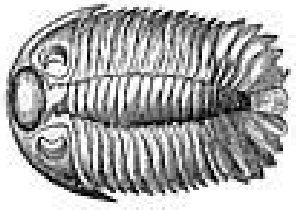
The Trilobite



Wisconsin Geological Society *March 2020*

NEXT WGS MEMBERSHIP MEETING & PROGRAM
Monday, March 9, 2020

Immaculate Heart of Mary Church Hall
(Downstairs, Enter at back of building)
1212 South 117th Street (Just North of Greenfield Ave):
West Allis, Wisconsin

7:00: Presentation followed by out business meeting as usual.

The presentation will be "Ice Ages in time and space" by Eduardo Luiz Menozzo da Rosa, Ph.D. student – Research Assistant, Department of Geosciences UWM

Junior Rockhound Report
By Denise Hohenfeldt

This month we explored the environment that Tully Monsters lived in, by looking at plant and animal fossils found and preserved in Mazon Creek nodules of stone. This was pair with artist renderings of the plants and animals, and photos of some of the plant types from that time that still haven't gone extinct.
The question was posed - Is a Tully Monster an unusual creature, or just part of an era with many life forms we perceive as odd, in comparison to the animals we are familiar with? We looked at a sampling of Cambrian Period creatures, from the Burgess Shale.

Pictures of some of the animals caused an adverse reaction when they look similar to centipedes and silver fish. The aversion was increased by the fact that some were close to a meter in length. Becoming familiar with the varied body shapes and plans of the Cambrian Period, the Tully Monster of the Carboniferous Period appears less of an anomaly compared to his neighbors from an earlier time.

Our next Junior Rockhound meeting will be Saturday March 14th at 2:00. We will be at the Wauwatosa Library 7635 W North Ave. Wauwatosa, WI 53213. We will be reviewing wire wrapping skills, to be used in the Kid's Area for our upcoming rock show. Also making posters for welcoming the show's attending children into the Kid's Area

WGS Minutes, February 10, 2020, Immaculate Heart of Mary Church Hall

The business meeting was called to order at 8:14PM by our Vice-President, John Hammetter.

The minutes of the February meeting were printed in *The Trilobite*. Chuck Rielmade a motion to accept the minutes as published. Jody Rymaszewski seconded. The motion was approved.

New Memberships: Nancy DeMalign family applied for membership. Denise Hohenfeldt made a motion to accept the membership. Another member seconded. The motion was approved.

Guests: Our guest speaker and Bonnie, a former scholarship recipient, and Darren, a former member.

Treasury Report: Christopher Nohl read the treasurer's report. Paul Schmidt made a motion to accept the treasurer's report for audit. Denise Hohenfeldt seconded. The motion was approved.

Committee Reports:

Show: The layouts are done. Bob will do the kitchen, Denise will do the Kid's Area. Hopefully we will be in the *Tribune* and the other publications we have been in the past. We will be having helpers from the Kettle Moraine group, but we also need to help out their show. John Hammetter will be doing overnight security. Mike Macali will do Door Prizes.

Newsletter: none

Lapidary: none

Mineral & Fossil Study Groups:
On hiatus at the moment. Shannon is willing to host meetings on weekday nights.

Junior Rockhounds:
The January Junior Rockhound meeting was cancelled due to snow. There will be a February meeting at the Wauwatosa Library on Saturday.

Field Trip: We will be going to the Field Museum on April 25 to see the meteorites we missed on the previous trip. We are also considering a field trip to Lizzadro in September.

Sunshine: No report.

Unfinished Business:

We're looking for a new meeting place. We will not be able meet here, starting in June. Pius will cost $100 a month. Inquiries will be made regarding the Wauwatosa Library.

New Business: none

Announcements: none

Door Prizes: No Door Prizes.

Adjournment: Mike Macali made a motion to adjourn. Chuck Riel seconded. The motion was approved. The meeting adjourned at 8:59PM.

Barbara Brown, WGS Secretary

CALENDAR OF EVENTS

The Midwest Federation website has an extensive calendar of shows and activities throughout the Midwest. **http://www.amfed.org/mwf/Calendar/calendar.html**

An extensive list on mineral shows is also at: **http://www.the-vug.com/vug/vugshows.html**

March 14,15 2020: Appleton WI: "Fox Rocks"
Grand Meridian, 2621 N. Oneida
Saturday 10-5, Sunday 10-4

March 14,15 2020: West Bend WI: Kettle Moraine Geological Society Show
Washington County Fair Park & Convention Center
3000 Hwy PV (1 block E of St. Hwy 45)
Sat 10-5, Sun 10-4

March 28,29 2020 Janesville, WI: Badger Lapidary and Geological Society Show
Rock County Fairgrounds, Craig Center Building, 1301 Craig Ave.
Sat 9-5, Sun 9-4

April 25,2020: Field Trip to Field Museum in Chicago. More info at Feb. Meeting

May 2,3 2020: Marshfield WI. Heart of Wisconsin Gem, Mineral, Fossil & Jewelry Show
Marshfield Senior High Fieldhouse
1401 E. Becker Road
Saturday 10-5, Sunday 10-4

May 16,17 2020: Wauwatosa WI. Wisconsin Geological Society Annual Show
Muellner Building, Hart Park (Park entrance at 72nd and State Street)
Saturday 10-5, Sunday 10-4:30

WGS Members, Please Note:

Your Membership Dues are renewed in November.

$15.00 Single Membership, $20.00 Family Membership

Please remember to send your check to Club Treasurer Christopher Nohl, 3240 N. Summit Ave , Milwaukee 53211

I will be cleaning up the Trilobite distribution list in March, so it you want to continue receiving the newsletter be sure to get your dues to Chris.

WGS STUDY GROUPS

WGS MINERAL STUDY GROUP

We would like to reconstitute the Mineral Study Group. Shannon has offered her and Christopher's house as a meeting place. If you are interested in being a part of the group, you can sign up at the March meeting. Indicate a day of the week and time that would be good for you.

Junior Rockhounds

We will meet at the Wauwatosa Library, 7635 W. North Ave., Saturday March 14th at 2:00.

WGS LAPIDARY STUDY GROUP

The Lapidary Study Group meets as McGovern Park Senior Center, 4500 West Custer Avenue, Milwaukee.

Our 2020 Rock and Gem Show will again be held at Hart Park the weekend after Mother's day. May 16 and 17

Setup will be after 10:30 on Friday May 115th.

Paul Schmidt—Show Chairman
pvs@wi.rr.com 414-771-8668

We have a field trip to the Field Museum of Natural History in Chicago coming up on April 25. We will be given a tour of their extensive collection of minerals and meteorites.
If you have not all ready signed up, you must do so by our next meeting on March 9. You can also sign up by emailing me at john.hammetter@marquette.edu.
Bus transportation will be provided by the club.

The Kettle Moraine Geological Society has their show on March 14-15. Volunteers are needed from our club to work security. They helped us out tremendously at our show last year so we should reciprocate this year. Would you please volunteer? You would only have to work four hours on Saturday or Sunday. Email me if you'd like to help out. Helping them helps us.

Minnesota's Banded Iron Ore by Steve Voynick.
From an article that appeared in Rock and Gem Magazine and reprinted with their permission.

If Minnesota ever decides to designate an official state rock, it should be banded iron ore. Since the late 1800s, Minnesota's four "iron ranges" have yielded four billion tons of banded iron ore that have provided 90 percent of the nation's iron.

The two types of Minnesota's banded iron ore are specularite and taconite. Specularite is a high-grade ore with well-defined, alternating layers of reddish chert and dark, glittery hematite; taconite has dark-gray bands and is much lower in grade. They share a common origin and are among the oldest ores ever mined.

Both specularite and taconite are partially altered sedimentary rocks. They were laid down during the late Precambrian Era when the Earth's atmosphere was devoid of oxygen. The region that is now northeastern Minnesota was then covered by a warm, highly acidic, shallow sea rich in dissolved iron and silica. Some 2.5 billion years ago, global environmental conditions began changing with the onset of the Great Oxygenation Event, a sweeping biochemical transition that lasted more than a billion years. It was triggered by the appearance of cyanobacteria, simple, algae-like life forms that obtained energy from photosynthesis and released large quantities of oxygen. Thick layers of cyanobacteria formed reef-like structures (which fossilized as stromatolites) at the edges of the seas. Cyanobacteria oxygenated the seawater, slowly reducing its acidity and precipitating iron ions as magnetite (ferric-ferrous oxide, Fe_3O_4) and silicon ions as chert (microcrystalline quartz, SiO_2). After the iron had precipitated, excess oxygen then began escaping from the seawater to eventually create the oxygen-rich atmosphere that we breathe today. Iron and silica accumulated on the sea bottom as alternating layers of magnetite and chert. The heat and pressure of deep burial later lithified these sediments into a hard, durable rock containing 25 percent iron. Much later, meteoric water and hydrothermal fluids altered part, but not all, of this iron-rich rock. Within the altered sections, magnetite oxidized into hematite (ferric oxide, Fe_2O_3). Large amounts of silica also leached away, enriching the rock's iron content to 55 percent. Because crystalline hematite is silvery-black and particulate hematite is red, this altered, iron-enriched rock exhibits alternating layers of reddish chert and shiny gray layers of crystalline hematite. The unaltered sediments formed taconite, a hard, high-silica, dark-gray rock that consists of magnetite and chert, and contains about 25 percent iron.

In the 1800s, Minnesota's first iron miners were concerned only with the high-grade specularite that required no concentration and could be shipped directly to distant smelters. But when the specularite ran out in the 1950s, Minnesota's iron-mining industry faced a crisis. All it had left was huge quantities of taconite—all too low in grade for direct smelting.

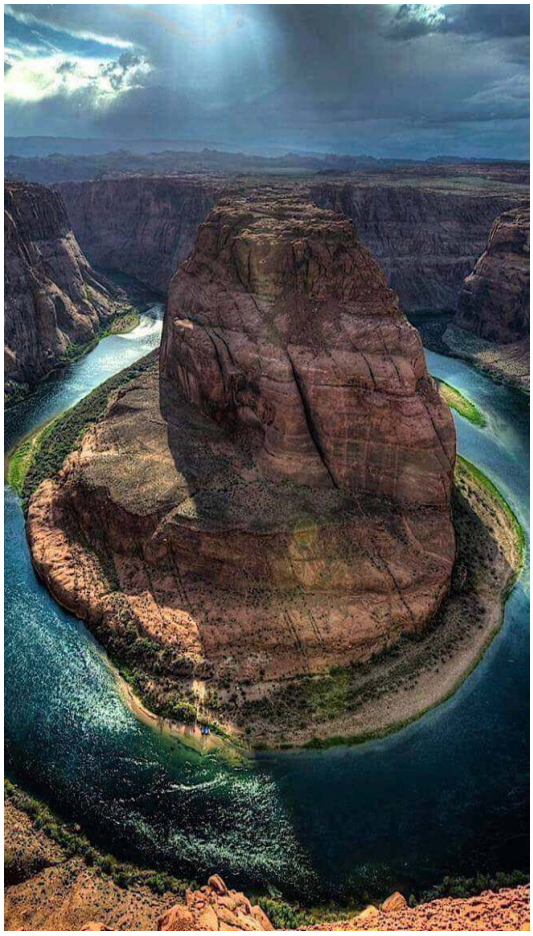
In the 1920s, the University of Minnesota's Dr. Edward W. Davis, aware that the reserves of high-grade specularite wouldn't last forever, had begun studying ways to concentrate low-grade taconite. After decades of work—and just as the specularite was being depleted—he perfected an inexpensive process to "pelletize" taconite. Grinding it to a powder, he concentrated its contained magnetite with electromagnets, added powdered limestone and bentonite clay, then rolled the mixture into half-inch pellets and roasted it at high temperatures. This exothermic reaction, which provided much of the process's required heat, oxidized the magnetite into hematite and yielded hard porous pellets. Produced at mine sites, these ready-to-smelt taconite pellets contain 55 percent iron—high enough in grade to be shipped to distant smelters. Pelletization saved Minnesota's iron-mining industry. Today, six Minnesota mines pelletize 40 million tons of taconite ore worth $1.5 billion each year. So, if Minnesota ever designates an official state rock, it should be either specularite or taconite, or simply "banded iron ore." continued on next page …...

Steve Voynick is a science writer, mineral collector, and former hardrock miner, and the author of guidebooks like *Colorado Rockhounding*

Horseshoe Bend is a horseshoe-shaped incised meander of the Colorado River located near the town of Page, Arizona.

Horseshoe Bend is an example of what happens when water takes the path of least resistance. Approximately 5 million years ago – or what a geologist might describe as "just the other day" – the Colorado Plateau abruptly uplifted. The rivers that flowed across this ancient landscape were suddenly trapped in their beds. Seeking a new natural level, with the help of gravity, the Colorado River began cutting through rock layers deep and fast. Here at Horseshoe Bend, an unstoppable force met an immovable object, namely, a sandstone escarpment. Since this rock formation wasn't going to budge anytime soon, the river did the most logical thing it could: it went around it. The result is the 270° bend in the river (called an "incised" or "entrenched meander") you see before you. Who knows, in a few million years, the stubborn promontory might finally decide to give way to the river's whims, and future tourists could be viewing an attraction that bears a resemblance to Rainbow Bridge!

Horseshoe bend.com,



More from Jack Morris and the Last Chance Mine in Creede Colorado (lastchancemine.com)

To collect some of the most beautiful mill-run ore you'll ever see, visit the Last Chance Mine. Here you can collect beautiful minerals, Such As: Sowbelly Agate, found only here in Creede mining district! Amethyst (some over 300 pounds! and all pieces take well to polish), we also have rare turquoise only found at the Last Chance. Other minerals that have been found include but are not limited to Galena, Zinc, Shalpalerite, Pink Rhodonite, Native Silver, Chalcopyrite, Copper, Red Jasper, Pyrite, Black Manganese coated Amethyst crystals, Amethyst crystal plates,and Drusy Amethyst, Cessurite, Galena Ferrous Silver, and Sowbelly Agate . What you find is yours to keep, for only $2.00 per pound.

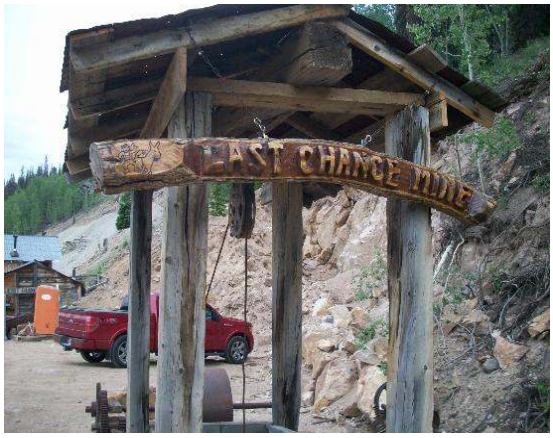
Morris guarantees that collectors will find all the Amethyst Vein material they want. Most collect- and carefully select-between 10 and 40 pounds. Some take small bits for tumbling, while others select cabinet-sized specimens for display or even larger pieces for lapidary purposes. The largest single piece of Amethyst Vein material collected was a 300-pound boulder destined to become a yard display.

Sowbelly agate makes a superb cutting material, and serious lapidaries sometimes collect more than 100 pounds of it at a time. Collectors may also find fragmented plates of crystalline amethyst that formed as vug linings. Amethyst crystals as large as 1 inch have a clean purple hue and are sometimes gem quality. For those who do not wish to collect, the Last Chance sells a large selection of sowbelly agate, plate amethyst, and other rocks and minerals. Dump minerals include specimens of argentiferous galena and argentite that sometimes assay as high as 30 troy ounces of silver per ton. Turquoise is another mineral occasionally found on the dumps.

The Last Chance, along with mines at Leadville, Cripple Creek, Manassas, and Bonanza, is one of five Colorado turquoise sources. Although turquoise is not abundant, miners have collected it at the Last Chance since the 1890s. The Last Chance in Creede has turquoise that occurs in a broad range of colors from yellow-green "lemon" turquoise to pale and deep greens and blues. Last Chance turquoise is sometimes flecked with iron-based brown inclusions and manganese-based black inclusions.

Available for large groups and clubs by appointment.

Jack Morris, Owner, www.lastchancemine.com



This was sent to my inbox by National Geographic
Wed. January 8, 2020

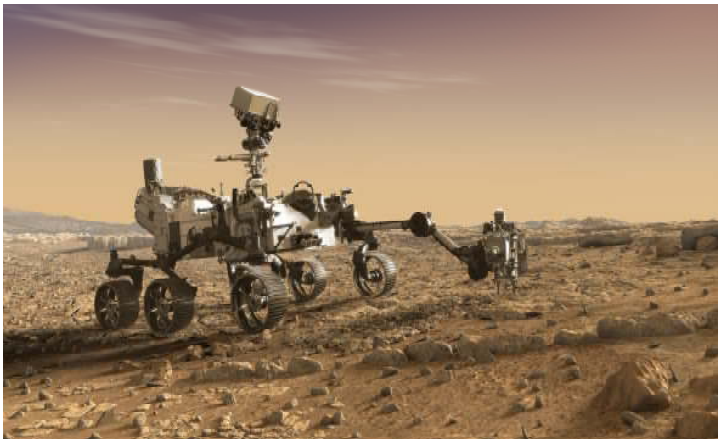
Today's big Question
Who will learn more from Mars?

*By Victoria Jaggard, **SCIENCE** Executive Editor*

Roughly every two years, Mars makes its closest approach to Earth as the planets trace their orbital dance around the sun. The event not only makes the red planet a stunning sky-watching target, it affords space agencies their most efficient window for launching new Martian missions. This year brings one such fortuitous alignment, and it's especially exciting because we should see a whopping three rovers from multiple countries set out on quests to find signs of life on Mars.

In July, NASA is slated to launch its Mars 2020 rover which will not only look for life, it will also collect rock samples for eventual return to Earth. Around the same time, The European Space Agency and the Russian Roscosmos will send up their Rosalind Franklin rover, which should drill into the red planet and hunt for microbial traces. Rounding out the trio, China's space agency will attempt its first Martian landing with the launch of the rover-orbiter combo pack Huoxing-1, which will also be geared up to search for biosignatures.

Assuming everything goes to plan, these three missions will arrive at Mars in the spring of 2021. Who knows what, if anything, their various hunts might reveal, but I will be on pins and needles as the missions progress, eagerly anticipating the prospect of answering that most profound question: Are we alone in the solar system?



From mars.nasa.gov

This artist's rendition depicts NASA's Mars 2020 rover studying rocks with its robotic arm.

Mars 2020 is targeted for launch in July/August 2020 aboard an Atlas V-541 rocket from Space Launch Complex 41 at Cape Canaveral Air Force Station in Florida.

The mission will not only seek out and study an area likely to have been habitable in the distant past, but it will take the next, bold step in robotic exploration of the Red Planet by seeking signs of past microbial life itself.

Bench Tips by Brad

CUTTING MOLDS

Cutting molds is easier and more precise with a sharp blade. A new Xacto blade is sufficient for cutting RTV molds but is usually not sharp enough for vulcanized rubber. For that it's best to use scalpel blades available from most jewelry supply companies. The #11 blade is triangle shaped, and the #12 is hawksbill shaped. I find the hawksbill is particularly nice for cutting the registration keys of the mold.

USING YOUR THUMB

When using multiple bits in a Foredom, we often have to deal with different shaft sizes - the usual 3/32 inch burs, the larger 1/8 inch shafts sizes and of course the many different sizes of twist drills. For some reason I really dislike having to turn the key multiple times to open or close the jaws of the handpiece chuck.

So I have two ways to speed up that task. For opening up the jaws, I just remember "four", the number of turns I have to make to open the chuck just enough from the 3/32 bur shaft size to the larger 1/8 bur shaft size.

For closing the jaws around a smaller shaft, there's a neat trick. Hold the new bit in the center of the open jaws of the chuck, put your thumb lightly onto the outer toothed collar of the chuck, and gently start up the Foredom. As the chuck turns, it will naturally tighten the jaws around the bur shaft or the drill bit. Then all you have to do is a final tightening with the key.

Elephant Birds were huge, flightless birds which lived up until the 18th century in Madagascar. The bird – related to ostriches and emus – is the largest bird ever to have lived. It had massive legs, taloned claws and a long, powerful neck. Its body was covered in bristling, hairlike feathers, like those of the emu, and its beak resembled a broad-headed spear.

The Elephant Bird was given its name due to its great size. The average Elephant Bird was approximately 10-feet tall and weighed about 1,000 pounds – or half a ton. This meant that it was half the height of a giraffe and weighed more than a horse. It was probably the biggest bird of all time. Fossil eggs and egg shells have been found with some having a circumference of more than 3 ft. The egg volume is about 160 times greater than a chicken egg.

One of the interesting facts about Elephant Birds is that the island environment of Madagascar probably contributed to their enormous size. That's because it was a lush tropical environment that had a lot of vegetation for it to eat but was devoid of many of the predators that other locations would have had. This allowed this bird to evolve into a bigger size. This is due to an evolutionary principle called insular gigantism.

For many years, it was believed that the Elephant Bird was related to the Giant Moa of New Zealand. Which makes sense, if you think about it, after all, they are both giant birds. However, that is simply not the case. Scientists have found out that they are actually related to another inhabitant of New Zealand, the kiwi. Some scientists believe that eons ago, a group of kiwi ended up on Madagascar and eventually evolved to an enormous size.

Although the Elephant Bird was big and scary, it probably lived off a diet of low-hanging tropical fruit and not the small animals you would expect it to eat. This theory has been proven by the study of other smaller extant ratites whose bodies are perfectly designed for a fruit diet.

Even though they have been extinct for hundreds of years, a new report from Britain hints that they could be resurrected some day since scientists have discovered how to extract DNA from ancient eggshells. Genetic material from the elephant bird, along with extinct emus of Australia and moas of New Zealand, have been collected by a new technique. In one case the DNA dated back more than 19,000 years. Scientists have discovered that eggshells are as good if not a better source than bone and hair. Bird eggshell is resilient and acts as a barrier to oxygen and water – the key causes of DNA damage. Modern shells also have antimicrobial chemicals and it also possible these remain active in fossil shells.

Techniques to map DNA from animals have taken great leaps forwards in recent years and scientists have already decoded the genetic make-up of extinct creatures such as the mammoth and the Neanderthal.

https://www.newdinosaurs.com/elephant-bird/ https://www.telegraph.co.uk

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The Purpose of the Wisconsin Geological Society, Inc is to:

Create an interest in the study of Geology

Provide a means for personal development in Geology.

Disseminate knowledge concerning all phases of Geology.

The **Wisconsin Geological Society, Inc** is a member of the Midwest Federation of Mineralogical and Geological Studies, which is a part of the American Federation of Mineralogical Societies.
www.amfed.org/mwf

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March 2020
Volume 76 Number 03

FIRST CLASS

To:

General Membership meetings are held each month (except July and August) on the second Monday of the month at 7:00p.m. in the Parish Hall (lower level) of the Immaculate Heart of Mary Catholic Church, 1212 South 117th Street; West Allis, Wisconsin.

All news, articles, and pictures to be included in the Trilobite should be forwarded to the editor by the 15th of the month. They can be mailed or e-mailed to:
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The check should be made out to WGS

The Wisconsin Geological Society, Inc is now in it's 84th year