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# THE LAKE AGASSIZ ROCK HOUND

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## Fool's Gold for April Fool's Day

Edited for educational info. See full article at:

<https://www.thermofisher.com/blog/mining/pyrite-the-real-story-behind-fools-gold/>

"Fool's Gold" is technically known as pyrite or iron sulfide ( $\text{FeS}_2$ ). It is one of the most common sulfide minerals. This group of inorganic compounds contain sulfur and one or more elements. Minerals are defined by their chemistry and crystalline structure. Minerals that have the same chemical composition but different crystal structures are called polymorphs.

Pyrite and marcasite, for example, are polymorphs because they are both iron sulfide, but each has a distinct structure.

Some other common sulfides are chalcopyrite (copper iron sulfide), pentlandite (nickel iron sulfide), and galena (lead sulfide). Many sulfides are economically important as metal ores.

Pyrite is called "Fool's Gold" because it resembles gold to the untrained eye. Pyrite is brittle and will break rather than bend as gold does. Gold leaves a yellow streak, while pyrite's streak is brownish black.

Pyrite is so named from the Greek word for fire (pyr) because it can create sparks for starting a fire when struck against metal or stone. This property made it useful for firearms at one time but this application is now obsolete. Pyrite was once a source of sulfur and sulfuric acid, but today most sulfur is obtained as a byproduct of natural gas and crude oil processing.

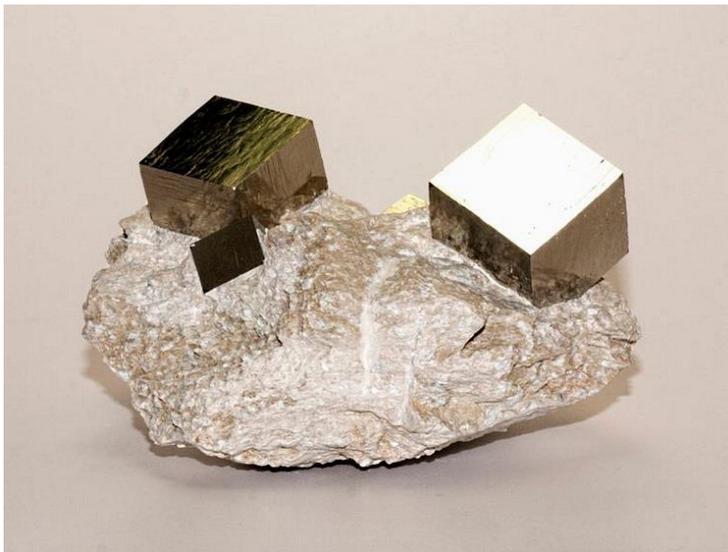
Today pyrite is sometimes sold as a novelty item or costume jewelry. But pyrite isn't entirely useless; in fact it's a good way to find real gold because the two form together under similar conditions. Gold can even occur as inclusions inside pyrite, sometimes in mineable quantities depending on how effectively the gold can be recovered.



Pyrite forms in sedimentary rocks in oxygen-poor environments in the presence of iron and sulfur. These are usually organic environments, such as coal and black shale, where decaying organic material consumes oxygen and releases sulfur. Pyrite often replaces plant debris and shells to create pyrite fossils or flattened discs called pyrite dollars.

In calcite and quartz veins, pyrite oxidizes to iron oxides or hydroxides such as limonite, an indicator that there is pyrite in the underlying rock. Such oxidized zones are called "gossan," which appears as rusty zones at the surface. Gossans can be a good drilling targets for gold and other precious or base metals.

Pyrite is a widespread natural source of arsenic, which can leach into ground-water aquifers when geologic strata containing pyrite are exposed to the air and water, during coal mining for example. Acid mine drainage and groundwater contamination requires close monitoring to ensure that it has been neutralized before being returned to the earth.



Pyrite is found in a wide variety of geological settings, from igneous, sedimentary and metamorphic rock to hydrothermal mineral deposits, as well as in coal beds and as a replacement mineral in fossils

**Please Come to the LARC  
April 2020 Meeting**  
**ALL DEPENDING IF NDSU will be be open...**

**Wednesday April 1<sup>st</sup> 7:00 pm**  
**Stevens Hall Room 134, NDSU**

**Program:**

**Jessie Rock**

**Speaks on plans for  
the new**

**F/M Science Museum**

**Share & Tell - April Fool's Day**

**Bring your bling! Pyrite Fools Gold pieces**

**Guests are always welcome!**

## Lake Agassiz Rock Club

**President:** Frank Svezia  
**Vice President:** Nina Flippance  
**Treasurer:** Terry Mallick  
**Secretary:** Chris Patenaude  
**Youth Group/Pebble Pups:** Nina Flippance  
**Program planning ideas/volunteers welcome**

### What is our Purpose?

To create an interest and promote a knowledge of all phases of geology or earth sciences in an informal setting.

### Where and When Do We Meet?

The Geology Lab, Room 136, lower level of Stevens Hall, NDSU, Fargo. Time: 7:00 p.m. This placement may change soon as we are seeking a larger space for our members. Directions meanwhile:

[From N. University Dr. turn West on 12<sup>th</sup> Ave N. Turn North on Bolley Dr. Drive just past Centennial Boulevard. See **Stevens Hall** on west side of Bolley, 2<sup>nd</sup> hall from the corner. To park, go into next driveway ahead, on the left. Drive west, then left again behind a lab building to Stevens Hall back-lot. Enter E. door or call a member to hold N. door.

### How Much Are the Dues?

Single person—\$20.00; Family—\$30.00; College (any school) students and youth (if not a family member)—\$10.00 per year. Send dues to Terry Mallick, Treasurer; 416 3rd Avenue S., Moorhead, MN 56560. Or contact him during regular meetings.

### What Happens at Meetings?

Our youth group The Pebble Pups attend their own separate group meeting, while the adults cover business. The kids join us for the main Program; a silent auction of collectable minerals; and "lunch".

### What are some of our Club Activities?

Field trips are taken to areas ND, SD, and MN. We fundraise at the R.R.V. Fair. LARC sponsors a scholarship to an outstanding Geology student at NDSU each year. Personal Info lessons can be arranged for pre-meeting times. Lots of Show & Tell at meeting nights!

### What are Our Club Affiliations?

We are affiliated with the American Federation of Mineralogical Societies. (**AFMS**) We are in the subsector Midwest Federation of the Mineralogical and Geological Societies. (**MWF**)

### How Do We Keep in Touch?

Website: > <http://www.lakeagassizrocks.com/> <  
Facebook: > [lakeagassizrocks.com/about.php](http://lakeagassizrocks.com/about.php) <  
The Lake Agassiz Rock Hound is our monthly bulletin e-mailed 7 days before meetings. Paper copy free to active members **without** computer access. \$15 dollar subscription/ yr. for hardcopy to members who want one in addition to their e-addy. **Send news tips and articles** to the editor: Chris Patenaude P.O.Box 434, Perley, MN 56574 or email [LakeAgzRC70@yahoo.com](mailto:LakeAgzRC70@yahoo.com). Rock Hound articles may be reprinted if full credit is given, unless otherwise noted.

LARC is an all-inclusive, diverse group. We welcome and respect every person in regard to age, gender, heritage, language, social class or disability. Discrimination or ill will towards another will not be tolerated. We are here to support any and all who love the hobby.

## Minutes from March 4<sup>th</sup>, 2020 Meeting

Submitted by Chris Patenaude, Secretary

Shortened notes, access to computer with editing software will be limited. Public Library where I do this will be shutting doors for two weeks due to Covid-19. What I can get done in one hour will have to suffice indefinitely into the future.

Regarding finding a bigger room has its setbacks. Opinions from the meeting included the facts that going offsite (NDSU) might be more problems than it's worth. So far we have managed to get all comers into the classroom we use. Members come and go. Right now, with the national crisis and the virus, we should just drift with the flow and see how things are, later.

Earlier, the daughter in law of one of LARC's founding members contacted the club. Her Father-In-Law had passed on and she had his facet cutter to give away. One suggestion was to hold a "memorial" silent auction and donate the bid to the Club. Another comment from a member who had gone to look at the machine said it was a tad worn and a few parts needed replacing. The gal apparently had a few interested parties and it was to find new hands in less than a week (from the meeting date.) So discussion dropped.

Secretary's and Treasurer's reports moved to be accepted, Ayes.

We might ask Jesse Rock to inquire after the student who won the LARC scholarship this year to see if she would like to present on a favorite topic of her own.

Shown for entertainment was a great You Tube on some of the best Amethyst Geodes in the world coming out of Uruguay. Wow!

## BRAD'S BENCH TIPS

### TOUCHING UP A BEZEL

Pumice wheels are good for touching up a bezel after you've set the stone. The hardness is about 6 on the Moh's scale, less hard than quartz, so it shouldn't scratch any of your agates or jaspers. However, I'd avoid or be real careful of using pumice near the softer stones like turquoise, amber, howelite, etc.

If you're unsure about the hardness of your wheels, test them on a piece of glass. Glass is about 5 ½ on the Mohs scale, softer than quartz. So if the wheel doesn't harm glass, it's safe for use on the quartzes and harder stones.

My preference is the one inch diameter ones such as those shown at > [riogrande.com/Product/AdvantEdge-Pumice-Wheels-Medium/332722?pos=2](http://riogrande.com/Product/AdvantEdge-Pumice-Wheels-Medium/332722?pos=2) <

Work Smarter & Be More Productive With Brad's "How To" Jewelry Books

<https://www.Amazon.com/author/bradfordsmith>

## Virus Spread May Just Have Found Its Copperhead

New research from the University of Southampton has found that copper can effectively help to prevent the spread of respiratory viruses, which are linked to severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).



Animal coronaviruses that 'host jump' to humans, such as SARS and MERS, result in severe infections with high mortality. The Southampton researchers found that a closely-related human coronavirus -- 229E -- can remain infectious on common surface materials for several days, but is rapidly destroyed on copper.

On copper, and a range of copper alloys -- collectively termed 'antimicrobial copper' -- the coronavirus was rapidly inactivated (within a few minutes, for simulated fingertip contamination). Exposure to copper destroyed the virus completely and irreversibly, leading the researchers to conclude that antimicrobial copper surfaces could be employed in communal areas and at any mass gatherings to help reduce the spread of respiratory viruses and protect public health.

"Human coronavirus, which also has ancestral links with bat-like viruses responsible for SARS and MERS, was found to be permanently and rapidly deactivated upon contact with copper. What's more, the viral genome and structure of the viral particles were destroyed, so nothing remained that could pass on an infection. With the lack of antiviral treatments, copper offers a measure that can help reduce the risk of these infections spreading."

Read the complete article online at:

<https://www.sciencedaily.com/releases/2015/11/151110102147.htm>

## MWF April 2020 Calendar

<http://www.amfed.org/nwf/Calendar/April.html>

**4: LOVES PARK, IL** Rock River Valley Gem & Mineral Society Open House. 10 am - 3 pm. North Suburban Library, 6340 N. 2nd St., Loves Park. Contact: Duane Cushing, (815) 218-5011; [tcdc78@comcast.net](mailto:tcdc78@comcast.net)

**4-5: MARION, IL** Southern Illinois Earth Science Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Pavilion of the City of Marion, 1602 Sioux Dr., Marion. Contact: Mike Contofalsky, (618) 367-0046, [chontofalsky@att.net](mailto:chontofalsky@att.net)

**4-5: FORT DODGE, IA** River Valley Rockhounds Annual Show. Sat 9 am - 5 pm; Sun 11 am - 4 pm. Webster County Fairgrounds, 22770 Old Highway 169, Fort Dodge, IA. Contact: Jim Baumer, (515) 571-6549; [jbaum@frontiernet.net](mailto:jbaum@frontiernet.net)

**4-5 LINCOLN, NE** Lincoln Gem & Mineral Club Annual Show. Sat 9 am - 6 pm; Sun 10 am - 5 pm. Lancaster Event Center, 4100 North 84th St., Lincoln. Contact: Jayne Beer, (402) 890-3307; [jbeer60070@aol.com](mailto:jbeer60070@aol.com)

**4-5: CANTON, IL** Fulton County Rockhounds Annual Show. Sat 10 am - 5 pm; Sun 10 am - 4 pm. Donnelson Center @ Wallace Park, 250 S. Ave. D, Canton. Contact: George Coursey, (309) 368-2947.

**4-5: GREEN BAY, WI** Neville Public Museum Geology Club Annual Show. Sat 9 am - 5 pm; Sun 10 am - 4 pm. Neville Public Museum, 210 Museum Place, Green Bay. Contact: Randy Phillips, (920) 437-4979; [bay45@hotmail.com](mailto:bay45@hotmail.com)

**4-5: COLUMBUS, OH** Columbus Rock & Mineral Society Annual Show. Sat 10 am - 6 pm; Sun 11 am - 5 pm. Northland Performing Arts Center, 4411 Tamarack Blvd, Columbus. Contact: Craig Kramer, (614) 436-4511; [show-info@columbusrockandmineralsociety.org](mailto:show-info@columbusrockandmineralsociety.org); [www.columbusrockandmineralsociety.org](http://www.columbusrockandmineralsociety.org)

**9-11: WYOMING, MI** Indian Mounds Rock & Mineral Club Annow Show. Thurs & Fri. 9:30 am - 9 pm; Sat. 9:30 am - 7 pm. Rogers Plaza Town Center, 972 - 28th St., Wyoming. Contact: Kreigh Tomaszewski, (616) 243-5851.

**18-19: DECATUR, IL** Rockhounds of Central & Southern Illinois Annual Show. Sat 10 am - 6 pm; Sun 10 am - 4 pm. Golden Fox Brewery, 2874 Denneen St., Decatur. Contact: Rits Winter, (217) 791-3512.

**25-26: BAY CITY, MI** Tri-County Rocks & Minerals Society Rocks & Mineral Show. Sat 10 am - 9 pm; Sun Noon - 6 pm. Bay City Town Center, 4101 E. Wilder Rd., Bay City. Contact: Renee Simmons (989) 751-5650; [simmonsironman@yahoo.com](mailto:simmonsironman@yahoo.com); or Kim Sherwood, (989) 225-9140

**25-26: CUYAHOGA FALLS, OH** Summit Lapidary Club & Akron Mineral Society Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Emidio & Sons Expo Center, 48 East Bath Rd., Cuyahoga Falls. Contact: Guy Kotch, [gemboreechairman@gmail.com](mailto:gemboreechairman@gmail.com)

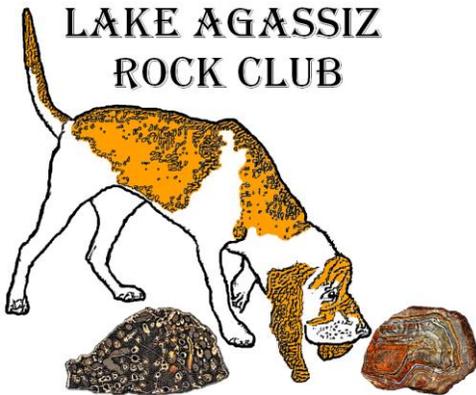
**25-26: EAU CLAIRE, WI** Chippewa Valley Gem & Mineral Society Annual Show. Sat 9 am - 5 pm; Sun 10 am - 4 pm. Eau Claire Expo Center, Building E, 5530 Fairview Dr., Eau Claire. Contact: Paul Tubbs, (715) 834-5747; [bizpam1@gmail.com](mailto:bizpam1@gmail.com)

**25-26: DAVENPORT, IA** Black Hawk Gem & Mineral Club Spring Show. Sat 10 am - 5 pm; Sun 11 am - 4 pm. Mississippi Valley Fairgrounds, 2815 W. Locust St., Davenport. Contact: Craig or Kellie Moore, (563) 299-5740; [kalsinean@gmail.com](mailto:kalsinean@gmail.com); [www.blackhawkgemandmineralclub.com](http://www.blackhawkgemandmineralclub.com)

**26: WATERLOO, IA** Black Hawk Gem & Mineral Society Annual Show. 11 am - 5 pm. Waterloo Center for the Arts, 225 Commercial St., Waterloo, IA. Contact: David Malm, (319) 266-6433; [davidmalm@efa.net](mailto:davidmalm@efa.net)



Lake Agassiz Rock Hound  
P.O. Box 434  
Perley, MN 56574



Marra Mamba Tiger Eye is a rare variety of Tiger Eye found only in the Hamersley Ranges of the Pilbara region in Western Australia. Only two deposits have ever produced "true" Marra Mamba, a rare type with reds, blues, yellow, gold and greens.

It is extremely old, forming when the Earth was very young and had little to no oxygen in its atmosphere. In the oceans, photosynthetic bacteria evolved more than 2700 million years ago, and gave off oxygen. Iron from underwater volcanos combined as iron-oxide precipitants and resulted in iron-rich and silica-rich bands, which are now classified as banded iron formations (BIFs).

Marra Mamba Tiger Eye was mined out in the 1970's. It is the most sought after form of Tiger Eye because of its mix of highly chatoyant Tiger Eye, (which can be golden, bluish, greenish or reddish). To top it off, Marra Mamba Tiger Eye often contains hematite and jasper.