



Flatirons Facets

Flatirons Mineral Club of Boulder County, Colorado
Volume 59, Number 3
May-June, 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.



The May Meeting is the Field Trip Sign-Up Meeting!



The May club meeting is always an exciting one! During this meeting the summer field trip schedule is unveiled and members get to sign-up for the trips of their choosing.

Flatirons Mineral Club schedules field trips on almost every weekend of the summer. We have a dedicated group of trip leaders who have great ideas for our adventures. Most of the trips are on Saturdays and some are weekend trips that include camping. The trips are usually family friendly.

Make sure to attend the May 12th meeting at Frasier Meadows and bring your calendar so that you can claim your spots on our upcoming field trips.

Large calcite crystals at Book Cliffs

A treasure collected at Yellow Cat



President's Message



Hello Everyone!

I am writing this message as I sit on a tour bus that took a couple of friends and me through Morocco for the last two weeks in April. It's been a great trip.

Throughout the tour I have been remarking to myself how similar the landscape here looks to our American Southwest. It's amazing! Right now we're speeding to Casablanca from Marrakech and it's rolling farmland, but a few days ago it was quite different going to the Sahara Desert.

The Sahara Desert is south of the Atlas Mountains while Marrakech and Casablanca are north of the mountains. While driving through the mountains I saw so many examples of uplift. It looks like these mountains experienced so much transformation! The sandstone layers were all on end and eroding away. When we came down out of the mountains the area could have been Colorado or any of our 4-Corner States - buttes, canyons, and vast vistas.

We were driven across the ordinary desert to get to the Sahara sand dunes in 4x4s driven by Berber nomads. It was the same wild ride we get driving off-road through our region. The dunes were spectacular.

We also stopped at a place that prepared fossils. Yes, there were some beautiful ones! And the sink in our room at the Kasbah was a big slab of stone loaded with fossils.

These thoughts bring me to our upcoming events for May and the summer. Our May meeting is always our field trip meeting. Anita Colin and I will present a short slide show of photos from previous field trips and then the summer schedule of field trips. This is the meeting when you will be able to sign up for the trips. Remember to bring your calendars!

I would also like to congratulate our 2016 scholarship winner, Jacob Weems. He's a geological engineering major and is in his sophomore year. He will receive \$1,500 from the Flatirons Mineral Club for the 2016-17 school year.

Let's go rockhounding! Gabi

Information on May and June Activities

Field Trips: The field trip season is now in full swing, with five trips planned for the next two months. See the list of field trips in May and June on page 3 and learn about all of this year's trips at the May 12 club meeting.

Boulder Creek Festival: This is a great way to showcase our club to the public. Information about the festival is on page 4. Please volunteer.

June Club Meeting: Come to the June 9 meeting and learn about ammonites, one of everyone's favorite fossils. More information is on page 3.

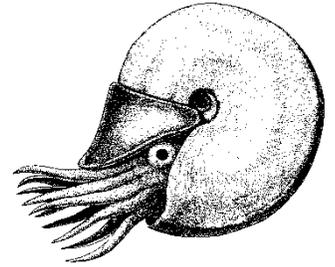
Jr. Geologists Meetings: We will learn about Antarctica at the May 18 meeting, then start the field trip season during the summer. More details are on page 9.

June Meeting Topic: Ammonites



Large ammonite molds at Kremmling

Our speaker for the **June 9** meeting will be Dennis Gertenbach, featuring **Ammonites and Their Cousins – Creatures from the Cretaceous**. These animals came big and small, some evolving bizarre shapes. Ammonites reached their peak in the Cretaceous and then died out at the end of the Cretaceous, the same time that dinosaurs met their demise.



Come the meeting at Frasier Meadows and learn about ammonites, nautiluses, and belemnites, and how they relate to modern cephalopods – octopus, squid, and cuttlefish. The history of ammonites in the fossil record will be discussed, along with paleontologists' thoughts about why nautiluses live today but ammonites became extinct. To learn more about how ammonites lived, sign up for the field trip to the Kremmling Cretaceous Ammonite Site on June 25.

Directions to Frasier Meadows: Exit Foothills Parkway at Baseline and go west. Turn left (south) onto Mohawk Drive and then turn left onto Pawnee Drive, traveling to the east of Burke Park. Take Ponca Place to your left and the Frasier Meadows parking lot will be on the left. When you enter the building, tell the receptionist that you are here for a Flatirons Mineral Club meeting and ask for directions to the elevator to get to the Sky Lounge, which is on the fifth floor. For a Google map of the location, see <https://www.google.com/maps/place/350+Ponca+Pl,+Boulder,+CO+80303/@39.9932747,-105.2356879,15.75z/data=!4m2!3m1!1s0x876bed9bb0459cf3:0x9bfaa244c5efe9e9>.

Field Trips for May and June

Here are the field trips planned for May and June. Come to the club meeting on May 12 to sign up or contact Anita at anitacolin@hotmail.com.

Date	Location	What to Find
Saturday-Monday, May 28-30	Yellow Cat and Celestite Queen Claim -	Celestite, barite, calcite, fossil wood, agate
Saturday, June 4	Calumet/Sedalia Mines	Epidote, almandine garnet, copper minerals
Saturday, June 11	Two Creeks (10 cars only)	Barite
Saturday, June 18	Silver Cliff and vicinity (10-15 people only)	Picture rhyolite, obsidian, chalcedony, and some sulfide minerals
Saturday, June 25	Kremmling	Ammonites, clams, other fossils

Volunteers Needed for the Boulder Creek Festival

Our club has a booth in the kid's area of the Boulder Creek Festival. We need volunteers to give out free specimens, supervise rock games, and sell grab bags. Festival days are Saturday, Sunday, and Monday, **May 28-30** (Memorial Day weekend), from 11 am - 5 pm. The booth is on the northwest corner of 13th and Arapahoe. Email Anita at anitacolin@hotmail.com to sign up. This will be our fifth year at the festival and we WILL be prepared for ALL types of weather!

Club Members Win Bulletin Awards

At this year's Rocky Mountain Federation of Mineral Societies Convention, Several Flatirons Mineral Club members received awards for the 2015 Bulletin Contest. These club members submitted articles and photographs for last year's club newsletter and were recognized for their achievements. Here are this year's winners from our club:

- **Craig Hazelton:** First place in the Adult Advanced Article category for his article on "Jade Culture".
- Six Jr. Geologists shared first place in the Junior Special Publications category for articles on different minerals.
 - **Aden Becknell** for his article on obsidian
 - **Piper Rausch** for her article on sphalerite
 - **Hudson Stoll** for his article on amazonite
 - **Ava Ream** for her article on azurite
 - **Egan Rausch** for his article on malachite
 - **Aden Wyckoff** for his article on galena
- **Craig Hazelton:** Second place in the Photograph category for the picture of Maxwell holding a fluorite specimen.
- **Dennis Gertenbach:** Third place in the Photograph category for the picture of Shaula at the kid's area in the 2014 club show.
- Certificates of Appreciation were awarded to
 - **Craig Hazelton** for his photo story about the Jr. Geologists summer activities.
 - **Dennis Gertenbach** for his photo story about the 2014 club show.
 - **Dennis Gertenbach** for his adult advanced article about fossils in the news.



Craig Hazelton's second place photograph of Maxwell with a fluorite specimen he found

Congratulations to all of this year's winners. Awards will be presented during the May meetings.

Needed: Articles and Photos for Flatirons Facets

Do you go on a great field trip or complete a special lapidary project? Perhaps you have expertise in some rockhounding area that you would like to share with other club members? Or, you have photos of your great finds and activities. The Flatirons Facets is always looking for items to include in each issue. Send your articles and photos to Dennis Gertenbach, editor, at gertenbach@comcast.net. You never know, you may receive an award next year for your submission.

Jacob Weems, FMC Scholarship Winner

Each year the Flatirons Mineral Club selects a college student studying for a career in the earth sciences to receive a scholarship to support their education. The scholarship is funded by the proceeds from the Kidz Korner and grab bags at our annual show, donations, and the club's scholarship fund. This year's recipient is Jacob Weems, a sophomore majoring in geological engineering at the Colorado School of Mines.

Jacob began his college education at the University of Colorado in Colorado Springs, but transferred to the Colorado School of Mines after his first semester. His interest is geological exploration. Jacob is a member of the student chapter of the Association of Environmental and Engineering Geologists, which promotes personal advancement in the engineering geology profession, connects students with geology professionals, and participates in community service in the Golden area. In addition to going to school full time, Jacob also works two part time jobs. He has been on the Dean's List both semesters at the Colorado School of Mines and plans to graduate in 2018.

North Table Mountain Field Trip

We picked the one beautiful Saturday in April for our kick-off field trip to North Table Mountain. Joining our club was the Colorado Mineral Society to collect zeolite minerals at the South Quarry. Jefferson County allows mineral collecting at the site, and the 43 participants on this trip were not disappointed.

The zeolite minerals, along with calcite, fluorapophyllite, and other minerals fill the gas cavities in the 63 million year old lava flows that cap North Table Mountain. The South Quarry originally provided stone blocks for the trolley lines in Denver. It has been abandoned for many years, but now provides mineral collectors access to world-class zeolite specimens. Analcime, thompsonite, and chabazite are the most common zeolite minerals found at the site, although mesolite and levyne were also found. Fourteen different zeolite minerals have been found on North Table Mountain.



Searching for specimens on North Table Mountain



New member Lodena Smith looking for that pocket of crystals

Here are some of the great finds from this year's trip on April 23.



Pocket lined with thompsonite with analcime and thompsonite crystals



Maxwell with an analcime specimen he found



Analcime crystals in a thompsonite-lined cavity



Levyne crystals

Our 60th Anniversary is Approaching!

Flatirons Mineral Club came into existence on March 9, 1957. We would like to celebrate our 60th Anniversary next year. We will celebrate during our June 2017 meeting. Do you have some great ideas to make this celebration special? Please contact Gabi Accatino at accatino@colorado.edu to help make our anniversary a fun event.

Minerals You May Find This Summer

The Jr. Geologists have researched several minerals that you may find this summer on the club's field trips. They provide ways to identify these minerals.

Sulfur

Oskar Holinka, age 12

This month in Geology Club, we were asked to take a sample of a certain mineral, and write a report on how we identified it and how others could too. My sample was sulfur and this is my report on how I identified it, and how others could identify it as sulfur too.

The first way I identified my sample as sulfur was by noting its color. It was bright yellow. Sulfur doesn't come in any other color, as far as we know, so that was a pretty big sign that my sample could be a sulfur crystal. Also, there are not that many other minerals that can come in that color. My sample's color was a telltale sign that it could be sulfur.

My next identification tool that I used was luster. My sample's luster was resinous. Sulfur is either greasy, resinous, or in between, so that was another arrow pointing to my sample being a sample of sulfur specimen. A specimen's luster is often a good identification tool.

Next, I conducted a hardness test. My fingernail scratched the specimen, but also was scratched by it, so I knew that my sample was the same hardness as my fingernail. I looked up the hardness of the human fingernail in one of my books, and concluded that my specimen had a hardness of 2.5. My other identification tests said that my sample could be sulfur, so I looked up sulfur in my books and found out that sulfur is a 1.5 to a 2.5 on the Mohs' Scale of Hardness. This was all the data I needed, and concluded that my sample was a specimen of Sulfur.

In conclusion, I identified my mineral sample by testing the color (although on most minerals this is not the best test), luster, and hardness test. Below is a table recording my data:

Hardness:	Luster:	Color:
2.5	Resinous	Yellow.

Here is a table on Identifying Sulfur to help others identify Sulfur:

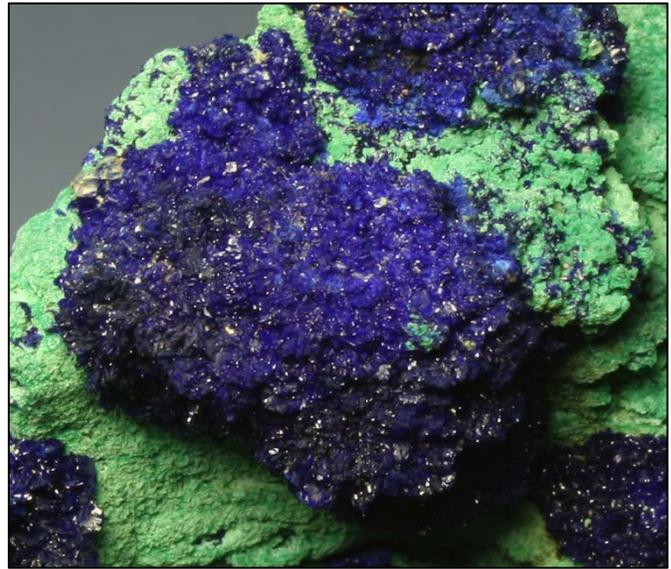
Crystal System:	Orthorhombic
Color:	Yellow
Crystal Habit:	Bipyramidal, thick tabular
Hardness:	1.5 - 2.5
Cleavage:	Indistinct
Fracture:	Conchoidal to uneven, brittle.
Luster	Resinous to Greasy

Diagnostic Streak:	White
Specific Gravity:	2.1
Transparency:	Transparent to Translucent.

Malachite-Azurite

Alexis Vancil, age 11

My malachite-azurite specimen is blue, teal, and white. The malachite (teal) is very soft. I can scratch it away easily with my fingernail. Malachite's chemical formula is $\text{Cu}_2\text{CO}_3(\text{OH})_2$ when it is alone, but I think that the azurite changed the malachite, since it is normally a 3.5 to 4 on the Mohs scale. On this specimen I can scratch it with my fingernail easily, so it would be more like a 1. Azurite's formula is $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$, but it has the same hardness as malachite does. Malachite and azurite also have the same crystal system, which is monoclinic. Both specimens can have a vitreous or dull luster. One cool thing about malachite and azure is that in the Middle Ages, it was used in paint and as eye shadow. It is also part of the copper family. It is found in the USA, Mexico, Tsumeb, and Namibia. Another fun fact is that it represents Capricorn. It is very pretty and is believed to have healing properties as well.



Malachite and azurite. Credit: www.greekrocks.com



Galena. Credit: www.britannica.com

Galena

Aden Bicknell, age 9

Galena is a mineral with a chemical composition of PbS . It is an ore of lead. Galena is mined in many countries. Galena is found in igneous and metamorphic rocks. Galena is very easy to identify. It has a silver color and a bright metallic luster. Galena tarnishes to a dull gray. Because lead is a primary element in galena, the mineral has a high specific gravity (7.4 to 7.6) and feels heavy even when picking up small pieces. Galena is soft with a hardness of 2.5+ and produces a gray to black streak. Galena crystals are cubic in shape. It is a very important mineral, because it is used as an ore for most of the world's lead production. It is also an ore of silver. The number one use of galena today is in the lead-acid batteries that are used to start automobiles.



Nice lapidary material and mineral specimens at the auction

Silent Auction a Great Success

Last month's Annual Silent Auction was a smashing success. There were lots of great minerals, fossils, and lapidary material to bid on, plus rockhounding books and supplies. The club netted \$415 from the auction after the sellers were paid, almost twice as much as last year. Thanks to all of the volunteers who helped at the auction and all of you who bid on these items.



Charlotte Bourg placing her bid

Jr. Geologists Activities



The Jr. Geologists learning about mineral identification

Last month, the Jr. Geologists continued to study rocks and minerals, learning how to identify different minerals. Be sure to read the Jr. Geologists' articles about how to identify several minerals on pages 7 and 8.

We will have a very special Jr. Geologists meeting in May. Annie Zaino will lead the group studying the rocks, minerals, and fossils of Antarctica. We will do experiments showing how the glaciers shape the landscape and what will happen as the glaciers melt due to global warming. It will be a great program you will not want to miss.



The Jr. Geologists display case at the Denver Guild show

The Jr. Geologists display at the Denver Gem and Mineral Guild's show in February took second place for the Junior People's Choice Award. The display, shown in the picture, showcased some of the favorite specimens for the juniors' collections.

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.

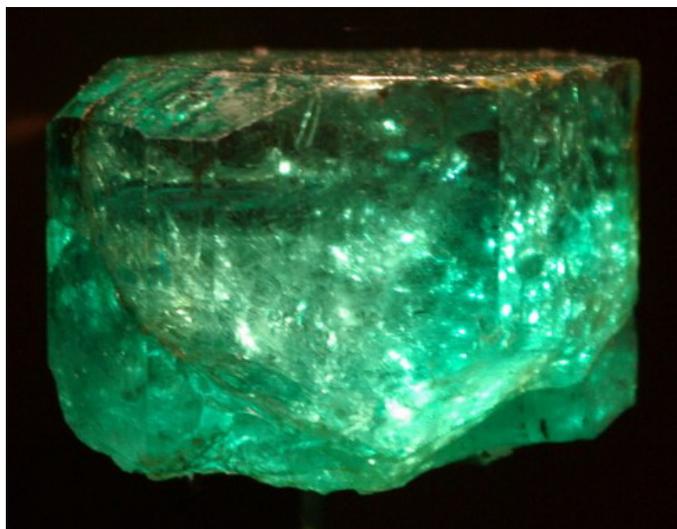
Famous Gemstones

As part of the Gemstone Lore and Legend badge, the Jr. Geologists each researched a famous gemstone. Here is what they learned.

Duke of Devonshire Emerald

By Aden Bicknell, age 9

The Duke of Devonshire Emerald is one of the most fascinating, awesome, breath taking crystals in the world. The gem is about 2 inches tall. It is hexagonal in shape. It is one of the finest rough emeralds in the world; it weighs exactly 1,383.95 carats. One big area on the gem is transparent; this makes it even more valuable. The 6th duke of Devonshire gave the Duke of Devonshire's Emerald its name somewhere between 1822 and 1831. It was discovered from the mines of Muzo, Santa Fe de Bogota, in Colombia, where lots of fine emeralds come from. The Devonshire emerald is on display in the Natural History Museum of London.



The Duke of Devonshire Emerald.
Credit: www.demarsacjewelers.com

American Golden Topaz

Oskar Holinka, age 12

At 22,892.5 carats, the American Golden Topaz is the largest cut yellow topaz in the world. It has 172 facets, or faces. It was cut over two years by Leon Agee from a 26 lb Brazilian cobble owned by Dr. Marie L. and Dr. Edgar F. Borgatta. The cobble originated from Minas Gerais, Brazil. The American Golden Topaz is now on display at the National Museum of Natural History in Washington D.C. In conclusion, the American Golden Topaz is the largest cut yellow topaz in the world, and is a marvelous gem that took years of work to get out.

Black Prince's Ruby

Abigail Roberta Tappert, age 13

The Black Prince's Ruby is rare. There have been many battles about it. It has been stolen many times. Today it is displayed in the crown of Britain.

Pride of Australia Opal

Annabelle MacEachern, age 10

The Pride of Australia is also known as the Red Empire. The stone is in the shape of Australia. It was found in 1915 by Tom Urwin. It toured at least five world fairs. The double sided gem was cut to a 225 carat stone, the size of a deck of cards. Some say that the price was 150,000 euros, but most say no more than 50,000 euros. The stone was later stolen from the new owner, Forest Lawn Memorial Cemetery in Los Angeles.

Empress of Australia Opal

Alexis Vancil, age 11

The Empress of Australia Opal was mined from the same patch of land as the Pride of Australia, another treasured Australian opal. When it was first dug up, it measured 500 carats of precious stone. It was measured to be roughly 3 x 2¼ x 2¾ inches. It has many nicknames, such as first the Kaleidoscope Queen, then the Tartan Queen. It then fell and broke into two fine opals. The first part of the opal was split again into two pieces, which were both two inches long and about 20 carats. One of those halves was shaped into a pendant. The other original half, meaning one of the halves that was first cut out of the stone, was mounted into a neckless of brilliants. The Empress of Australia Opal is a very precious gem.



The Black Prince's Ruby in the center of the crown of Britain.

Credit: www.lotusgemology.com



Star of Bombay Sapphire

Maxwell Minson, age 8

The Star of Bombay is a 182 carat cabochon-cut star sapphire. It is blue and has a little purple color. The picture as shown below is the Star of Bombay. The Star of Bombay gets its blue color from titanium and iron. It gets its purple color from vanadium. The gem is currently on display in the Smithsonian's National Museum of Natural History. It was originally found in Sri Lanka, an island off of India.

The Star of Bombay Sapphire.

Credit: John Wallick Jewelers

Star of India Sapphire

Shea MacEachern, age 8

The Star of India or Star of Lanka is a 563 carat (gold ball sized) star sapphire with a star on both sides. It was purchased in the 1900s in Sri Lanka. The stone was stolen and found two days later. Now it is in the New York City Museum of Natural History. The mineral rutile is responsible for the star effect and milky quality of the stone. The star effect is called asteri.

Check out our Website! www.flatironsmineralclub.org

Our website is up and running! Check out www.flatironsmineralclub.org to see our developing website that Board member, Kevin Notheis, has created.

This is so exciting. This will be where club members can keep in touch and keep track of the club events. We plan to have General and Jr. Geologist meeting news there, as well as our field trip schedule and club photos. A special thank you to Kevin for creating our new website.

Are you on Facebook? So are we! Find the Flatirons Mineral Club on Facebook and Like us, please!



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.

Rockhound of the Year

Each year the club membership honors an active member, or husband and wife team, who have made an outstanding contribution in promoting and furthering the goals of the Flatirons Mineral Club. Since its inception in 2002, the annual FMC recipients have been: Charlotte Morrison (2002), Paul and Martha Ralston (2003), Ray and Dorothy Horton (2004), John and Jeanne Hurst (2005), Ray and Joyce Gilbert (2006), Chuck and Jan Buda (2007), Cory Olin co-tie with Hallie and Dot Cook (2008), Shaula Lee (2009), Anita Colin co-tie with Gabi Accatino (2010), Mel and Charlotte Bourg (2011), Deborah Knox (2012), Ed Raines and Silvia Pettem (2013), Mike Smith (2014), and Tally O'Donnell in 2015.

You are encouraged to nominate a club member for this award in 2016 using the form on the following page. Nominations can be submitted to Gerry Naugle at any meeting, by mailing to Flatirons Mineral Club, P.O. Box 3331, Boulder, CO 80307 or by emailing Gerry at gnaugle@earthlink.net. Nominations are needed by July 10.

The recipient of this year's award is honored in the newsletter of the Rocky Mountain Federation of Mineralogical Societies and is inducted into the Flatirons Mineral Club's Hall of Fame. The winner will be announced at the annual club picnic on Saturday, August 20.



Flatirons Mineral Club
P.O. Box 3331
Boulder, CO 80307

2016 Ballot for the Flatirons Mineral Club Rockhound of the Year

The club membership each year honors an active member, or husband and wife team, who have made a substantial contribution this past year in promoting and furthering the FMC goals and mission statement, as outlined in the Club Bylaws.

Since its inception in 2002 , the annual FMC recipients have been: Charlotte Morrison (2002), Paul & Martha Ralston (2003), Ray & Dorothy Horton (2004), John & Jeanne Hurst (2005), Ray & Joyce Gilbert (2006), Chuck & Jan Buda (2007), Cory Olin co-tie with Hallie & Dot Cook (2008), Shaula Lee (2009), Anita Colin co-tie with Gabi Accatino (2010), Mel & Charlotte Bourg (2011), Deborah Knox (2012), Ed Raines & Silvia Pettem (2013), Mike Smith (2014), and Tally O’Donnell in 2015.

Please list your 2016 nominee below. You can also vote by electronic means. All voting information is confidential and is tallied and is then erased or shredded by Gerry Naugle. The FMC annual winners’ names are sent to the RMFMS and AFMS offices for publication in their respective publications. Note: The annual FMC winner(s) are also inducted into the FMC Hall of Fame and placed on the club’s Hall of Fame plaque.

Your 2016 nomination is: _____

The person (or) persons should be honored because:

Submitted by (please print): _____

Please return this paper ballot to Gerry Naugle (use the letterhead address above) by July 10th
or you can vote by leaving a message or text to: 303-591-2830
or by sending an e-mail to: gnaugle@earthlink.net,

Voting results will be announced at the 2016 annual club picnic to be held on **Saturday, August 20th** at the **Pavilion of Harlow Platts Park in South Boulder**, just south of the South Boulder Recreation Center, near the lake. Please note that this is a new location for this year only. The picnic starts at 11:00 am with usual activities.

Fossils in the News

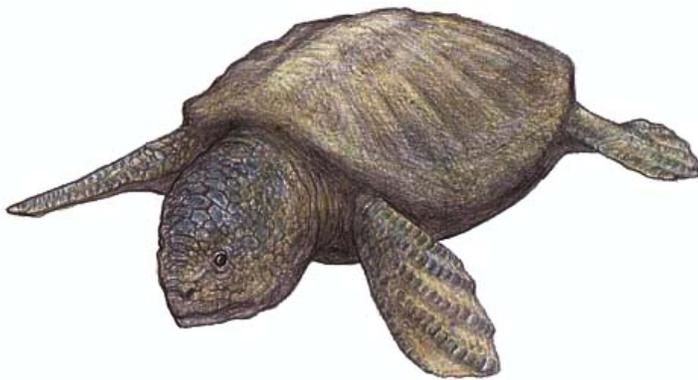
Dennis Gertenbach

Oldest Know Land Dweller Fossil Found

A fossil dating from 440 million years ago, a type of fungus, is the oldest land-dwelling organism found to date. The organism, and others like it, likely played a key role the evolution of more complex plants and animals, by initiating the process of rot and soil formation, a key to all life on land. Dr. Martin Smith published the results in the *Botanical Journal of the Linnean Society* and his research showed that this early organism, known as *Tortotubus*, displays a structure similar to some modern fungi. Working with tiny microfossils from Sweden and Scotland, each shorter than a human hair is wide, Dr. Smith realized that what was previously thought to be parts of two separate organisms was actually a single organism at different growth stages. He was able to show that the fossils represent mycelium, the root-like filaments that fungi use to extract nutrients from soil.



Filaments of *Tortotubus*, the oldest know land organism. Credit: Martin R. Smith



Protostega, a late Cretaceous sea turtle. Credit: Palaeopedia

changing of the old guard. They began to thrive in oceans around the world when their ferocious arch-predators went into terminal decline." The decline of crocodyliforms is thought to be primarily due to a drop in sea levels, which led to a closing off of shallow marine environments such as lagoons and coastal swamps. These were the homes and primary hunting grounds for many crocodyliforms.

The Mystery of the Tully Monster Has Been Solved

Tully Monsters, named *Tullimonstrum gregarium*, were Pennsylvanian age animals found only in the Mason Creek area of Illinois that have long puzzled paleontologists. Thoughts have ranged from a segmented worm to a free-swimming slug. These unusual animals are up to 14 inches long and have a torpedo-shape body, rigid eye stalks on top of their body, and a long proboscis ending in a claw-like structure studded with two rows of conical teeth. "I would rank the Tully Monster just about at the top of the scale of weirdness," said paleontologist Victoria McCoy of Britain's University of Leicester, who conducted the study. A sophisticated reassessment of over 2,000 fossils determined it was a vertebrate with gills and a stiffened rod, or notochord, that functioned as a rudimentary spinal cord and supported its body. These discoveries indicated that this animal was a type of jawless fish called a lamprey. The notochord previously had been identified as the gut. It is called the Tully Monster in honor of amateur fossil-hunter Francis Tully, who first

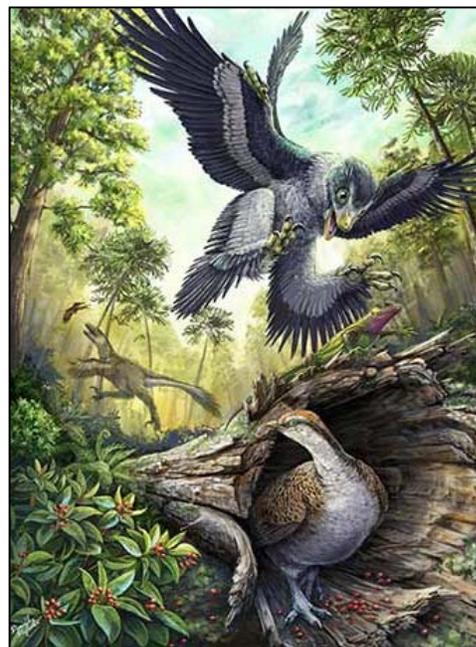
found it in Illinois coal-mining pits in 1958 and brought it to experts at the Field Museum in Chicago. The Tully Monster is the state fossil of Illinois.



*Reconstruction of a Tully Monster.
Credit: Sean McMahon via EurekAlert*

The Dinosaurs' Last Days

Neither a giant asteroid nor a gradual die out can take full blame for dinosaurs' demise. Rather, the culprit may be both, two new studies published in the *Proceedings of the National Academy of Sciences* and *Current Biology* suggest. Tens of millions of years before the asteroid delivered its killer blow some 66 million years ago, the number of dinosaur species had already begun to drop. The asteroid may have been the final blow that wiped out these animals. However, some species like toothed maniraptorans, hadrosaurs (duck-billed dinosaurs), and ceratopsids (the group that includes *Triceratops*) were still thriving up until the asteroid strike. Researchers theorize that diet may have been the key for bird ancestors to survive the asteroid impact, while the other dinosaurs became extinct. The asteroid impact would have resulted in a nuclear winter that blotted out the sun, making food scarce. Animals like the bird ancestors that ate seeds could rely on available seeds to sustain them, while animals that ate plants and animals disappeared as their food source diminished.



Dinosaurs like the toothed maniraptorans (in flight) died out, while their beaked relatives (in log) lived to become the ancestors of modern birds. Credit: Danielle Dufault

We Need a Program Chair for our December Rocks & Rails Show!

Please join the gang of regulars and help make the FMC December Show a success! Take over the role of Program Chair and organize the lectures and demonstrations that we try schedule during the Saturday and Sunday afternoons of the show weekend. It can be as few as one lecture each day or as many as you can arrange. We need your energy! And this position is not a time consuming one – a few emails or phone calls during the fall before the show weekend to make some contacts and the job is done. Contact Gabi Accatino at accatino@colorado.edu to volunteer.

Become our Database Chair for our December Rocks & Rails Show

Do you like keeping lists? We need your talent to help us organize the mailing database for our December show! Please volunteer to take over as Database Chair and cleanup the information that we gather from our show postcards and door prize entry slips that the show attendees fill-in. This job can be done on your schedule starting right after the

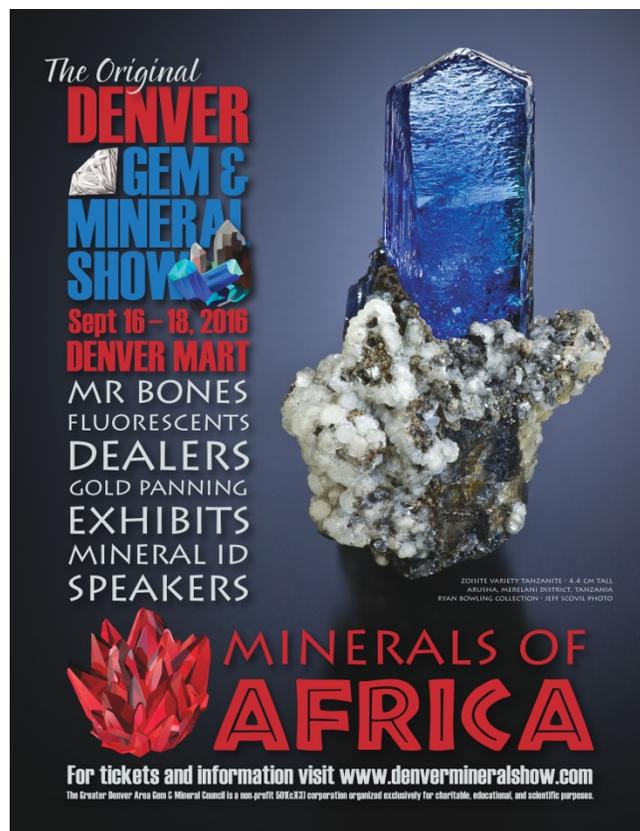
show. The database just needs to be ready by November for our postcard mailing that advertises the show. Please help the club by taking this on! Contact Gerry Naugle at gnaugle@earthlink.net.

Denver Gem & Mineral Show Mini Reports for April and May 2016

The Denver Gem & Mineral Show for 2016 will be here before you know it. Remember the dates are September 16 - 18, 2016 and the theme is "Minerals of Africa". The location is the Denver Mart, I-25 and 58th Avenue (Exit 215 on I-25). Thanks to Publicity Chair, Gloria Staebler, handsome flyers and postcards are available featuring exquisite specimens of tanzanite and diopside. The show is always a fantastic event for all of us gem, mineral and fossil hobbyists and collectors. Every club member should be a part of it.

In addition to the show competitions covered in the March mini report, there are other competitive opportunities offered by the show.

The **C. E. Withers Award** honors the memory of a man who was committed to the improvement of displays in the show. No special entry form is required, and a given exhibit may win this award only once. The winner is determined by a vote of the members of the Show Committee. Entries are judged on showmanship, quality, and educational value. Adherence to the show theme is not a requirement. Individuals, couples, or families are eligible. Dealers, commercial miners, individual competitive cases, cases exhibited by aggregate groups and club cases are not eligible.



The **Donna Chirnside Museum Trophy** honors Donna Chirnside, a deceased member of the Show Committee who served as Exhibits Chair for several years and as such was instrumental in improving exhibits, particularly the museum exhibits. This trophy is presented to the museum with the best display at the show. The entries are judged on showmanship, quality, educational value and relationship to the show theme. The winner is determined by a special Judging Committee.

The **Prospector Trophy** is awarded in honor of the countless miners, prospectors, and mineral collectors who preceded us and collectively made a monumental contribution to the Earth Sciences. The trophy is given to the best field collected mineral specimen found during the year preceding the opening date of the show. The specimen(s) entered must have been personally collected in the field by the exhibitor and may be any species, from any locality and any size. An exhibitor may enter up to three specimens. Eligibility is strictly limited to amateurs.

The **Junior Prospector Trophy** is awarded for the best field collected specimen personally collected by an individual, aged 6 through 14, and found during the year preceding the show. The other rules for this trophy are the same as for the Prospector Trophy.

The **Best Fossil Trophy** is intended to encourage exhibition of fossils at the show, as well as to increase public awareness of the importance of this aspect of Earth Science. The trophy is given to the best field collected fossil specimen found during the year preceding the show. The specimen(s) entered must have been personally collected in

the field by the exhibitor and may be any fossil, from any locality and any size. Specimen(s) must be labeled with the name and location using AFMS fossil labeling standards. In addition, the geological formation must be cited on the label. An exhibitor may enter up to three specimens. Eligibility is limited to amateurs.

The **Richard M. Pearl Trophy** is awarded to the exhibitor of the best crystallized mineral specimen entered in the competition. The trophy is given in honor of Professor Richard M. Pearl, a longtime Colorado resident, who was instrumental in organizing both the American Federation and the Rocky Mountain Federation of Mineralogical Societies and was past President of both. He was the second "Certified Gemologist" recognized by the American Gem Society, as well as the author of many books on Colorado geology and mineralogy. The competition is open to all exhibitors. Entries may be any crystallized mineral, thumbnail or larger, from any locality. The exhibitor must own the specimen. Quality, on a worldwide basis, will be the only criterion by which each mineral specimen will be judged. The exhibitor is limited to three entries for this trophy in a given year. A specimen is eligible to win this trophy only once. An exhibitor shall not be eligible to enter this competition for two years following receipt of the Pearl Trophy. Specimens entered in this category will be placed in special group cases provided by the Denver Show Committee and may not be part of a regular competitive or non-competitive display nor in any other special competition, such as the Species Competition. The deadline for entry is August 31, 2016.

The **Club Prospector Trophy** is open to any member club of the Greater Denver Area Gem and Mineral Council. A club is eligible to enter up to three specimens collected after September 17, 2015 on club-sponsored field trips in their exhibit. When the club installs its exhibit case on set-up Thursday, the club representative will designate the three specimens to be judged to the Judging Chair or designee. The Judging Committee will then number the designated specimens (1 through 3) in the same direction in all the entered cases. An aggregate entry, such as a vial of gold dust, or a group of loose topaz crystals would not constitute an eligible entry. A gold nugget or a single topaz crystal, or group of crystals on a single matrix, would be eligible. The specimens will be displayed in a standard Denver showcase with supporting information about the field trips. Maps, pictures, drawings, etc. can be used to make an attractive case that would be of interest to viewers. One third of the case score will be on showmanship as defined in the AFMS Rules. The other 2/3 of the case score will be double the highest score from among the three quality scores awarded to the specimens. AFMS Showmanship Rules for minerals refer to the ability of the exhibitor to use the material exhibited, the background material, lighting, arrangement, and labeling features (such as size, neatness, etc.) to create a display which will attract and hold the interest of the viewer upon the specimens exhibited. The deadline for entry is Tuesday, September 6, 2016.

For complete information on these competitions, see the show website www.denvermineralshow.com. Anyone with questions about these competitions may contact the Judging Chair, Larry Havens at 303-757-6577 or lwrnchavens@comcast.net.

I hope that club members are perusing and signing up on the volunteer sheets for the show. Some 400 plus volunteers are needed to put on the show and we really cannot put on the show without them. Please feel free to contact the Show Chair, Lesley Sebol, at 720-999-1372 or lsebol@yahoo.com if you have ideas or questions about the show. You may also contact the undersigned at 303-423-2923 or jrknoshaug@comcast.net if you have ideas for future mini reports. Thanks for your interest.

Respectfully submitted, Judy Knoshaug, Show Secretary

Other Rockhounding Events and Activities in the Area

Here is a list of rockhounding-related activities for both adults and juniors that you might be interested in.

Saturday, May 7, 11:00 a.m. to 2:45 p.m., is the **Colorado Mineral Society Silent Auction** at the Holy Shepherd Lutheran Church, 920 Kipling St., Lakewood CO. For more information see <http://www.coloradomineralsociety.org/>.

Thursday, May 12, 7:30 p.m., is the **Friends of Mineralogy, Colorado Chapter**, bimonthly meeting, with a talk on the “**Geology and Mineral Deposits of the Upper Peninsula, Michigan**”, by James Cappa, retired from the Colorado Geological Survey. At the Denver Museum of Nature & Science, VIP Room.

Saturday, May 14, is **Dinosaur Discovery Day**, a public tour day at Dinosaur Ridge by the Visitors Center, 16831 W. Alameda Parkway, Morrison CO. This month features Boy Scout Day, with special activity booths for scouts and others. Tours from 10 a.m. to 2 p.m.; walking tours are free or there is a charge to ride a tour bus. For more info see www.dinoridge.org.

Saturday, May 14, is the **Friends of Mineralogy, Colorado Chapter, Silent Auction** at the Clements Community Center, 1580 Yarrow St., Lakewood CO, from 12:00 to 3:00. Setup begins at 10:30 a.m., the auction begins at 12:00, the verbal auction is at 1:00, and checkout begins at 3:00 p.m. All are welcome; please contact Lou Conti, dlconti@aol.com, or telephone 303-797-3205, if you would like to be assigned a seller and/or buyer number in advance.

Friday-Sunday, June 3-5, is the **53rd Annual Pikes Peak Gem, Mineral, and Jewelry Show**, sponsored by the Colorado Springs Mineralogical Society and the Cripple Creek & Victor Gold Mining Co. This show will be at a new location this year, the Mortgage Solutions Financial Expo Center, 3650 N. Nevada Ave., Colorado Springs. Times are 10-5 on Friday and Saturday and 10-4 on Sunday. See www.csms-web.org.

Thursday-Sunday, June 9-12, is the **Fairplay Contin-Tail rock & mineral show**, Fairplay, CO; see www.facebook.com/ContinTail.

Friday-Sunday, June 17-19, is the **Victor Gem and Mineral Show** in Victor, Colorado. See <http://victorcolorado.com>.

Saturday, June 18, is **GEOdyssey's Annual Home Rock Sale**, from 9 a.m. - 3 p.m. at 15339 West Ellsworth Drive, Golden, CO 80401 (303-279-5504). There will be lots of new mineral and fossil specimens from around the world, including some from Namibia, China, Mexico, a selection of vertebrate fossils, and large fossil fish. All specimens are a minimum of 20% off, with larger discounts for volume purchases. Drinks and snacks provided. You can check out some representative specimens on their web site, www.geodyssey-rocks.com.

Friday-Tuesday, July 15-19 is the **2nd Eugene E. Ford Pegmatite Symposium** on the Colorado School of Mines campus in Golden. Full registration information is accessible online at <http://www.colorado.edu/symposium/pegmatite/>. All are invited to take part.

Officers, Directors, and Other Volunteers

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

Barry Knapp, 303-665-9557
barry_knapp@msn.com
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

open

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

Volunteer Chair

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

Kidz Korner 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 that the annual dues to the FMC are due on October 1st, 2015

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 2015-16 dues must be received by January 20th, 2016 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 2015-16 FMC membership card.





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

First Class Mail

Upcoming Events

Thursday, May 12	Club meeting featuring the 2016 field trip season	Frasier Meadows
Wednesday, May 18	Jr. Geologists meeting featuring Antarctica geology	Reynolds Library
Friday- Monday, May 28-30	Boulder Creek Festival	13th and Arapahoe in Boulder
Friday-Monday May 28-30	Yellow Cat and Celestite Queen field trip	Utah
Saturday, June 4	Calumet/Sedalia Mines field trip	Colorado
Thursday, June 9	Club meeting program about ammonites by Dennis Gertenbach	Frasier Meadows
Saturday, June 11	Two Creeks field trip	Colorado
Saturday, June 10	Silver Cliff field trip	Colorado
Saturday, June 25	Kremmling field trip	Colorado