



Colorado Mineral Society

Mineral Minutes



Volume 80, Issue 8

November 2016

Next CMS General Meeting November 4, 2016

This is a reminder that the next Colorado Mineral Society (CMS) general meeting will be on November 4th at 7:30pm at the St. Paul's Episcopal Church located at 10th Avenue and Garrison Street in Lakewood (parking is in the lot across the street to the north of the church). CMS meets the first Friday of the month from October through May. Visitors and guests are welcome to attend the general meetings. Feel free to check out our meeting before becoming a member. We are encouraging current members to bring snacks and desserts to share to supplement the hospitality snacks we normally have at each meeting.

For the November general meeting, Philip Persson will be doing a presentation on Mineralogy and Geology of the Franklin-Sterling Hill Mining District, New Jersey. An abstract for his presentation is located on Page 3. If you have an ultraviolet light and some New Jersey or other highly fluorescent specimens, please bring them to the meeting and we will set up a display and turn out the lights to view them.

For CMS members that are attending the 37th annual New Mexico Mineral Symposium have an opportunity to visit the Blanchard Mine (including going underground to collect minerals) on Thursday, November 10th and the US 60 Mine on Friday, November 11th. The symposium will be held Saturday and Sunday, November 12th and 13th, at the New Mexico Institute of Mining and Technology, Socorro, New Mexico. Contact Gary Rowe at cmsfieldtrips@gmail.com for field trip meeting locations.

The symposium will also be conducting a field trip to Copper Flat Mine on Friday, November 11th led by Virginia McLemore. To sign up for trip and further information: virginia.mclemore@nmt.edu.

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CMS Officer and Appointed Board Positions Available

CMS is seeking one Officer position and six appointed Board member positions. Please contact John Smith or one of the other Board members if you have an interest. Available positions include:

- **Secretary (Officer Position)**
- **Auction Chairperson**
- **Display/Exhibits Chairperson**
- **Donations Assistant**
- **Assistant Treasurer**
- **Junior Rockhound Assistant**

The **Secretary's** duties include participating in the monthly Board meeting as a voting member, taking meeting notes at the CMS general meetings and Board meetings, and preparing meeting minutes.

The **Auction Chairperson's** duties include coordinating the CMS May Auction activities and volunteers, participating in the Board meetings leading up to the May auction, and making announcements at the general meeting.

The **Display/Exhibits Chairperson's** duties include attending the monthly general meetings to manage set up of the CMS display cases, planning and coordinating the CMS display case themes and materials for the Denver Gem and Mineral Show, and coordinating possible traveling exhibits.

The **Donations Assistant** will work with the Donations Chairperson to collect verbal auction donations prior to the May CMS Auction.

The **Assistant Treasurer's** duties include working with Treasurer to submit financial forms to the State and attend the Board and General meetings to report financials when the Treasurer cannot attend. Familiarity with Quicken is helpful, but not necessary, will train.

The **Assistant Junior Rockhound Chairperson's** duties include helping the Junior Rockhound Chairperson to prepare for and conduct the junior program at the CMS general meetings.

COLORADO MINERAL SOCIETY OFFICERS

2016

President: John W. Smith

First VP-Programs: Gary Rowe

Second VP-Education: Debbie Kalschur

Secretary: Sandra Gonzales

Treasurer: Eva Siemonsma

Appointed Board Members - Committee Chairpersons

Annual Auction: **OPEN**

Door Prizes-Guests: Cindy Hatfield

Library: Kevin Atwater

Display Chair: **OPEN**

Membership: Cara Reynolds

Membership Assistant:

Field Trip Leader: Gary Rowe

Field Trip Leader Co-Chair: Nels Grevstad

Nominations: Daryl Lamb

Grab Bags: Dale Block

Editor: Amber Brenzikofer

Historian: Amber Brenzikofer

Scrapbook: Jennifer Knies

Junior Rockhound Coordinator: Lewis Reynolds

Junior Rockhound Assistant: **OPEN**

Hospitality: Star Edwards

Donations: Debbie Kalschur

Web Master: Julio Edwards

coloradomineralsociety@comcast.net



Representatives (Board Members)

Denver Council Rep: Bruce Sales

Denver Show Rep: Dale Gann

COLORADO MINERAL SOCIETY (CMS) was founded in 1936 by a group of distinguished individuals within the mineralogical field. The organization was incorporated as a non-profit, educational organization in 1948. The Society is affiliated with the Rocky Mountain Federation of Mineralogical Societies and the American Federation of Mineralogical Societies, a founding member of each group.

PURPOSE: To promote the study of minerals and other geologic materials, to encourage mineral collecting as a hobby and to conduct public meetings, lectures, and field trips, and to engage in all activities which relate to said purposes of the organization.

MEETINGS: General membership meetings start at 7:30 PM on the first Friday of each month, October through May, at St. Paul's Episcopal Church, at 10th and Garrison in Lakewood, CO. Displays are set up by members about one-half hour before meetings. Specimens may be available for sale and trade.

VISITORS and **GUESTS** are welcome.

BOARD MEETINGS: The board members meet once a month to complete the executive business and affairs of the Society. Meetings will start at 7:00 PM usually the third Tuesday of each month. Additional meeting times, if necessary, may be called by the President or any three members of the board and will be announced at the general or board meetings.

MEMBERSHIP: Open to all persons who agree to abide by Society rules and rules of the Federations. Annual fees: \$16.00 for a Family or Newsletter Membership, \$14.00 for a Single Membership, \$12.00 for a Senior Membership (single or family over 65), and \$12.00 for junior members under the age of 18 who are not included in a family. Name badges are available

for a one-time fee of \$7.50.

ANNUAL EVENTS: Yearly activities include a silent auction of minerals, fossils, gems, jewelry, equipment and other items related to our interests; participation in the Colorado Contintail, the largest mineral swap show in Colorado; participation as a member of the Greater Denver Area Gem and Mineral Council in sponsoring the largest gem and mineral show in Colorado; and the Founder's Day celebration.

FIELD TRIPS: The Society sponsors several field trips from Spring through Fall for the purpose of collecting minerals, crystals, and fossils. These trips are one-day, two-day, and occasionally several-day adventures. A field trip guide is published each year in May.

NEWSLETTER GUIDELINES: CMS has a proud history of promoting the education and pure enjoyment of the mineralogical world. At the very heart of its existence are the many volunteers and contributors who spend their time and efforts in direct support of the club's mission. The CMS official newsletter **MINERAL MINUTES** is published monthly during the active meeting season (October through May) and a summer edition, and is the primary way the club's activities and mission are communicated to its members and prospective members. On that basis, the Board of Directors would like to offer the following content guidelines for CMS newsletter contributions:

- Formal announcements concerning club business and/or membership
- Information around mineral-related education opportunities or fundraising activities
- Stories or history that concentrate on the edifying aspects of mineral collection and education
- Sharing of personal mineral-related experience from field trips or other related adventures serving an educational purpose
- Announcements of volunteer/leadership opportunities for the club or club representation
- Worthy news events or discoveries related to mineralogy or geology that align to club's core interests
- Appropriate announcements regarding mineral shows, one-time mineral related events, mineral auctions, sale of private collections and/or equipment, etc.
- Information around relevant donations and/or gifts made available to the club or club members

Please note that the editor may correct spelling, syntax, or content to conserve space and is also entitled to bring contributions in compliance with newsletter guidelines

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Deadline for publication is the 20th of the month prior to publication. All correspondence to Mineral Minutes should be sent to Amber Brenzikofer, Editor, P.O. Box 280755, Lakewood, Colorado 80228-0755 or by email to:

editor.coloradomineralsociety@gmail.com

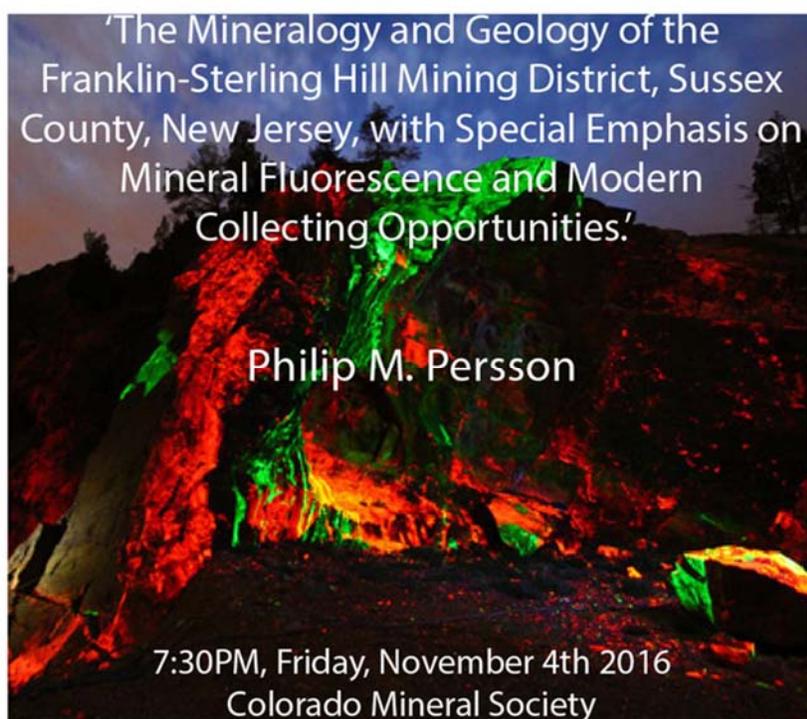
CMS November 4th General Meeting Presentation

The Mineralogy and Geology of the Franklin-Sterling Hill Mining District, Sussex County, New Jersey, with Special Emphasis on Mineral Fluorescence and Modern Collecting Opportunities

by Philip Persson

The two Zinc-Manganese-Iron ore deposits at Franklin and Sterling Hill, Sussex County, New Jersey are known as the premier places on earth for fluorescent minerals. What makes them such a mecca for minerals which emit light under ultraviolet radiation? In this talk we will explore the history, geology, mineralogy and present-day collecting opportunities at these fascinating localities, and also explain the physics behind mineral fluorescence in general. Mining at Franklin and Sterling Hill dates back nearly 400 years and the rich history of miners, geologists, and collectors is part of what makes the district so interesting. While mining for zinc and other metals ceased in 1986, two world-class mining and mineral museums now fill the space left by the closure of the mines themselves, and a local mineral club in addition to two annual mineral shows help sustain the vibrant mineral collecting culture which has surrounded the district for many years. The geology of the deposits themselves is enigmatic as well, and is still being unraveled. Believed to have originally formed at seafloor hydrothermal vent sulfide ore deposits (also known as volcanogenic massive sulfide deposits) over 1 billion years ago, the two major ore deposits at Franklin and Sterling Hill then underwent regional metamorphism around 980 Ma (million years ago) which converted surrounding limestone into marble and led to the explosion in rare and unique mineral species which categorize the deposits today. At present over 350 different mineral species are known from the district, making it one of the world's 'mineralogical rainforests.' Please join me this upcoming Friday evening as we explore a locality every mineral collector should visit!

Editor's Note: Please bring your best Franklin specimens (or other colorful specimens) and ultraviolet light(s) with you to the meeting so we can set up an interactive display. If you have specimens that you want to find out if they are fluorescent, but may not have an ultraviolet light, bring them to the meeting. It should be a fun evening of viewing minerals in the dark.



CMS Junior Rockhounds Program – November 2016 Meeting

Prospecting in Pegmatites



Amazonite and Smoky Quartz

Crystal Peak area, Teller County, Colorado
(Lewis Reynolds specimen and photo ©2012)

Mt. Antero. Crystal Peak. Devil's Head. Glen Cove. Red Feather Lakes. St. Peter's Dome. Tarryall Mountains. Trout Creek Pass. Wigwam Creek. These popular Colorado Mineral Society field trips take us prospecting for very desirable specimens in coarsely crystallized igneous rocks called pegmatites: clusters of amazonite and smoky quartz; gemmy crystals of amethyst, aquamarine, phenakite, or topaz; and, rarer minerals from astrophyllite to zircon. The values of such specimens derive not only from their astonishing beauty but also from the fact that they are not easy to find. This month the Junior Rockhounds will consider how pegmatite deposits form, signs of mineralization in granites, and markers for pegmatite pockets containing crystals.

The very important concept of fractional crystallization will be introduced at this meeting, and we will conduct a short, hands-on demonstration of this idea using Skittles® candies or Legos®. Our discussion about signs of mineralization and markers for pegmatite pockets will be supported by examples of specimens, images from the field, and perhaps a video segment of miners cleaning out a pocket.

Parents or guardians are strongly encouraged to attend the Junior Rockhounds Program with their children. Because our field trips require the participation of parents, our program is intended as much for adults as for their children. Although no supplies are needed for this meeting, a pencil or pen and a notebook may be helpful for taking notes.



Amethyst

Red Feather Lakes area
Larimer County, Colorado
(Lewis Reynolds specimen and photo ©2016)

The CMS Junior Rockhounds Program would also like to acknowledge Kuyper Reynolds who will serve as the youth leader this year. After participating in the monthly meetings for more than a half-dozen years, he would like to share his knowledge and experience. As a regular competitor in the Denver Gem and Mineral Show Junior Prospector Competition, he has received a few awards for field-collected specimens.

We look forward to another exciting lesson on Friday night, November 4!

Lewis Reynolds, CMS JRP Coordinator

Attention Field Trip Participants

This is a request from the editor to take some time in the next several months to prepare a small (or long) report/story about a CMS field trip you took or led this year and include some pictures, if available. Send it to the editor so she can include them in the upcoming newsletters. We also need field trip reports/stories/drawings from our Junior Rockhounds, so please encourage your children to write about or draw their experiences and finds.

CMS New Members

First Listing

- Connie and Jill Gallegos & family
- Morgan and Doug Love & family
- Judy Norkus

Second Listing

- Mark Leatherman
- Brynna Gilbert
- David R. Bartholomew
- Marrielle Monte and Luis Canales & family
- Chad Seidel & family
- Lucas and Andrea Burroughs & family
- Dan Schoenstein
- Jason and Annick Sparks & family
- Gabriel Finkelstein & family
- Jason Chard
- Scott Savala
- Ellen Wingenter & family

Per CMS Bylaws, comments concerning new, first listing members should be formally submitted to the President.

Open Enrollment for Spring Mineral ID Course - - New Educational Ideas Welcome

by Debbie Kalscheur, Second Vice-President-Education

Just a reminder that the Mineral Identification Course with Ed Raines is being planned for the Spring with an estimated start date of Monday, March 6th. It is a 10-class course curriculum and we are planning on a cost of \$75 per person or couple (two people living at the same address). The class typically meets on Mondays from 6-9 pm. We do not have a confirmed venue for the course yet, but we are planning for it to be in the Golden area. If there is a change to the cost, it would be due to unplanned costs related to securing the location.

Many CMS members have already taken this course, so if you are interested in signing up, please feel free to ask other club members to share their experience of the course. If you have any detailed questions, please find me at the club meeting or send an email to me at kalscheur2004@yahoo.com.

If you have an idea for a course, or would be willing to teach one, please contact me. We are always open to new course offerings on any topic relevant to the CMS educational mission.

Rocky Mountain Federation News

The Rocky Mountain Federation of Mineralogical Societies (RMFMS) is made up of 81 clubs representing 13 Western states. CMS is a member of RMFMS. The Rocky Mountain Federation News is published monthly and is located at www.rmfmts.org.



A.F.M.S Newsletter

The American Federation of Mineralogical Societies (A.F.M.S) serves seven regional federations, including RMFMS. The A.F.M.S Newsletter is published monthly and is located at <http://www.amfed.org/news/default.htm>.



****Save the Date****

Christmas Holiday Potluck Party

Friday, December 2nd at 6:30pm

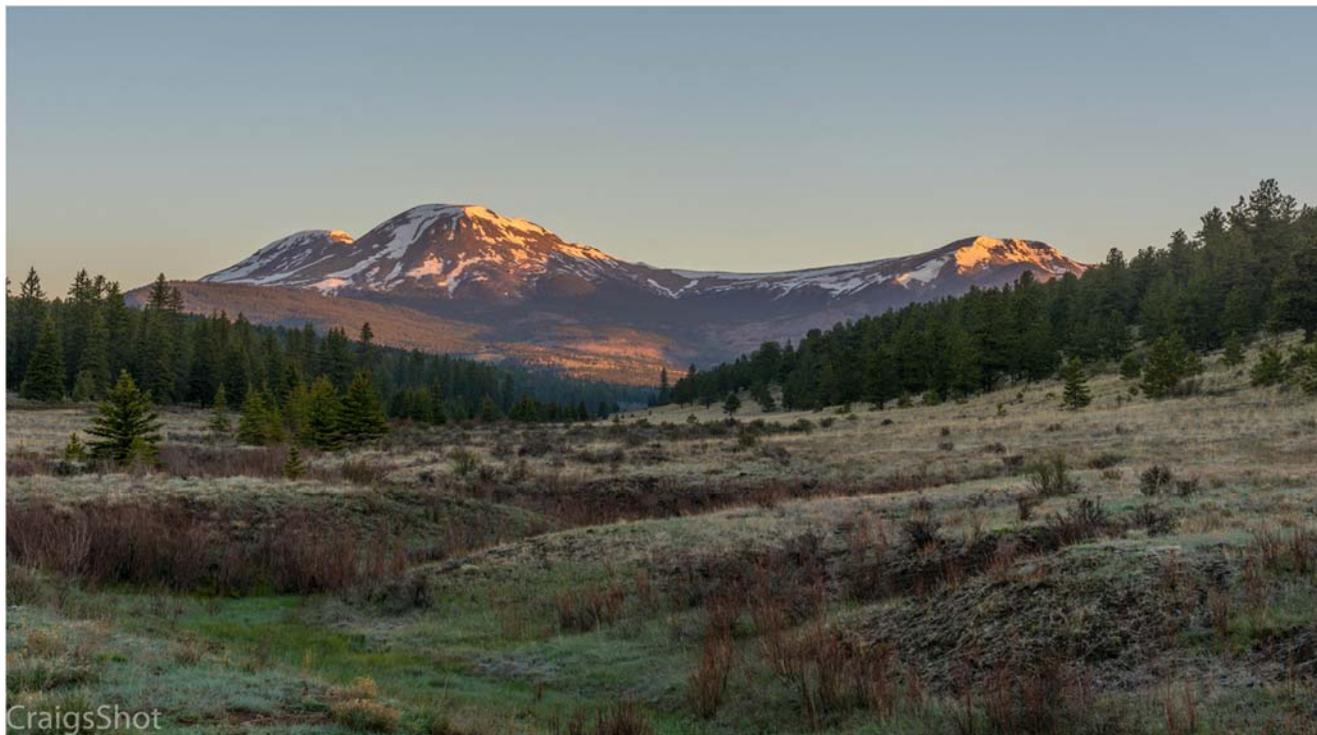
The CMS Christmas Holiday Party will be on December 2, 2016 at 6:30pm (note earlier time). We need volunteers to set up and decorate tables at 5:30pm.

The Wheat Ridge High School Choir is scheduled to perform with a 20-minute holiday program. There will be games, a raffle, cake steal, gift exchange, and a visit from a special guest from the North Pole. More information will be in the December newsletter.

We are looking for two (2) volunteers who may be interested in preparing and setting up the professional, amateur, and kids mineral challenges with 20 specimens needed for each challenge. Touching and handling of specimens must be allowed by participants.

Trout Creek Pass Pegmatite District

by Craig Hazelton ©2016



Buffalo Peaks (extrusive andesite, likely a volcano) at the head of Trout Creek, on the East side of Trout Creek Pass. Extensive jasper deposits are found just behind the treed ridges in the foreground. *(photo by author)*

Trout Creek Pass (TCP) refers to the general area surrounding the topographical pass on State Highway 24 between the Southwest border of South Park and the Arkansas Valley near Buena Vista. This is where the Mosquito Range from the North changes significantly at Buffalo Peaks becoming what some refer to as the Arkansas Hills to the South. This corresponds to a change in the East Horst structure of the Rio Grande Rift. Interesting geological formations, associated rocks and minerals, many abandoned mines and quarries are found here. There are significant deposits of sedimentary, metamorphic, as well as extrusive and intrusive igneous rocks presenting the rock hound anything from sandstone to gold. Pegmatites in the area represent occurrences of up to 30 different minerals including rare earth element (REE) minerals. Pegmatites occur along the Arkansas River Valley from Trout Creek Pass to almost Canon City. The REE occurrence in the pegmatites at TCP makes them unique and are what makes up the Trout Creek Pass Pegmatite District.

The district was first used as a source of raw minerals for Colorado industry. Mining included precious metals, industrial metals, decorative jasper, and limestone in addition to the pegmatite minerals. Extensive quarrying of feldspar was performed in the pegmatites providing raw material for the ceramics industry. The alumino-silicate component of feldspars is a very useful source of silica to produce porcelain ceramics (ea. toilets). These pegmatites provided an exploitable source of feldspar due to the large zones of pure microcline.

More recent activity also includes scientific studies of the pegmatites investigating the general structure, origin, and the mineralization. The pegmatites are 1.6 billion years old forming during crustal extension periods, predating most of the geology in the Arkansas Valley. Research has been performed from 1950 through today with TCP information being presented at the recent Second Eugene E. Foord Pegmatite (SEFP) Symposium held at the Colorado School of Mines (abstracts can be viewed here, http://friendsofmineralogycolorado.org/wp-content/uploads/2016/07/Abstract_book-Foord_pegmatite_symposium_with_covers.pdf).

Scientific projects have included doctoral research projects, collection of large amounts of radioactive aeschynite trans-

Trout Creek Pass Pegmatite District (continued)

ported to the lab in “highly radioactive sedans”. The aeschynite is found in a non-crystalline glassy state (metamict) due to over a billion years of self-irradiation. Study of this mineral included melting the metamict specimens in furnaces and carefully recrystallized to recreate the original crystalline form (it would be interesting to see some of those crystals).

Currently there is little active mining in the district, but I have heard of an active gold mine in Chub Park. The Trout Creek Chert Quarry is a protected archeological site that has been used for over 11,000 years where an abundant deposit of beautiful chert can be seen. There are many abandoned prospects and mines throughout the district. Of interest to us is the four pegmatite quarries the Crystal No. 8, Tie Gulch, Yard Mine, and the Clora May.

Any scarcity of specimens may be due to extensive collecting by TCP specialists. Fortunately, pictures of these specimens can be seen online. Many specimens are on the mineral market and can be purchased (there was a large aeschynite from the Clora May for sale at the Contin-Tail show this year). Some of the collecting has required special equipment and aggressive approaches as can be seen in these photos.



Specialized collecting equipment and techniques for the TCP Pegmatites (*Facebook Public Photos*)

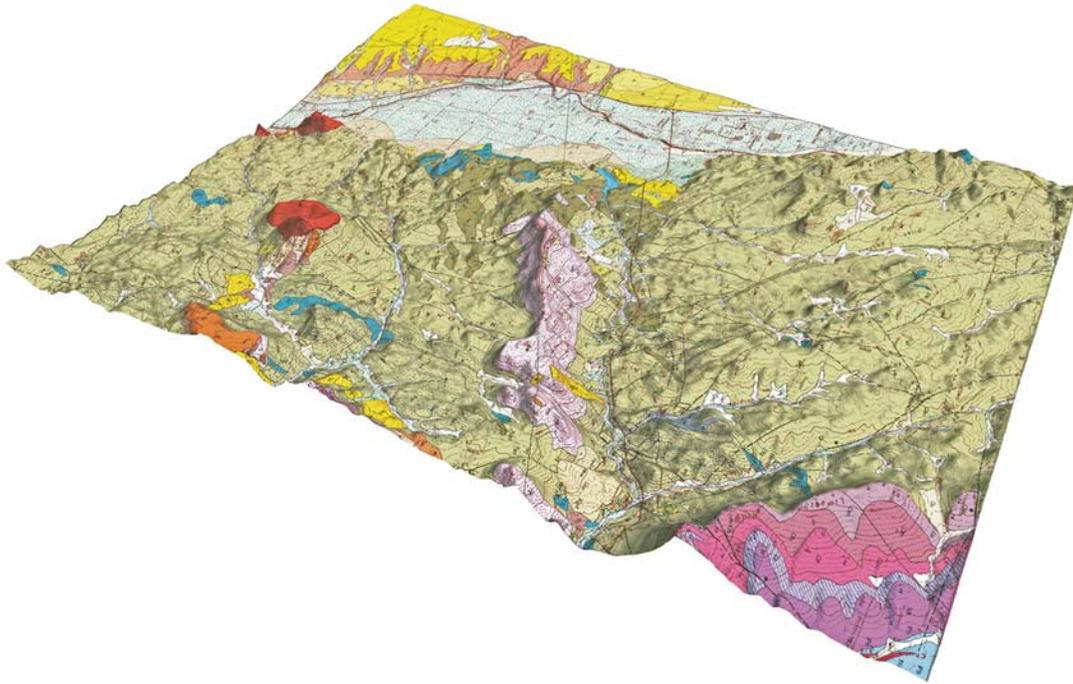
The TCP pegmatites are unique in that they lack the element fluorine in their chemistry, and because the REE's being segregated into light REE (LREE) and heavy REE (HREE) minerals. The concentration of REE minerals are among the highest in Colorado. The TCP pegmatites are chemically classified as NYF (for niobium, yttrium, and fluorine) type, but the fluorine is curiously missing, so they might be classified as an NY pegmatite. The pegmatites in nearby South Platte Pegmatite District are also characterized as NYF (only 1.0 billion years old), however fluorite (containing yttrium) is common there. These formations provide a great rock hounding experience for us today.

There are also sedimentary formations that contain beautiful jasper, as well as interesting marine sediments including some fossils and agate and a good exposure of the Great Unconformity. This is where a billion years of sedimentary deposits have been weathered away leaving an abrupt transition from Precambrian metamorphic rocks to Cambrian sedimentary rocks. Where did these rocks go?

The TCP pegmatites typically have cores of quartz, pink microcline, biotite and muscovite, with intermediate zones containing massive quartz, potash feldspar, albite, as well as the REE minerals. The outer regions can be marked by graphic granite.

There are seventeen elements in the REE grouping (http://en.wikipedia.org/wiki/Rare_earth_element). They are considered rare, not because of scarcity, but because they rarely occur in large concentrations like those found here at TCP. Cerium (Ce), Yttrium (Y) are the most common REE's that are found in the TCP pegmatites. Cerium is used as a chemical oxidizing agent, polishing powder, and creating yellow colors in glasses. Applications for yttrium include fabricating synthetic yttrium aluminum garnet (YAG) for lasers, ceramics and semiconductors. There is a list on mindat.org of 69 minerals that have been found in the TCP pegmatites (<http://www.mindat.org/loc-3600.html>). Some of the REE minerals that can still be found are polycrase/euxenite, allanite and aeschynite.

Trout Creek Pass Pegmatite District (continued)



View of the lower section of the Trout Creek pass area, colors represent different geological formations. The white colored ridge in the middle is the Triad made up of primarily andesite. The volcanic formation (Nathrop volcanic event 28-29 MYA) responsible for Ruby, Sugarloaf and Bald Mountains is shown in rusty red. Ruby Mountain is now in Browns Canyon National Monument (*map courtesy of the Colorado Geological Survey, CGS*).



View of the upper section of the Trout Creek pass area with the bright colors indicating largely sedimentary formations. The highway exposure of the Great Unconformity is in the upper left corner. The pegmatites are too small to show up on these maps. (*map courtesy of the Colorado Geological Survey*)

Trout Creek Pass Pegmatite District (continued)

A Word on Pegmatites

Granite pegmatites are intrusive (cooled underground) igneous (derived from magma) rocks that solidify/crystallize from a melt that has been concentrated in many elements that create deposits of important minerals. They exhibit very large crystals of quartz, feldspar, mica and other minerals generally exhibiting a texture that is much coarser than most intrusive rock like granite. If there are cavities in the pegmatite, large crystals can grow (quartz, topaz, aquamarine, etc.). The pegmatites in the TCP district are generally massive and do not have cavities that form gemmy crystals. There are however many interesting rocks to find.

Pegmatites originate in magma that has been super concentrated and injected upward where they crystalize in a matter of days or weeks in an unrelated country rock. Before some igneous batholiths cool, upper regions can become super concentrated with the ingredients that make the special magma for pegmatites. This magma moves and injects through weaknesses in the country rock, or the batholith, to solidify and form the pegmatite deposit. Details on how nature does this is extremely complex and quite miraculous (<http://pegmatopia.ou.edu/>).

Sometimes the pegmatites can cause metamorphic genesis in the country rock. Interesting rock with large crystals and beautiful composition can be found in the area around the TCP pegmatites. Unakite is a rock with a granitic texture composed primarily of green epidote and pink feldspar which can be found at the Yard mine. This unakite may be related to the pegmatite at the Yard mine (maybe not). Even though it can have lot of fractures, the rock is a great lapidary material.



Bowl made by the author using unakite from the Yard Mine (2.5" diameter).

Clora May Mine:

This is a pegmatite quarry and longtime mineral collecting location (it is included in Richard M. Pearl's book): REE minerals, rose quartz, tourmaline, jasper, biotite as well as petrified wood, are found here. (<http://www.mindat.org/loc-6038.html>)

Fun Fact: In addition to the mining of feldspar to produce ceramics, 600 pounds of bismutite was mined here as well. Richard Pearl's (a Colorado Mineral Society founder) wife apparently was the first to find the jasper deposit next to the mine in 1969, they called it "Jasper Hill".

Trout Creek Pass Pegmatite District (continued)



Mt. Princeton Massif from a camp near the Yard pegmatite quarry, Mt. Antero is hiding behind clouds (*photo by the author*).

Yard Mine:

Several references state that the locality of the Yard mine, originally owned by Mr. Rudy Yard of Canon City, was “misplaced” in the 1950's. Now it is plainly labeled on topo maps. The pegmatite is similar to the Clora May, however it is about two times bigger, and has probably had less rock hound traffic. I have located a spot with radiation levels are more than 30 times above background levels and found some REE minerals. Other collectable rocks are large feldspar crystals, monazite, graphic granite, quartz, and unakite. (<http://www.mindat.org/loc-6040.html>)



Graphic granite is found in the boundary between the pegmatite and the host rock. There is a lapidary potential for this material, and one of the attendees at the SEEFPS Symposium wore a graphic granite bola he made using stone he found in a Montana pegmatite.

Fun Fact: Some of the most scenic campsites in the Arkansas River Valley are in this area near the mine with great views of Mt. Princeton, Mt. Antero and Mt. White. A technical paper on the Yard mine can be found here: http://rruff.info/doclib/cm/vol30/CM30_673.pdf, and Dr. Sarah Hanson, the author, spent a summer camping at the mine during her doctoral field work, nice classroom!

Crystal No. 8 Mine

This is a smaller pegmatite quarry that was initially difficult for me to locate. I had spent a couple of days hiking around the area using GPS coordinates from Mindat.org to no avail. Then I was driving up TCP one day with a friend and happened to notice the mine on a small hill above Trout Creek just across from the highway. Turns out there are good directions in the old Richard Pearl book. (<http://www.mindat.org/loc-6039.html>)

Fun Fact: Use to be called the Luell mine, and you must cross Trout Creek (very small) to get there. There is different Trout Creek a bit further North in South Park that drains into the South Platte, not the Arkansas River. Radon concentrations ninety times over the permissible maximum were measured in a mansion located close to the Crystal No. 8.

Trout Creek Pass Pegmatite District (continued)

There is a lot of loose rock to collect on the ground at these quarries, however much of the rock is in place so chisels, gad points and heavy hammers or small sledges are useful. The quarry walls have some hard to reach sections, so a lightweight ladder would be useful. A radiation survey meter is essential to easily locate the REE elements, preferably one with a scintillation probe (photon based), but the more common Geiger tube (electric charge based) detectors do work as well.

Radioactive Mineral Safety:

Radioactive minerals present a health hazard and following a good safety protocol will reduce any negative health effects. The REE minerals readily accept uranium and thorium into their crystal lattices resulting in significant alpha and beta radioactivity. This radiation can give you a dose externally or internally. External dose to the skin from alpha and beta radiation is a minimal as neither of these penetrate the skin very much. The most serious dosage is internal, so precautions for preventing internal doses are the most important to follow. Internal doses come from ingesting, inhaling or absorbing radioactive material. Most of the ingested minerals should pass through the body as they are locked in a mineral structure that hinders uptake of the radioisotopes. Nonetheless safety precautions are advisable.

Suggested Radiation Safety Protocol:

- 1) Avoid breathing dust from the mineral.
- 2) Avoid direct contact with the minerals, wear gloves.
- 3) Practice short handling times, large distances, and shielding to keep the external exposure as low as reasonably achievable (ALARA).
- 4) Avoid repeated contact with the radioactive dust, wash hands before eating, wash clothing and mineral containers after use.
- 5) Uranium minerals will emit radon gas, so store them in a sealed container or in a well-ventilated area.
- 6) Label containers of radioactive minerals, so others know of the hazard.

I hope you get an opportunity to visit and explore the TCP pegmatite district and surrounding areas!

References:

- 1) Donald McGookey; *Geologic Wonders of South Park, Colorado with Road Logs*, 2009.
- 2) Stephen Voynick; *Colorado Rockhounding, a Guide to Minerals and Fossils*, 1994.
- 3) WM Pearl; *Gem Trails of Colorado*; 1972 (3rd edition)
- 4) Edwin B. Ecklel, Eugene E. Foorde, Pete Modreski, et. al.; *Minerals of Colorado*, Fulcrum Publishing, 1997.
- 5) Richard Walker Holms, Marriana Kennedy, Van Nostrand Reinhold; *Mines and Minerals of the Great American Rift (Colorado-New Mexico)*, 1983.
- 6) Hanson, S., W. Simmons, K. Webber, A. Falster; Rare-Earth-Element Mineralogy of Granitic Pegmatites in the Trout Creek Pass District, Chaffee County, Colorado; *Canadian Mineralogist*, Vol. 30, pp.673-686,1992.
- 7) Simmons, W.; REE-Rich Pegmatites from the South Platte and Trout Creek Pass Pegmatite Districts, Colorado: Contrasting Geochemical Profiles and Tectonic Regimes; Keynote speaker, Second Eugene E. Foorde Pegmatite Symposium, July 15-19, 2016.
- 8) David London; Pegmatites; 2008, *The Canadian Mineralogist*, Special Publication 10, 347 pp., ISBN 978-0-921294-47-4.

Craig Hazelton is an avid prospector/collector in the Arkansas Valley area, a lapidary jewelry artist, founder of Rock Out! (<https://www.facebook.com/RockOutbyCraig/>), and a member of the Colorado Mineral Society. craig.hazelton@hotmail.com

CMS Membership Dues Reminder

CMS memberships run from January 1st to December 31st. You can pay your 2017 membership dues now in three ways:

1. Pay with cash or check at the general meetings the first Friday of each month from October through May. Look for the Membership Chairperson to obtain a receipt and membership card.
2. Send a check made out to "Colorado Mineral Society" or "CMS" to P.O. Box 280755, Lakewood, Colorado 80228-0755. Please do not send cash through the mail. Membership cards will be mailed to you.
3. Fill out a membership form and bring cash or check to a field trip to receive a temporary membership card.

CMS Membership Fees:

Family: \$16 per year

Single: \$14 per year

Senior 65+ (single or family): \$12 per year

Junior (<12 years old): \$12 per year

Also, due to RMFMS insurance and liability purposes, we need to know the month and year of your children's birthdays, so please provide this information when you renew your membership. The children's information will not be published. A new membership form is located on the CMS website at www.coloradomineralsociety.com.

If you ordered a name badge, they will be available at the general meetings to pick up. Alternative methods of delivery for name badges may be available, so contact Cara Reynolds or Amber Brenzikofer to coordinate.

CMS General Meeting on October 2, 2015

Meeting called to order 7:30 pm by President John Smith

Announcements:

- Congratulations to Youth Prospector Awards from the Denver Show this past September
- Presentation of Awards granted to CMS Newsletter contributors
 - Pat Tucci – 2nd place in category of Photo Stories
 - Mark Jacobson – Adult Articles

Business – Board/Committee Reports

- Education Report – Mineral ID Course has been deferred to Spring term. Sign-up is now open for planned start of March, 2017. Those that were confirmed for Fall can reconfirm for Spring. See Debbie Kalscheur with any questions.
- Cara Reynolds read off the new members who joined over the summer. 2017 membership renewal now open
- Call for open leadership positions
- Welcome to Visitors
- Bruce Sales gave update from Show Council -\ul>- \$32K in grants awarded for past fiscal year
- Show Committee continues to need volunteers

Sewing Machine Drawing:

- All those who sewed bags used for the CMS contribution of grab bags were eligible to win a sewing machine (contributed by John Smith)
- Jennifer Knies won this raffle

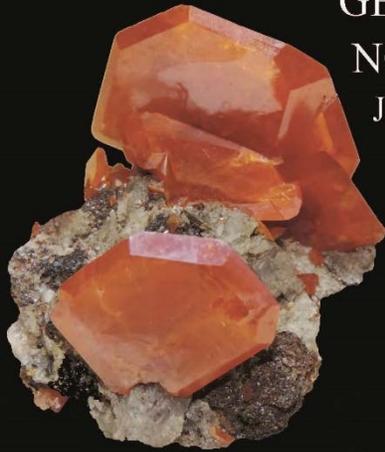
Door Prize Winners

- | | |
|-----------------|-------------------|
| • Judy Norkus | Randy Kokkinen |
| • Bill Jones | Merlin Schreffler |
| • Eva Siemonsma | Ian Duncanson |
| • Mike Dempsey | Lewis Reynolds |
| • Mark Leavitt | Katherine Brannan |
| • Cara Reynolds | |

Notes taken by Debbie Kalcheur for Sandra Gonzales, Secretary

CMS October Board Meeting

The October Board meeting was canceled due to a lack of a quorum.



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

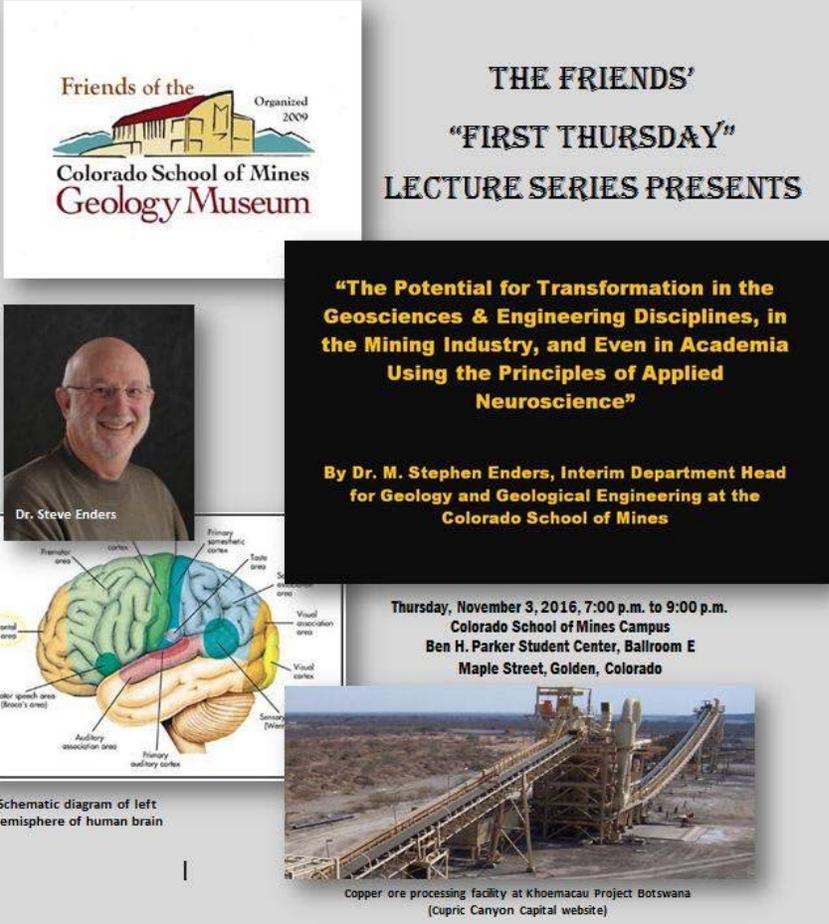
Public Welcome

Free Admission

Free Parking

Sponsored by Denver Area Mineral Dealers

Hours: Friday 10am-5pm, Saturday 10am-6pm, and Sunday 11am-4pm

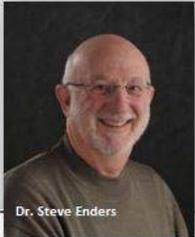


Friends of the Colorado School of Mines Geology Museum
Organized 2009

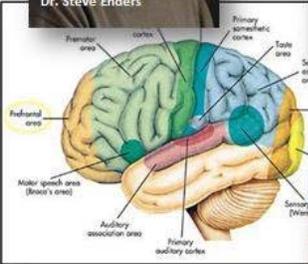
THE FRIENDS' "FIRST THURSDAY" LECTURE SERIES PRESENTS

"The Potential for Transformation in the Geosciences & Engineering Disciplines, in the Mining Industry, and Even in Academia Using the Principles of Applied Neuroscience"

By Dr. M. Stephen Enders, Interim Department Head for Geology and Geological Engineering at the Colorado School of Mines



Dr. Steve Enders



Schematic diagram of left hemisphere of human brain

Thursday, November 3, 2016, 7:00 p.m. to 9:00 p.m.
Colorado School of Mines Campus
Ben H. Parker Student Center, Ballroom E
Maple Street, Golden, Colorado



Copper ore processing facility at Khoemacau Project Botswana
(Cupric Canyon capital website)



Colorado Mineral Society
PO Box 280755
Lakewood, CO 80228

FIRST CLASS MAIL



Calendar of Events

November 4, CMS November General Meeting at St. Paul's Episcopal Church, Lakewood, 7:30pm

December 2, CMS December Holiday Party at St. Paul's Episcopal Church, Lakewood, 6:30pm

January 6, 2017, CMS January General Meeting at St. Paul's Episcopal Church, Lakewood, 7:30pm



*Happy 80th
Anniversary
CMS*

<http://www.coloradomineralsociety.org>