and cloudy. The cloudy white character of the crystals is what lead to the variety name, milky. Milky quartz is the most common variety of crystalline quartz. The white color is caused by minute fluid inclusions of gas, liquid, or both, trapped during crystal formation, making it of little value for optical and quality gemstone applications

Smoky quartz is the brown to black, and sometimes smoky gray version of quartz. It ranges in clarity from almost complete transparency to a brownish-gray crystal that is almost opaque. Smoky quartz, a variety itself of quartz, has a few varieties of its own

Carnelian

Chalcedony

Mtorolite



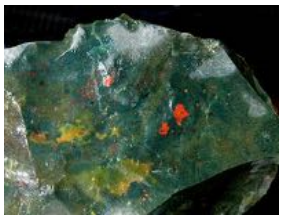
Carnelian Reddish orange chalcedony, translucent. The color can vary greatly, ranging from pale orange to an intense almost-black coloration. Similar to carnelian is **sard**, which is generally harder and darker.

Chalcedony is a cryptocrystalline quartz and moganite mixture. The term is generally only used for white or lightly colored material. Otherwise more specific names are used. Chalcedony has a waxy luster, and may be semitransparent or translucent. It can assume a wide range of colors, but those most commonly seen are white to gray, grayish-blue or a shade of brown ranging from pale to nearly black.

Mtorolite is a green variety of chalcedony, which has been colored by chromium. Also known as chrome chalcedony, it is principally found in Zimbabwe.

Chrysoprase

Heliotrope



Chrysoprase is a green variety of chalcedony, which has been colored by nickel oxide. Its color is normally apple-green, but varies to deep green. Chrysoprase is cryptocrystalline, which means that it is composed of crystals so fine that they cannot be seen as distinct particles under normal magnification.

Heliotrope is a green variety of chalcedony, containing red inclusions of iron oxide that resemble drops of blood, giving heliotrope its alternative name of bloodstone.

Ancient Footprints Suggest Humans Lived In The Americas Earlier Than Once Thought

September 24, 2021
By Scott Neuman

Fossilized human footprints shown at the White Sands National Park in New Mexico. According to a report published in the journal *Science*, the impressions indicate that early humans were walking across North America around 23,000 years ago.

The question of when humans first migrated to North America has long been a matter of hot debate among researchers who have continually uncovered evidence of ever-earlier dates. Now, analysis of ancient fossilized human footprints in New Mexico has pushed the date back once again — to at least 21,000 years ago.

Writing in the journal *Science*, a team of researchers led by Matthew Bennett of Bournemouth University in England examined a set of human footprints preserved on an ancient lakeshore in New Mexico's White Sands National Park, a location now known for its expansive — and dry — chalk-colored dunes.

They concluded that the footprints were made between 21,000 and 23,000 years ago. The date would place human habitation in the Americas during the Last Glacial Maximum and at least 5,000 years earlier than widely accepted evidence has yet suggested.

The footprints were mostly made by children and teenagers

Bennett and his colleagues, whose paper was published Thursday, determined that the tracks belonged to numerous people, mostly children and teenagers. What's more, the footprints spanned a significant time period, suggesting that humans frequented the area for at least a few thousand years.

"One of the beautiful things about footprints is that, unlike stone tools or bones, they can't be moved up or down the stratigraphy," Bennett says, according to Science News, referring to the layers where artifacts and fossils are found. "They're fixed, and they're very precise."

Normally, rock layers are "a nightmare" to date, says Bennett, a professor of environmental and geographical sciences. But he says that two years ago, archaeologist David Bustos, a study co-author, discovered a site where human footprints were co-mingled with a layer of sediment containing seeds from the spiral ditchgrass, an aquatic plant that could be carbon-dated. The results gave an estimate for the footprints.

Tom Higham, an archaeological scientist and radiocarbon-dating expert at the University of Vienna, who was not part of the study, called the latest findings "extremely exciting." "I am convinced that these footprints genuinely are of the age claimed," he said, according to *Nature*.

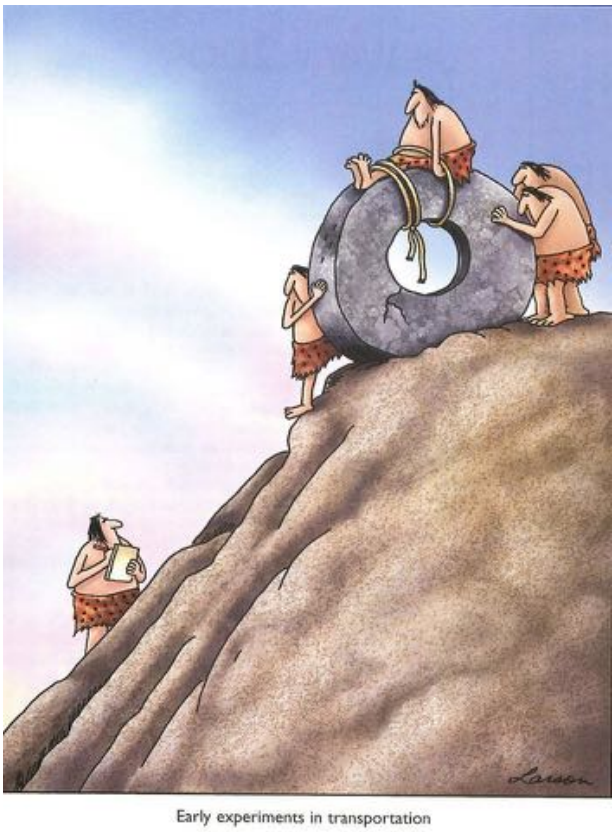
The evidence for older dates for migration to the Americas is less solid

Although previous studies have suggested an even earlier migration of modern humans into North America — including a controversial 2017 paper suggesting that people lived in the Southern California region as long as 130,000 years ago — those claims have been largely discounted because of the "equivocality of the evidence," *Nature* says. For instance, rocks were mistaken for tools, and marks on animal bones thought to be made by humans turned out to have a natural origin, the journal says.

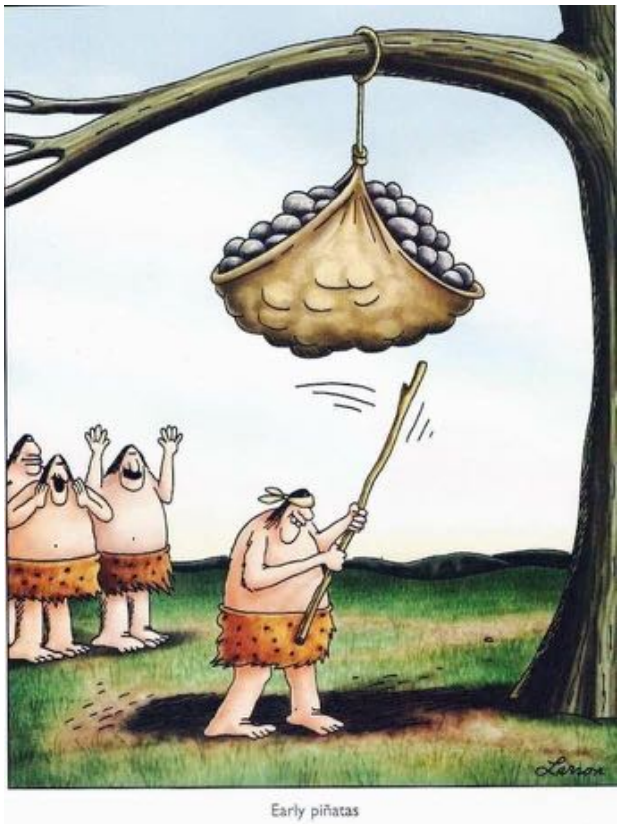
"For decades, archaeologists have debated when people first arrived in the Americas," says Vance Holliday, a University of Arizona archaeologist and co-author of the latest paper. "Few archaeologists see reliable evidence for sites older than about 16,000 years. Some think the arrival was later, no more than 13,000 years ago by makers of artifacts called Clovis points."

Last year, *Nature* published a paper by archaeologists who claimed to have found human artifacts in Mexico's Chiquihuite Cave dating to at least 26,000 years ago. But many fellow archaeologists were skeptical, pointing to the possibility that what the researchers had identified as stone tools were in fact naturally fractured rocks.

Ciprian Ardelean, who led the 2020 study at Chiquihuite, readily acknowledges that the discovery by Bennett and his colleagues "is very close to finding the Holy Grail.""I feel a healthy but profound envy — a good kind of jealousy — towards the team for finding such a thing," Ardelean told *National Geographic*.



Early experiments in transportation



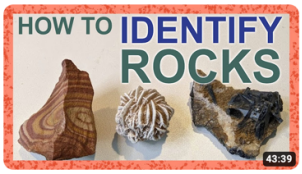
Early piñata

Ohio Rockhound

A useful website focusing on Ohio minerals, including collecting sites.

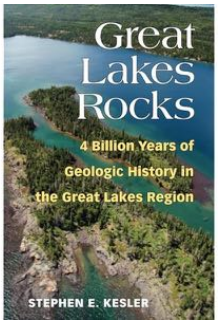
1. Mark J. Camp, **Roadside Geology of Ohio** (2006).
2. June Culp Zeitner, **Midwest Gem, Fossil, & Mineral Trails: Great Lakes States** (Rev. ed., June 1999 – first published in 1955).
3. June Culp Zeitner, **Midwest Gem Trails: Field Guide for the Gem Hunter, the Mineral Collector, and the Tourist** (3d. Rev. ed., 1964 – originally published in 1956).
4. James Martin Monaco & Jeannette Hathway Monaco, **Fee Mining & Mineral Adventures in the Eastern U.S.** (2d ed. 2010).
5. Kathy J. Rygle & Stephen F. Pedersen, **Northeast Treasure Hunter's Gem & Mineral Guide** (4th ed. 2008).

Amazing YouTube Videos



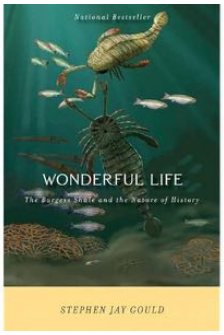
1. Crystals you can find in Ohio
2. How to Identify Rocks
3. 20 Most dangerous Minerals in the World
4. How to find Thousands of Oceanic Fossils in… Ohio?
5 Top 15 Biggest Crystals

Geology Books



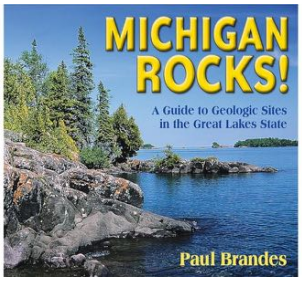
Great Lakes Rocks: 4 Billion Years of Geologic History in the Great Lakes Region Paperback – May 1, 2019
by Stephen E Kesler

The geologic story of the Great Lakes region is one of the most remarkable of any place on Earth. Great Lakes Rocks takes readers on this fascinating journey through geologic history, beginning with an investigation of the surface features—the hills and valleys, waterfalls and caves, and the Great Lakes themselves—that we encounter on a daily basis.



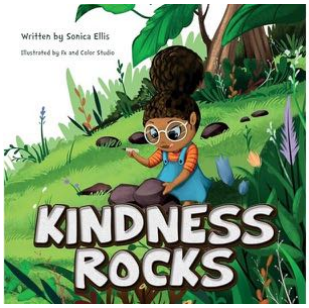
Wonderful Life: The Burgess Shale and the Nature of History
by Stephen Jay Gould

High in the Canadian Rockies is a small limestone quarry formed 530 million years ago called the Burgess Shale. It hold the remains of an ancient sea where dozens of strange creatures lived—a forgotten corner of evolution preserved in awesome detail. In this book Stephen Jay Gould explores what the Burgess Shale tells us about evolution and the nature of history.



Michigan Rocks!: A Guide to Geologic Sites in the Great Lakes State Paperback April 15, 2023
by Paul Brandes

Michigan is the only state in the nation to border four of the five Great Lakes--giving it the nickname, the Great Lakes State. This abundance of shoreline translates to a multitude of rock exposed by waves and currents. Nearly the entire history of Earth is on display in Michigan, from 3.6-billion-year-old gneisses to potholes drilled by modern rivers.



Kindness Rocks Paperback September 14, 2019
by Sonica Ellis (Author)

Little Clara enjoys painting cute messages on rocks and leaving them for people to read. One day a turtle feeling down and out passes by Clara's house. Upon seeing the messages on the rocks he is rejuvenated and rushes home to share the messages with his friends.

Interesting Web Sites

1. Mineralogy4kids
    a. https://min4kids.org
2. Minerals by Name
    a. http://www.galleries.com/Minerals_By_Name
3. Ology - the science website for kids from the American Museum of Natural History
    a. https://www.amnh.org/explore/ology?channel=earth
4. Fascinating Geology for Kids
    a. https://littlebinsforlittlehands.com/geology-for-kids/
5. Geology for Elementary Schools
    a. https://study.com/academy/topic/geology-for-elementary-school.html
6. Elementary School Science
    a. https://www.elementaryschoolscience.com/lesson-plan-intro-rocks-minerals

Upcoming Events and Rock Shows – (Ohio and close to Ohio)

Check the Midwest Federation of Mineralogical + Geological Societies for Calendar Updates

October

28 - 29 **Summit Lapidary + Akron Mineral Society Gemboree** Emidio Expo Center
48 East Bath Road, Cuyahoga Falls, OH Sat 10 - 6 Sun 10 - 5

November

4 - 5 **Mid-Michigan Rock Club** Chippewa Nature Center
400 S Badour Road, Midland, MI Sat 10 - 5 Sun 10 - 5

December **No Local Area Rock Show listings.**

Our Club's Craft Program

We will send out information about craft classes as we get them planned and scheduled.

The Midwest Federation of Mineralogical + Geological Societies

You can check out all the Shows and Events in our Midwest Region (Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska) at the Midwest Federation of Mineralogical + Geological Societies Web Site (https://www.mwfed.org)

The U.S. Geological Survey Youth and Education in Science (YES) Team.

Revamped their web presence to better assist with online and home learning.

The new USGS learning from home portal for lesson plans and activities, grades K – 12.
www.usgs.gov

Students of all ages can always tap into the USGS Resources for Teachers for over 140 years of USGS research in the natural sciences in the form of lesson plans and activities, maps, podcasts, online lectures, videos and animations, and much more. Browse thousands of ideas for using these resources in elementary, secondary, university, and informal education settings

Meeting Minutes

July 2023

Tom K opened the meeting. Minutes for June 2023 were read.

Pam K gave a detailed financial report regarding the checking, savings, and CD's of the club.

Pam K also covered the June show's finances ending with a tentative balance from the show of $6,607.10 net profit.

Upcoming Programs:
August: Dale Gneidovic on "Continents on the Move" about plate tectonics.
September: Buy, Sell, Trade night
October: TBD
November: Annual Silent Auction
December: Annual Christmas dinner at Golden Corral

Joyce K noted Summit County Rock & Mineral Club will be hosting a picnic at noon at Monroe Falls. Clubs from Mansfield, Toledo, Akron, etc. are welcome to attend. Please bring a covered dish.

Robin H advised there was not a lot of participation for the scavenger hunt, however, 8-10 children took part and enjoyed the hunt!!

We will be changing the name of our website sometime in the not too distant future.

Pam K also stated she had to obtain a debit card for one of our accounts in order to get the best CD rate. This will not be activated.

Rob L said the Kids Zone went well with only 97 kid bags left out of 240 that were made.

Jason L said the Archeology Club wanted to know if anyone is interested in giving a talk to let him know.

Rob L also thanked Bryan S for the very interesting article on Sand in the most recent Lithnics Newsletter.

Refreshments tonight are provided by: Jim & Patty, Doug & Martha, and, Janet & Patti. Thank you :)

Door Prize: Bridget Burnell won a Montana Agate.

Personal Exhibits:
1. Stan E - Kentucky Agates
2. Lawrence H - Blue Mountain
3. Bonnie - piece of Petrified Wood her grandson found out west.
4. Kristin & Mark - pieces of various Agates
5. Jay - Quartz from Flint Ridge & Faceted piece of Barite.
6. Skeeter - Fossils of Kentucky chart.
7. Jim B - Herkimers, Trilobites & pieces from Marblehead.

Meeting adjourned for refreshments and lecture on the differences between Agate & Jaspers given by our own Tom K.

August 2023

Tom opened meeting. July minutes & treasurer's reports were read.

Historical - Jason L noted nothing new.

Tom K stated next year's show will be center on Calcite. Mark & Kristin picked up 300#'s of Trancas geodes for a cost of $900.

Upcoming Programs:
September - Buy, sell, trade night
October - Rob Ledwedge will be presenting Sands of the World. If you have one, bring a small magnifying glass or jeweler's loupe for viewing.
November - Annual Silent Auction
December - Annual Christmas Dinner/get together at Golden Corral

Lithnics - Bryan S had no new news.

Shop - Walt U reported the shop is up & ready for use. Please call him to be sure it is unlocked.

Jason L said there are old books in the back for sale. Please pay Pam K.

Joyce K reminded us of the picnic to be held August 24th. It's on S River Rd & remind her if you are going.

Door Prize: Robin Miller won 2 different Garnet Schiest, 1 from China & 1 from Alaska.

Personal Exhibits:
1. Kristen brought a Sodalite & Christolite piece.
2. Joyce K - Slabs of Kentucky Agate of various colors, not just the red & black normally seen.
3. Jason L - had 3 Flourites with Rhodachrosite inclusions.

Tom K asked for any visitors & if they would identify themselves.

Upcoming shows:
Akron/Canton will be the end of October
Toledo show is held in Bowling Green
Flint Knapp-in will be held Labor Day Weekend at the Coshocton Fairgrounds.

Meeting adjourned for refreshments & program on "Continents on the Move" given by Dale Gneidovic, Curator of the Orton Geologic Museum on the OSU Campus.

September 2023

Tom opened the meeting. Minutes & treasurer's reports were given. Tom then introduced Sandy, a member of Mid-West Federation (MWF), spoke on a t-shirt sale, and, if you purchase & wear your t-shirt to a show in the MWF group, you will get a free gift.

Field trip - members absent.

Tom K said the 2024 show will be June 8th & 9th. One of the grand door prizes next year will be a Cobalto Calcite.

Friends Of Mineralogy (FOM) has field trips during the year March - November. Cost for membership is $20.00.

Tom K said you can collect for free at Hueston Woods (close to College Corner, Ohio) & Caesar Creek (close to Georgetown, Ohio). You may find Trilobites, etc. Southern Indiana is also a good place to collect as well as Sylvania Fossil Park, Sylvania, Ohio.
Kim B - had some "Rummage Relish" for sale in the back. See her during the break.

Rob L - Advised members to bring a jeweler's loupe or good magnifying glass next month for the program on Sands of the World.

Tom K said the November silent auction will include items from the late Cliff Rhodes inventory including slabs.

Person Exhibits:
Stan Eusey - had some Dino Bone & Coprolite-Dino poop!
Dave - a Cinnamon Bear-claw Necklace.

Door Prize: Nancy Riebau won a piece of Rainbow Jasper & a piece of Ocean Jasper.

Meeting adjourned for refreshments & buy, swap, sell time.

Don't Forget to Check Out our Website for Club Information
www.rlls.webs.com

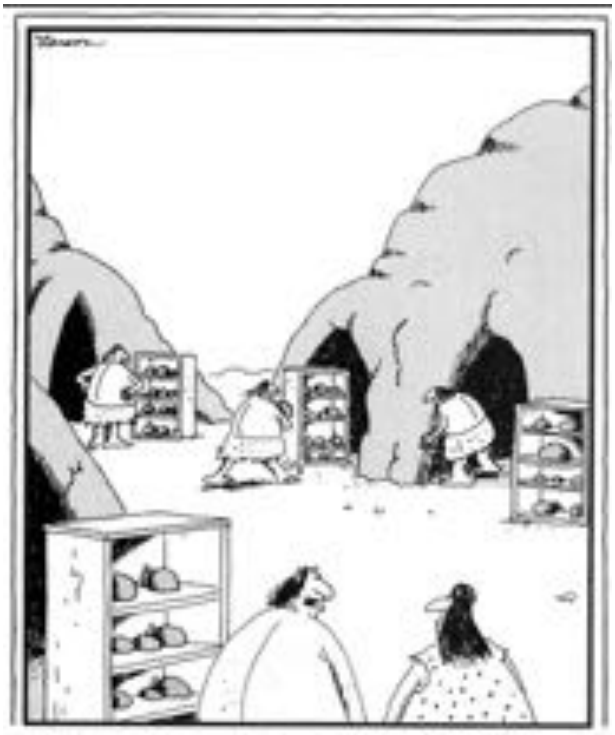
The Lithnics

If you have any club news, articles you would like share with members, updates on your committee, etc. please email info to:

Bryan Summer – bryansummer1@gmail.com

The Lithnics is Published Quarterly

January 1, April 1, July 1, October 1



"You know, I used to like this hobby. ... But shoot! Seems like everybody's got a rock collection."