



Flatirons Facets

Flatirons Mineral Club of Boulder County, Colorado
Volume 65, Number 2

March-April, 2022



Cowlesite specimen from North Table Mountain, Golden, Colorado, measuring $1\frac{3}{4}$ inches across. Each of these spheres is a cluster of radiating crystals, stained orange with iron oxide. Photo by Jr. Geologist Charlie Bonvillian, age 14.

Read about taking a field trip to this place and several others, starting on page 7.

In this newsletter

- Rockhounds of the Year, page 2
- March club meeting about McCoy fossils, page 2
- Election of Officers and Directors, page 3
- Where in Colorado? pages 4 and 24
- Silent Auction in April, page 4
- Jr. Geologists activities, page 5
- Member field trips, page 7, 9, and 14
- Upcoming club field trips, page 14
- Field Trip Safety, page 16
- Fluorescents at the Tucson Gem & Mineral Show®, page 17
- Second fossil horseshoe crab found, page 23
- Denver Gem & Mineral Show updates, page 25
- Other rockhounding events, page 26



President's Message

I had the opportunity to participate in the 2022 Tucson Gem and Mineral Show[®] representing the Fluorescent Mineral Society (FMS). The FMS put on a spectacular 50 case display of fluorescent minerals from around the globe. It was an honor to exhibit with the world's best fluorescent collectors. My case didn't win any awards, but I'm very satisfied with the participation certificates I received, as well as the overall experience.

Please read about this, our upcoming field trips, and other features in this newsletter.

Best regards,
Brian Walko, FMC President

Club Members Honored as Our Rockhounds of the Year

Two club members, Susanne Peach and Charlotte Small, were recently honored as our Rockhounds of the Year by the Rocky Mountain Federation of Mineralogical Societies.

Susanne Peach was selected as our Senior Rockhound of the Year. Susanne is one of the leaders of our Junior Geologists program. She helps at the monthly meetings with activities and hands-on learning experiences. She has also led field trips for the Junior Geologists to collect smoky quartz and other minerals, plus provides specimens for the juniors to add to their collections. The FMC much appreciates the time Susanne spends with our Junior Geologists group.

Charlotte Small is the first Junior Rockhound of the Year for the Flatirons Mineral Club (FMC). She was selected because of her active involvement in the club's Junior Geologists program. Charlotte has earned 15 of the AFMS's badges and has the goal of earning all 20 badges. She has written articles for the club's newsletter and made presentations at our Junior Geologists meetings. We appreciate Charlotte's enthusiasm at meetings and on field trips.

March Club Meeting about the Fossils of McCoy

Dr. Wayne Itano will be the speaker at our next club meeting on Tuesday, March 8. Wayne will talk about the **Paleontology of the Pennsylvanian Minturn Formation of McCoy, Colorado**. The Middle Pennsylvanian (about 300 million years old) deposits of the Minturn Formation around McCoy, Eagle County, Colorado, contain a diverse assemblage of marine animals and a moderately diverse assemblage of land plants.

Wayne will briefly describe the geology of the fossil beds of McCoy and the history of paleontological research there, starting with the 1911 trip of CU Professor Junius Henderson. Stories about particularly interesting and significant fossils will be interspersed in a systematic review of the various kinds of fossils that can be found at McCoy. Some of these special fossils are *Eretmocrinus sawdoi*, named after the

The Flatirons Mineral Club is a non-profit organization, which is dedicated to developing and maintaining interests in Earth science and associated hobbies. The purpose of this Club includes, but is not limited to, studying geology and Earth science, teaching others about our hobby, including young people, collecting gem, mineral and fossil specimens, and learning lapidary skills.

The Flatirons Mineral Club is affiliated with the Rocky Mountain Federation of Mineralogical Societies, the American Federation of Mineralogical Societies, and the Greater Denver Area Council of Gem and Mineral Societies.



finder, Jordan Sawdo, which is the youngest batocrinid crinoid in the world, the first *Edestus* shark tooth to be found in the Rocky Mountain region, and the most complete *Ctenacanthus* shark fin spine known from Colorado. He will wrap up the talk with the story of the 'snap-button' mystery fossil that stumped the paleontologists of the Smithsonian and is still unidentified.

Wayne Itano is a retired physicist, having spent his career at the National Institute of Standards and Technology in Boulder. He has a B.S in Physics from Yale (1973) and a Ph.D. in Physics from Harvard (1979). He has collected fossils since he was a teen. He joined the Flatirons Mineral Club in January 1984 and went on a field trip to McCoy with the Club in May 1984. He went on to become a charter member of the Western Interior Paleontological Society (WIPS) when it formed in 1985 and has been a member of that organization ever since. He has collected fossils at McCoy, mostly in the 1980s and 1990s, and has coauthored articles on the crinoids and sharks of McCoy. In recent years his paleontological research has been focused on late Paleozoic sharks.



Wayne Itano, our speaker on March 8, points to the K-Pg Boundary in Southern Colorado. This boundary marks the time when the asteroid wiped out the dinosaurs on Earth.

Club meetings start at 7:00 pm at the Mountain View United Methodist Church, 355 Ponca Place in Boulder (right across the street from Frasier Meadows, our previous meeting place). Enter the building from the south side.

Paleontology of the Pennsylvanian Minturn Formation of McCoy, Colorado

Wayne Itano



Flatirons Mineral Club
Boulder, Colorado
March 8, 2022

Election of Officers and Directors

Also at the March meeting, we will be electing officers and directors for 2022. Positions include president, first vice president (meeting programs), second vice president (field trips), third vice president (club show), secretary, treasurer, and board members. If you would like to know more about these positions or to run for an office, please contact Brian Walko at earthextractions@gmail.com.

Where in Colorado?

Each month, we test your knowledge of geological features in Colorado. This photo shows a vertical canyon wall of dark metamorphic rock, crisscrossed with pegmatite veins. At the bottom of this canyon runs one of western Colorado's major rivers. Where in Colorado is this? See page 24 for the answer.



Silent Auction Is Back on April 12

Yes, our club's silent auction will be back in 2022 on Tuesday, April 12. This year's auction will be at Mountain View United Methodist Church, where we are holding our monthly club meetings. We will be in Barker Hall in the basement of the church, which will give us more room. Park in the lot at the west end of the church, come in the main entrance, and head down the stairs.

This year's auction will feature material from several collections, including fabulous minerals, fossils, and lapidary material.

Setup starts at 6:00 pm and the auction begins at 7:00. A flyer and bid slips are at the end of this newsletter. Please print and post flyers in public places around town.

If you have items to sell at the auction, you can e-mail Gerry Naugle at gnaugle@earthlink.net for a seller's number ahead of time, so you can fill out your bid slips before the meeting.

Jr. Geologists Activities

March 16 Meeting

February's Jr. Geologists meeting was snowed out - twice - but the meeting we had planned about gems will be on Wednesday, March 16. To prepare for the meeting, you need to do the following:

- Based on what month you were born, find out what your birthstone is and something interesting about it.
- If you have pieces of agate, petrified wood, jasper, chert, or other forms of quartz that you would like to polish, bring them along to add to the rock tumbler we are starting at the meeting.

GeoExplorers (middle and high school age): In addition to the two items above, we will have a special activity. I have one specimen of each of these very nice minerals to give away: temolite, barite, staurolite, endlichite, andradite garnet; goethite, celestite, anhydrite, fluorite. If you would like one of these minerals, here is what you need to do.

- Pick one of these minerals to learn more about. **Let me know which mineral you picked.**
- Research your mineral, learning about its properties, like color, hardness, streak, luster, chemical formula (we will talk more about this at the meeting), and others. Also learn something special about your mineral.
- At the meeting, share what you learned with the other GeoExplorers.
- If you have a cell phone, bring it along so you can take pictures of your mineral.
- You can take home your mineral to add to your collection.

Crystal Growing Sessions

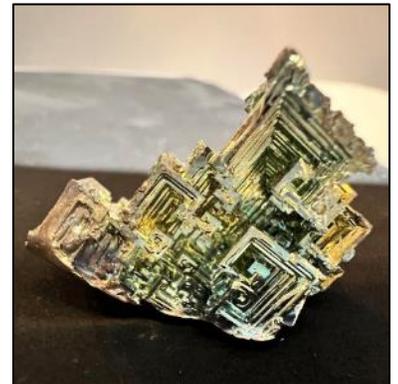


Borax snowflake. Credit:
Dennis Gertenbach

Everyone loves seeing beautiful crystals. Next month, the Jr. Geologists will have an opportunity to grow their own crystals. Elementary schoolers can come on **Saturday, April 2**, at either 10 am or 2 pm, where we will start you growing a borax snowflake, an alum geode, and crystals you can eat.

GeoExplorers: Charlie, one of our Jr. Geologists, has been growing bismuth crystals like to one to the left. He will show us how to grow these beautiful crystals to take home on **Sunday, April 3**, at 1:30. In addition, we will begin growing two other crystals.

Please contact Dennis (gertenbach1@gmail.com) to sign up for one of these crystal growing days. And, begin saving glass jars (jelly jar size) with lids to bring with you.



Bismuth crystals. Credit: Jr.
Geologist Charlie Bonvillian

GeoExplorers Fossil Preparation Lab Tour

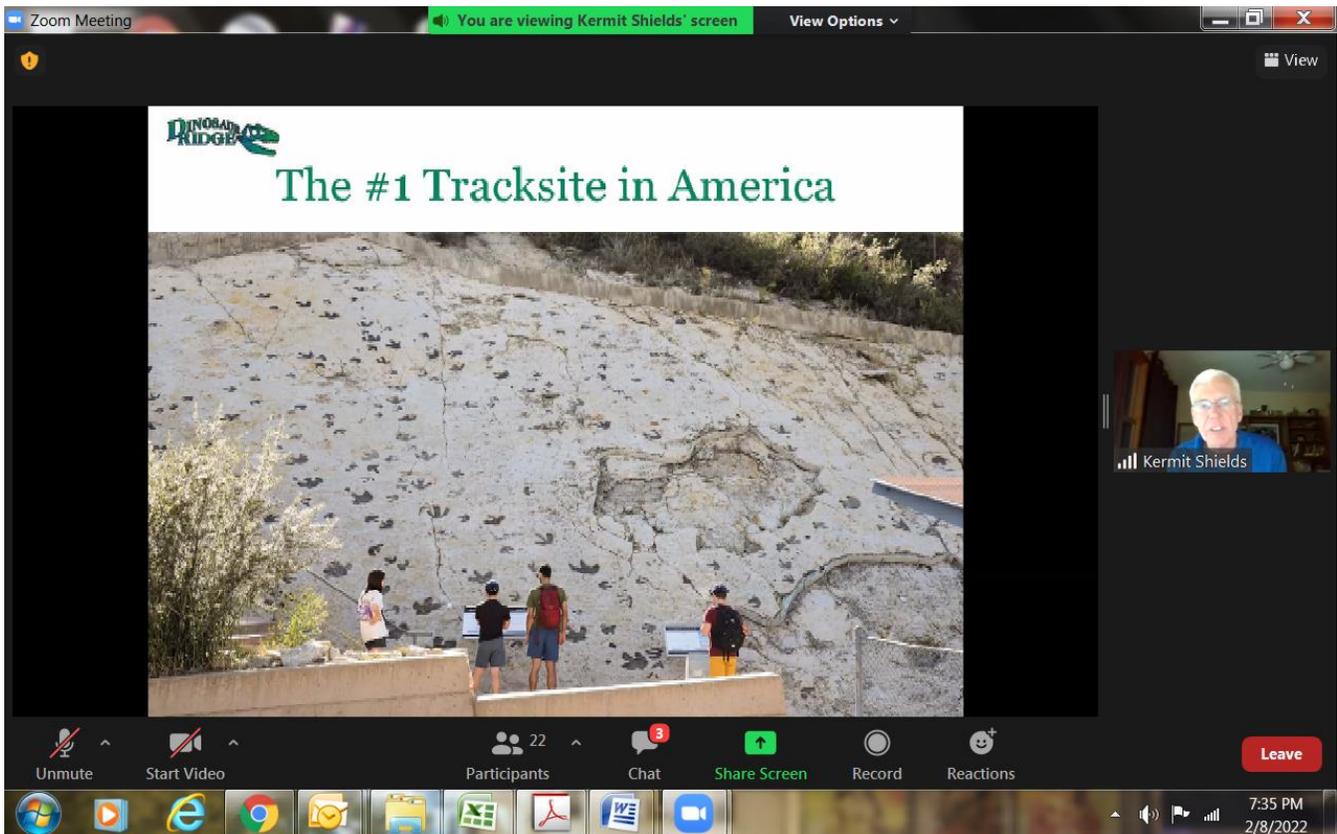
Tom Caggiano, a local fossil dealer, has invited the GeoExplorers (middle and high schoolers) for a special tour of his fossil cleaning and preparation laboratory at 10 am on **Saturday, April 16**. He will show us some of the techniques he uses to clean fossils that he sells. Many of you probably remember seeing some of his fabulous fossils at our club show in December.

There is room for only 6 GeoExplorers, plus parents, on the tour. Please contact Dennis (gertenbach1@gmail.com) to sign up for the tour.

February's Club Meeting

Kermit Shields, a volunteer at Dinosaur Ridge, gave a wonderful online presentation about the history, current programs, and future plans at Dinosaur Ridge. In addition, he talked about the first discovery of Stegosaurus, Colorado's State Fossil, right in our own backyard at Dinosaur Ridge. We thank Kermit for taking the time to educate us about this wonderful geologic wonder.

We are working on a special field trip to Dinosaur Ridge to see the tracks, dinosaur bones, and paleontological displays at Dinosaur Ridge. Watch your email for information about this tour.



Member Name Tags

Would you like a Flatirons Mineral Club name tag to wear at club events and field trips? The club places orders for name tags several times a year for members.

If you would like a name tag, please log onto our website and choose the "Request a Name Tag" link in the Members Area. Add your name to the list as you want it to appear on your name tag, and it will be ordered for you. Your first name tag is free!



Example of a club name tag

Member Field Trips

With warmer weather just around the corner, it is time to begin thinking about field trips. Several club members have shared these favorite sites that you might want to consider visiting this summer.

North Table Mountain, Golden, Colorado

Article and Photos by Mark Goldgeier

I am Charlie and Daniel B's grandfather. Please forgive me my rapture over our field trip with Tara and Dennis to North Table Mountain. I live in the sedimentary lands of the Finger Lakes region of New York State. Most of the crystals that we find here are winter ice crystals.

On a clear and deliciously warm Monday we hiked, despite altitude sickness, up the old mining trails to the South Quarry of North Table Mountain Park. The weight of rock hammers, sunscreen, water, and extra clothing lightened as we saw the "treasures" of worn analcime along the way, and Dennis' promise of the zeolite paradise awaiting us above. We arrived at the base of the shoshonite lava columns and the grand boys went to work spotting incredible zeolite specimens simply lying on the ground. It is incredible to think that for well over a century people from all walks of life

have been visiting and collecting from this site. Thanks to the power of erosion, the bounty continues to replenish itself for all to enjoy.



Radiating thomsonite crystals

I went to work on a promising rock that Dennis pointed out because of its already visible vugs (you call these amygdaloidal voids). A few dozen well placed whacks later and we were into an amazing introduction to museum quality zeolites at first inspection thomsonite, analcime, augite, and chabazite but I'm certain there were others (mica, manganese dioxide, etc.).

My impressions of the quarry were first that it was pristine free of trash and other debris. Whoever had visited it over the past centuries was respectful of the land. Everyone we met on the mountain was courteous and friendly. Hikers, dog walkers, trail runners, bicyclists, climbers respected each other's freedom. Two plus years into the Covid-19 pandemic, it was wonderful to travel (carefully), to be with new friends and with loved ones.

As is our custom in rock hounding, I shared the absolute best of the bounty with Charlie, Daniel, Tara and Dennis. Profound thanks to Dennis for guiding us on this amazing adventure and to everyone for teaching me about Colorado zeolites.

I brought some rocks home for photography and study. I hope you enjoy these images. (Nikon 800e, Nikon macro 100mm lens with 36mm extender, ring light, top and side fill)



Cowlesite spheres with small, secondary unidentified



Dendrite on an analcine-filled vug



Vug filled with thomsonite spheres



Cowlesite spheres



Thomsonite lining cavities





Bluish-gray hemisphere of thomsonite



Unidentified dark mineral surrounded by white laumontite? crystals

Trammel Fossil Park of Sharonville, Ohio

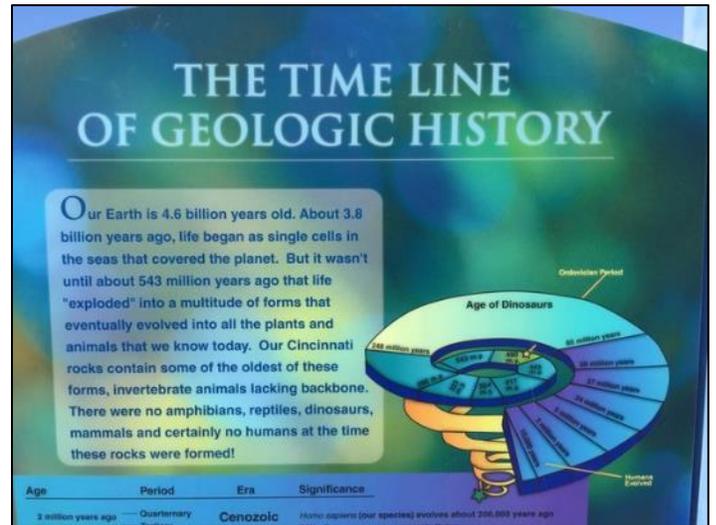
Article and Photos (except as noted) by Jean Orr

The Cincinnati area boasts a free Ordovician fossil-collecting 10-acre site, donated to the city by the developer of the nondescript office park in which it sits. R.L. and Ellen Trammel dedicated the site on their 58th wedding anniversary in 2003. It consists of a rocky hillside, with signs on the slope to indicate in which of the 4 formations you are standing. At the base is an interpretive area with tables for sorting treasures. It has ample parking, but no shade. Periodically, the surface is scraped to unearth new fossils. Practically every rock piece on the hill contains a fossil, much like the zeolites on North Table Mountain, so children, especially, can enjoy the thrill of successful finds.



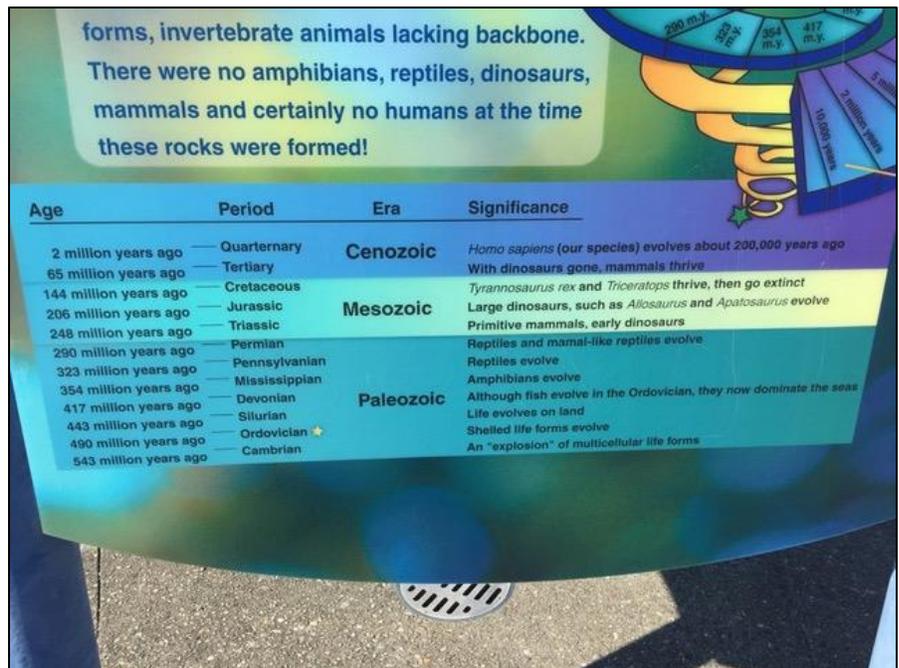


Exulting that the park was “the greatest place ever,” Cora found it irresistible to run up and down the hillside several times. Youngsters can work off steam clambering around in search of guaranteed “finds”.



The interpretive area explains the timeline and background of the rocks.

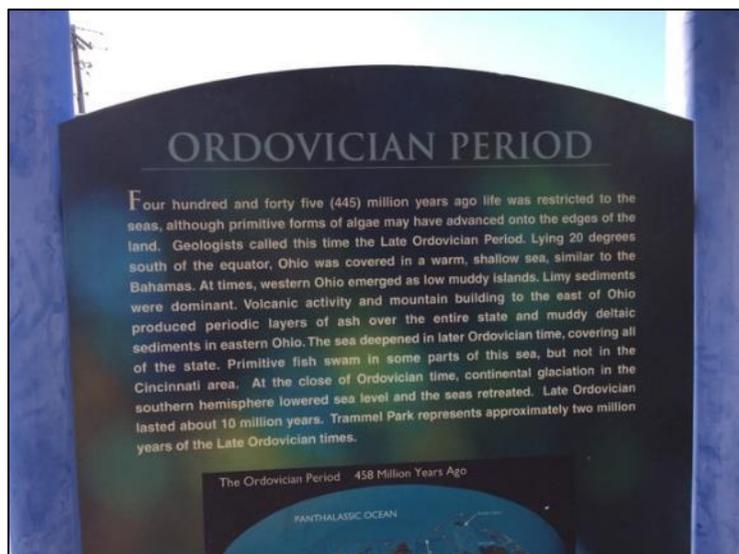
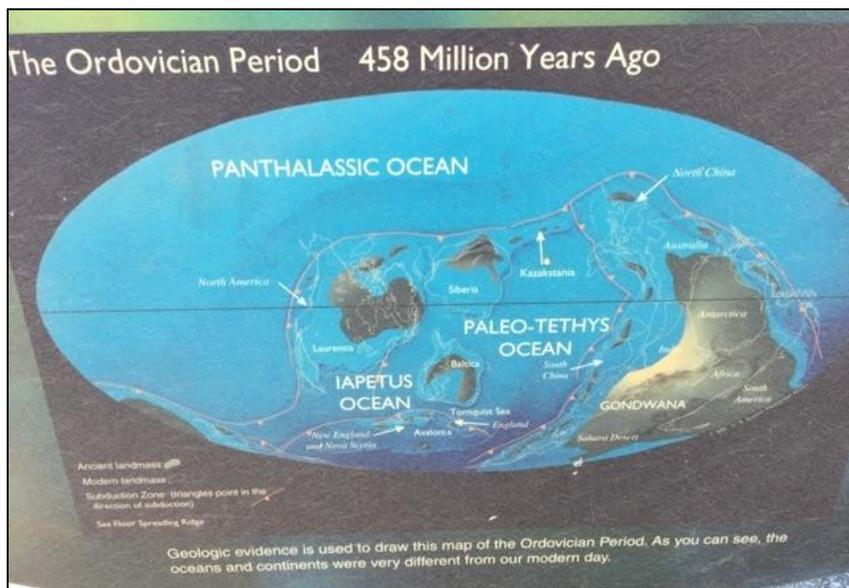
Author Jean Orr with granddaughter Cora collecting fossils. Credit: Charlotte Orr



“You are here.”

The Ordovician Era lasted from approximately 485 Ma to 444 Ma.

Fun facts: In Greek mythology, the Titan Iapetus, son of Uranus and Gaia, was the father of Atlas and Prometheus. Atlas led the older generation, called Titans, in rebellion against the younger Olympians. When the elders lost, Zeus punished Atlas by condemning him to hold up the world on his shoulders forevermore. Perhaps he finally found relief when Perseus, using Medusa's head, turned him into the stony Atlas Mountains of Morocco. Iapetus's siblings included Tethys, whose namesakes were oceans in the Paleo and Mesozoic eras.



The volcanic and mountain building activity to the east were due to the rise of the Appalachian Mountains. The plate underlying the Iapetus Ocean, precursor of the Atlantic Ocean, submerged under the North American plate, thereby creating a subduction zone with volcanoes. As Iapetus was father to Atlas, it seemed logical to name the Atlantic Ocean's precursor the Iapetus Ocean.

The Fairview Formation, with an orange marker on the hill, forms a layer in the Cincinnati Arch, a geologic province running northeast to southwest through Ohio, Indiana, Kentucky, Tennessee, and Alabama. It was uplifted in the late Ordovician to mid-Devonian times. Occasionally, it emerged from the waters as a low-lying land mass.

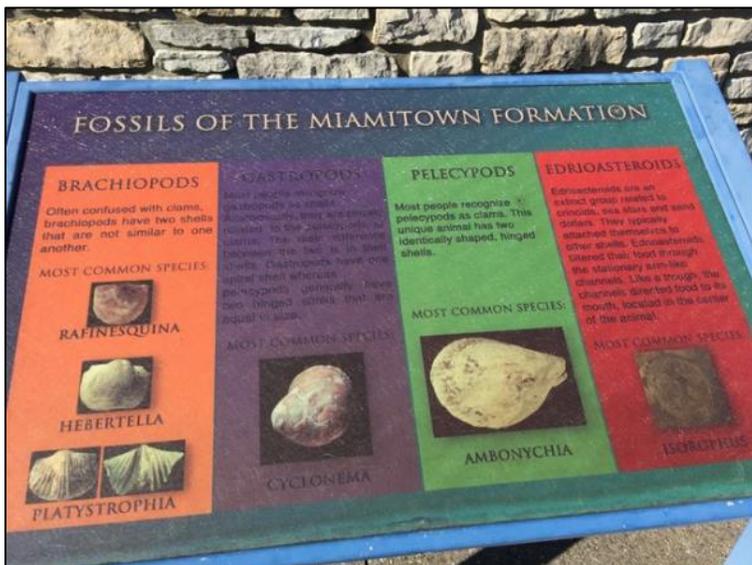
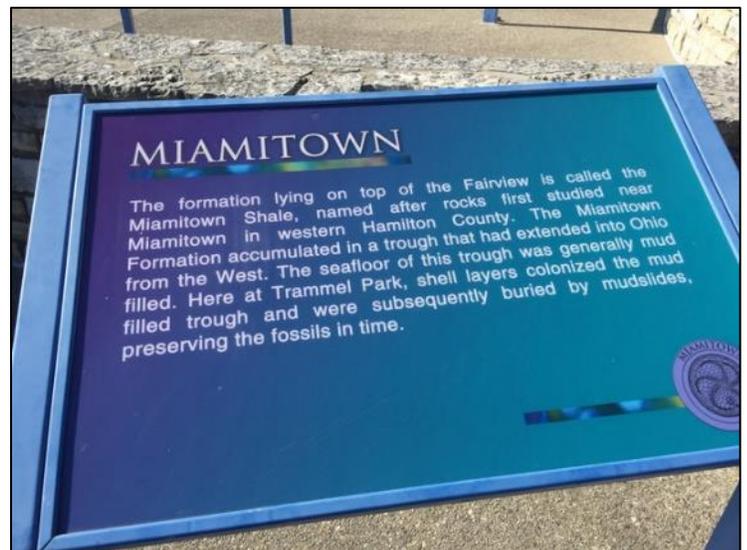




The Fairview Formation features bryozoans, brachiopods, and crinoids. These four formations are named for sites in inner Cincinnati, which have been disturbed by development.

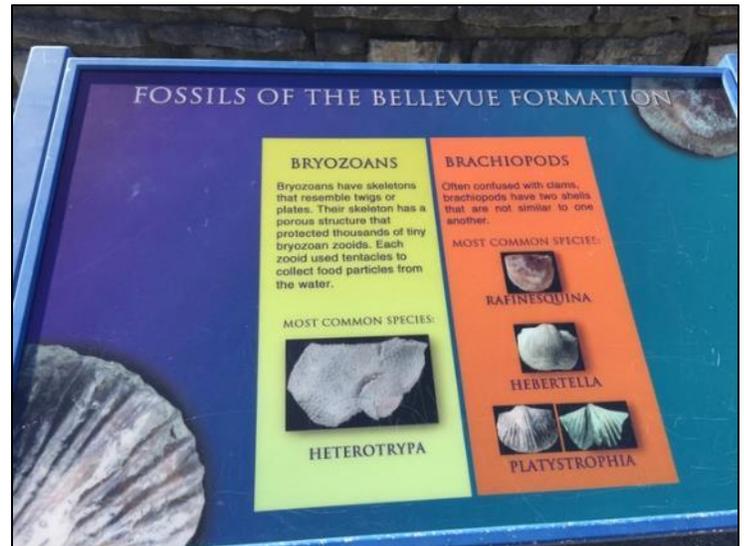
Shale forms when tiny clay particles are deposited in water and later are compacted into stone. It is the most abundant sedimentary rock in the crust.

After the trough filled, the water became more turbulent; conditions then favored the development of different species in a new formation.



Each formation has a sign to illustrate its fossils, to aid in identification of your finds.

The turbulent, shallower seas of the Bellevue led to deposits of rippled limestone and different fossil types.

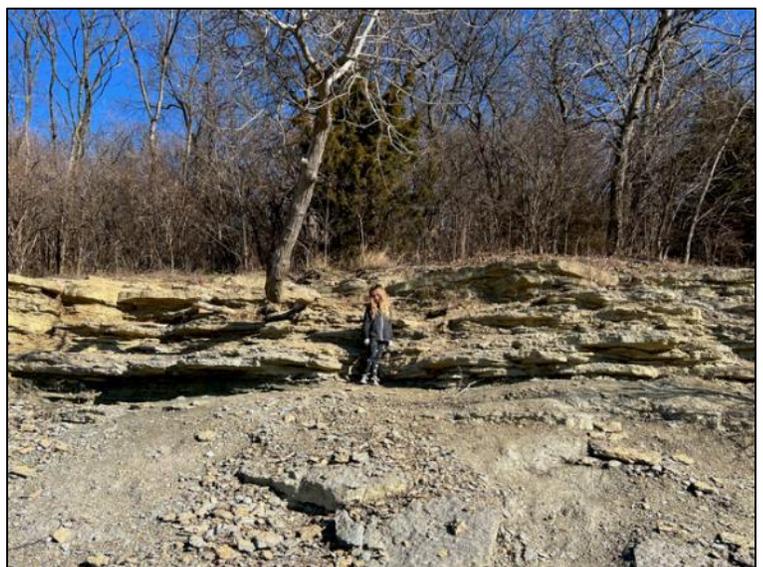


The Corryville Formation features bryozoans, brachiopods, crinoids and trilobites.

If you go:

https://www.tripadvisor.com/Attraction_Review-g50962-d3383561-Reviews-Trammel_Fossil_Park-Sharonville_Ohio.html

Cora among the youngest rocks, the Corryville Formation



Long Canyon near Moab, Utah

Article and Photos by Sharon Dooley

My favorite place to look for interesting rocks is Long Canyon near Moab, Utah. I first learned about this area in a great book: "Geological Evolution of the Colorado Plateau of Eastern Utah and Western Colorado" by Robert Fillmore.

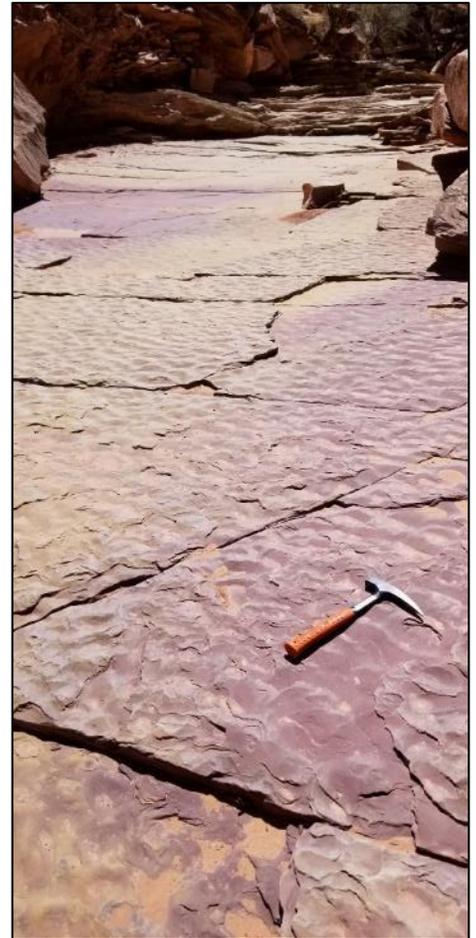


To access Long Canyon, go north from Moab on Highway 191; turn south onto Potash Road, Highway 279, and go about nine miles to Jug Handle Arch; then turn right onto the Long Canyon dirt road.

There are fossil tracks on the underside of the alcove visible through

There are many pull off places to park, and there are so many interesting rocks in the gulch. I have collected petrified wood, fossil ripple marks, concretions, and many other great rocks. I have also seen fossil tracks in several places. About three miles up the road, the gulch splits, and the south fork leads into a magnificent Cutler Formation canyon, while the north fork leads into the Chinle Formation.

Long section of ripple marks in the north fork of the gulch.



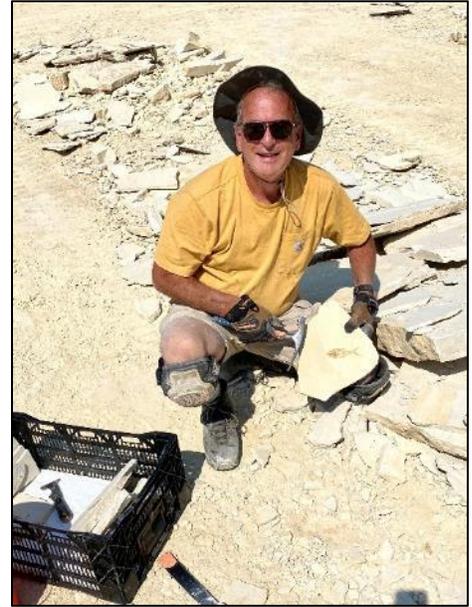
Upcoming Club Field Trips

A number of club field trips are in the planning stages. If you have a place that you would like to go or if you would like to lead a trip for the club, please contact Taneka Colon at taneka_ringo@hotmail.com.

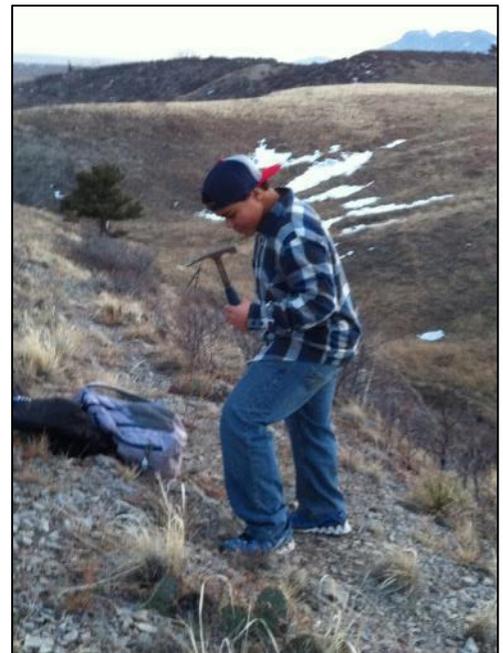
Barite Crystals at Hartsel, CO – Collect barite crystals on the surface or dig for them.



Fish Fossils at Kemmerer, WY – Dig in a quarry containing an ancient freshwater lakebed, 40-50 million years old (Eocene). The layers contain numerous fish and plant fossils. **We need a leader for this trip.**



Six-Mile Fold, north of Boulder, CO - Explore the structural geology of an anticline, syncline, folds, and faults of the Niobrara formation. You also may find clam fossils and fish scales.



Gold, Fluorite & Quartz Crystals, Jamestown, CO, Midnight Express Lode Claim - Hike up the side of a mountain following a quartz vein that contains quartz crystals and gold. Explore an old mine dump for fluorite crystals.





Gold Panning, Ward, CO, Thanksgiving Placer Claim - Learn how to pan and sluice for gold. All panning equipment provided by the FMC.



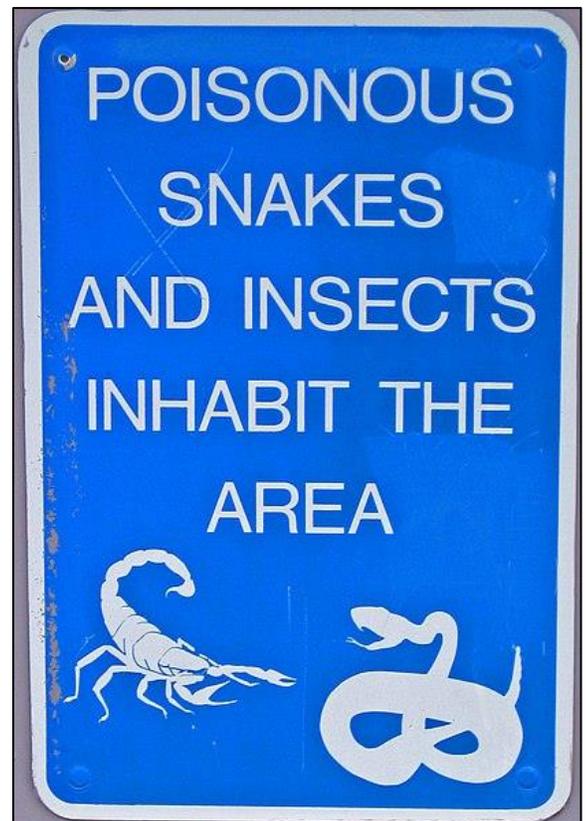
Photos by Brian Walko

Field Trip Safety

The U.S. Forest Service provides these safety tips for rockhounding field trips:

- Stay out and stay alive; abandoned mines are potential killers. Rotten timbers, open shafts, toxic gases, and a lack of oxygen can be deadly.
- Rockhounding is mostly a rugged and dirty pastime. Clothing, especially footwear, should be serviceable and adequate for hiking in rugged terrain, digging, and weather conditions. Boots are recommended.
- Be prepared for extreme weather conditions including rain or snow at any time of the year. Temperatures in the winter can drop below 0 degrees and summertime temperatures can be over 100 degrees. Carry extra food, water, clothing, fuel and other supplies.
- Always tell someone where you are going and when you plan to be back.
- Always wear proper protective equipment (gloves, safety glasses, etc.) when striking or breaking rocks.

Credit: Matt Frederick, licensed under the [Creative Commons Attribution 2.0 Generic](#).



- Rockhounds may unknowingly create hazards through careless digging. Undermining the root of a tree is both destructive and dangerous, as it may cause the tree to fall. Tunneling through unsupported soil or under overhanging banks that may cave in on the digger are unsafe practices. Deep or steep-sided pits or trenches should be filled upon completion of digging, as they pose a hazard to both people and livestock.
- Be aware that the roads leading into the digging sites may be used by heavy trucks carrying logs, gravel, livestock or other products. Travel at your own risk. Unimproved roads can be dangerous to travel when wet, muddy or snowy. Rockhounds should inquire with the BLM or USFS about possible road closures and fire restrictions prior to visiting the rockhounding sites.
- Rattlesnakes may be found in certain areas during the warm months. Watch for them in rock slides, around damp areas, under old buildings, ledges, etc. Prompt medical treatment is always advisable if bitten.
- In the spring, wood ticks are found in sagebrush and timber fringe areas, where they can hang on the tips of bushy twigs and transfer to any person or animal that brushes past. Ticks can carry spotted fever and other infections. They should be removed promptly, and the bites should be treated.
- Protect your pets by keeping them under control at all times.

From

https://www.fs.usda.gov/wps/portal/fsinternet/cs/detail!/ut/p/z0/04_Sj9CPyksy0xPLMnMz0vMAfljo8zijQwgnNHCwN_Dl8zPyBcqYKBfkO2oCABZcx5g/?position=Not%20Yet%20Determined.Html&pname=Deschutes&ss=110601&navtype=&pnavid=11000000000000&navid=11037000000000&ttype=detail&cid=stelprdb5246967.

The Show That Glows at the 2022 Tucson Gem & Mineral Show®

Brian Walko, FMC President & FMS Rocky Mountain Chapter Lead

All photographs by the author



In 1996 the Fluorescent Mineral Society (FMS) celebrated its 25th anniversary at the Tucson Gem and Mineral Show® (TGMS). The FMS had over 80 cases of fluorescent minerals on display. The FMS' 50th anniversary was in 2021. Unfortunately, COVID delayed the celebration until 2022. In recognition of this milestone, the TGMS invited the FMS to feature a world-class exhibit of fluorescent minerals at the show. 50 cases were on display. Here is the story behind accomplishing this historic event.

The FMS has

several veterans of the 1996 TGMS and several people were experienced with running local fluorescent shows or fluorescent rooms within larger gem and mineral shows. This was the case with our Denver Gem and Mineral Show.

Planning was a three-year effort. A planning team solicited FMS members to display and coordinated with TGMS and the Tucson Convention Center on



space and power requirements. We determined the logistics of getting cases, lights, and minerals to Tucson.

Several “FMS Expresses” transported exhibits from New England, Franklin, NJ, Seattle, and the Denver area. Exhibiting FMS members who did not own UV display lights, UV Systems, Inc. sold them at a discount or made rentals available. TGMS loaned FMS many cases for displaying.



An FMS Express



Lights supplied by UV Systems, Inc.

TGMS supplied most of the cases. FMS members added black paper to darken the case and supplied risers and shelves for optimum display.



TGMS Cases



Risers and shelving



Creating darkening inserts

Next came the case setup. Exhibitors hung their lamps and placed their minerals. After the specimens were arranged, the labels were placed and the front glass secured.



Arranging the minerals



Placing the labels



Securing the glass



Cases ready to show

The TGMS lasted four days. During this time FMS members acted as docents and provided security for the room. In my estimation several thousand people visited the Fluorescent Room. It was the highlight of the 2022 TGMS.

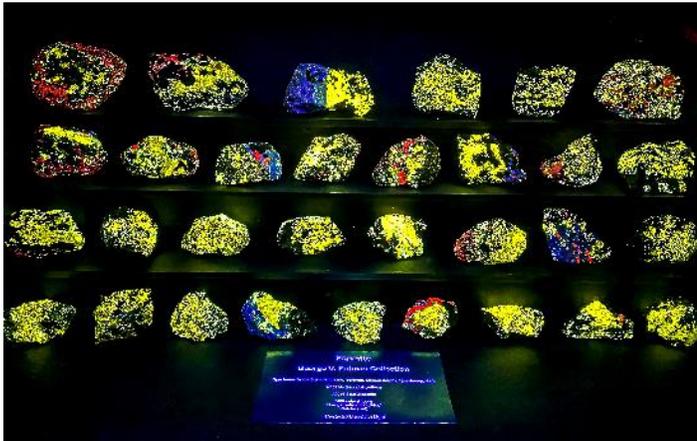


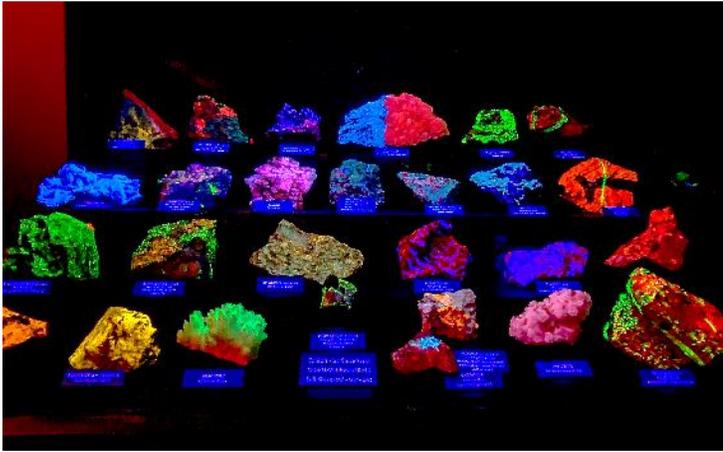
FMS docent explaining a case



Viewers at the Fluorescent Room

Photographing the cases was extremely difficult. TGMS rules prohibited removing the glass. Thus, reflections from the red safety lighting and photographing through glass did not create high quality photos. Here are a few case photos.

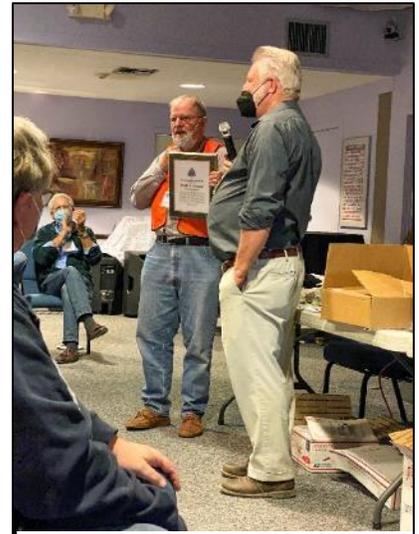




The FMS held its annual meeting one evening. About 85 FMS members were in attendance with another 30 on Zoom. Awards, auctions, a raffle, and members selling/trading resulted in lots of fun!



Celebration cake



Awards



Mineral trading



Door prizes

The FMS had a couple of educational displays on the TGMS main floor. The Story of the FMS with Hall of Fame members and Evolution of UV Lights.

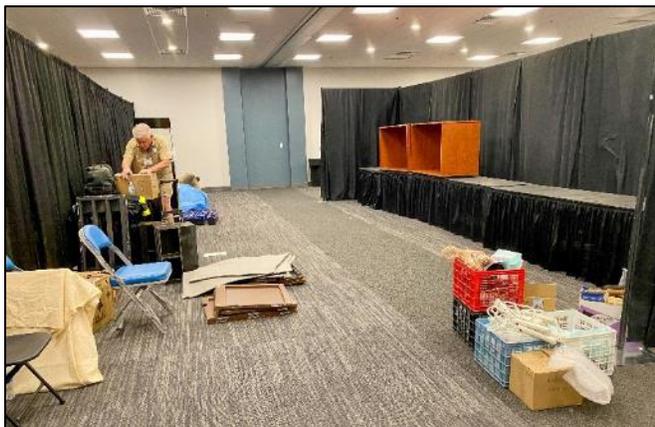


Story of FMS

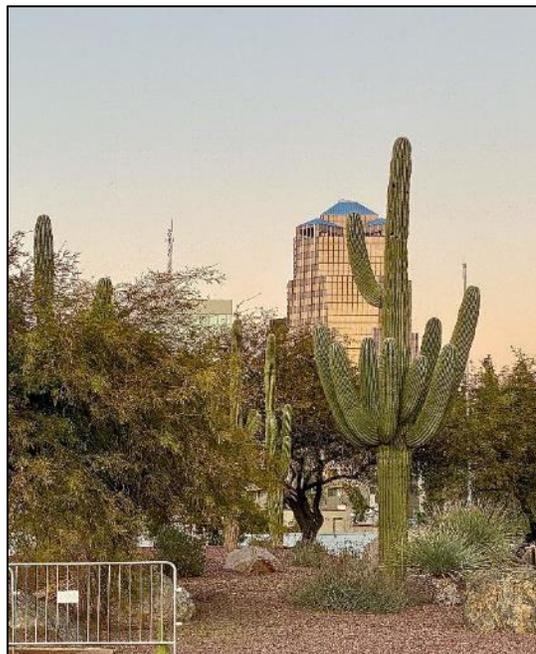


Evolution of UV Lights

After four days, it was time to pack up and say goodbye to the TGMS and a show all FMS members can be proud of.



Packing up



Goodbye Tucson Convention Center



Before heading back to Colorado, I took time to play turista.

Saguaro National Park

Plus enjoy a fine Mexican dinner serenaded by a Mariachi band.

Adiós Tucson!



Sunset from the Catalina Foothills



Mariachi band

Second Fossil Horseshoe Crab Specimen Found by Trick Runions

Allan Lerner and Spencer Lucas, paleontologists from the New Mexico Museum of Natural History, have recently published a paper describing the second known specimen of *Vaderlimulus tricki*. This extremely rare, Triassic (245-million-year-old) horseshoe crab was named for Trick Runions, a member of the Flatirons Mineral Club, who found both the original and this second specimen.

The new specimen preserves previously unknown features of this animal, including legs, gills, and muscles. The muscle impressions show it was a carcass, not a molt.

Trick reports that the locale where both of these specimens were found is a small, very treacherous, steep hillside, loaded with slippery slabs of shale. He commented that this specimen is “pretty cool, since I thought it was the bottom mold of one sitting in mud. But Allan said it is actually a compression of the whole thing. They actually rewrote some of the facts from the first description, as they could see things better on this one.”

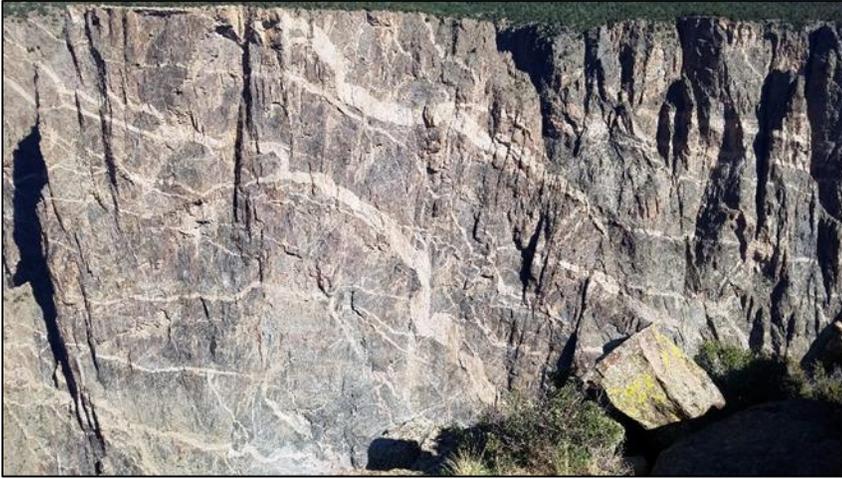
This second *Vaderlimulus tricki* specimen is now in the collection of the New Mexico Museum of Natural History.



The second horseshoe crab fossil, *Vaderlimulus tricki*, discovered by club member Trick Runions.
Photo provided by Trick Runions

Where in Colorado?

Dennis Gertenbach



Painted Wall, the tallest sheer cliff in Colorado at 2,250 feet.

Credit: Dennis Gertenbach

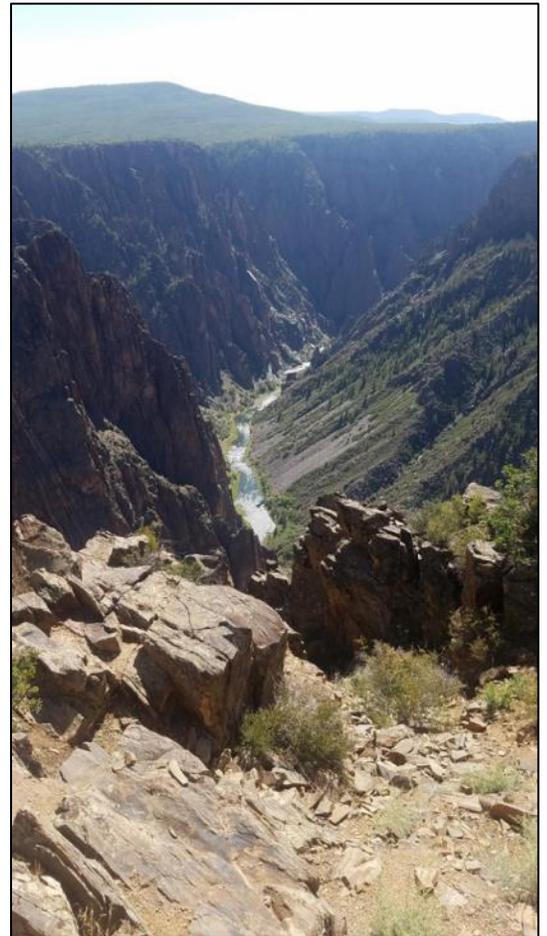
The geological story of the park begins 1.8 billion years ago during the Precambrian Era. At that time, this part of Colorado was a shallow sea, much like today's Gulf of Mexico. Rivers carried sediment to the sea, where it accumulated on the ocean floor. Nearby volcanos added ash to the accumulating sediments. Over time, these sediments were buried deep below the Earth's surface, where great pressures and heat converted them into the dark metamorphic schist and gneiss we see today.

We now fast-forward 100 to 300 million years later. Earth's molten magma squeezed into the deeply buried schist and gneiss. As it cooled, the magma solidified into the pink-colored igneous pegmatite and granite we see today running through the Painted Wall. This rock remained buried under the Earth's surface for the next billion years.

As the Rocky Mountains rose to the east about 70 million years ago, these rocks were pushed upwards as part of the Gunnison Uplift. The ancient Gunnison River carved its way through the overlying rock during the last 15 million years. Two million years ago, the river reached these hard metamorphic rocks, and began carving the narrow canyon through these rocks that now make up the Black Canyon of the Gunnison.

There are two primary entrances to the park: the south rim entrance is located 15 miles east of Montrose, and the north rim entrance is 11 miles south of Crawford (closed in the winter). Visit the National Park Service's website at <https://www.nps.gov/blca/index.htm> to learn more about what to see and do at Black Canyon of the Gunnison National Park. For a short history of the Canyon, plus other places to visit in the area, see <https://www.5280.com/2019/05/a-first-timers-guide-to-black-canyon-of-the-gunnison-national-park/>.

This vertical wall, with veins of lighter-colored pegmatite running through it, is known as Painted Wall. It is in one of Colorado's four national parks, the Black Canyon of the Gunnison. Within the canyon, the Gunnison River drops an average of 34 feet per mile, making it the fifth fastest dropping river in North America. By comparison, the Colorado River drops an average of 7.5 feet per mile through the Grand Canyon. The Black Canyon is so named because the narrow canyon makes it difficult for sunlight to penetrate into its depths, causing the rocky walls to appear black.



Black Canyon of the Gunnison.

Credit: Dennis Gertenbach



Inside displays at the Museum of the Mountain West. Credit: Dennis Gertenbach

Worth Visiting in the Area

At the eastern outskirts of Montrose along US 50, is the Museum of the Mountain West (68169 E. Miami Road, Montrose). The museum has 28 historic buildings, indoor displays, and over half a million artifacts on its 6-acre property. Although you can visit both the outside buildings and inside displays on your own, it is highly recommended that you take a guided tour to learn more about the rich western history preserved at the museum.

Historic buildings include a general store with a post office, carriage works, jail, Chinese laundry, gunsmith, hotel, saloon, schoolhouse, teacherage, two period houses, old cabins, and a beautifully restored German Lutheran Church from 1913 that is used for weddings and as an event center. These were collected from various Colorado locations, including Montrose, Delta, Ouray, Telluride, and Ridgway, as well as western towns in Utah, Nevada, Wyoming, and Alaska.

The inside displays are arranged as a western street with storefronts and homes. Rich Fike collected the half million artifacts over 70 years that now make up these displays. You can peek in a room, open a drawer in a store, or poke around the doctor and dentist offices and one of the many stores to see what treasures you might find. The two saloons are complete with mechanical music devices, games, slots, a beautifully restored bar, plus authentic poker, roulette, pool, and faro tables.

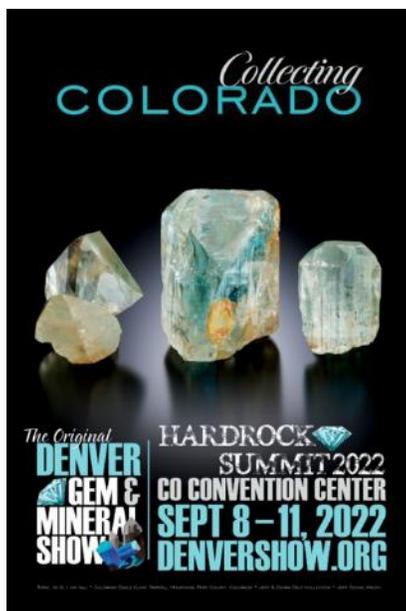
The mission of the Museum of the Mountain West is to educate children and adults about the history and culture of the American West through the collecting, historic preservation, stewardship, restoration, and display of historical buildings and artifacts. For more information about the museum, see <https://museumofthemountainwest.org/>.

Denver Gem & Mineral Show Update



The Denver Gem and Mineral Show (DGMS) will be co-located with the Hardrock Summit at the Colorado Convention Center from **September 8-11, 2022**. All the Hardrock Summit's associated shows will be at the Colorado Convention Center in 2022, including Evolution, Sparkle & Joy, and AGTA. We are grateful for the opportunity to be part of the Hardrock Summit again in 2022. The theme for this year's DGMS show is **"Collecting Colorado"**.

We will be in the same space as last year's show, on the main floor of the Convention Center. We are planning on having dealers, display cases, fluorescent room, speakers, educational booths, Mr. Bones, and club tables. We will need volunteers again this year to set up and tear down the display cases, staff the club tables, sell grab bags and posters, and help provide information and directions. More information will be coming out next month about requests for exhibits and volunteer signups.



The Show Committee is looking for a Treasurer, so if you are interested, please contact Amber at the email below.

At the 2021 DGMS, we sold 1,989 grab bags that provided a \$1,989 scholarship to a Colorado School of Mines 3rd or 4th year geology student. We appreciate member clubs providing grab bags for this important effort, so keep up the great work, and I encourage you to volunteer for a club grab bag stuffing party when one occurs.

If you have any questions, please contact Amber Brenzikofer, the 2022 DGMS Chairperson, at denvergemmineralshow@gmail.com. If you are interested in being a dealer at the DGMS, you can send an email to dealers.denvergemmineralshow@gmail.com.

Prepared by Amber Brenzikofer, DGMS Chair

Prepare an Exhibit for the Denver Gem & Mineral Show

Time to start the wheels rolling on the 2022 Denver Show:

Dates - September 8, 9, 10 and 11, 2022

Location – The Colorado Convention Center, 700 14th Street, Denver.

This year's Theme – **COLLECTING COLORADO**

Granted, the theme language is somewhat general, and even ambiguous, but we are not looking for exhibits such as “one bottle of beer from each of Colorado’s breweries.” Within our earth science context, we *are* looking for exhibits that feature Colorado minerals, fossils, agates, meteorites, and even ephemera like mining memorabilia, equipment, documents, etc. Exhibited material *need NOT* be self-collected.

The corona virus pandemic curtailed many of our normal social activities, but, hopefully, our determined field collectors escaped to their favorite collecting grounds so self-collected exhibits would be especially welcome.

- This year we are asking for the usual non-competitive exhibits from individual collectors and museums.
- In addition, we are offering the following **competitive exhibit** options:
 - Both Adult and Junior Prospector Competitions. Because of the pandemic, the collecting period for eligible specimens will extend from the end of the 2019 show to the beginning of the 2022 show.
 - The Species Competition.
 - The Best of Fossil Competition.

Hoping you are able to join us,
Larry Havens, Exhibit Chair

Other Rockhounding Events and Activities in the Area

If you plan to attend any of these that have not been canceled, please check their websites for the latest updates before you go.

- **Tuesday, March 15.** The **Western Museum of Mining and Industry** in Colorado Springs will feature a talk by Steven Veatch on "**Things Left Behind: An Intimate Time with Spencer and Julie Penrose.**" Spencer Penrose made a fortune mining gold in Cripple Creek and then copper in Utah. Steven Veatch will share stories, historic

photographs, and artifacts from when his grandfather was the private secretary for Spencer Penrose and later Julie Penrose. Admission is always free to Museum members and just \$5 per person for the general public. See <https://wmmi.org/education/> for more information.

- **March 25-27, Fort Collins Rockhounds Show**, featuring **Copper and New World Minerals**. The show is at The Ranch/Larimer County Fairgrounds (5280 Arena Circle, Loveland, CO 80538) in the Thomas M. McKee Building. Parking is free for this event. See <http://www.fortcollinsrockhounds.org/gemAndMineralShow.shtml> for more information.
- **Saturday, April 23**, 6-10 pm, is **Rock Out for the Ridge**, a fundraiser for Dinosaur Ridge at Fossil Trace Golf Club in Golden. The theme is Party Like It's 1989, with dinner and drinks, dancing, live music, and a live and silent auction. Get your tickets at <https://dinoridge.app.neoncrm.com/np/clients/dinoridge/eventRegistration.jsp?event=2733>.



- **Everything Dinosaur -- Learning with LaCount**
Dinosaur Ridge is presenting a 12-part series on Thursday mornings via Zoom from 10-11:30 a.m. on Everything Dinosaurs. You can join the program live, when you can ask questions, or watch the recordings at a time most convenient for you. You'll learn tons about the ancient world and Colorado's dinosaurs in particular. Here are the programs for March:
 - Mar. 10 Pachycephalosaurs
 - Mar. 17 Ceratopsians
 - Mar. 24 Archosaurs
 - Mar. 31 MammalsFor details and to register click [HERE](#)
- **Jurassic World: The Exhibition - Now Open!**
Get closer to dinosaurs than ever before at **Jurassic World: The Exhibition**. The Exhibition immerses audiences of all ages in scenes inspired by the beloved film. Now, the park that was only a promise comes to life. Discover the science of Jurassic World. Walk in the land of Jurassic giants. Come face to face with life-size dinosaurs. See the flyer below and <https://jurassicworldexhibition.com/> for more information.

Officers, Directors, and Other Volunteers

President

Brian Walko, 303-931-4283
earthextractions@gmail.com

1st Vice president: Program Chair

Jean Orr
jporr@mindspring.com

2nd Vice President: Field Trip Chair

Taneka Colon
taneka_ringo@hotmail.com

3rd Vice President: Annual Show Chair

Brian Walko, 303-931-4283
earthextractions@gmail.com

Past President

Gabi Accatino, 303-809-4666
accatino@colorado.edu

Secretary

open

Treasurer

Gerry Naugle, 303-591-2830
gnaugle@earthlink.net

Board of Directors

Term expires in 2020

Tally O'Donnell, 303-494-6061
phantom@indra.com

Anita Colin, 720-556-9889

anitacoln@hotmail.com

Dennis Gertenbach, 303-709-8218

gertenbach1@gmail.com

Term expires in 2021

Brad Willkomm, 303 249-8877

bpwillkomm@yahoo.com

Andrew MacGregor, 720-988-3259

andrew.d.macgregor@gmail.com

Charlotte Bourg, 970-278-0975

Rckhnd4252@gmail.com

Membership

Gerry Naugle, 303-591-2830
gnaugle@earthlink.net

Newsletter Editor

Dennis Gertenbach, 303-709-8218
gertenbach1@gmail.com

Web Master

Gabi Accatino, 303-809-4666
accatino@colorado.edu

Scholarship

Gerry Naugle, 303-591-2830
gnaugle@earthlink.net

Junior Geologists

Dennis Gertenbach, 303-709-8218
gertenbach1@gmail.com

Denver Show & Council Rep

Tally O'Donnell, 303-494-6061
phantom@indra.com

Field Trip Advisory Committee

Members are needed!

Club Hospitality Chair

open

Facebook Chair

Anita Colin, 720-556-9889
anitacoln@hotmail.com

Meeting Door Prize Chair

Brad Willkomm, 303 249-8877
bpwillkomm@yahoo.com

Grab Bags

Anita Colin, 720-556-9889
anitacoln@hotmail.com

Charlotte Bourg, 970-278-0975
rckhnd4252@gmail.com

Mineral Specimens for Grab Bags

Don Mock
donmock@hotmail.com

Club Show Committee Members

Show Chair

Brian Walko, 303-931-4283
earthextractions@gmail.com

Past Show Chair

Ray Gilbert 303-774-8468
Hoss@q.com

Volunteer Chair

Charlotte Bourg, 970-278-0975
rckhnd4252@gmail.com

Program Chair

Open

Dealer Chair

Andrew MacGregor, 720-988-3259
andrew.d.macgregor@gmail.com

Show Advertising and Admissions

Gerry Naugle, 303-591-2830
gnaugle@earthlink.net

Kid's Corner Chair

Charlotte Bourg, 970-278-0975
rckhnd4252@gmail.com

Eileen Fitzgerald, 303 666-1399

elfitz891@hotmail.com

Other Show Committee Members

Gabi Accatino, 303-809-4666
accatino@colorado.edu

Denver Show Club Table

open

A friendly reminder to pay your 2022 annual dues

Dues are still only \$18 per individual and their immediate family. You can pay in two ways:

PAY Gerry Naugle, Treasurer and Membership Chair, at any FMC monthly meeting. Gerry is at or near the sign-in table when you enter the room for the monthly meetings.

SEND a check made to "Flatirons Mineral Club" or "FMC" to P.O. Box 3331, Boulder, CO, 80307. Please do not send cash in the mail.



Your 2022 dues must be received by January 20th, 2022 in order to stay current with the member benefits, which include electronic club newsletters containing the information about club activities, club field trips, annual show opportunities, silent auction opportunities, the annual club summer picnic, and access to the club website. Your receipt is your new annual 2022 FMC membership card.



Flatirons Facets
P.O. Box 3331
Boulder, CO 80307-3331

First Class Mail

Upcoming Events

Date	Event	Location
Tuesday, March 8 at 7 pm	Club meeting featuring Wayne Itano talking about the "Paleontology of the Pennsylvanian Minturn Formation of McCoy, Colorado." See page 2	Mountain View United Methodist Church, 355 Ponca Place in Boulder
Wednesday, March 16 at 6:30 pm	Jr. Geologists meeting on gems. See page 5	Mountain View United Methodist Church, 355 Ponca Place in Boulder
Saturday, April 2 at 10 am and 2 pm	Crystal Growing Day for Jr. Geologists in elementary school. See page 5	12083 W. 27th Drive in Lakewood
Sunday, April 3 at 1:30 pm	Crystal Growing for the GeoExplorers (middle and high school). See page 5	12083 W. 27th Drive in Lakewood
Tuesday, April 12 at 7:00 pm	Club Silent Auction. See page 4	Mountain View United Methodist Church, 355 Ponca Place in Boulder
Saturday, April 16 at 10 am	Fossil preparation lab tour for GeoExplorers. See page 5	Lost World Fossils

Please check the club's website at <https://flatironsmineralclub.org/> for the status of these activities, as they may be canceled because of safe COVID-19 guidelines.



Flatirons Mineral Club

**2022 Annual Silent Auction, starts at 7:00pm on
Tuesday, April 12th**

Seller's set-up starts at 6:05pm

**Mountain View Church, 355 Ponca Place located in
East Boulder (80303) in the downstairs Barker Hall
Room *(the huge A-Frame looking church with south facing
solar-panels, located just west of the Frasier Healthcare)***

Minerals, Crystals, Fossils and Lapidary

Bring items to sell.....or just come to browse!

**Sellers: Suggest to e-mail Gerry Naugle ahead of time to get a seller-buyer
number, *then you can pre-fill your seller slips.***

Gerry Naugle
gnaugle@earthlink.net

See us on our website, at:

<https://flatironsmineralclub.org>

