THE ROCKPILE

Official Publication of the Midwest Mineralogical and Lapidary Society

AFFILIATED WITH • MIDWEST FEDERATION OF MINERALOGICAL AND GEOLOGICAL SOCIETIES • AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES

February 2023

MINERALOGICAL AND LAPIDARY SOCIETY
MID WEST of MICHIGAN

SOUTHEASTERN - MICHIGAN

Midwest Mineralogical & Lapidary Society

2023 OFFICERS

President: Mike Bomba (313) 381-8455
Vice President: Dan Gumina (313) 766-8944
Recording Secretary: Diane Kuzara (734) 675-5237
Treasurer: Doris Snyder (313) 291-2133
Corresponding Secretary: Diane Kuzara (734) 675-5237
Liaison Officer: Peter Kuzara (734) 675-5237

COMMITTEE CHAIRPERSONS

Club Services: Ana Ferguson
Door Prizes: Mike Bomba
AFMS Scholarship: Pat Rutkowski
Field Trips - Mike Bomba/Gary Slominski
Education: Dave Hendershot
Historian: Tom Morris
Michigan Material: Tom Morris
Membership: Ana Ferguson
MMLS Scholarship: Velma Bradley
Program Coordinator: Mike Bomba
Property – Storage: Gary Slominski
Sunshine Reporter: Velma Bradley
Refreshments: Gary Slominski
Web Site: Stacey Harper

ACTIVITIES

2023 Banquet: Andrea Rinker
2023 Club Picnic: Stacey Harper
2023 Swap: Lou and Cindy Talley
2023 Super Swap: Bill Barr
2023 Auction: Dwayne Ferguson

The Rockpile Staff : Editor Peter Kuzara,
email: Kuzara1126@gmail.com 734-675-5237

MMLS website – www.mmls.us
Email - rockhounds@mmls.us

General Club meetings are held at 7:30 p.m. on every third Tuesday of the month (except July and August) at the Democratic Club of Taylor, 23400 Wick Rd., Taylor, MI 48180
GUESTS ARE ALWAYS WELCOME

STUDY GROUPS

Lapidary: Workshop at Frank Konieczki's
Bead Study: Diane Kuzara
Mineralogy: Bill Barr at David Esch's

PAST PRESIDENTS

Robert Ellison (interim) 1956
Louis Cox 1957
Robert Heldenbrand 1958-59
Ralph Gamble 1959-60
Fred Miller 1960-61
Bert Smart 1961-62
Leo Nieman 1963
Nicholas Rothenthaler 1964-65
Robert Fedoruk 1966-67
John Good 1968-69
Cecilia Duluk 1970
Stanley Franczak 1971-72
E. Donald Stinnett 1973-74
Ralph Goniea 1975-76
Norman Hanschu 1977-78
Thomas Gibbs 1979-80
Harry Nagy 1981-82
Elspeth Gibbs 1983-84
Loretta Franczak 1985-86
Roland Snyder 1987-88
Jay Ross 1989-90
Tom Morris Jr. 1991-92
Diane Kuzara 1993-94
Bill Orban 1995-96
Glenn Swain 1997-98
Bill Peach 1999-2000
Diane Kuzara 2001-02
Cecilia Duluk 2003-04
Russ Ranker 2005-06
Dick DePodesta 2007-08
Rich Williams 2009-10
Leonard Swisher 2011-12
Mike Bomba 2013 - 14
Diane Kuzara 2015 - 16
Dan Gumina 2017 - 18
Diane Kuzara 2019 -2020
Dan Gumina 2021 - 2022

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February, 2023 Volume LXVII Issue 2

From The President's desk:

I hope everyone had a wonderful Holiday season . I'm excited about going to the Tucson rock and gem show this year and hopefully doing some rock hunting in Arizona ! You can watch some videos on Utube about the show which incidentally is the biggest show in the world now ! Anyone else going can let me know, our good friend Chris Stephano will be hosting guests at his home there for rock talks a few nights after the show there ! Don't forget February 25th is our winter field trip to the Cranbrook museum. Thanks all for your support. Please come to our General meeting and let's get to know each other and have fun with our hobby ! PYD, pay your dues! President Mike Bomba .

February Program: The program for February will be a video " The Wonderful World of Agates" part one . Mexican Agates with Brad Cross and recent agate finds in Germany , with Krause Shafer . Mike

DUES ARE OVER DUE !!!!!!!!!

REMEMBER BEFORE TRAVELING A GREAT DISTANCE CHECK THAT THE EVENT IS STILL GOING ON!!!!!

Dates to Remember!!

February 2nd & 16th, 2023 Bead Study group will meet at the Kuzara's 20281 Thomas, Brownstown at 7pm. Diane Kuzara 734-675-5237

February 6th, 20th & 22, 2023 Lapidary Work Shop 2009 W. Michigan Ave., Ypsilanti, Mi. 7pm. to 10 pm. Space is limited so please call Frank Konieczki 734-323-2218 before attending.

February 16th, 2023 Mineral Study Group Will meet at Dave Esch's house, 227 Barton Shore Dr., Ann Arbor, MI. At 7:30 pm.

February 17th , 2023 Rockpile Deadline for February issue

February 21st, 2023 Board Meeting will be held at the Democratic Club of Taylor, 23400 Wick Rd., Taylor at 6:30 pm.

February 21st, 2023 General Meeting will be held at the Democratic Club of Taylor, 23400 Wick Rd., Taylor at 7:30 pm.

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MARCH 18TH 2023 THE MIDWEST MINERALOGICAL & LAPIDARY SOCIETY 50TH ANNUAL ROCK SWAP

At: St Johns Lutheran Church
Taylor, Michigan
13115 Telegraph Rd.
For Reservations and Information:
Call LouTalley 734-837-8920
SEE FLYER ON PAGE 6

The Michigan Mineral Beginning with the Letter P: Pumpellyite

$Ca_2(Al,Mg,Fe)_3(SiO_4)_3(OH) \cdot H_2O$

Pumpellyite is a **group of closely related minerals that have a minor of variation of element among members**. Pumpellyite- (Mg) and Pumpellyite- (Fe 2+) are the most common members, with the other members being rare.

Hardness: 5.5 - 6 on the mohs scale.
Color: Olive green to bluish green.
Occurrence: Houghton and Keweenaw Counties
From the internet Wikipedia

BIGGS JASPER

Jasper from Biggs Junction, Oregon, with varying light and dark color brown bands and pretty formations.

From the internet Mineral Net

DUES ARE OVER DUE!!!!!

DUES ARE OVER DUE!!!!!!!

What is the rarest mineral on Earth? Story by Elizabeth Rayne

Most human eyes have seen the mystical beauty of quartz, possibly without knowing it is the most common mineral on Earth, but which is the rarest.

Kyawthuite, found in Myanmar, is the rarest mineral in the world.

Minerals are scattered everywhere on our planet, from glittering flecks in gravel or sand to actual hidden gems. According to the U.S. Geological Society, minerals are naturally occurring elements or compounds that are inorganic, meaning they do not contain carbon. Each type of mineral exhibits order in its internal structure and has a unique chemical makeup. The form a mineral's crystals take, as well as its other physical properties, can vary.

The rarest mineral on Earth is kyawthuite. Only one crystal, found in the Mogok region of Myanmar, is known to exist. Caltech's mineral database describes it as a small (1.61-karat) deep orange gemstone that the International Mineralogical Association officially recognized in 2015.

However, little is known about kyawthuite, so let's move on to the second-rarest mineral in existence. This is painite, which appears as deep red hexagonal crystals (though there are

some pinkish exceptions). Though painite is now more easily found than it used to be, this mineral is still rare, and its chemical structure makes it something of a scientific enigma.

From the Internet Live Science

How the Mayans Used Crystals to Keep Themselves Healthy

Above: The Mayan City of Tikal

I can guess what you might be thinking…Is this going to be some "New Age" article about how the Mayans in South Americans used crystal powers to cure disease and save lives? Well, yes and no. It is about how the Mayans used Zeolites as part of their culture to keep themselves heathy, but it is most definitely not about holding crystals over your chakras and chanting magical words. It is based on sound scientific principles about how the Mayas built and maintained the Western Hemisphere's first water purification system and perhaps the oldest in the world of its type.

The famous Mayan city of Tikal is known for its temples and palaces, but scientist have recently discovered a far more basic need was innovated in the Mayan Kingdom of old. Tikal, known as Yax Mutal to the ancient Maya, was a city of more than 3000 structures situated in the Guatemalan tropical forest. At its height in 750 C.E., it was home to at least 60,000 people and a vibrant religious culture.

As we all know, it takes good food, clean water and clean air to keep us working properly. No society can exist without taking care of the basic human needs. It has been long known that the Mayans used water reservoirs (man-made and natural) to manage its fresh-water resources. Researchers recently discovered a volcanic mineral that captures microbes and heavy metals in one of Tikal's largest reservoirs. Because the material is not found nearby, the finding suggests the presence of a deliberate filter placed there by the Mayan builders.

The finding contradicts the long-standing idea that the ancient world's technological prowess was concentrated in places such as Greece, Rome, Egypt, and China, says study co-author Kenneth Tankersley, an archaeological geologist at the University of Cincinnati. "When it comes to purifying water, the Maya were millennia ahead."

But Tikal's people had to contend with a dry season lasting roughly from November through April. Storing water in reservoirs was a solution, but that water had to be fit to drink, said Lisa Lucero, an archaeologist at the University of Illinois, Urbana-Champaign, who was not involved in the research. "Keeping water clean was critical."

A few years ago, Dunning and his colleagues excavated sediments from several of Tikal's reservoirs. They were surprised to find that one of the largest reservoirs, Corriental, had significantly less contamination from heavy metals, toxin-producing algae, and a mineral associated with fecal pollution than the others. "The water quality at Corriental was much higher," Dunning says.

Somehow the Maya were filtering Corriental's water, the team hypothesized. "The Maya used gardens as their bathrooms," Dunning says. "The water coming into the reservoir would not have been very clean."

So, the researchers looked closer at the sediments at the bottom of the reservoir. The first hint of an ancient filter was the discovery of quartz crystals. The scientists found four distinct layers, each a few centimeters thick, of brownish, millimeter-scale crystals. (Such sand-size grains can be used for filtering water, but they don't capture all harmful microbes.) Then, the researchers examined the quartz in greater detail and discovered it was dotted with even smaller crystals of "zeolites." This type of volcanic mineral can purify water by trapping both microbes and heavy metals within a porous structure, and they're still in widespread use today, Tankersley says. "Just about everything we drink, from bottled water to wine, is filtered through a zeolite filter."

Zeolite has long been recognized as a mineral with excellent absorptive properties. Approximately 2700 years ago, Greek and Roman engineers used zeolites as a pozzolan in cement in the construction of large-scale hydraulic structures such as aqueducts, bridges, dams, and harbors. However, it has been assumed that zeolites were not used for water purification until the beginning of the twentieth century. It also has been presumed that the oldest forms of water purification occurred in Europe and southern Asia.

The Maya wouldn't have known about the zeolites in rock, but they would have recognized purifying capabilities, the researchers suggest. A quartz and zeolite rich rock formation about 30 kilometers northeast of Tikal is the likely source of the material in Corriental reservoir, the team proposed last month in *Scientific Reports*. Water at this site "was clear and tasted good," Tankersley says. The findings from Tikal, Guatemala, where zeolite was found in the one of the largest storage facilities of Maya drinking water in use during the Late Pre-classic to Late Classic cultural periods (~ 2200–1100 yr. B.P.). The apparent zeolite filtration system at Tikal's Corriental reservoir is the oldest known example of water purification in the Western Hemisphere and the oldest known use of zeolite for decontaminating drinking water in the world.

There are ~ 50 distinct species of zeolites including analcime, clinoptilolite, and mordenite. In Guatemala, analcime occurs as an extensively altered form of jadeite and clinoptilolite. Mordenite occurs in association with the mineral's quartz, calcite, and smectite in wet spring settings where volcanic activity has altered to zeolites. While clinoptilolite and mordenite are not locally available at Tikal, they occur in volcanic rock cavities in western Guatemala where there are active, dormant, and extinct volcanoes. Clinoptilolite and mordenite have also been discovered in a coarse crystalline Cretaceous-Tertiary tuff exposed northeast of Tikal where there are clean potable water discharges. The co-occurrence of macro-crystalline euhedral quartz, zeolite, and clean drinking water was likely the symbolic connection and empirical basis for the Maya choosing to mine this resource. Zeolite is a non-toxic, three-dimensionally porous, crystalline, hydrated aluminosilicate. Zeolite has adsorbent properties because its three-dimensional microcrystalline pore spaces create a natural molecular sieve. Consequently, zeolite has the ability to filter out harmful microbes, nitrogenous compounds, and other dispersed insoluble and soluble inorganic and organic toxins from drinking water.

Corriental Reservoir and Water Purification

Corriental is one of the largest reservoirs (~ 58,000,000 L) at Tikal located south of the main city complex. Earthenware sherds of water jars of varying size were found in all of Corriental's strata. Corriental has only minor evidence of chemical pollutants and no evidence of blue-green algal blooms or other pollutants and it is the only excavated reservoir, which was not heavily dredged. In this regard, Corriental is not only anomalous at Tikal, but throughout the Maya Lowlands. Corriental is also the only reservoir, which has evidence of a zeolite water filtration system to date.

There's, unfortunately, no direct evidence of what Corriental's filtration system looked like, Dunning says. However, the team has an idea: Woven reed matting may have held quartz- and zeolite-containing rocks underwater just upstream of the reservoir's inflow. Such a setup would have been periodically swept away by flash floods following a storm, which would explain the layers of quartz and zeolite found at the reservoir's base.

By the Late Pre-classic cultural period, the Maya installed a successful and sustainable euhedral quartz and zeolite water purification system at Tikal. This system was critical for survival in a humid tropical environment with unpredictable catastrophic cyclonic and volcanic events, seasonal droughts, and drinking water contaminated by harmful microbes and toxic mineral leachates. Zeolite provided the people of Tikal with safe drinking water for more than 1000 years. It not only represents the oldest Indigenous water filtration system of its kind in the Western Hemisphere, it greatly predates by millennia comparable methods of water purification developed by other cultures in the Old World.

The discovery is a potent reminder of the Maya's technological capabilities, Lucero says. "It

shows yet another level of amazement of what ancient peoples accomplished."

Resources:

https://www.sciencemag.org/news/2020/11/maya-built-western-hemisphere-s-first-water-filtration-system
https://www.nature.com/articles/s41598-020-75023-7
https://www.chemistryworld.com/news/ancient-maya-communities-were-first-to-use-zeolite-to-purify water/4012757.article
https://www.smithsonianmag.com/smart-news/researchers-uncover-2000-year-old-mayan-water-filtration-system-180976186/

Thank you to Brad Zylman for submitting the above article to be printed.

From the Michigan Mineralogical Society Conglomerate Dec. 2020

Archaeopteryx Was a Flyer, Not a Glider

Excerpted from an article by Dennis Gertenbach in the 8/2018 issue of the Flatiron Facets

Since the discovery of their fossils in 1860, paleontologists have argued whether *archaeopteryx* was a flyer or was just capable of gliding. New fossil analysis suggests *Archaeopteryx*, one of the earliest birds, was capable of bursts of flight, like today's pheasants. A new study finds that the shape of the ancient bird's wing bones suggests it was capable of short bursts of active, flapping flight, similar to how modern birds like pheasants and quails fly to escape predators. *Archaeopteryx* lived about 150 million years ago during the Jurassic Period, and has been key to explain how modern birds evolved from feathered dinosaurs. Paleontologist Dennis Voeten and colleagues used x-ray microtomography on bones from *Archaeopteryx*, several dinosaurs, flying pterosaurs, and modern birds. As reported in *Nature Communications*, *Archaeopteryx* had wing bone structures most similar to pheasants and quails, indicating that they could not maintain active flight, but were capable of small bursts of flapping flight

The above picture is a complete fossil of an Archaeopteryx .

From the Lapidarian 3/2021

Humor Passed Along By Velma Bradley

9. Remember, if you lose a sock in the dryer, it comes back as a Tupperware lid that doesn't fit any of your containers.
10. If you're sitting in public and a stranger takes the seat next to you, just stare straight ahead and say, "Did you bring the money?"
11. When you ask me what I am doing today, and I say "nothing," it does not mean I am free. It means I am doing nothing.
12. I finally got eight hours of sleep. It took me three days, but whatever.
13. I run like the winded.
14. I hate when a couple argues in public, and I missed the beginning and don't know whose side I'm on.
15. When someone asks what I did over the weekend, I squint and ask, "Why, what did you hear?"
16. When you do squats, are your knees supposed to sound like a goat chewing on an aluminum can stuffed with celery?
17. I don't mean to interrupt people. I just randomly remember things and get really excited.
18. When I ask for directions, please don't use words like "east."
19. Don't bother walking a mile in my shoes. That would be boring. Spend 30 seconds in my head. That'll freak you right out.
20. Sometimes, someone unexpected comes into your life out of nowhere, makes your heart race, and changes you forever. We call those people cops.
21. My luck is like a bald guy who just won a comb stolen from a friend.

REMEMBER DUES ARE PAST DUE!!!!!

Editor Pete

50th Annual
Metro Rock Swap

Hosted By
The Midwest Mineralogical & Lapidary Society

Saturday, March 18th 2023
10:00 A.M. to 5:00 P.M.

At
St. John's Lutheran Church
13115 Telegraph Road
Taylor, Michigan

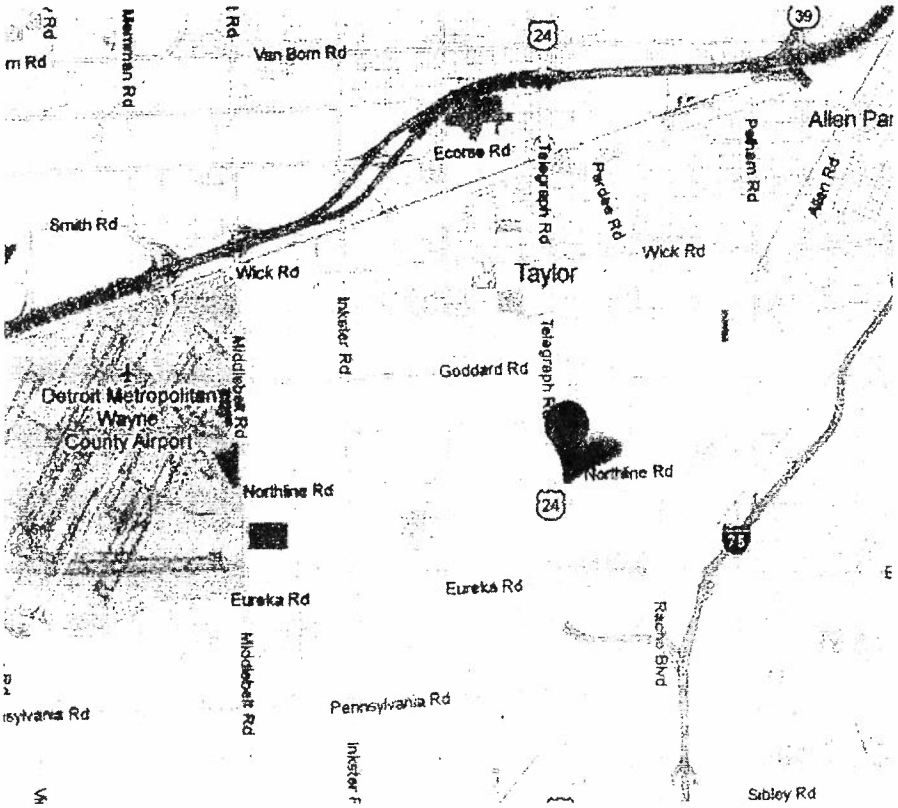
For Table Reservations and Information Call:
734-837-8920

$15.00 per 8-Foot Table

- ☐ Public Invited
- ☐ Free Admission
- ☐ Free Parking
- ☐ Refreshments Available

Swap - Sell - Buy

☐ Minerals	Crystals
☐ Fossils	Slabs
☐ Jewelry	Lapidary Items
☐ Beads	Related Books



THE MIDWEST MINERALOGICAL AND LAPIDARY SOCIETY (MMLS) is an educational non-profit organization founded in 1956. The Society now has more than 100 members and is affiliated with the Midwest Federation of Mineralogical Societies and the American Federation of Mineralogical Societies. Significantly, MMLS has been recognized numerous times by the Midwest and American Federations with first place (gold level) awards in the annual All American Club Awards Program.

PURPOSE: The purpose of The MMLS shall be (I) to promote interest in and increase knowledge in the fields of mineralogy, geology, and paleontology, including lapidary and related arts; (2) to publish articles and information pertaining to these fields; (3) to encourage collections and to display specimens in these fields; and (4) to arrange field trips in support of the interests and activities specified.

GENERAL MEETINGS: the third Tuesday of each month, September through June, 7:30 p.m. at the Democratic Club of Taylor, 23400 Wick Rd., Taylor, MI 48180 **GUESTS ARE ALWAYS WELCOME.**

MEMBERSHIP: Applications for membership can be obtained at any general meeting or from any MMLS member. DUES: Entrance fee - $3.00; annual dues - $20.00 (adult), $2.00 (junior) on a year basis. Membership expires each Dec. 31.

ANNUAL EVENTS:
March - Spring Rock Swap and Sale, Banquet Fall- 2 Day SuperSwap and Sale November Annual Auction
Yearly Picnic

STUDY GROUPS: Special-interest study groups meet monthly, September though June. Currently the following groups are active: Bead Study, Mineralogy, Wire Study is conducted on individual basis.

FIELD TRIPS: Several one day field trips and one longer (one to two weeks) field trips are conducted each year. Mostly, these field trips focus on the collecting of mineral and fossil specimens at quarries, mines, and other known collecting sites in the United States and Canada. Field trips are restricted to MMLS members.

SCHOLARSHIP FUND: **MMLS** has established a scholarship Endowment Fund which provides scholarships to qualified students enrolled in an accredited college or university in southeastern Michigan who have completed at least their junior year and have a major in geology, mineralogy, paleontology or lapidary and related arts.

SEAMAN MINERAL MUSEUM: MMLS has designated the A.E. SEAMAN Mineral Museum, Houghton, Michigan, as it's "adoptive" museum, pledging to support it with gifts to the museum's endowment fund and the donation of mineral specimens and services.

INTERNET WEB SITES OF INTEREST:
Midwest Federation:
www.amfed.org/mw1lindex.html American
Lands Access Association: http: //amlands.org

American Federation:
www.amfed.org

The Rockhound's 10 Commandments:

Thou shall not touch thy neighbor's minerals unless he places them in thy hands.
Thou shall not test the strength of crystals by pushing, squeezing or biting.
Thou shall not drop thy neighbor's fossils, for many do not bounce properly.
Thou shall not place thy neighbor's specimens in thine own pocket.
Thou shall not collect at a neighbor's land unless unless thy neighbor knowst he's there.
Thou shall not argue names of minerals too violently; for sometimes thou couldst be wrong.
Thou shall not climb above thy neighbor's head when on a field trip, lest thou art willing to spend the rest of the day digging him out.
Thou shall protect thine eyes, hands & feet, so that they mayst enjoy many future field trips.
Thou shall not encroach upon thy neighbor's diggin's, lest thy neighbor's hammer be dropped upon thee.
Thou shall not break uncollectable specimens.

Midwest
Mineralogical and
Lapidary
Society of
Michigan

EDITOR
20281 THOMAS
BROWNSTOWN, MI
48183

OFFICIAL PUBLICATION OF

Dated Material

The ROCKPILE

Bulletin Editor Contest Awards

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1993 – 1st Place (Large Bulletin) AFMS
1991 – 1st Place (Large Bulletin) MWF
1990 – 1st Place (New Editor) AFMS
1990 – 1st Place (New Editor) MWF