



Flatirons Facets

Flatirons Mineral Club of Boulder County, Colorado

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November-December, 2016

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.



Come and Have Fun at the Towel Show!

Get Ready for the November 10th Meeting - our Annual Towel Show

If you're new to the club, you're probably asking yourself, "What is a Towel Show?" Each year, members bring specimens they have collected, as well as lapidary and jewelry work they have completed to show the other club members. The specimens are displayed on a towel, hence "The Towel Show".

Prizes are awarded to both adults and juniors in the following categories: personal field trip, club field trip, lapidary/jewelry, best mineral, best fossil, best ugly rock, and even best towel. Everyone votes for their favorites and Barnes and Nobel gift cards are presented to the first and second place winners in each category. Come join the fun, plus bring some snacks to share with everyone.

The Towel Show will start at 7:00 pm in the Sky Lounge at Frasier Meadows, 350 Ponca Place, Boulder, CO 80303. If you are bringing items to show, plan to arrive 10 minutes early to set up your display.

Come and join in the fun of displaying your special finds and creations and enjoying those of other members.

Our December Show – Rocks & Rails

Every December the Flatirons Mineral Club teams up with the Boulder Model Railroad Club to bring a weekend of rocks, minerals, and model trains to the community! Sounds crazy but it works. For years now our two clubs have put on this show during the second weekend of December at the Boulder County Fairgrounds in Longmont.



A scene for last year's show

Turn to page 3 to find out more about the show and how you can help. Everyone's help is needed to make the show successful.

President's Message



Hello FMC Members!

I hope you had a great summer filled with wonderful rock and mineral finds! You'll be able to show off the highlights of your collection at the November meeting at our annual Towel Show.

Our fun club events continue in December with our rock and mineral show and your club needs you! Please answer the call and contact me or Charlotte Bourg to work a shift to help make our show a success. Our show is called Rocks & Rails and we join forces with the Boulder Model Railroad Club to put on quite an unusual and wonderful show at the Boulder County Fairgrounds in Longmont. Volunteer for one shift and get in to the show all weekend for free. Come have fun with us!

Next, we will also have our annual holiday party during our December meeting! Join us to enjoy potluck appetizers and sweets and our fun gift exchange. Bring a wrapped rock or mineral surprise to join the fun.

Lastly, I'd like to thank all of you who volunteered to help out at the Denver Gem & Mineral Show this past September. This show is the second largest show in the country and is entirely run by the members of the eight of the Denver-area rock and mineral clubs. It's an amazing event!

Happy Autumn! Gabi

A Colorado Geological Wonder

This picture shows one of Colorado's many geological wonders. Here are two questions to test your knowledge of Colorado geology.

What is this geological feature?

- a. a dry lake bed
- b. a volcano
- c. a large sink hole

Where is it located?

- a. north of Dotsero
- b. outside of Delta
- c. above Durango

Turn to page 12 to check your answers.



Rocks & Rails – December 9-11

(continued from page 1)

The show is a favorite event for families. Those with small children especially enjoy the club Kids Corner that has mineral-themed games to play and a sand pit with hidden rocks to find. Ed Rains provides free mineral identification for anyone who is wondering about their rocks. A long line of children and adults form to learn to polish a rock using the club equipment that volunteers bring to the show for the weekend.

Elsewhere at Rocks & Rails is a fluorescent room with mineral specimens glowing under UV lights. There is usually a schedule of lectures. There are vendors and demonstrations and door prizes. And we are continuing a new feature from last year called the Club Artisan Table.



Kids Corner co-chair Charlotte Bourg with the kids' games. The other Kids Corner co-chair is Eileen Fitzgerald.



Ed Rains identifying minerals

members. It's a great way to get to know the other members and you can come to see the show the rest of the weekend for free.

And then, of course, there are the trains! It's fun to wander over to that side of the arena to watch all the fascinating model train layouts.

Rocks and Rails will be at the Boulder County Fairgrounds at 9595 Nelson Road in Longmont, December 9-11. The doors open at 10 am each day and close at 5 pm. Admission for adults is \$5 per day; children 12 and under are free with a paid adult. **Volunteers get in free!**

We truly need your help! Please come help at the Kids Corner or put on an orange vest and walk around providing security to all of our wonderful vendors. This is a fun event for our community as well as for our

Contact Gabi at accatino@colorado.edu and let her know when you can help.

Club Artisan Sale Table at the December Show

Do you have rock-related items that you'd like to sell but don't have enough to play with the big vendors? This year we are continuing to offer an opportunity to club members who are not dealers. They can sell their own creations or rock collections at our Rocks & Rails show in Longmont. This can include bulk rocks, slabs, jewelry and other items that fit the following description from our dealer contract:



Club Artisan Table

Dealers will only be permitted to display or sell materials or equipment directly related to the Earth Sciences, Rocks, Minerals, Fossils, Lapidary, Gems, Jewelry, Indian Artifacts, or printed, film or video materials associated with any of these fields.

We will provide a set of tables at the show designated for this purpose and we are calling it the “FMC Club Artisan Table”. You are not required to get either a Colorado Multiple Events License and/or a Tax Resale number if you do not anticipate selling over \$1,000 worth of merchandise.

A few ground rules for participation are:

1. This is being offered on a first come first served basis so please don't wait too long to register if you are interested.

2. At this stage we are limiting space to each individual

to anywhere between 3 and 6 feet in one foot increments. When you contact Tally O'Donnell to get a copy of the contract, please let him know the number of linear feet you are requesting so he can make sure we have the room available.

3. You must sign up by Tuesday December 1st. To do this, contact me Tally to get a PDF copy of our contract that you need to fill out and return with a check for the space you have requested.

4. All items must be clearly marked as to price either individually or in groups (which you can then negotiate as you wish).

5. The “FMC Club Artisan Table” area must be staffed at all times to properly register sales and for security purposes. To this end it is the obligation of all participants in this offering to register for one or more time slots to oversee this area. Once Tally has a list of the people who will be participating, he will then coordinate getting the staffing addressed.

6. If you chose to partake of this opportunity you also need to sign-up for a non “FMC Club Artisan Table” volunteer assignment during the show such as security, Kids Corner, set-up, or breakdown.

If you would like to join this endeavor please contact Tally at phantom@indra.com and he will send you the contract and pricing information.

Display Your Best

Returning this year are display cases for our members to showcase their rocks, minerals, fossils, and lapidary work. The display cases are from the Denver Show and feature a glass front, overhead lighting, and are secured. The display cases will be set up for you. All you need to do is bring your specimens, labels, and liners on Thursday, December 8, and fill your case. Plan to take down your case on Sunday at 5 pm.

The display cases are always a great hit with



the public and help to interest people in joining our club. To reserve a display case, please contact Dennis Gertenbach at gertenbach@comcast.net.

Specimens needed for the Rocks & Rails Show

It is time for you to go through your rock collections and donate to the KIDS CORNER for our Rock and Mineral show. We need donations for three areas:

1. SMALLER, POLISHABLE SPECIMENS for the kids to use on the Genie. For some kids, this is the highlight of the show. They come back each year to polish a new rock and it is amazing to see these kids get so excited when they do it. They are so serious and intense while doing the actual polishing; they could do this over and over all day. It is a blast to work with them on this.
2. For the DIG SITE, we need COLORFUL, SPARKLEY SPECIMENS that are about the size of a ping pong ball up to a tennis ball. FOSSIL WOOD that the kids can actually tell is wood are favorites, also. Here you have a chance to talk to the parents about the club, tell the kids about what they are digging up and really interact with our visitors. The kids will dig up all the rocks and shells, line up their favorites and then pick from the ones they want to take home with them. Of course, if you are smart, you will have them re-bury the rejects so you don't have to.
3. We have the WHEEL OF ROCKS, ELECTRIC MATCHING, and a new game, PIC-A-DINO. These all need SMALLER SPECIMENS, about the size of a quarter, for prizes. Some examples are small pieces of calcite, apache tears, quartz crystals, fossils, wood, etc. We like to be able to fill a container with the same type of specimen for the kids to choose from.



Of course, if you have rocks and minerals you aren't sure of, bring them anyway. Some we can cut down and use while others may end up in a pothole. To DONATE your specimens, contact Charlotte at rckhnd4252@gmail.com.

Volunteers Needed for the Rock & Rails Show

This Show runs on VOLUNTEERS. We need volunteer help from set-up on Wednesday at 10 am until breakdown Sunday night. This is your club and we need your help to put on the show. From kids to grandparents, we need you all! During Friday–Sunday we need you for SECURITY and in the KIDS CORNER, perhaps running a game, helping with the rock polishing or selling grab bags, or chatting about the club with visitors. You don't have to stand all the time, we have sitting positions too. Volunteer needs are summarized in the table on the next page. To VOLUNTEER your time, contact Gabi at accatino@colorado.edu.

Volunteer for Show Set-up and Tear-down

Four or five people are needed to help with show setup on Wednesday December 9th at the Longmont fairgrounds from 10 am till about 2 pm. We will be setting up tables, chairs and electrical cables, so this is mildly physical labor. We also need another 5 to 6 people on Sunday evening December 13th from 5:30 till around 8 pm to help undo what we put together on Wednesday. On Sunday evening and Wednesday noon the club will provide pizza and soda for all who volunteer to help. If you can help with either or both times please contact Tally at phantom@indra.com.

December Show Volunteer Need		7-Dec	8-Dec	9-Dec	10-Dec	11-Dec
		Wednesday	Thursday	Friday	Saturday	Sunday
Timespan		11am-9pm	8am-9pm	10am-6pm	9am-5pm	10am-7pm
Most Need for Member Help		1pm-9pm		10am-6pm	9am-5pm	10am-7pm
SET-UP TASKS	Electrical Boxes	AM				
	Display Cases	unload in AM				
	6' Tables	11:30am-3pm				
	8' Tables	4pm-9pm				
	Trains' Tables	1pm-9pm				
Manning Club Tables (3-4 hour shifts)				10am-6pm	9am-5pm	10am-5pm
Parking (3-4 hour shifts)				10am-4pm	10am-4pm	11am-4pm
Security (3-4 hour shifts)				10am-5pm	9am-5pm	10am-5pm
Free Food for Volunteers		Pizza (S-U)		3 \$1-Meal Scripts	3 \$1-Meal Scripts	3 \$1-Meal Scripts (S) and Pizza (T-D)
Tear-Down (After 5pm on Sunday)						Packaging Boxed Items
						Taking down, packing displays
						Display cases into truck
legend:						Gathering 6' tables
(S) = During Show						Gathering 8' tables
(S-U) = During Set-up						Gathering trains' tables
(T-D) = During Tear-down						Chairs to storage
						Electrical boxes to storage

Members, Please volunteer !! Each December, the Flatirons Mineral Club and the Boulder Model Railroad Club hold a joint show at the Boulder County Fairgrounds in Longmont. We are in serious need for volunteers to help us set-up and tear-down the tables, chairs, and display cases before and after the show. We especially need folks to man our club booth during the show. If you volunteer you will get free admission to the show for the entire weekend and free food. Please contact Gabi Accatino at accatino@colorado.edu for more volunteer information and to sign-up.

Holiday Party – December 15



Santa Gerry presiding over the gift exchange

To finish the year, come and join the fun at the annual Holiday Party on Thursday, December 15th. Bring a \$5 to \$10 mineral-related gift, wrapped for the gift exchange, and some snacks to share with other, and enjoy our year-end party gift exchange. The gift exchange is great fun, with gifts exchanging hands throughout the evening. Members young and old will have a great time and you never know what gift you will go home with.

The party starts at 7:00 pm in the Sky Lounge at Frasier Meadows, 350 Ponca Place, Boulder, CO 80303.

Crawford Fairburn Agate Field Trip with CMS – October 1-2

Brian Walko



We started Saturday morning at Toadstool Geologic Park with approximately 25 people from FMC and CMS. It was a beautiful High Plains day with temperatures in low 80's. Toadstool Park is surrounded by the White River Group of Oligocene age (~30 mya) and is extremely fossiliferous with early mammals and turtles. Fossil collecting on federal lands is prohibited; however, everybody found a fossil fragment, took pictures, and tossed them back on the hill. Next



we went a mile east of Sugar Loaf Butte to a little reservoir south of the road. Agate beds all around it. We found a lot of black petrified wood, prairie agate, and some picture agate. No fairburns. Most of these finds were along newly eroded sides of cattle trails. It seems the agate beds were picked over.



The group set up camp on a rise just east of Sugar Loaf Butte. No cactus! People explored the area north of Sugar Loaf Road. No significant finds. However Kevin Notheis and his rockhound dog, Annie, ventured south to a dried pond. Kevin found a lot of chalcedony nodules. When cracked open they had nice geode hollows with calcite crystals.



We went back to the agate beds for some evening ultraviolet agate hunting. Some of the cracked chert glowed along with the petrified wood. When we returned to camp, Kevin brought over his chalcedony pieces. Wow, bright green shortwave fluorescence. That prompted a hike to that dried pond area. Almost every piece of chalcedony glowed. In some areas, the entire ground was glowing bright green.

The night was filled with comradery and stargazing with the occasional sound of coal trains passing in the distance.



Sunday morning we worked the public land just east of Sugar Loaf. Loaded up on fluorescent chalcedony. Then headed north to Agate Reservoir. The agate beds were picked over again. Kevin found a small fairburn in the middle of the dirt access road. We also found some agatized brachiopods and a small clam in the chert.



It was a great trip and I look forward to leading it again next year.

Photos from Brian Walko and Ellen Scheffler

Tepee Buttes Field Trip – October 15

Dennis Gertenbach



Water color of the Tepee Buttes by Andrew Caballero, age 13, painted during the trip

October 15 was another great day to be out collecting; the weather was perfect. This time, the club went to Boone, outside of Pueblo, to collect Cretaceous fossils on the Tepee Buttes in the area. The Tepee Buttes are unusual features that can be found in the Pierre Shale from Canon City traversing northeast through Colorado and into South Dakota. During the Cretaceous period (65-100 million years ago), eastern Colorado was covered by the Western Interior



Seaway. About 70 million years ago, methane gas vents in the floor of the ocean provided nutrients for reef colonies to form around the vents. The reefs, in turn, provided food and shelter for a wide range of animals, including clams, ammonites, baculites, snails, and other invertebrates (animals without backbones). These ancient reefs are the cone-shaped features we find today.

The clam *Nymphalucina occidentalis* is only found on the Tepee Buttes, where they are quite plentiful. Some of the finds that day included several species of ammonites, baculites (straight ammonites), snails, and clams. Some of the prized finds included *Solenoceras*, a bobbypin-shaped ammonite.

A special thanks to the two land owners for allowing us to collect on their property.



Dennis Gertenbach discussing the geology of the Tepee Buttes



A small scaphite ammonite



Isaac with the *Solenoceras* he found



A *Solenoceras* ammonite

Photos from Charlotte Bourg and Dennis Gertenbach

One of the local inhabitants



Club Name Badges

Would you like to have a club name badge? We have finally found a reliable source for personalized name tags and will place an order 4 times a year. The next order will be placed at the beginning of December. Order yours and proudly wear it at meetings and other club events! The cost is \$5.00 each. Email Gabi Accatino at accatino@colorado.edu to get your name on the list for the December order.

Jr. Geologists Activities

This fall, the Jr. Geologists are learning how to identify minerals by color, crystal shape, and physical properties, such as hardness, streak, luster, gravity, and cleavage. They will continue to hone their skills at our next meeting on Wednesday, November 16 at 6:30 p.m. at the Reynolds Library, 3595 Table Mesa Dr., Boulder, CO 80305.



Dennis Gertenbach talking to the Jr. Geologists about mineral identification

This year we are fortunate to have two high school seniors helping with the Jr. Geologists – Kevin Barz and Nico Caballero. It is wonderful to have these two sharing their knowledge with the younger kids. We are always looking for more club members who enjoying working with children, teaching them about the earth sciences. Contact Dennis Gertenbach, if you would like to help.

The Jr. Geologists program is open to all Flatirons Mineral Club families. Each month we learn about different aspects of geology, minerals, and fossils, plus earn badges for different earth science activities. For information about the Jr. Geologists program, please contact Dennis Gertenbach at gertenbach@comcast.net or 303-709-8218.



Isaac cleaving calcite

Photos from Isaac Huang

A Colorado Geological Wonder

Dennis Gertenbach



What is this geological feature?

b. a volcano

Where is it located?

a. north of Dotsero

About one mile north of Dotsero is this volcano (more precisely a cinder cone). Most travelers on I-70 just to the east of Glenwood Springs do not realize that they are crossing the lava flow from this volcano. But if you look closely, you can see ridges and rocks of basalt from the lava flow sticking up from the sage.

The Dotsero Crater formed when magma encountered water and explosively blasted a crater through the country rock, showering ash and cinders across the landscape. It is Colorado's youngest volcano, last erupting only 4,150 years ago. Geologists have dated the last eruption using carbon radiometric dating of plant debris in the lava flow. Although the eruption was not huge, lava flowed about four miles from a vent on the side of the volcano. Today, I-70 cuts through the southern edge of this lava flow. The location of the cone and the lava vent are shown on the Google Earth image below.



Satellite image showing the location of the Dotsero Crater and the lava vent

The cinders and lava are mostly scoria, a basaltic lava typically having a frothy texture. This texture can be seen in this picture of a typical cinder from the Dotsero Crater. The frothy texture is caused by gases dissolved in the molten lava

rapidly bubbling out as the lava reached the surface. Most of the scoria and basalt at Dotsero is black; but some red scoria is also found, colored by the oxidation of iron minerals.

Today the crater today has a diameter of about 2,500 feet and a depth of 250 feet at lowest point of the rim. Geologists think that the crater was originally about 1,300 feet deep, but has since been partly filled as the surrounding slopes eroded into the crater.

Will the volcano erupt again? No one knows. Currently, the volcano is classified as inactive. However, the magma body is still below – it is responsible for the hot springs in Glenwood Springs. The residents of Dotsero are probably safe for now.



Scoria cinder from the Dotsero Crater

If you would like to visit the volcano crater, take exit 133 off of I-70 to the town of Dotsero. The road to the crater heads up the main gulley north of the town on a dirt road. A high clearance vehicle is best. As you travel up the gulley, you will pass scoria and basalt from the lava flow. Nearing the crater you will find areas where cinders cover the road. These cinders cause poor traction and four-wheel drive is helpful. When you reach the crater, you can poke around the crater and even walk down into the crater. Just be aware that the sides are steep and be sure you have good footwear for scrabbling back up through the cinders. Also, cinders are periodically mined from the area, so be on the lookout for mining trucks. The GPS reading for the crater is:

Latitude: 39.663° N
Longitude: 107.032° W

References:

Chronic, Halka, *Roadside Geology of Colorado*, Mountain Press Publishing Company, Missoula, Montana, 1980, p. 125.

Denver Museum of Nature and Science, <http://www.dmns.org/museum-blog/the-dotsero-volcano/the-dotsero-volcano/>, accessed 11/4/16.

Matthews, Vincent, KellerLynn, Katie, and Fox, Betty (editors), *Messages in Stone, Colorado's Colorful Geology*, Colorado Geological Survey, Denver, Colorado, 2003, p. 108.

United State Geological Survey, <https://volcanoes.usgs.gov/volcanoes/dotsero/>, accessed 11/4/16.

The Club Now has a Claim! Pixie's Sunset Lode

The club now has its own mineral claim! Yay!

This is something that the club has been talking about for many years. It is one of the things that the current FMC board wanted to be able to provide to our members. Thanks to your volunteer work at our Rocks & Rails Shows each year in December and your membership dues, we have enough money in our coffers to pay the yearly fee to own a claim. The plan is for any FMC member to go and collect on the claim, whenever you want to go. We also would like everyone to take an active role in maintaining it.

The claim is in Red Feather Lakes which is west of Ft. Collins. The mineral that is plentiful there is quartz – peach colored crystals. The claim's name is Pixie's Sunset Lode. We are working on directions and instructions for you to get

there on your own. And we will have a club trip to the claim in the spring to fully acquaint club members with this wonderful acquisition!

Scenes from the Denver Gem and Mineral Show

Many of us enjoyed this year's Denver Gem and Mineral Show in September. The theme from this year's show was Minerals from Africa, and the fabulous display of minerals from this continent did not disappoint. Here are pictures from this year's show.



Our club's display case highlighting our activities



Members at our club's table



One of the many beautiful fluorescent minerals from Africa



One of the many displays in the Fluorescent Room



Piper panning for gold

Photos from Brian Walko, Anita Colin,
and Dennis Gertenbach

Denver Gem & Mineral Show 2016 - Winners in the Special Competitions

This year's winners for the best display cases at the Denver Gem and Mineral Show in September are listed below. Congratulations to each of the winners.

Richard M. Pearl Trophy: Les Presmyk (Azurite Plate, Bisbee, Arizona)

Best of Species Trophies:

Thumbnail - Paula Presmyk (Rhodochrosite, South Africa)

Toenail - Nick North (Rhodochrosite, South Africa)

Miniature - Larry Havens (Sturmanite, South Africa)

Cabinet - Jack Halpern (Smithsonite, Tsumeb, Namibia)

Oversized Cabinet - Larry Havens (Japan Law Twinned Quartz, South Africa)

Best Fossil: Evan Walsh (Trilobite) - A JUNIOR!

Prospector Trophy: Jim Hooten (Almandine cluster, Chaffee County, Colorado)

Junior Prospector Trophy: Hunter Kokkinen (Celestine/Calcite, Utah)

C. E. Withers Award: Scott Rudolph (Minerals from the Tsumeb Mine)

Donna Chirnside Memorial Museum Trophy: Smithsonian Institution (Minerals of Africa)

Individual Competitive Case Trophies:

Thumbnails of One Mineral Species - Barbara Sky (Calcites)

Educational, General Audience, Skill, Lapidary - Keith Sheel (How to Make a Cabochon)

Fossils, Single Classification - Evan Walsh (Trilobites)

Club Prospector Trophy - Colorado Mineral Society (Happy 80th Anniversary)

Thanks to Everyone Who Helped at the Denver Gem and Mineral Show

Hello Show Volunteers,

I wanted to send out a heartfelt thank you for helping out with our September 2016 Denver Gem and Mineral Show. Your volunteering is greatly appreciated. Without you, we would not have a show. To those of you who also serve on the show Committee or Council, an extra thank you. I have been told that our dealers have said that our show is very well run and that is because of all you do. We are starting planning for the 2017 Show which is our 50th anniversary show. For this momentous year, our theme will be Gold and Silver. It should be an exciting show with beautiful displays. I look forward to working with you again and hope to meet some additional new volunteers this year. We are always looking for more volunteers and new and fresh ideas.

Lesley Sebol,
Show Chair

Lapidary Equipment for Sale

Warren Sharratt is moving overseas and is selling the following lapidary equipment and supplies.

- Lortone Model Q - 66 Gemstone Rock Tumbler - two rubber barrels. Manual included.
- Two containers (about 6-7 lbs.each) of abrasive and polishing compound.
- Lortone Stroker Hand Cabbing System with instructions.
- Rock Rascal Model V rock vise.
- Bag of approximately 50 small slabs of rock minerals ready for polishing.

None of the equipment or materials has ever been used and all are still in the original boxes. Warren is selling the complete package for \$250.00. Contact him at (303) 666-6353 or WJSkier@yahoo.com.

How Would You Like To Swim In This? Probably Not

Gerry Naugle



Credit: Placestoseeinourlifetime.com

This is Lake Natron in Tanzania and the bright color comes from a dissolved brew of concentrated salts (of all kinds), with a trace of cadmium (nasty) and a trace Erbium (nasty) from nearby volcanoes. The water is highly toxic to all but a few specific indigenous life forms.

Officer Nominations for the Greater Denver Area Gem and Mineral Council

The Greater Denver Area Gem and Mineral Council is composed of the eight mineral, lapidary, and fossil clubs in the area. The Flatirons Mineral Club is one of these eight clubs. The Denver Council sponsors the Denver Gem & Mineral Show each September and directs the disbursements of the show proceeds as grants for the advancement of the earth sciences.

The nominated officers for the Denver Council in 2017 are:

President: Joe Payne

Vice President: Dale Gann

Secretary: Larry Havens

Treasurer: Open at this time

Additional nominations will be accepted from club members prior to November 16, 2016, provided the nominee has accepted the nomination.

Our club will vote on each of these nominees at our club meeting on November 10. For more information about the Denver Council, please contact Carl Bird, our club's representative on the Council, at carlmbird@comcast.net or 303-665-9794.

Enjoy a Mine Drilling Contest

In the latest copy of *Rock & Gem* magazine, Steve Voynick had an interesting article about “The Games Miners Play” describing drilling contests featuring professional miners. Here is a schedule and locations of mine drilling contests in the eight Western states next year. If you are traveling to these areas, you may enjoy watching these public exhibitions of underground mining practices.

Mine-Drilling Contests - Where to Find Them	
Professional miners participate in the 18 drilling contests in eight Western states. All are held on national holidays or in conjunction with mining-town festivals. Many events have Web sites that post exact contest dates.	<ul style="list-style-type: none">• Silverton: Hardrockers' Holiday (August)• Leadville: Boom Days (August)
ALASKA <ul style="list-style-type: none">• Juneau: Gold Rush Days (June)	IDAHO <ul style="list-style-type: none">• Osburn: Coeur d'Alene District Mining Competition (August)
ARIZONA <ul style="list-style-type: none">• Wickenburg: Gold Rush Days (February)• Miami: Boomtown Spree (April)• Superior: Apache Leap Mining Festival (April)• Bisbee: Fourth of July Drilling and Mucking Contest (July)	MONTANA <ul style="list-style-type: none">• Absarokee: Absarokee Days Mining Competition (July)
COLORADO <ul style="list-style-type: none">• Creede: Days of '92, Colorado State Mining Championships (July)• Idaho Springs: Tommyknocker Days (July)• Nederland: Miners' Days (July)• Victor: Gold Rush Days (July)• Ouray: Highgraders' Holiday (August)	NEVADA <ul style="list-style-type: none">• Tonopah: Nevada State Mining Championships (May)• Carson City: Nevada Day, World Championship Single-Jack Drilling Contest (October)
	UTAH <ul style="list-style-type: none">• Park City: Miners' Days (September)
	WASHINGTON <ul style="list-style-type: none">• Republic: Prospectors' Days (June)

Fossils in the News

Dennis Gertenbach

The real reason turtles have shells

Dr. Tyler Lyson of the Denver Museum of Nature and Science is a coauthor of a recent paper which concludes that turtle shells initially evolved as a burrowing tool, not for protection. As we all know, modern turtles used their shells primarily for protection. No other living vertebrate has so drastically altered its body to create a protective structure. However, a new study by an international group of paleontologists suggests that the broad ribbed proto shell on the earliest partially shelled fossil turtles was an adaptation for burrowing, not protection.



An artistic drawing of early proto-turtle *Eunotosaurus* in burrows dug with help from its shell. Credit: Denver Museum of Nature & Science

A big breakthrough came with the discovery of several specimens of the oldest (260- million-year-old) partially shelled proto turtle, *Eunotosaurus africanus*, from the Karoo Basin of South Africa. These fossils show the ribs of these animals were quite broad. The broadened ribs, which later evolved into the turtle shell, would have had a serious impact on both breathing and walking speed. This disadvantage was offset by the ability to dig underground to escape the harsh South African environment where these early proto turtles lived.

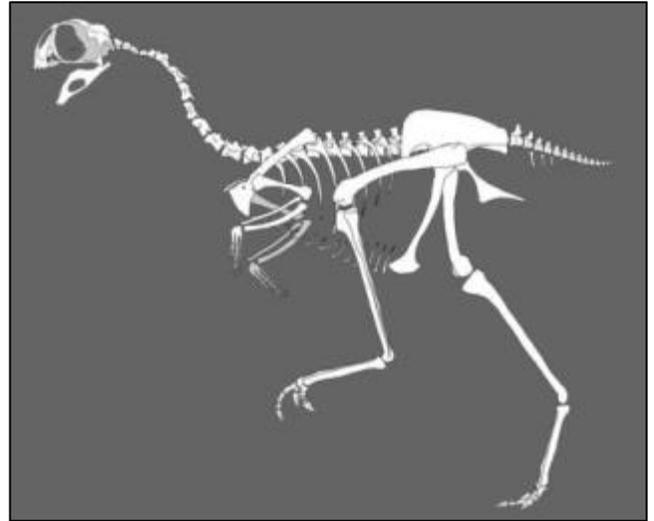
Information from

<https://www.sciencedaily.com/releases/2016/07/160715171312.htm>

Dinosaurs that flocked together

A new publication on the bird-like dinosaur *Avimimus* from the late Cretaceous suggests they were gregarious, social animals. This contradicts the long-held belief that dinosaurs were solo creatures. Gregory Funston, a Ph.D. student at the University of Alberta, states that "Our discovery demonstrates that dinosaurs are more similar to modern animals than people appreciate. Although the players are different, this evidence shows that dinosaurs were social beings with gregarious behavior who lived and died together in groups."

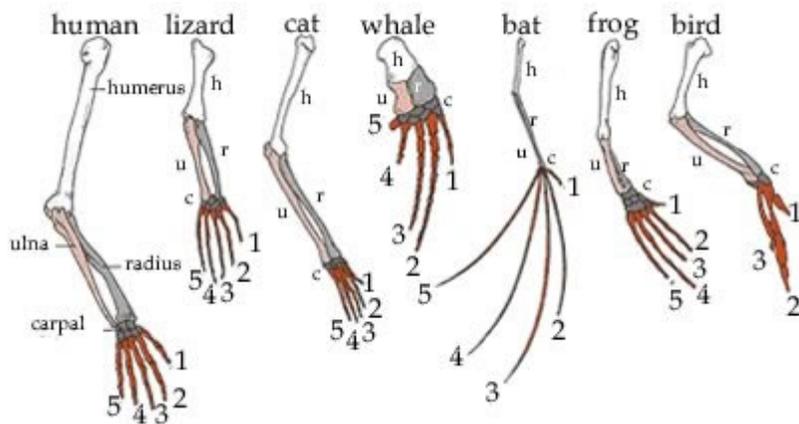
The fossils are from a site in Mongolia, where scientists found a bone bed containing a number of *Avimimus* dinosaurs. The large number of animals found at the site could only be explained by flocking behavior, similar to flocks of modern birds.



An *Avimimus* reconstruction Credit: Gregory Funston, University of Alberta

Information from

<https://www.sciencedaily.com/releases/2016/10/161024111326.htm>



Five digit limbs of modern animals Credit: Kurokarasu

Why do our hands have five fingers?

A team led by Dr. Marie Kmita's team at the Institut de Recherches Cliniques de Montréal and Université de Montréal have uncovered a part of this mystery in a recent discovery published in the journal *Nature*. Paleontologists have known that the five digits on the arms and legs of vertebrates evolved from fish fins. Researches demonstrated that two genes - *hoxa13* and *hoxd13* - are responsible for the formation of fin rays and our fingers. However, the fossil record shows that our ancestors had more than five fingers. The current study showed that changes in the DNA of fish and mammals led to five digits in mammals.

Information from <https://www.sciencedaily.com/releases/2016/10/161005132654.htm>



Get Your Very Own Flatirons Mineral Club Baseball Cap

The club now has baseball caps in a variety of colors for sale, sporting the new Flatirons Mineral Club logo. Buy them at any meeting. The member price is \$10 each, while the non-member price is \$15.

Other Rockhounding Events and Activities in the Area

Here is a list of rockhounding-related activities in the area for both adults and juniors that you might be interested in. Thanks to Pete Modreski of the USGS for providing information on many of these events.

Tuesday, Nov. 8, 3:00 p.m. The Earth Sciences Colloquium at the Denver Museum of Nature & Science will feature **Exploring the Eocene Forests of Colorado**, by Steve Manchester, Florida Museum of Natural History. The talk will be in the VIP Room at the museum. All are welcome; museum admission is not required.

Saturday-Sunday, Nov. 12-13, is the **37th annual New Mexico Mineral Symposium**, at New Mexico Institute of Mining & Technology, Socorro, NM. The symposium is always a very interesting and worthwhile weekend program and a rendezvous for mineral collectors, mineralogists, geologists, and Rockhounds. It includes a day and a half of lectures, a Saturday evening banquet, a Sunday afternoon silent auction, mineral dealers, and some optional field trips on Thursday and Friday. See <https://geoinfo.nmt.edu/museum/minsymp/home.cfm> for full program and registration information.

Thursday, Nov. 17, at 7:00 p.m. is the **Colorado Scientific Society** November meeting. Joe Sertich from the Denver Museum of Nature and Science will be talking about **Terrestrial Ecosystems during the Mesozoic: the Dinosaurs of Madagascar**. Shepherd of the Hills Presbyterian Church, 11500 W. 20th Ave., Lakewood CO. All are welcome.

Thursday, Nov. 17 at 7:30 p.m. is also the **Friends of Mineralogy, Colorado Chapter** bimonthly meeting at the Denver Museum of Nature and Science, VIP Room. Daniel Kile will present a program on **Barite-Bearing Concretions near the Book Cliffs Area of Grand Junction, Mesa County, Colorado: Genesis, Mineralogy and Collecting**. See <http://friendsofmineralogycolorado.org/> for an abstract (with pictures) about the presentation. All are welcome.

Friday-Sunday, Nov. 18-20, is the **Gem and Mineral Show** at the Jefferson County Fairgrounds, Exhibit Building. The Fairgrounds are located on the 6th Avenue Frontage Road at Indiana Street in Golden, CO. The show is sponsored by Denver Area Gem and Mineral Dealers and is open to the public on Fri. 10:00-5:00, Sat. 10:00-6:00, and Sun. 11:00-4:00. The show will have 24 dealers, featuring minerals, fossils, gemstones, jewelry, cabochons, beads, books, and carvings. Free admission and plenty of free parking.

Saturday, Nov. 19, 11 a.m. to 4 p.m. is a **Silent Auction**, held by the Littleton Gem and Mineral Club. All are welcome. The

auction is at the Columbine Hills Church, 9700 Old Coal Mine Avenue, Littleton, CO. Setup is at 11:00 a.m., the silent auction starts at noon, the verbal auction starts at 1:00 pm, and checkout starts at 3:30 pm.

Tuesday, Dec. 6, at 3:00 p.m. is an Earth Sciences Colloquium at the Denver Museum of Nature & Science. This month will feature **Pterosaur paleobiology: Insights from photogrammetric Ichnology** by Brent Breithaupt and Neffra Matthews, BLM. The talk is in the VIP Room at the museum. All are welcome and museum admission is not required.



GEM & MINERAL SHOW
NOVEMBER 18-20, 2016
Jefferson County Fairgrounds

*Public
Welcome*

*Free
Admission*

*Free
Parking*

Sponsored by Denver Area Mineral Dealers

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President

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

1st Vice president: Program

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

2nd Vice President: Field Trip Chair

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

3rd Vice President: Annual Show Chair

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

Secretary

Eileen Fitzgerald, 303 666-1399
elfitz891@hotmail.com

Treasurer

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

Past President

Mike Smith, 303-530-2646
m_l_smith@earthlink.net

Board of Directors

Term Expires 2016

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

Kevin Notheis, 303-325-5666
knotheis@gmail.com

Term Expires 2017

Brian Walko, 303-931-4283
earthextractions@gmail.com
Brad Willkomm, 303 249-8877
bpwillkomm@yahoo.com

Web Master

Kevin Notheis, 303-325-5666
knotheis@gmail.com

Membership

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

Newsletter Editor

Dennis Gertenbach, 303-709-8218
gertenbach@comcast.net

Scholarship

Donald Layden
donald@pmgresources.com

Junior Geologists

Dennis Gertenbach, 303-709-8218
gertenbach@comcast.net

Denver Show & Council Rep

Carl Bird, 303-665-9794
carlmbird@comcast.net

Field Trip Co-Chair

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

Club Claims

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

Club Hospitality Chair

Deborah Knox
clanfelidae@yahoo.com

Club Show Committee Members

Show Chair

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

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open

Programs and Dealer Chair

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

Grab Bags

Anita Colin, 720-556-9889
anitacoln@hotmail.com
Charlotte Bourg, 970-278-0975
rckhnd4252@gmail.com

Meeting Door Prize Chair

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

Denver Show Club Table

Dennis Gertenbach, 303-709-8218
gertenbach@comcast.net

A friendly reminder to pay your 2017 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 2017 dues must be received by January 20th, 2017 in order to stay current with the member benefits, which include electronic club newsletters containing the information about club activities, club field trips information, annual show opportunities, silent auction opportunities, and the annual club summer picnic. Your receipt is your new annual 2017 FMC membership card.





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

First Class Mail

Upcoming Events

Date	Event	Location
Thursday, November 10	Towel Show – a time to show your best rock, mineral, and fossils finds and your lapidary projects from the past year	Frasier Meadows
Wednesday, November 16	Jr. Geologists meeting to learn more about mineral identification	Reynolds Branch Library
Friday-Sunday, December 9-11	Rocks and Rails – our annual rock and mineral show, held with the Boulder Model Railroad Club	Boulder County Fairgrounds
Thursday, December 15	Holiday Party featuring a fun gift exchange and holiday snacks	Frasier Meadows