



CGMG News

Publication of **Cowtown Gem, Mineral, & Glass Club**
Member of Corporate Employee Recreation Association
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Classes

The status is still the same at CERA. We are still not able to provide classes. As soon as I get notice of a change in the status of our club we will start classes again.

Brad

Glass Activity

I am planning on scheduling an online pot melt class in the next couple of weeks. There are no prerequisites to join the class, but you will have to take intro to glass studio and beginning fusing to use the kilns. The class will be held in the next couple of weeks, so keep an eye on the class registration page. Pot melts are a fun and easy way to use scrap, so I hope you will all consider attending.

Felice



HELP WANTED

As your editor, I strive to produce interesting and informative newsletters. While we are not having meetings it is especially important to me that members submit photos, articles and other items that are of interest to the club. If you have gone anywhere scenic; found rocks, fossils or minerals; attended a class; made jewelry or polished a stone; created a stained or fused glass piece; come across an interesting item in the media; please send me a link, an article or a photo. Thanks!

Colleen

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The Purpose of the Cowtown Gem Mineral & Glass Activity

is to promote a spirit of fellowship among members and to promote popular interest and education in certain arts and the various earth sciences, in particular, those facets dealing with the arts of lapidaries, metals, glass, and jewelry and the sciences of minerals paleontology, geology, and archeology.

The Grand Canyon

The Grand Canyon is the result of a distinct and ordered combination of geologic events. The story begins almost two billion years ago with the formation of the igneous and metamorphic rocks of the inner gorge. Above these old rocks lie layer upon layer of sedimentary rock, each telling a unique part of the environmental history of the Grand Canyon region.

Then, between 70 and 30 million years ago, through the action of plate tectonics, the whole region was uplifted, resulting in the high and relatively flat Colorado Plateau.

Finally, beginning just 5-6 million years ago, the Colorado River began to carve its way downward. Further erosion by tributary streams led to the canyon's widening.

Still today these forces of nature are at work slowly deepening and widening the Grand Canyon.

Deposition of Grand Canyon Rocks

The story of how Grand Canyon came to be begins with the formation of the layers and layers of rock that the canyon winds through. The story begins about 2 billion years ago when igneous and metamorphic rocks were formed. Then, layer upon layer of sedimentary rocks were laid on top of these basement rocks.

To look at rock layers, geologists use a diagram called a stratigraphic column. It shows the rock layers with the oldest on the bottom, and the youngest on the top. That means that the bottom layer was formed first, and every subsequent layer was formed later, with the youngest rocks on the top. In geology, this is referred to as the principle of superposition, meaning rocks on the top are generally younger than rocks below them.

Another important principle is the principle of original horizontality. This means that all the rock layers were laid horizontally. If rock layers appear tilted, that is due to some geologic event that occurred after the rocks were originally deposited.

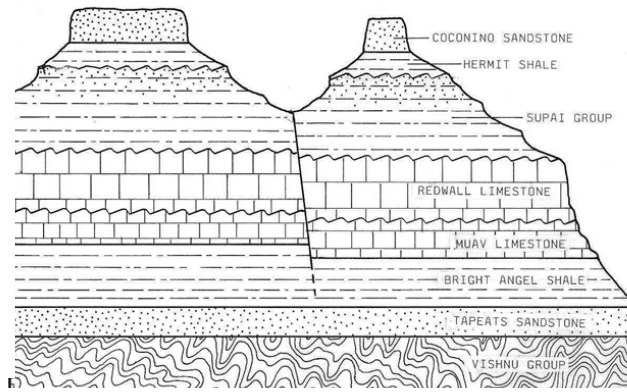
The Uplift of the Colorado Plateau

The Kaibab Limestone, the uppermost layer of rock at Grand Canyon, was formed at the bottom of the ocean. Yet today, at the top of the Colorado Plateau, the Kaibab Limestone is found at elevations up to 9,000 feet. How did these sea floor rocks attain such high elevations?

Uplift of the Colorado Plateau was a key step in the eventual formation of Grand Canyon. The action of plate tectonics lifted the rocks high and flat, creating a plateau through which the Colorado River could cut down.

The way in which the uplift of the Colorado Plateau occurred is puzzling. With uplift, geologists generally expect to see deformation of rocks. The rocks that comprise the Rocky Mountains, for example, were dramatically crunched and deformed during their uplift. On the Colorado Plateau, the rocks weren't altered significantly; they were instead lifted high and flat.

Just how and why uplift occurred this way is under investigation. While scientists don't know exactly how the uplift of the Colorado Plateau occurred, a few hypotheses have been proposed. The two currently favored hypotheses call for



something called shallow-angle subduction or continued uplift through isostasy.

How does a river like the Colorado carve such a big canyon?

The Colorado River has been carving away rock for the past five to six million years. Remember, the oldest rocks in Grand Canyon are 1.8 billion years old.

The canyon is much younger than the rocks through which it winds. Even the youngest rock layer, the Kaibab Formation, is 270 million years old, many years older than the canyon itself.

Geologists call the process of canyon formation downcutting. Downcutting occurs as a river carves out a canyon or valley, cutting down into the earth and eroding away rock.

Downcutting happens during flooding. When large amounts of water are moved through a river channel, large rocks and boulders are carried too. These rocks act like chisels, chipping off pieces of the riverbed as they bounce along.

Several factors increase the amount of downcutting that happens in Grand Canyon: the Colorado River has a steep slope, a large volume, and flows through an arid climate.

The Grand Canyon is a Dynamic Place

Weathering and erosion are ongoing processes. If we were to visit Grand Canyon in another couple million years, how might it look?

For one, it would be wider; we may not even be able to see across it anymore. Much of Grand Canyon's width has been gained through the erosive action of water flowing down into the Colorado River via tributaries. As long as water from snow melt and rain continues to flow in these side drainages, erosion will continue.

In a few million years, Grand Canyon also may be a bit deeper, though the canyon isn't getting deeper nearly as fast as it is getting wider. The rocks through which the river is currently downcutting are hard, crystalline igneous and metamorphic rocks, which are much stronger than the sedimentary rocks resting above them. More importantly, the river's gradient has decreased, such that it has less power to battle with the hard rocks.

Finally, the river's elevation near Phantom Ranch, a popular hiking destination in the canyon, is just 2,400 feet above sea level. Because sea level (0 ft.) is the ultimate base level for all rivers and streams, upon reaching sea level, the Colorado River will be done downcutting.

Scientists have estimated an age for the river, and thus the canyon through which it flows, of 5-6 million years.

BENCH TIPS

Raising a Cabochon

When a cabochon sits too low in a bezel, the bezel can hide a lot of the stone. The solution is to either sand down the bezel height or boost up the stone. But if you choose to raise it up, the question is what is the best material to use ?

I was taught to use fine sawdust but now think that might be a problem when used in rings. I reason that rings will frequently get wet, which would cause the sawdust to swell in size and push the stone against the bezel. Then when the sawdust dries out, the stone would be a little loose.

In any case, I now prefer to insert a flat sheet to boost up my stones. It can be a scrap of metal or some plastic from product packaging or old credit cards. In either case, just cut a piece to loosely fit into the bezel and drop in the stone (with some dental floss) to check it's height.

Transparent Cabs

When bezel setting a transparent cabochon in silver, I usually cut out the back of the bezel to allow background light to show off the colors and patterns in the stone. If this is not possible or appropriate, I worry that the silver bezel will tarnish under the stone and will ruin its brilliance. What to do?

My solution is one extra step before setting the stone. I place a piece of thin silver Mylar plastic under the stone to act as a mirror that will never tarnish. Mylar is readily available in craft and gift wrap stores, or in a pinch from a party balloon supplier. You may even want to experiment with using colored or patterned Mylar (i.e. diffraction pattern) under some stones.

*Learn New Jewelry Tricks and Techniques
in Brad's Jewelry-Making Books*

[Amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)

In Defense of Rocks

W. C. McDaniel

Memphis Archaeological and Geological Society

The use of the phrase “Dumb as a Rock” appears to be on the increase, especially by politicians, and it is time to stand up for rocks. I love and adore rocks, collect them, play with them, hoard and board them, display them, sell them, and put them to work. But I have never met a dumb rock. Met a few that were hard and somewhat ugly and of little use, some that made my back ache and a few



that tried to remove my big toe. But through it all, they were rocks, not dumb rocks. The origin and use of the term are somewhat hazy, and an online search will give you multiple answers and opinions. So, stand up for rocks, collect them, appreciate them and keep on rocking. Addendum: Rocks are a perfect companion and activity for social distancing.



*April 2020,
MAGS Rockhound News*

Web and Email Addresses

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GEM & MINERAL AND BEAD SHOWS

October 2020

10-11—TEMPLE, TEXAS: Annual show; Tri-City Gem and Mineral Society; Frank Mayborn Civic and Convention Center, 3303 N. 3rd Street; Sat. 9-6, Sun. 10-5; Adults \$5, youth (13-17) \$2, free admission for children under 13; 51st Annual Show and also 2020's South Central Federation Convention and Meeting, contact Lois Ruth Rolston, 106 Ottoway Drive, Temple, TX 76501; Email: lrolston@hotmail.com

23-25—AUSTIN, TEXAS: Annual show; Austin Gem and Mineral Society (AGMS); Palmer Events Center, 900 Bartons Springs Rd; Fri. 9-6, Sat. 9-6, Sun. 10-5; Adults \$8, seniors and military personnel \$7, children ages 13-18 \$2 (good for all three days), and free admission for children 12 and under; contact Laird Fowler, 6719 Burnet Ln, Austin, TX 78757, (512) 458-9546; Email: showchairman@austingemandmineral.org; Website: www.agms-tx.org

AREA CLUBS

Fort Worth Gem & Mineral Club, 3545 Bryan Ave, Fort Worth, TX; forth Tuesday of the month at 7:30.

Arlington Gem & Mineral Club, 1408 Gibbins, Arlington, TX; first Tuesday of the month at 7:30.

Dallas Gem & Mineral Society,

American Legion Hall, Suite 105, 10205 Plano Road, Dallas, TX; third Tuesday of month at 7:00.

Dallas Paleontological Society, Brook-haven Geotechnology Institute, 3939 Valley View Lane; second Wednesday of the month at 7:30.

Oak Cliff Gem & Mineral Society, Unitarian Universalist Church, 3839 W.

Keist, Dallas, TX 75233, Fourth Tuesday of month . at 7:00.

Dallas Bead Society, The Point at CC Young, 4847 W. Lather Dr., Dallas, TX; first Saturday of month at 10:00.

Pleasant Oaks Gem & Mineral Club, Garland Women's Activities Bldg, 713 Austin, Garland, TX; first Tuesday of month at 7:30.