



Flatirons Facets

Flatirons Mineral Club of Boulder County, Colorado
Volume 62, Number 5
September-October, 2019

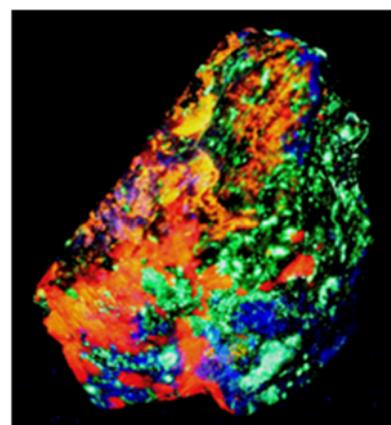
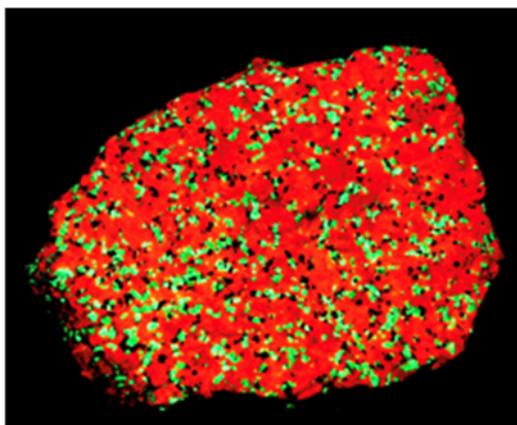
The Flatirons Mineral Club is a non-profit Organization which is dedicated to developing and maintaining interests in Earth science and associated hobbies. The purpose of this Club includes, but is not limited to, studying geology and Earth science, teaching others about our hobby, including young people,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



Still Crazy (About Franklin) After All These Years by Bob Carnein September 5th Club Meeting

Although mining ended in 1986, the zinc deposits of Franklin and Sterling Hill, New Jersey, continue to excite the interest of geologists, mineralogists, mineral collectors, and industrial historians, in the U.S. and worldwide. Many of us received our first exposure to minerals at one of Franklin's mineral museums or mine dumps (for the writer, this happened in 1954). The obvious appeal of fluorescent minerals (of which the Franklin district currently boasts 98) sometimes obscures the fact that its complex geologic history has generated more than 379 minerals (72 of them first described in the district) during more than one billion years of terrestrial chemical recycling. The result is arguably one of the most diverse mineral assemblage on any planet in our solar system.



Research continues to uncover new minerals, and a massive book project, now in the final stages of completion, may soon prove to collectors that non-fluorescent Franklin minerals aren't all obscure microscopic coatings and ugly brown lumps. The talk will summarize the district's complex geologic history and mineralogical diversity, as well as its continued appeal to many of us who love minerals.

Note that September's meeting has been moved up one week and will be in a different room at Frasier Meadows. See page 2 for information about the new location.

WANTED!!

- Help at the Denver Gem and Mineral Show and the club table - see page 3
 - Specimens for the club table at the Denver Show - see page 3
 - Club President for the next year - see page 2



President's Message

Hello FMCers!

Here we are at the end of summer. Where did it go? I hope it was fun for you and your family. And I hope you got a chance to take advantage of the field trips that the club offered this year. Please contact Charlotte Bourg with any suggestions for new places to go.

I have an important request. Please become a more active member of our club by volunteering to be on the board of directors. We need your voice and presence to maintain a positive direction for the club. Club elections happen at the October meeting.

And the Denver Gem and Mineral Show needs you! This show is completely volunteer-run by the eight rockhounding clubs in the metro area. That means all of us. Come join me at the show by volunteering for either or both - the entire show tasks like security or our club table helping out Dennis.

Best to all,
Gabi

New Club President Needed

Gabi Accatino has been our club president for a number of years. However, with her retirement she is moving to Arizona and the club needs a new president beginning in October.

Although it will be hard to replace Gabi, we need a member to step up as our new president. Please consider giving your time to FMC. Not more than six board meetings a year and most other business can be handled at home in your pajamas. The club has an active Board that handles most of the club's activities. And, Board members will help you as you learn the president's job.

You can contact Gabi at accatino@colorado.edu to learn more about the job and to volunteer your services for this position or any other needs of the club.

FMC Board

Room Change for September Club Meeting

Please note that our meeting on Thursday, September 5, will be in a different room. For this month only, the meeting will be in the **4th Floor Assembly Room** because of a conflict that arose. Also, the old Main entrance is under construction. Everyone must temporarily enter through The Canyons Center to the south of the old entrance. The front entrance of The Canyons Center has the wall of darkened windows facing north into the reconfigured parking area. There should be a large Entrance banner posted in the landscaping on Ponca Place, directly across from the church, to help guide the way. The greeter desk and front reception desk is just inside for signing-in. For directions to the meeting place, please ask the receptionist.

Club Meetings in October

At our club meeting on October 10, **Beth Simmons** will tell us about the **iron furnace on Marshall Mesa**. It's hard to believe that there was iron mining and smelting right here in Boulder County. Come to the meeting to learn about this interesting part of our history.

Also, in October we elect the club officers and Board directors. These offices are listed on page 18 of this newsletter. Consider volunteering to help the operation of the club. For more information about the duties of these officers or to volunteer to serve on the Board for the next year, please contact Gabi at accatino@colorado.edu.

Help with the Denver Show

The Denver Gem and Mineral Show is rapidly approaching. Plan to attend the show on September 13-15 at the Mart in Denver. There is lots for the whole family to see and do at the show. More information about the show can be found on page 4.

The Denver Show is run entirely by club volunteers. **If you volunteer to help at the show, you get into all three days of the show for free!**

Here is how you can help:

Help with Set-Up

Volunteers are needed on Wednesday, September 11th, to help set up the show. There are two parts to it. The easier part is covering the dealer tables in the aisles and the east room with plastic. The other part is setting up the display cases. Set up commences at 9 a.m. until it is finished. If there are enough volunteers, the work is usually finished by mid-afternoon. Since the volunteers are so appreciated, there will be a complimentary lunch of pizza, snacks and beverages. Please contact Anita Colin at anitacolin@hotmail.com to volunteer to help on Wednesday.

Volunteer during the Show

During the three days of the show, scores of volunteers are needed to sell tickets, collect tickets, sell grab bags, serve food to the other volunteers, patrol the show as "security eyes", and work at the individual club tables. This year you can even sign up for a volunteer "sampler" to work at several different jobs to find your favorite. To sign up to help at the show, please contact Anita Colin at anitacolin@hotmail.com.

Help at the Club Table

Our club has a table at the show to talk to the public about our club and give out flyers. We also run games for kids at our table. To volunteer for a two-hour shift at the club table, please contact Dennis Gertenbach at gertenbach1@gmail.com.

Provide Specimens for the Club's Display Case

At our club table, we have a display case showing some of the specimens our members have collected at past field trips. The display case gives the public an idea about the fun they can have as members of our club. Please bring specimens you have to the September 5th meeting, or contact Dennis Gertenbach at gertenbach1@gmail.com to make arrangements for getting your specimens. All specimens will be returned after the show.



One Last Field Trip for the Year: Baculite Mesa for Fossils



Scaphite ammonite found at Baculite Mesa

As summer comes to a close and the kids are back in school, we still have one more field trip planned for the year. On **Saturday, October 5**, we will travel south to Baculite Mesa outside of Pueblo. Baculite Mesa has fossils dating to about 70 million years ago when eastern Colorado was covered by the Western Interior Seaway. On this day, we will collect fossils that lived in this ocean, including baculites (squid-like animals with an exterior shell), ammonites, *Inoceramus* clams, and other invertebrates.

You can get more information about this trip and sign up for it by logging into the club website at <https://flatironsmineralclub.org/>. Just a reminder that you must be paid-up members to join the field trips; you will not be able to log in without being paid up.

Don't Miss the Denver Gem and Mineral Show, September 13-15

The Denver Gem and Mineral Show, which began in 1967, has grown over the years into the second largest show in the United States and has numerous satellite shows that have sprouted up around the area. Exhibits from a number of regional and national museums have remained key attractions along with other activities.

The Denver Gem and Mineral Show is held in the Expo Hall of the Denver Mart at 451 E 58th Ave, Denver, 80216. It is located just a few blocks east of I-25 at exit 215 (58th Ave).

Show Hours

Friday Sept 13: 9am - 6pm
Saturday Sept 14: 10am - 6pm
Sunday Sept 15: 10am - 5pm

Admission

\$7 for adults
\$5 for seniors/teens/military

Three-day passes

\$15 for adults
\$10 for seniors/teens/military

Children under 13 and scouts and leaders in uniform are admitted free.

You can purchase tickets online or at the show. For more information about the show, see <https://www.denvermineralshow.com/>

The Original
DENVER
GEM & MINERAL
SHOW
Sept 13-15
2019
DENVER
MART
Fossils
WORKSHOPS
Mr. Bones
FLUORESCENCE
DEALERS
GOLD PANNING
MINERALS
Exhibits
MINERAL ID
SPEAKERS





So, what is there to do at the show? You can attend workshops and listen to world-class speakers. The fluorescent mineral room is not to be missed. You can bring in mineral and fossil specimens for identification. Many of the clubs have demonstrations for the public. For the kids, there are games at the club tables, gold panning, grab bags to purchase, and lots of other fun activities.

Exhibits are at the heart of the Denver Gem and Mineral Show, providing local and international community members, groups, and institutions a rare opportunity to showcase their collections and share their stories. On the other side of the coin, exhibits provide visitors with perspectives and points of reference — touchstones for starting, advancing, or curating their own collections.

The nearly 100 competitive and noncompetitive exhibits feature the latest mineral and fossil finds from around the world as well as world-class specimens reflecting the show theme. The theme of the 2019 show will be Minerals of Canada (Canada Unearthed).

The Denver Gem & Mineral Show is proud to host more than 150 mineral, gem, fossil, book, and jewelry dealers from across Colorado, the United States, and around the world. The diversity of dealers offers buyers a unique opportunity to find a broad selection of anything related to minerals, gems, fossils, or meteorites. From museum-quality specimens, to rough and tumbled stones, to findings, our dealers bring the world of minerals, gems, and fossils to Denver's door.

Our exhibits, speakers, public sector booths, and family activities place our dealers in a fun and educational context, inviting discussion and minimizing pressure. That makes the show a great place not just to find that special piece but also to get to know the dealers. These meetings have the potential to form lasting friendships and can also come in surprisingly handy when shopping for an important piece of jewelry, seeking advice before making a major purchase, or preparing to sell a specimen or collection. Taking the time to get to know our dealers will invariably net a valuable friend in the business.

FMC Members Win Regional and National Newsletter Awards

Each year, the Rocky Mountain Federation of Mineralogical Societies (RMFMS) holds a contest for the best articles in local club newsletters. The top three winners in each category go on to the national competition of the American Federation of Mineralogical Societies (AFMS). This year, Flatirons Mineral Club members won a number of regional awards. Jr. Geologists **Annika Jacobson** and **Dennis Gertenbach** took home national awards.

Here are FMC winners for this year. We congratulate them on their accomplishments.

Annika Jacobson - Junior article under 12, "Zeolites"

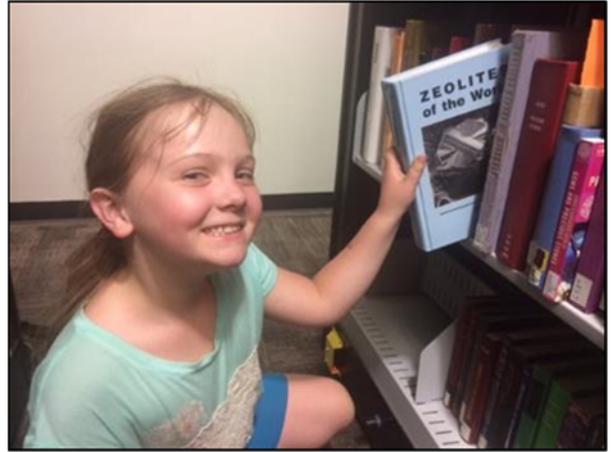
- RMFMS - 2nd place
- AFMS - 2nd place

Dennis Gertenbach - Adult article, "History and Geology in Your Neighborhood - Purington Pavers"

- RMFMS - 3rd place
- AFMS - 2nd place

Masaki Tsukada - Written feature, "Field Trip to Herkimer, New York"

- RMFMS - 3rd place
- AFMS - honorable mention



Annika researching her zeolite article

Dennis Gertenbach - Photo collage, "Field Trip Photos"

- RMFMS - 1st place

Jean Orr - Adult article, "Field Trip to Franklin, New Jersey"

- RMFMS - participation

Brian Walko - Adult article, "2018 Crawford Fairburn Agate Field Trip Report"

- RMFMS - participation

Dennis Gertenbach - Large bulletin

- RMFMS - 1st place
- AFMS - 10th place

Consider writing an article or providing photos for future newsletters. You can contact Dennis Gertenbach at gertenbach1@gmail.com to get started.

Lauren Miller, Our 2019 Scholarship Recipient

The FMC Scholarship Committee has chosen Lauren Miller for a scholarship of \$1,500 for the 2019-20 academic year. The scholarship is presented to a student attending a Colorado university or college who is majoring in an earth science field.

Ms. Miller is a junior at the Colorado School of Mines in the Geology and Geological Engineering department. She plans to graduate next year. Her professional interests include structural geology, carbonate systems, and mineral exploration.

We congratulate Ms. Miller on her selection for this scholarship and wish her the best as she continues her education.

Great Club Picnic in August

Our annual club picnic was held on August 17 at Harlow Platts Park in Boulder. In addition to the great food folks provided for the potluck, we filled 500 grab bags for the upcoming Denver Gem and Mineral Show and for our own club show in December. The Jr. Geologists made pendants out of peridot and fire agate to take home.



Great food at the picnic. Credit: Brian Walko



Filling grab bags with 10 specimens for upcoming shows. Credit: Brian Walko



Packing the finished grab bags. Credit: Karen Simmons



The Jr. Geologists making pendants at the show. Credit: Karen Simmons

Several special presentations were made at the club show. We recognized Lauren Miller, a Colorado School of Mines student, as the recipient of this year's scholarship award (page 5). Several club members received regional and national newsletter awards (page 4).

The highlight of the day was the recognition of Craig Hazelton as our Rockhound of the Year. Craig is a long-time club member and one of the Jr. Geologists leaders. He has given several talks to the club and led geology hikes in the area. He helps with the annual club shows in December, and his company, Rock Out!, presents fine minerals, unusual jade carvings, and beautiful custom jewelry for sale at our show.

Field Trip to the Dinosaur Quarry at Como Bluff

The club traveled to the world-famous Como Bluff in Wyoming on July 27 and 28 to extract dinosaur bones from the Nail Quarry. Como Bluff was the home of the famous Bone Wars in the 1880s and produced many well-preserved specimens of dinosaurs, as well as mammals, turtles, crocodilians, and fish from the Morrison Formation over the years. Club member Anita Colin helps manage the quarry and teaches dinosaur enthusiasts how to extract the bones so they can be sent to the Tate Museum in Casper for further study. Although participants could not keep any dinosaur bones and teeth they found, they hiked to a nearby site to collect belemnites and other marine animal fossils for their collections.



The Nail Quarry at Como Bluff. Credit: Eileen Fitzgerald



Extracting a dinosaur bone at the quarry. Credit: Eileen Fitzgerald

Here are comments from Eileen Fitzgerald and her grandson Kemper about the trip. "Kemper's mind was completely blown at this site! He could not believe that he was seeing real dinosaur bones! Neither could I!"



Kemper at the dinosaur quarry. Credit: Eileen Fitzgerald



Jacketing bones with plaster, so they can be safely transported to the Tate Museum. Credit: Eileen Fitzgerald

Dinosaurs 101

Do your children or grandchildren know a lot more about dinosaurs than you? Scientists estimate over a thousand dinosaur species once roamed the Earth. Learn which ones were the largest and the smallest, what dinosaurs ate and how they behaved, as well as surprising facts about their extinction. This 3½-minutes-long video from National Geographic will help you and your children or grandchildren begin to learn more about these creatures that once ruled the earth: <https://www.nationalgeographic.org/video/dinosaurs-101/>

Jr. Geologists Activities



Dr. Sue Hirschfield explaining the geology at Marshall Mesa.

Credit: Dennis Gertenbach

Last month we were treated to a hike lead by Sue Hirschfield and Beth Simmons to learn about the large variety of tracks they discovered in 2016 in Marshall Mesa Open Space, south of Boulder. The site includes nearly a thousand tracks made by turtles, dinosaurs, crocodiles, and other reptiles. Sue and Beth talked about some of the scientific studies currently underway to describe these tracks. We also learned about the historic coal mining in the area and what it was like to live and work in Marshall over a hundred years ago. We thank Sue and Beth for spending time with us on this hike.

In September, Jr. Geologists families will help staff the club table at the Denver Show, as well as enjoying the displays, activities, and vendor booths at the show. Our monthly meetings begin again in October on the third Wednesday of each month.

The Jr. Geologists program is open to all Flatirons Mineral Club families. Meetings begin at 6:30 at the Meadows Branch Library at 4800 Baseline Rd, Boulder, CO 80303 (behind the Kaiser Permanente medical offices). For information about the Jr. Geologists program, please contact Dennis at gertenbach1@gmail.com or 303-709-8218.



Jr. Geologists examining turtle tracks. Credit:

Dennis Gertenbach



A hadrosaur track at Marshall Mesa. Credit:

Dennis Gertenbach

Free Club Name Tags for All Members

Are you coming to meetings and field trips anonymously? We want to put a name with a face!

As members of the Flatirons Mineral Club, everyone in your family can receive a FREE club nametag. Just log onto the FMC website at <https://flatironsmineralclub.org/> to order your name tag. Once you log in, click Member Area and a short menu appears. Then click Request Nametag and fill out the information.



Example of a club name tag

Please take advantage of this free offer. We will be ordering another batch of name tags soon, so sign up for yours this month.

All FMC members who ordered a name tag and have not received it, plan to attend the club picnic to pick up your new badge from Gerry Naugle.

Club Lapidary Equipment Available

Now that you have collected petrified wood, agate, and other materials over the summer, you are probably anxious to cut and polish some of this material. The club has 2 locations where the club's lapidary equipment can be used by our members.

One of our big saws and a Genie are at Tim Ruske's house in Superior. To use this equipment, please call Tim at 303-807-4234 and leave a message to arrange a time.

Another saw is at Terry O'Donnell's house. His email address is whee0297@msn.com.

New from the Colorado School of Mines Geology Museum

Here are new opportunities at the CSM Geology Museum.

Edtalks: Minerals Worth Talking About

Join mining history expert and Collections Manager, Ed Raines, for a fascinating lecture series on the geology and mining history of Colorado. Watch past lectures on the [Museum Facebook page](#) or at [EdTalks Archive](#). The most recent addition is "Pikes Peak minerals: beyond amazonite and smoky quartz, Part 1 pegmatites."

Digital Collections

The Museum has a sampling of specimens available to browse online at <https://mountainscholar.org/handle/11124/171841>, including pieces from Creede and Gilman, CO.

Museum Open House

In conjunction with the Denver Gem and Mineral Show, the Museum is holding their annual open house showcasing their outstanding minerals and new exhibits. all are welcome to come on Wednesday, September 11. Details are in the flyer below.

The poster features a background of blue and white mineral patterns. The title 'Mines Museum Annual Open House & Sale' is written in a large, elegant, black cursive font at the top. Below it, a white rectangular box contains the event details in a smaller, black cursive font.

Mines Museum Annual Open House & Sale

*Join us for an evening of appetizers, drinks, and great conversation
set to a backdrop of outstanding minerals and new exhibits.*

Wednesday, September 11th, 2019

6:00-9:00 pm

*1310 Maple St.
Golden, CO 80401*

Parking on campus is free after 5 pm.

Coming Soon

A donation of \$350,000 has been secured by the Museum to support the development of a new hydraulic fracturing exhibit. The exhibit will be installed in a section of space where the current Museum Store is located on the Museum's lower level. This exhibit will be installed once the Store is relocated upstairs.

Rock Business Liquidation

Jennifer Brown is the owner of Firebird Gems and Minerals and is sadly having to liquidate and close the majority of the business.

Her specialty has been thundereggs from New Mexico, of which she has thousands! Many are from Baker mine, which are very rare now that the mine has closed. She has many buckets of rough cut, hundreds of 220-400 sanded of excellent quality and some tubs of polished. She also has 20+ flats of special Baker eggs called stalactite or geode eggs and only a small percentage came out of that mine.

In addition, she has rough, slabs and cabs and some mineral specimens.

If you are interested in examining Jennifer's material, please contact here at 720-289-0821 or firebirdworks64@gmail.com

Giant Pumice Raft Headed to Australia

Who of us has not been fascinated with pumice, a rock so light that it will float on water? Imagine a sheet of floating pumice that stretches 58 square miles and is floating towards Australia. Scientists say that it may be a boon for the Great Barrier Reef, as it is carrying marine organisms that could help replenish the reef.



The "pumice raft" is seen floating in the South Pacific Ocean. Credit: NASA Earth Observatory/Joshua Stevens

Michael and Larissa Hoult were sailing from the Vava'u islands of Tonga to Fiji in the South Pacific Ocean when they saw it — a "total rock rubble slick" extending for miles around them. The rocks, some the size of marbles and others as big as basketballs, bumped against their boat and clogged their rudders. "It was quite eerie, actually," Larissa Hoult told CNN.

The couple had sailed upon what scientists call a "pumice raft," a mass of floating, porous rock that forms when a volcano erupts from the ocean floor. The hot lava, full of gas bubbles, cools in the ocean water and produces pumice, which floats to the surface above the eruption. The raft spotted by the Hoult's has been estimated to be the size of 20,000 football fields.

Scott Bryan, a geologist and associate professor at Queensland University of Technology in Australia, learned about the raft from the Hoult's Facebook postings. He has been studying underwater volcanic pumice for two decades. He told ABC News that the mass is slowly floating toward Australia's coastline, where in 7 to 12 months it could arrive with a host of marine life ready to potentially revive the badly damaged Great Barrier Reef.

Organisms such as algae, barnacles, snails, crabs and possibly even corals could attach themselves to the pumice raft, serving as a "natural mechanism for species to colonize, restock and grow in a new environment," Bryan said. Warming waters, caused by climate change, have caused devastating bleaching to the Great Barrier Reef, which stretches 1,400 miles off the coast of Australia and is the world's largest coral reef. When ocean heat waves drive nutrient-rich algae from coral cells, they lose their color and begin to die. There are degrees of severity to the bleaching that coral reefs are facing, but the warmer the waters stay — and the longer the nutritious algae stays away — the greater the threat.



Michael Hoult holds volcanic rock collected from the large pumice raft in the South Pacific Sea. Credit: Michael Hoult

At the moment there are more than a trillion pieces of pumice all floating together. The Hoult's have collected and sent samples of the pumice stone, which range "from marble to basketball size," to the researchers at the Queensland University of Technology.

Information from <https://www.washingtonpost.com/science/2019/08/26/theres-giant-volcanic-rock-raft-floating-ocean-it-might-actually-help-boost-habitats/> and <https://www.bbc.com/news/world-australia-49469446>.

Fossils in the News

Dennis Gertenbach

Amber reveals ancient bird foot with bizarre long toes

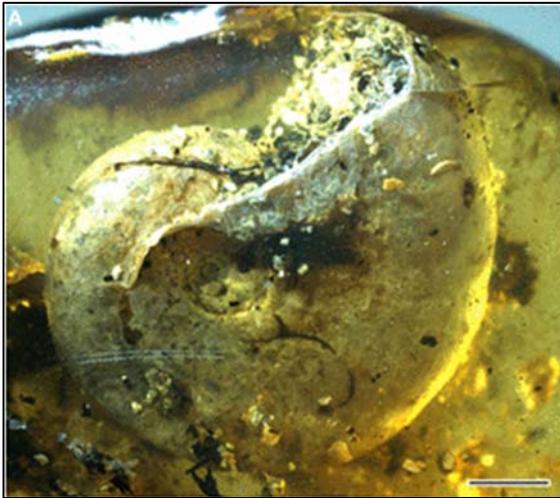
The fossilized limb, found in a piece of amber from Myanmar, is unlike anything seen in any other bird, dead or alive. The 99-million-year-old bird, named *Elektorornis chenguangi*, likely resembled a modern sparrow, except for its bizarrely long toes. The bird's right foot was preserved when tree sap oozed over the dead bird's carcass, preserving the structure of the lower leg, including its extraordinarily long middle toes. Although bird feathers have been previously found, *Elektorornis* is the first genus of bird described from a fossil encased in amber.

Why did *Elektorornis* have such long toes? For now, the best guess by scientists is that *Elektorornis* used its extraordinary toes to plumb tree bark for insects. Although novel behavior for birds, the aye-aye Madagascar lemur uses its elongated fingers to snatch grubs and other insect larvae.



A reconstruction of *Elektorornis chenguangi* shown probing bark with its elongated toe. Credit: Zhongda Zhang

Information from <https://www.nationalgeographic.com/science/2019/07/fossil-bird-in-amber-has-unusually-long-toes/>



Ammonite *Puzosia* (*Bhimaites*) preserved in amber from Myanmar. Credit: Proceedings of the National Academy of Sciences

An ammonite trapped in amber

Another unusual fossil was recently found in amber from Myanmar. This time, an ammonite and several marine gastropods were found in a piece of amber along with terrestrial forest floor organisms. The terrestrial animals include 40 pill bugs (rollie-pollies), mites, spiders, insects, and millipedes.

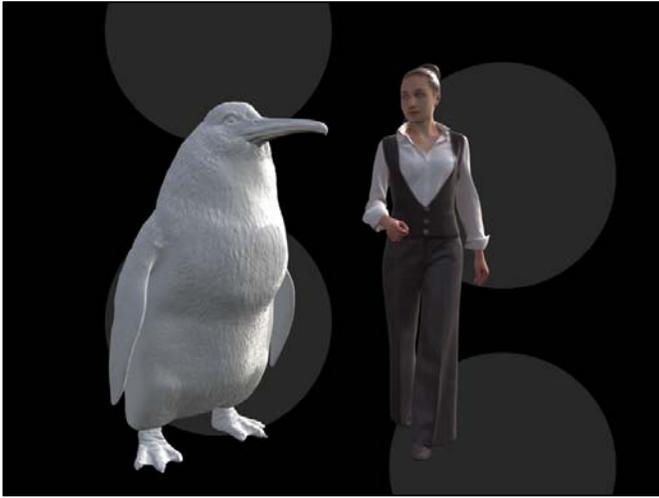
So, how did amber, which comes from terrestrial tree sap, enclose marine animals? Based on the incomplete preservation and lack of soft body parts of the ammonite and marine gastropods, paleontologists suggest that they were dead and underwent abrasion on the seashore before entombment. Most likely, the resin fell to the beach from coastal trees, picking up the terrestrial animals and beach shells. This find is the first record of an ammonite in amber.

Interestingly, the marine ammonite and gastropods allowed scientists to date the amber to the mid-Cretaceous period.

Information from <https://www.pnas.org/content/116/23/11345>

Monster penguin find in New Zealand

A new species of giant penguin about 5¼ feet (1.6 meters) tall has been identified from fossils found in Waipara, New Zealand. The discovery of *Crossvallia waiparensis*, a monster penguin from the Paleocene Epoch (between 66 and 56 million years ago), adds to the list of gigantic, extinct New Zealand fauna. These include the world's largest parrot, a giant eagle, giant burrowing bat, the moa and other giant penguins. *C. waiparensis* is one of the world's oldest known penguin species and also one of the largest, taller even than today's 4-foot (1.2-meter) emperor penguin, and weighing up to 155 to 175 pounds (70 to 80 kilograms).



Dr. Paul Scofield, Senior Curator at the Canterbury Museum of Natural History, related that when *C. waiparensis* was alive, New Zealand and Antarctica were very different from today. Antarctica was covered in forest and both had much warmer climates. The leg bones of this giant penguin suggest their feet played a greater role in swimming than those of modern penguins, or that they had not yet adapted to standing upright like modern penguins.

Information from

<https://www.canterburymuseum.com/about-us/media-releases/monster-penguin-find-in-waipara-north-canterbury/>

The giant penguin *Crossvallia waiparensis* compared to a modern human. Credit: Canterbury Museum

Filter-feeding pterosaurs were the flamingos of the Late Jurassic

Modern flamingoes employ filter feeding and this is reflected in their feces, which are rich in remains of microscopically-small aquatic prey. Very similar contents are described from more than 150-million-year-old pterosaur coprolites (fossil droppings) from Poland in a recent paper in *PeerJ*. Pterosaurs were a diverse group of flying reptiles that roamed the skies during the age of dinosaurs. The results of this study provide the first direct evidence of filter-feeding by Late Jurassic pterosaurs and demonstrates that their diet and feeding environment were similar to those of modern flamingoes.

The coprolites' size, shape and association with pterosaur tracks suggest that the coprolites in this study were produced by pterosaurs, most probably belonging to a group called Ctenochasmatidae. Synchrotron microtomography scans of the pterosaur coprolites revealed many microscopic food remains, including small shells of marine invertebrates and possible remains of polychaete worms. Some later Cretaceous ctenochasmid pterosaurs possessed a sieving basket consisting of many long, thin teeth and were certainly filter feeders. This study pushes back the date of pterosaur filter feeders into the Jurassic.



An artist's impression of the Cretaceous pterosaur *Pterodaustro*. Credit: Nobu Tamura

Information from <https://www.sciencedaily.com/releases/2019/08/190826092250.htm>

Why we have coyotes today, not saber-toothed cats

The most detailed study to date of ancient predators trapped in the La Brea Tar Pits is helping scientists understand why today we are dealing with coyotes dumping over garbage cans and not saber-toothed cats ripping our arms off. The tar pits of La Brea contain fossils of predators that tried to eat horses, bison, and camels stuck in the tar over the past 50,000 years and themselves became trapped.

Larisa DeSantis, a Vanderbilt University paleontologist, studied the teeth of extinct species found at La Brea such as American lions, saber-toothed cats, and dire wolves; and teeth from ancient animals whose offspring are still alive today, such as gray wolves, cougars, and coyotes. Her work revealed that competition for prey among carnivores was not a likely cause of the Pleistocene megafaunal extinction as formerly believed. Instead, she found that climate

change was the most likely culprit. As the climate became dryer, most large herbivores went extinct. Predators that exclusively fed on large animals, such as saber-toothed cats and American lions, also went extinct. Animals feeding on smaller animals or scavenged carcasses, such as coyotes and gray wolves, continue to live today.

For a short video about this study, see https://youtu.be/O_jfNYXITc.

Information from <https://news.vanderbilt.edu/2019/08/05/intense-look-at-la-brea-tar-pits-explains-why-we-have-coyotes-not-saber-toothed-cats/>

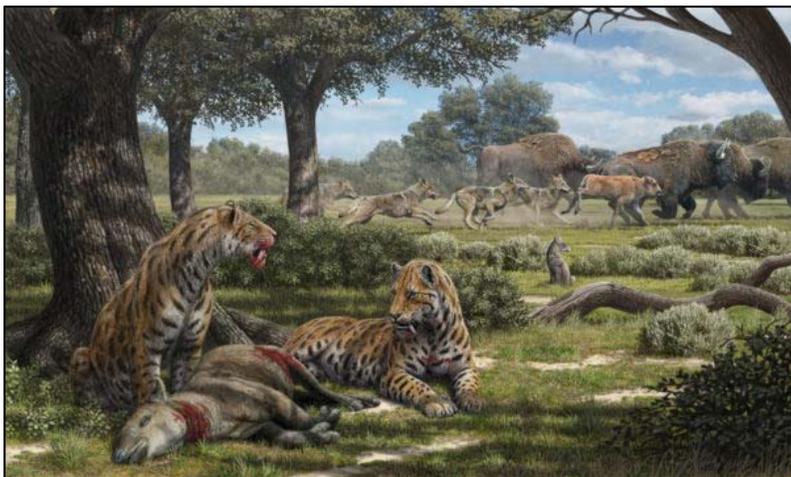
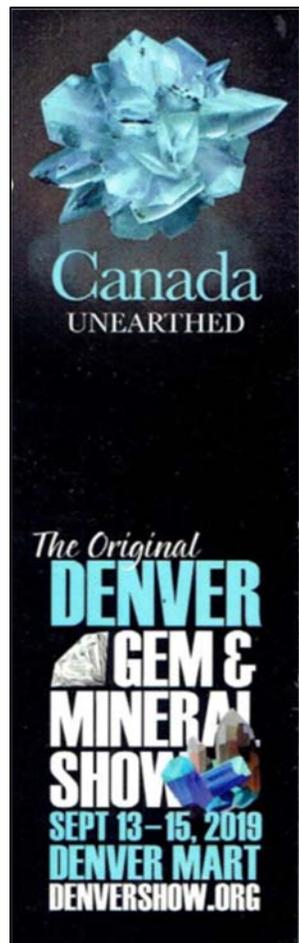


Illustration of hunting behavior of La Brea carnivores, including saber-toothed cats, dire wolves, and coyotes. Credit: Mauricio Antón

Denver Gem & Mineral Show Mini Report September 2019



IT'S SHOW TIME!! The Denver Gem & Mineral Show will take place in just a few weeks. Remember the dates September 13-15. The venue is the usual Denver Mart, located at 451 E. 58th Avenue (I-25 & 58th, Exit 215 on I-25). The show theme is "Canada Unearthed". The Show Chair is George Daggett, 303-453-9651 or geoddaggett@hotmail.com. The show is always fabulous and we hope every club member is looking forward to participating in the show in some way.

There are ample opportunities to participate in the show. Maybe you are entering an exhibit in the show. It's not too late! The deadline for both competitive and non-competitive exhibits is August 31, 2019. For more information and an application form, contact Larry Havens, 720-401-6543, or lwrnchavens@comcast.net or lghavens4@gmail.com. The deadline for both the Prospector and Junior Prospector trophies is September 6, 2019. So, there is still a little time but not much.

There are also ample opportunities to volunteer for the show. The area that needs the most volunteers is Admissions, which is selling and taking tickets. If this suits your talents, contact Kathy Honda at katherine.honda@ucdenver.edu. Another area that needs volunteers is set up on Wednesday. For this, contact Linda Burns at burns.henley@gmail.com or 303-263-0391. Then there is show take down on Sunday after 5 p.m. Take Down Chair Dan Wray would be very appreciative of your help. Contact him at Daniel_Wray@comcast.net or 303-922-0905. Security Chair Amber Brenzikofer needs volunteers as well. Contact her at amberbrenzikofer@gmail.com or 720-480-5234. The Hospitality Room is the place where volunteers can find a relaxing break and refreshments. But, of course, volunteers are needed to staff the room with beverages and snacks. If you

wish to help with this, contact Kevin Larsen at mail@klarsens.net or 303-429-6976. Another area that is fun to work is the Grab Bag, Pins and Poster sales table. At this table you are dealing mostly with children, who are trying to select that perfect grab bag. Joe Walkowich is the Chair and would love to have your help. Contact Joe at joewcai@yahoo.com or 720-272-8806.

Remember the show is not all work. There are perks to volunteering. You will receive free admission to the show, access to the Hospitality Room, a complimentary delicious breakfast on Sunday for \$1, a chance to enjoy all the features of the show, plus the satisfaction of knowing you helped put on the best show in the country.

If you have any questions about the show, contact your club representative on the Show Committee; each club has one. They are: CMS - Amber Brenzikofer; Flatirons - Gerry Naugle; FM - Larry Havens; Guild - Kathy Honda; Littleton - Lynette Warren; NJeffco - Ron Knoshaug; RAMS - Judy Knoshaug; and WIPS - Nancy Kimber.

Thanks for reading the min report and hope to see you at the show.

Respectfully submitted,
Judy Knoshaug, Secretary

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 many of these notices.

- **Wednesday, September 4**, 4:00-5:00 p.m., CU Geological Sciences Colloquium Series, Benson Earth Science Building Room 180, Karen Chin, Department of Geological Sciences: Associate Professor, University of Colorado Boulder, **Analyses of dietary residues within Cretaceous dinosaur dung: surprising insights into the feeding habits of large herbivorous dinosaurs**. Please also join us for Colloquium Social Hour after the Colloquium, 5 to 6 p.m., BESC 185, "An hour of science, socialization, and good food and drink!"
- **Friday, September 6**, 3:00-4:00 p.m., Denver Museum of Nature & Science Earth Sciences Colloquium, **Flowering plants enter the canopy: Fossil woods and the Cretaceous diversification of flowering plants**, by Nathan Jud, William Jewell College. VIP Room at DMNS; all are welcome and admission is free.
- **Saturday and Sunday, October 5-6**, the Colorado Scientific Society will host a weekend field trip, **Geology and Geoheritage of the Florissant-Cañon City-Florence area**. It will include Florissant Fossil Beds National Monument; Skyline Drive by Cañon City; Royal Gorge; the Florence coal, oil, and gas basin; the Cope-Marsh quarries at Garden Park; and the Cripple Creek and Victor Gold Mine. You must be a CSS member to take part, but anyone may join the Society if they wish to go on the trip; see <http://coloscisoc.org/>.
- **Tuesday, October 8**, 7:00-9:00 p.m. Western Museum of Mining and Industry Speakers' Bureau Lecture: **Cripple Creek's Cresson Mine: The Untold Stories**, by Ben Elick. WMMI, 225 North Gate Rd., Colorado Springs. \$5 per person, free to museum members. RSVP to 718-488-0880 or rsvp@wmmi.org; to book in advance at <https://fareharbor.com/embeds/book/wmmi/items/108438/calendar/?flow=41147>.
- **Saturday, October 12**, the Colorado School of Mines will host the Mines Museum Spooktacular. This is a free family activity and children are encouraged to wear costumes. See the flyer on the next page for more information.

- **Tuesday, October 15**, Donald Sweetkind, Geologist at the USGS, will speak about **From Uravan to Rulison: Tales from Colorado's Nuclear Past** as part of the "Golden Beer Talks" at the Buffalo Rose, 1119 Washington Ave., Golden. Doors open at 6; Talk begins at 6:35 with Q&A afterwards.

In conjunction with the Denver Gem and Mineral Show, there are several satellite shows and other activities. Here is a sampling of them.

- **September 6-15, Colorado Mineral and Fossil Fall Show**, Crowne Plaza Hotel - Airport, 15500 E. 40th Ave. Denver, CO. See <https://www.coloradomineralandfossilshows.com/colorado-mineral-fossil-show-september-2019.html> for more information.

- **September 6-16, Denver Coliseum Mineral, Fossil, and Gem Show.** There are actually 5 separate gem & mineral shows taking place here, at the Denver Coliseum (south side of I-70) and the National Western complex (north side), one of which is wholesale only, the rest are retail and open to the public; see <http://www.coliseumshow.com/>.
- **September 7-8, 1st Annual Denver "Just Minerals Event"**, Embassy Suites Hotel, 4444 N. Havana St.; wholesale and retail mineral dealers.
- **Wednesday, September 11, 6-9 p.m., Colorado School of Mines Geology Museum Annual Open House**, to showcase new exhibits for the opening of the Denver Gem and Mineral Show. 1310 Maple St., Golden CO; all are invited. Campus parking is free after 5 p.m.
- **September 11-14, Denver Fine Mineral Show**, Denver Marriott West, 1717 Denver West Blvd.; free admission / free parking / open to the public, see <http://finemineralshow.com/denver/>

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Denver Show Club Table

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gertenbach1@gmail.com

A friendly reminder to pay your 2019 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 2019 dues must be received by January 20th, 2019 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 2019 FMC membership card.



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

First Class Mail

Upcoming Events

Thursday, September 5	Club meeting featuring Bob Carnein talking about "Still Crazy (About Franklin) After All These Years"	Frasier Meadows at the 4 th Floor Assembly Room. This is a different location, see page 2 for directions.
Friday-Sunday, September 13-15	Denver Gem and Mineral Show. Volunteer and get in free, see page 3	Denver Mart, 451 E 58th Ave, Denver, 80216
Saturday, October 5	Baculite Mesa field trip to collect fossils	Baculite Mesa, east of Pueblo, CO.
Thursday, October 10	Club meeting featuring Beth Simms talking about iron mining and production in Marshall, south of Boulder	Frasier Meadows in the regular meeting room.
Wednesday, October 16	Jr. Geologists meeting	Meadows Branch Library at 4800 Baseline Rd, Boulder, 80303