



THE MOUNTAIN GEM

Gem & Mineral Society of Franklin, North Carolina

April 2020 Newsletter



Franklin Gem and Mineral Society

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Membership: Tom Parker and Diane Mason
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Curator Emeritus: Fred Plesner, (828-349-4224)
Museum Gift Shop: Nancy Hopp (828-508-0637), Anamay Rossomando (828-349-2807)
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Publicity: George Fritz, (828-524-4936)
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Newsletter Editor: Stacy Walbridge [fgmseditor@gmail.com]

The Club is a member of the American Federation of Mineralogical Societies and the Southeast Federation of the Mineralogical Societies.



The Gem and Mineral Society of Franklin, North Carolina, is a 501 (c)(3) organization and donations may be tax deductible. Please remember us when planning your estate.

From the Editor

Greetings members! Another month has gone by and I think we are starting to see the light at the end of the tunnel. Numbers are starting to come in that seem to show that COVID-19 has been with us longer than thought and that the number of people that are asymptomatic indicate that the morbidity rate is significantly lower than originally estimated. Hopefully, by this time next month we will have seen the worst of it and be well on our way out of hibernation.

There is little club news to report this month but I thought it important to stay in touch with you by publishing the newsletter. For this month's edition I asked several board members to write up a little about what they've been doing during this stay-at-home time so you will see some extra articles and pictures.

One of the positive outcomes Kathi and I have experienced during this time is that we've gotten in touch with some old friends. They use Zoom, video conferencing, quite regularly and convinced us to try it. They wanted to see what we've been collecting and making and share with us what they've been doing. With some hesitation we agreed, pulled some of our rocks and jewelry together in front of our computer and made the call. What I thought was going to be a half hour call ended up lasting for over 90 minutes and was filled with jokes and laughter.

Although these have been trying times, it will get better and the rocks will still be there waiting for us. I hope you enjoy this issue.

Stacy Walbridge

Club Website: <http://www.fgmm.org>
<https://www.facebook.com/franklingems>

Club Facebook Page:

Club Newsletter: fgmseditor@gmail.com, **Club Contact E-mail:** franklingsociety@gmail.com

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NOTES FROM THE CLASSROOM

Diane Mason

There are three (?) students in beginning wire (WIRE I) that are waiting to complete the class. There are also several students waiting on a cabbing class. My husband and I just want you to know that you are not forgotten. When all is said and done and our borders are open again we will be there to carry on these teaching assignments. At present we cannot cross the North Carolina state line.

Well, we have been extremely busy during our "down time". We've done a lot of yard work. We rebuilt a 4'x4' glass show case complete with lights (thank goodness for Amazon). The next project is to build an outdoor fountain between the garage and the house. This is something that has been in the plans for the last 6 years and just never got done.

Diane has been trying to do some wrapping every day and now she has enough inventory for about 2 years. She has also been working on new projects for her classes and getting them ready for students.

Jerry has been running the slab saw several days a week so that WHEN it is time to open the Rock Shop everything will be ready. The one thing that they have tried to keep constant is their usual hours. Get up at the same time, go to bed at the same time, and eat meals at the same time. That way when the world opens back up it should not be such a culture shock and make them wonder how they were able to do everything and get it all done.

However, none of this can take the place of seeing the people we know and our friends. We miss Susan and George and the Kountry Kitchen and running to Mary's for breakfast. Life goes on and

we all will survive this trauma. Hopefully we will have some good times to remember from this and not all of the bad.

We hope all of you are well and taking care of yourselves and abiding by the rules of the state (whichever one you are in). Thanks for being understanding and we will see you when covid-19 is over.

Jerry & Diane Mason

Certificates Awarded

During the last club meeting 4 members completed instruction in making cabochons and polishing sapphires. Jay and Jenny Mooney are now certified to use the cabochon equipment in the museum. Bushy and Mike Hartman received a certificate for the special techniques used to polish sapphires.



Jay Mooney, Instructor Jerry Mason, and Jenny Mooney
Photograph by Al Pribble



Instructor John Hayes, Bushy, and Mike Hartman
Photograph by Al Pribble

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Al Pribble has been busy with some jewelry projects during his stay-at-home time.



Unknown Agate Pendant, Earrings, & Ring
Photograph by Al Pribble.



Kokopelli Earrings
Photograph by Al Pribble



Blue Lace Agate Pendant
Photograph by Al Pribble

Al purchased the Kokopelli castings at one of our shows and added the ear wires for this earring set.

Al Pribble

Be Wary of Kokopelli

Kokopelli is an image surviving from ancient Anasazi Indian mythology and is a prominent figure in Hopi legends. The figure represents a mischievous trickster or the Minstrel, spirit of music. Kokopelli is considered a symbol of fertility who brought well-being to the people, assuring success in hunting, planting and growing crops, and human conception.



Image Courtesy of
en.wikipedia.org



Lapis Pendant and Earring Set
Photograph by Al Pribble



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FROM THE GIFT SHOP

Nancy Hopp

In anticipation of re-opening the Gift Shop sometime in the near future I would like to hear ideas from the members of changes or additions you would like to see in the Museum Gift Shop. Would you like to add things like tools, beads, beading supplies, specific specimens, etc.? We won't be able to implement all of your ideas right away but it will help point us in the right direction.



FIELD TRIPS

Marsha Harmon

Howdy Ya'll,

The good news with this Corona Virus is that my house may not have been this clean in a long time and yesterday's assault on hill # 1 was a success which means one of my three hills have been mowed.

I have an appointment to give blood, by going on line to RedCrossBlood.org and choosing a time with a few simple questions. It is quite easy and I have even taught myself to make a mask so I'll be styling. If you can get out; it is a worthwhile hour out of your day. May 1st, 5th and 30th they will be back in Franklin!

If you know how to cut hair, have the ability to help with a Van Conversion and/or are really good during an incoming tornado, when a power outage is in progress, just give me a call.

My dog and cat have begun talking back and forth out loud again so I should probably go. Hope to see you all as soon as possible and if you need a delivery. I'm your girl.

Marsha H. 369-7262 Oh by the way, no field trips or tours until further notice

Marsha Harmon



WHAT IS A ROCKHOUND?

Fred Plesner, Curator Emeritus

A 'Rockhound' is a person who hunts and collects rocks and minerals as a hobby.

Warmer weather is here and given a little time we will have the opportunity to get out and enjoy it and one another's company. Here in western North Carolina that probably means doing a certain amount of rockhounding on national forest land. So, how do you steer clear of any legal conflicts?

As a rule, there is no objection to taking a handful of rock, mineral, or petrified wood specimens from the surface of National Forest Lands. No fee, special permission or permit is required as long as:

1. The specimens are for personal, non-commercial use.
2. The specimens are not of archeological value. This means all artifacts, including projectile points, chips and flakes may not be collected.
3. No mechanical equipment or blasting is utilized.
4. No significant surface disturbance results.
5. Collection does not conflict with existing mineral permits, leases, claims or sales.

Included with rockhounding is Panning for Gold in streambeds. No fee, special permission or permit is required as long as only shovel and pan techniques are employed and no significant stream disturbance occurs. Where minerals are

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privately owned panners are advised to obtain written permission from the mineral owner(s).

In relation to mineral activities, Disturbance is considered significant when:

1. Natural recovery would not be expected to take place in a reasonable amount of time.
2. There is unacceptable air or water degradation.
3. There is unnecessary or unreasonable injury, loss or damage by use of explosives or mechanical equipment.



Collecting in the Sonoran Desert

Stacy Walbridge

Photograph by Stacy Walbridge



For several months I've volunteered to give a presentation on "Mineral Collecting in the Sonoran Desert" at our monthly club meetings. But with the stay-at-home orders, suspension of our meetings, and lack of material for the newsletter I've decided to convert my presentation to a three-part article for the newsletter. In part 1, I'll provide a little personal background and the Geology of the Sonoran Desert, part 2 will cover the tools we use to collect, and part 3 will review some of the

collecting sites we've been to and minerals we've found.

When I enlisted in the Army many years ago I was given a choice of duty stations that included Aberdeen Proving Ground in Maryland, Dugway Proving Ground in Utah, and Yuma Proving Ground in Arizona. At that time I was not well versed in the geography of the United States so looking at a map I saw that Yuma was about halfway between San Diego and Flagstaff and assumed that it had to have a nice climate. So I selected Yuma. When I got off the plane on July 3rd the temperature in Yuma was 119 °F and I realized that I had made a huge mistake.

But it wasn't a mistake. During my 7 years in the desert I met and married my wife, Kathi, and the two of us began exploring the desert and collecting rocks, which we've been doing off an on for over 40 years.



Graphic courtesy of

<https://www.pinterest.com/pin/341781059203212612/>

Sonoran Desert (Arizona) Geology

The Sonoran Desert covers northwestern Mexico, southeastern California, and about one half of the southern part of Arizona. It is an arid region with very little vegetation and typically less than 10 inches of rainfall each year. Elevations range from below sea level near Ocotillo, CA to over 5,000 feet east of Tucson, AZ with mountaintops

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reaching to 10,000 feet.

Arizona is divided into three major geologic regions or provinces:

- Colorado Plateau: 5,000 to 8,000 feet in elevation
- Transition Zone: widely varied climate
- Basin and Range: steep linear mountain ranges alternating with wide desert plains.



Arizona Provinces

Graphic Courtesy of <https://www.ereferencedesk.com>

Six major episodes of volcanism are estimated to have occurred in Arizona over the last 1.8 billion years with each episode affecting different provinces. Two of the episodes occurred over 1.1 billion years ago, then there was a pause in activity for about a billion years. During this time Arizona was intermittently flooded with shallow seas and northern Arizona was subject to deposition of volcanic ash and debris from northern Mexico and California. This debris became altered over time resulting in the colors of the Painted Desert and Painted Forest.

The next four episodes occurred between 190

million years ago (MYA) and 15 MYA. It was the fourth episode, 85 to 45 MYA, when large copper deposits were formed in southeastern Arizona.

Between 20 to 40 MYA, significant heating was going on below the surface that softened the lower crust. At the same time the Pacific Coast became attached to the Pacific tectonic plate and as it moved northwest it stretched the basin and range area like taffy. This resulted in thinning of the crust in several areas where huge fault zones formed. By 12 MYA the crust fractured into hundreds of long-thin segments. The narrow segments sank while the wider segments maintained their height, hence the term, “basin and range”. After the area stabilized about 8 MYA natural erosion took over reducing the mountain heights and filling in the basins. A video graphically showing the formation of a Basin and Range is available at: https://www.iris.edu/hq/inclass/animation/basin_range_deformation_erosion_sedimentation

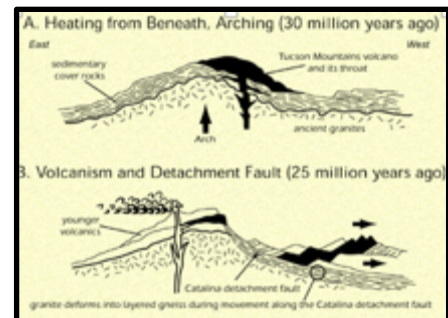


Diagram courtesy of www.desertmuseum.org

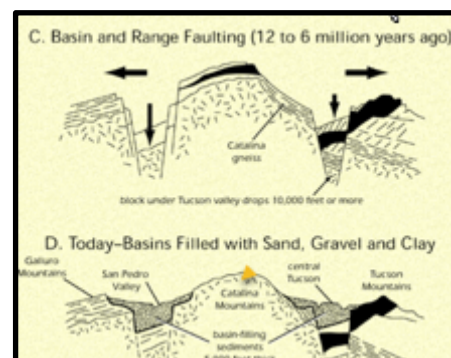


Diagram courtesy of www.desertmuseum.org

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Arizona is Copper Country

Several areas in the world had large copper-bearing plutonic bodies introduced in the crust over time but with the lack of eroding rainfall those bodies remained intact in Arizona.



Arizona's Copper Porphyry Belt

Map courtesy of <https://investorintel.com>

In the late 1880s copper mining in the harsh desert area became economical leading to Arizona's place as the largest copper producing state in the US.

But it isn't the copper that most collectors are interested in but the associated minerals of Turquoise, Malachite, Chrysocolla, and Azurite. Arizona is a world renowned site for turquoise with some of the most beautiful turquoise and silver jewelry handmade for years by members of the Navajo, Hopi, Zuni, Apache and other Native American tribes. Native Americans were the earliest miners of Turquoise with records indicating the Hohokam, known as the "Vanished Ones", mined Turquoise in Arizona as early as 200 B.C.

From the Kachina House Blog:

"Native American lore says that long ago their people rejoiced and danced when the rains they prayed for came. It is said their tears of joy mixed with the rain they prayed for and fell to the ground. Within Mother Earth those tears became Sky Stone turquoise.

For thousands of years, many cultures have appreciated "fallen sky stone" for its beauty and spiritual qualities. It is highly valued by Native American peoples and Medicine men keep this "stone of life" in the belief it has the power to support and heal. They cherish turquoise for its protection, positive healing energy, aid in mental functions and communication and use it in ceremonies and rituals and to ward off evil. Hopi hunters wore small pouches around their necks to bring good luck and warriors wore it into battle for protection."

On the more technical side:

(The following mineral pictures are courtesy of John Betts Fine Minerals, Rob Lavinsky, iRocks.com, Treasurmountainmining.com, and maggieminejewelry.com)

Turquoise is formed when acidic water dissolves copper and aluminum and deposits the liquid in veins with the formula, $\text{CuAl}_6(\text{PO}_4)_4(\text{OH})_8 \cdot 4\text{H}_2\text{O}$.



Kingman Turquoise

Azurite is produced by the weathering of copper. $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$. Unstable in air it is typically

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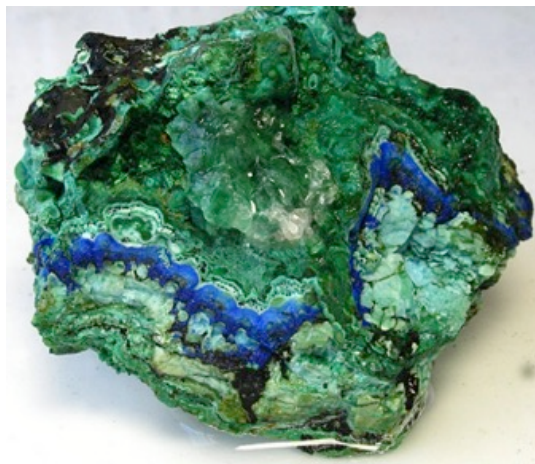


replaced by malachite.



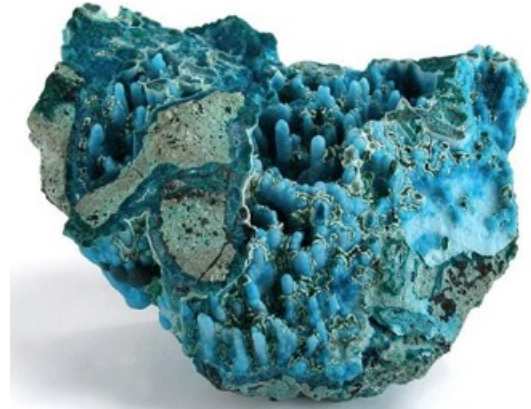
Copper Queen Mine Azurite

Malachite is also formed by the weathering of copper - $\text{Cu}_2\text{CO}_3(\text{OH})_2$ often found together with azurite (one copper atom difference)



Bisbee Malachite

Chrysocolla is also a derivative of copper with the formula, $\text{Cu}_{2-x}\text{Al}_x(\text{H}_{2-x}\text{Si}_2\text{O}_5)(\text{OH})_4 \cdot n\text{H}_2\text{O}$



Ray Mine Chrysocolla

References:

Fieldnotes, Vol 16, No 2, Arizona Bureau of Geology and Mineral Technology

A Natural History of the Southwest 2000, Arizona-Sonora Desert Museum

<http://www.arizonaadventures.com/arizona/blog/reference-guide/arizona-physiographic-regions/>

The Deep History of the Sonoran Desert, https://www.desertmuseum.org/books/nhsd_deep_history.php

The Geologic Origin of the Sonoran Desert https://www.desertmuseum.org/books/nhsd_geologic_origin.php

<https://blog.kachinahouse.com/turquoise-the-sky-stone/>

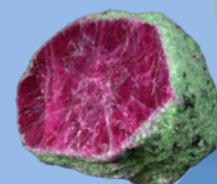
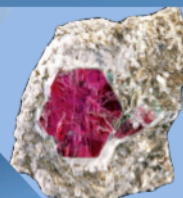
https://tucson.com/news/local/native-americans-mined-variety-of-minerals-early-on/article_8d64025e-b0a7-5c5a-920d-b67f53073ef5.html

<https://www.mindat.org>

To Be Continued. Next Month: Tools for collecting in the desert.

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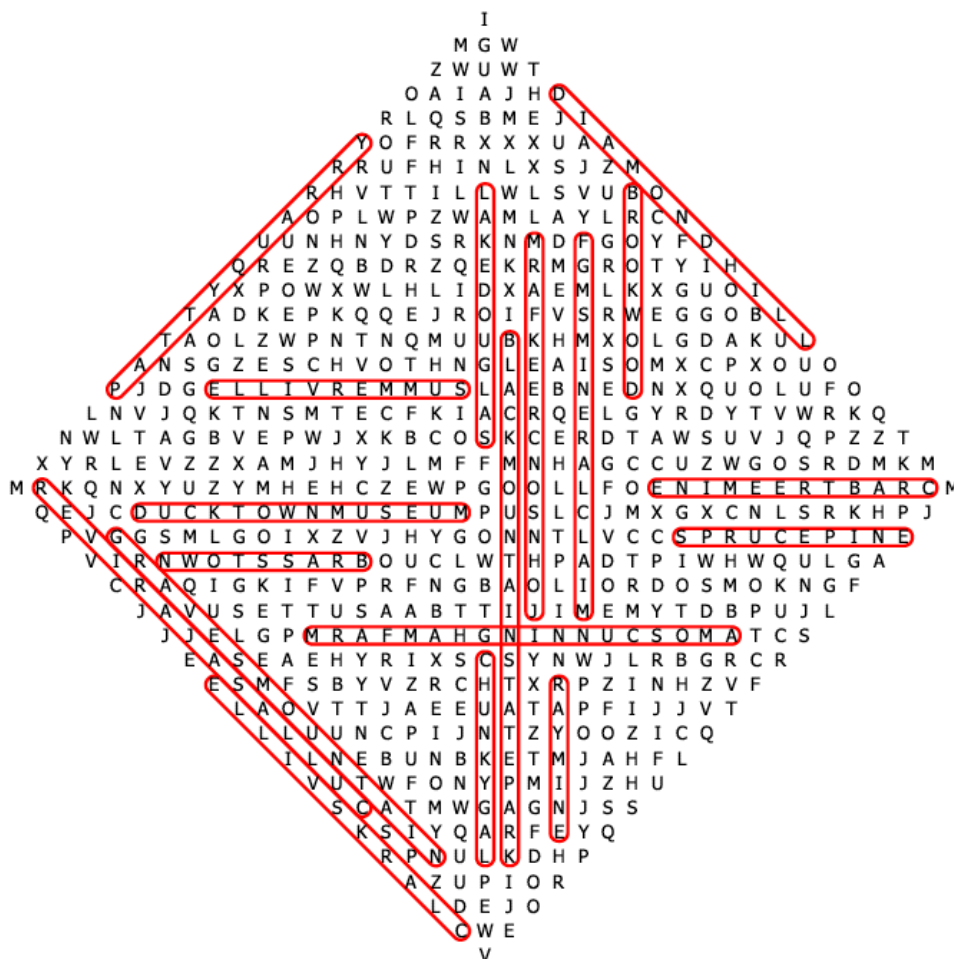
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Answers to the March Word Search Puzzle

Kathi Walbridge

Congratulations if you found all 18 locations! Let's check with the following answers.

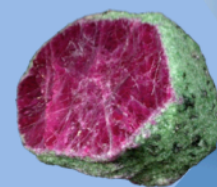
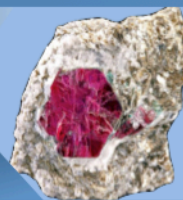


WORD LIST

1	AMOS CUNNINGHAM FARM	10	DUCKTOWN MUSEUM
2	BLACK MOUNTAIN STATE PARK	11	FGMS MINERAL CLAIM
3	BRASSTOWN	12	GRAVES MOUNTAIN
4	BROOKWOOD	13	JOHNSON CREEK FARM
5	CHUNKY GAL	14	LAKE DOUGLAS
6	CLARKSVILLE	15	PATTY QUARRY
7	CRABTREE MINE	16	RAY MINE
8	CULLASAJA RIVER	17	SPRUCE PINE
9	DIAMOND HILL	18	SUMMERVILLE

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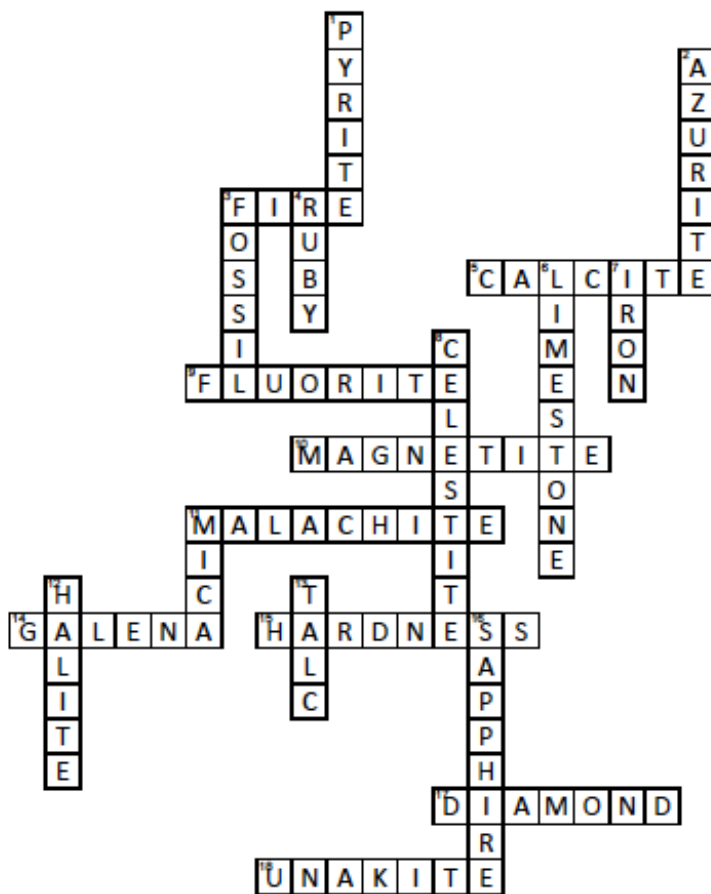
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Answers to the March Crossword Puzzle

Kathi Walbridge

How well did you do without using reference material? Here are the answers to last month's crossword puzzle.



Across

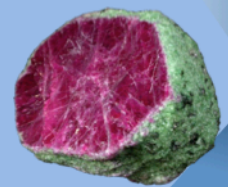
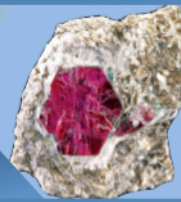
- 3 The word "igneous" comes from the Latin word for _____.
- 5 A common carbonate mineral, often a replacement mineral in fossils
- 9 Calcium fluoride
- 10 A naturally magnetic rock
- 11 A bright green copper carbonate
- 14 The main source of lead
- 15 The property of a mineral that describes its ability to resist being scratched
- 17 The hardest mineral on Mohs' hardness scale
- 18 North Carolina's state stone

Down

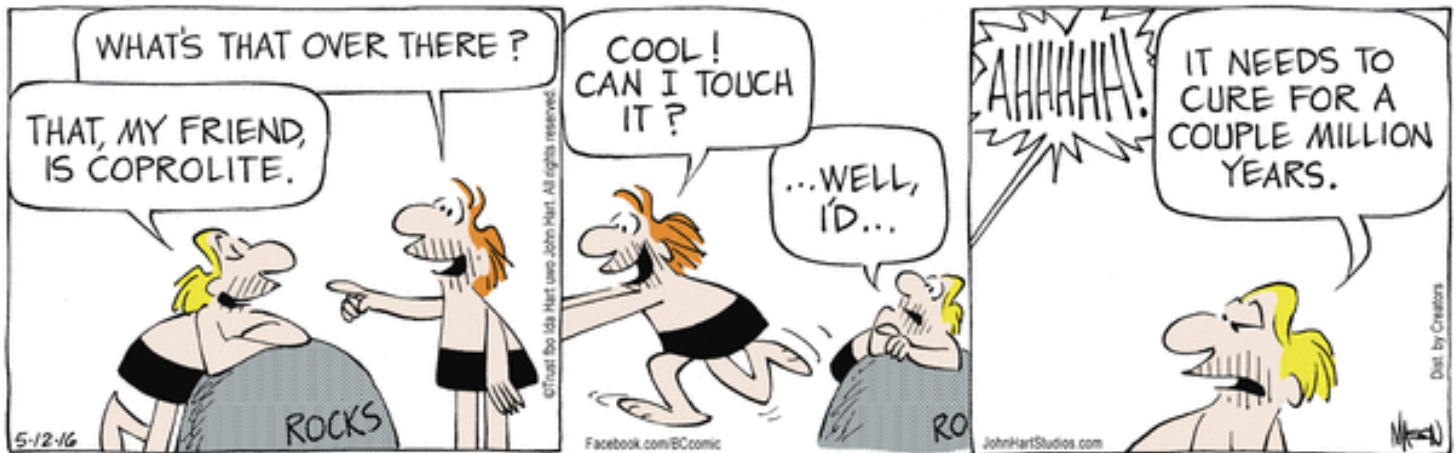
- 1 Sometimes called Fool's Gold
- 2 A bright blue copper carbonate
- 3 The remains (or impressions) of a plant or animal that existed in a past geologic age that has been preserved in the earth's crust
- 4 The birthstone for July
- 6 Sandstone, shale, and _____ are examples of sedimentary rocks.
- 7 The mineral used to make steel
- 8 Strontium sulfate, its name means "celestial"
- 11 A silicate mineral known for its perfect cleavage in thin layers
- 12 Rock salt
- 13 The softest mineral on Mohs' hardness scale
- 16 The birthstone for September

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And a little humor to end this month's newsletter



B.C. strip courtesy of JohnHartStudios.com

Franklin Gem and Mineral Museum

25 Phillips Street, Franklin, NC 28734



Phone: 828-369-7831
In the Old Jail House
FREE ADMISSION
May 1 – October 31
Monday Thru Saturday: 12:00 PM – 4:00 PM
November 1 – April 30
Saturdays: 12:00 PM – 4:00 PM
Open Year Round For Tours
And Special Requests