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CSMS General Meeting

Thursday, September 17th, 7:00 PM

This month's speaker is Vicky Crystal

Topic: The Mineral Bioapatite

(How bioapatite can be used to understand and make interpretations about ecosystems and environments of the past.)

Refreshments provided by the Fossil Group

**Pikes Peak Pebble Pups and Earth Science Scholars
to Speak at the 2015 Denver Gem & Mineral Show**

by Steven Wade Veatch

Several of the Pikes Peak Pebble Pups and Earth Science Scholars will be speaking at the upcoming Denver Gem and Mineral show, on Saturday, September 18, 2015. The Pebble Pups and Earth Science Scholars will give presentations on various topics as part of the show's educational programming. The presentations will begin at noon in the Speaker's Room at the Denver Merchandise Mart. This will be the third year that the Pebble Pups will speak at this internationally famous gem and mineral show. The Pebble Pups have created a loyal following and each year the people attending their presentations has grown to a packed, standing-room-only event. Following is a brief introduction of each student and their presentation topic.

Casey Martin: Radioactivity in Colorado Dinosaur Fossils



Casey Martin

Casey has been working with a Geiger counter and conducting research on radioactive rocks, minerals, and fossils.

Casey is 12 years old and attends Eagleview Middle School in Colorado Springs. Casey has been keenly interested in earth science from a very young age and has been an active member of the Pikes Peak Pebble Pups and Earth Science Scholars since 2011. He has lead several of the club meetings. He has worked on all of the public outreach programs, including Cool Science at the University of Colorado, Colorado Springs and at Colorado College.

(Continued on page 3)

CSMS Calendar

September 2015

Tue., **Sept. 1**—**Fossil Group**, 7 p.m., Senior Center. Jerry Suchan 303 648-3410

Thu., **Sept. 3**—**Board Meeting**, 7 p.m., Senior Center.

Tue., **Sept. 8**—**Micromounts**, 7 p.m., Senior Center. Dave Olsen, 719 495-8720

Thu., **Sept. 17**—**Pebble Pups & Juniors**, 5:30- 6:15 p.m., Senior Center. Steven Veatch, 719 748-5010

Thu., **Sept. 17**—**General Assembly**, 7 p.m., Senior Center

Thu., **Sept. 24**—**Crystal Group**, 7 p.m., Senior Center. Kevin Witte, 719 638-7919

Thu., **Sept. 24**—**Faceting Group**, 7 p.m., Senior Center. Paul Berry, 719 578-5466

Appointment Only—**Jewelry Group**, Bill Arnson, 719 337-8070

Appointment Only—**Lapidary Group**, Sharon Holte, 719 217-5683

October 2015

Thu., **Oct. 1**—**Board Meeting**, 7 p.m., Senior Center.

Tue., **Oct. 6**—**Fossil Group**, 7 p.m., Senior Center. Jerry Suchan 303 648-3410

Tue., **Oct. 13**—**Micromounts**, 7 p.m., Senior Center. Dave Olsen, 719 495-8720

Thu., **Oct. 15**—**Pebble Pups & Juniors**, 5:30- 6:15 p.m., Senior Center. Steven Veatch, 719 748-5010

Thu., **Oct. 15**—**General Assembly**, 7 p.m., Senior Center

Thu., **Oct. 22**—**Crystal Group**, 7 p.m., Senior Center. Kevin Witte, 719 638-7919

Thu., **Oct. 22**—**Faceting Group**, 7 p.m., Senior Center. Paul Berry, 719 578-5466

Appointment Only—**Jewelry Group**, Bill Arnson, 719 337-8070

Appointment Only—**Lapidary Group**, Sharon Holte, 719 217-5683

The Senior Center is located at **1514 North Hancock** in Colorado Springs. For more information on any of the sub-groups, meetings, and other CSMS valuable information, please visit our website, <http://www.csms.us>

Other Events of Interest to CSMS Members

Thurs., Sept. 10, (doors at 6pm, lecture at 7pm), Free Heritage lecture & Exhibit Opening- **Trails and Trials: Stories from the Mining Migration Trails and Ink Sketches of Mine Labor Life** at the **Western Museum of Mining & Industry**, Colorado Springs. "Join WMMI as we open our newest exhibit –The Mining Art of Buck O'Donnell – with a lecture by Lee Whiteley. JC (Buck) O'Donnell created a series of pen and ink drawings for various mining related supply and informational magazines during the early to mid-20th century. His work appeared in magazines like Shaft and Development Machines and Machinery Center, Inc. O'Donnell's works served to provide visual evidence of how miners lived, how they worked, and what the western mining boom looked like to those who lived it. For the opening, Lee Whiteley will speak about his book "Pathways to Gold", which looks at the various trails the gold prospectors took to reach the gold fields in Colorado. Join WMMI as we welcome Lee Whiteley and enjoy a series of nineteen sequenced, pen and ink drawings of underground mining, mining equipment and miner's lives. Heritage Lectures at WMMI are always FREE with an rsvp! Visit www.wmmi.org for more details. RSVP to rsvp@wmmi.org. Please post, share or otherwise announce this great local history opportunity! Thank you for supporting WMMI. ---Western Museum of Mining and Industry, 719-488-0880, info@wmmi.org

Sat., Sept. 12, 10 a.m. – 2 p.m., monthly "**Dinosaur Discovery Day**" at **Dinosaur Ridge, Morrison**. Guides are stationed all along the ridge to show and explain the fossils and geology, plus educational booths and activities by the Visitors Center. Walk up & down the ridge, or ride a tour bus for \$4. See www.dinoridge.org. This date will feature "Geohazards Day".

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Casey's past primary interests have included rocks, volcanoes, dinosaurs, fossils, magnetism and astronomy and he has collected a large number of mineral specimens. Currently, his main area of interest is radioactivity and studies low-level radioactive minerals and fossils with the aid of his vintage Geiger counter. Casey won 1st place, in 2013, at his elementary school's science fair, with his magnetic levitation experiment and 2nd place, in 2012, with his copper-plating experiment. Casey is also an active Boy Scout.

Jenna Salvat: Pyrite



Jenna Salvat

During her presentation, Jenna will explore the mineral pyrite and demonstrate how important this mineral is in Cripple Creek—the “World’s Greatest Gold Camp.”

Jenna is fourteen and is about to enter high school. She is very passionate about studying the various fields in Earth Science. She also loves to build and program robots and will participate in her school’s robotics team. She will also be a part of her school’s orchestra. Jenna loves to spend time in nature, whether it is collecting rocks or just enjoying the views of the Earth. Jenna has volunteered for two years at Helen Hunt Falls and Starsmore Discovery Center in North Cheyenne Canyon, educating visitors about the geology of the Pike’s Peak Region. Jenna is also in her second year as a volunteer interpretive ranger at the Florissant Fossil Beds National Monument. Jenna has taught a third grade class at Mesa Elementary School that focused on the world of rocks and minerals. Jenna presented at the Western

Interior Paleontological Symposium, at the Colorado School of Mines, in 2015. She also coauthored a paper that was presented at the New Mexico School of Mines. Jenna has also been published in *Deposits* magazine as well as a few newspaper articles. Jenna hopes to maintain a life long presence in geology as a naturalist and scientist.

Blake Reher: Paleontology



Blake Reher

Blake will talk about the fossils of the Pikes Peak region and discuss some of the new discoveries in the area.

Blake is in the 10th grade at Cheyenne Mountain High School in Colorado Springs. His life goal is to be a paleontologist. He also wants to learn more about earth sciences, especially geology, in order to have a broader appeal in tough job markets. Blake has been active in the Colorado Springs Mineralogical Society’s Earth Science Scholars Program for more than five years. He assists in teaching the Pebble Pups. Blake is enthusiastic in learning and then sharing his knowledge of the Pikes Peak Region with youth

and adults in programs like the Florissant Fossil Beds National Monument’s Paleolab and Cool Science Programs. Several of Blake’s poems, articles about fossils, and research which was used in larger research papers, have been published. Blake continues to work as a uniformed volunteer in the Park at the Florissant Fossil Beds National Monument.

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Be sure to follow the Pebble Pup program on the Web at <http://pebblepups.blogspot.com/> and “Like” their Facebook page at <https://www.facebook.com/PikesPeakPebblePups>.

Jack Shimon: Radio Wave Powered Crystal Radio



Jack Shimon

Jack's presentation is on a project he recently demonstrated at the Pebble Pup meeting on a radio wave powered crystal radio. Jack uses a number of mineral crystals for different results.

Jack has been a member of the Pikes Peak Pebble Pups in Colorado Springs for six years. He is in the 5th grade and enjoys playing the drums, mountain biking, snowboarding, and hiking with his dog Comet.

Jack's grandfather is a retired geologist and worked on his crystal radio science fair project with him, which received honorable mention at his school last spring.

Jerrod and Nathan Gallup: Mount Saint Helens and Crater Lake



Jerrod Gallup



Nathan Gallup

Jerrod and Nathan Gallup are long-time members of the Lake George Gem and Mineral Club's Pebble Pup program. During their presentation, the twin brothers will present their field trip research in a master presentation with the title "*After the Eruptions: Mt. St. Helens and Crater Lake (Mt. Mazama)*."

Jerrod is 11 years old and is a 5th grader at Columbine Elementary in Woodland Park. Jerrod is an active Pebble Pup with the Lake George Gem and Mineral Club and was recognized as the Rocky Mountain Junior AFMS Rockhound of the Year, in 2014.

Jerrod's articles on minerals are published by *Deposits* magazine and *Ute Country News*. In addition to rock hounding and trail running, Jerrod loves cooking, art, and playing piano and violin.

Nathan is 11 years old and is a 5th Grader at Columbine Elementary in Woodland Park. Nathan is an active Pebble Pup with the Lake George Gem and Mineral Club and was also recognized as the Rocky Mountain Junior AFMS Rockhound of the Year, in 2014. Nathan's articles on minerals are published by *Deposits* magazine and *Ute Country News*. Besides rock hounding, Nathan loves video games, reading, and playing piano and bass.

PEBBLE PUPS TO PARTICIPATE AT COOL SCIENCE CARNIVAL DAY AT UCCS

When: Saturday October 03, 2015 @ 10:00 AM - 4:30 PM

Where: University of Colorado Colorado Springs, 1420 Austin Bluffs Parkway Colorado Springs, Colorado

Website: <http://www.csssciencecenter.org/calendars/events/66-cool-science-carnival-day-at-uccs>

Help Needed: I will need Pebble Pups and ESS to help with this day. Please pick a shift, put it on your calendar, and let me know what you picked. Thank you!

- 9:30 am to 11:30 am
- 11:30 am to 2:00 pm
- 1:30 pm to 4:30 pm
- All day 9:30 am to 4:30 pm

FOLLOWING LEADS IN A ROCKHOUNDING JOURNAL

Mike Nelson csrockguy@yahoo.com

I am an avid reader and enjoy a wide variety of genre as long as it is mostly non-fiction. I also enjoy reading a number of magazines that relate to our hobby of rock, mineral and fossil collecting. However, I am not a lapidary so I pass up on some of those specialized publication. My favorite rock/mineral magazines are *The Mineralogical Record*, *Rocks and Minerals* and *Rock and Gem*. Secondary favorites include *Deposits* (British), *Lapis* (German), and *Elements* and *Minerals*. Unfortunately subscribing to more than two publications would exceed my magazine budget! So, I subscribe to the old fashioned, rock clubby *Rock and Gem* mainly to read the articles of my favorite author, Bob Jones. *Rocks and Minerals* and *The Mineralogical Record* are more like professional journals and both have fantastic glossy photographs of minerals that I would never locate in a lifetime of collecting! I could only choose one of the latter so I picked *Rocks and Minerals*. However, I usually read the Table of Contents and some of the free stuff available on their web site and usually wish that I had a subscription!

In fact, the other day I was reading about the contents of the new *Min Record* and continued to wonder who in the world is able to collect some of those fantastic mineral specimens noted in the photographs. Wendell Wilson, the Editor-in-Chief and Publisher since approximately 1977, continues to publish an outstanding magazine; I just do not have a subscription.

My mind often goes in interesting directions and I decided to see if a mineral was named after Mr. Wilson, after all there is a mineral named bobjonesite!. Sure enough, wendwilsonite was named in 1987 for a hydrated calcium magnesium arsenate (contains the AsO_4 radical)— $\text{Ca}_2\text{Mg}(\text{AsO}_4)_2 \cdot 2\text{H}_2\text{O}$. In reading descriptions of the mineral I noted it was often referred to as the “magnesium analogue of roselite.” That perked my mind up since I purchased a small specimen of roselite at an estate sale about three years ago and it was filed under “Africa” in a home drawer.

I originally purchased the specimen since the crystals were nicely formed and were gorgeous rose-red to rose-pink in color. At that time I guessed the color might be due to cobalt but was not certain. It turns out that roselite is the cobalt analogue of wendwilsonite; cobalt replaces some of the magnesium [$\text{Ca}_2(\text{Co},\text{Mg})(\text{AsO}_4)_2 \cdot 2\text{H}_2\text{O}$] and thus they form a solid solution series. Any specimen rich in magnesium is wendwilsonite while the cobalt-rich specimen is roselite. But, wendwilsonite usually contains enough cobalt to give a pink color to the crystals while roselite always has some magnesium and many of the crystals are zoned and are of a lighter shade of color with a decreasing cobalt content.

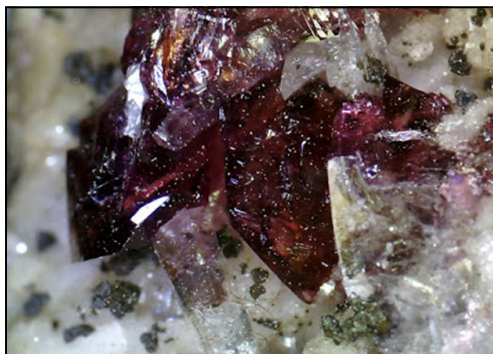


Figure 1. Photomicrograph of a crimson red aggregate of roselite crystals. Width FOV ~1 cm.

Early on I also assumed that roselite was given its name due to the rose red color. Wrong! The mineral was named for Gustav Rose, a German mineralogist. But could there be some relationship between the color and the name? Only the authors know that answer.

Roselite crystals are actually quite beautiful with their color and vitreous luster. They are usually transparent grading to translucent and are fairly soft at ~3.5 (Mohs) with a red streak. The individual crystals range from tabular to prismatic, often twinned, and seem to occur in aggregates rather than individual and well-spaced crystals.

I find it interesting that roselite (Monoclinic Crystal System) has the same chemical formula (and therefore dimorphs) as another mineral termed beta-roselite (or β -roselite) that belongs to the Triclinic Mineral System. They have the same color and everything and I seriously doubt if I could tell the difference; however, β -roselite is a very rare mineral. The same goes for identifying a red to pink specimen of wendwilsonite!

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Figure 2. Photomicrograph roselite crystals showing color gradation from pink to dark crimson red. Width FOV 6 mm.

My specimen of roselite (I have none of wendwilsonite or β -roselite) came from its most famous collecting locality, the mines of the Bou Azzer District, Morocco. The District contains over 60 ore bodies enriched with cobalt and nickel. Mining of cobalt, nickel, arsenates, gold and silver started in 1928 and in 2006 the mines produced about 8 percent of the annual world cobalt production (Hawkins, 2006). The ore bodies are associated serpentinites of a Precambrian ophiolite sequence in contact with igneous intrusions and volcanic rocks (Ahmed and others, 2009). In other words magmatic fluids from the intrusions interacted with upper mantle peridotites (olivine- and pyroxene- rich) and rocks called ophiolites that are pieces of the earth's upper mantle and ocean floor. This sequence of rocks seems to date back to the late Precambrian (700 to 600 Ma) when the plates building what is now Africa were banging into each other. Ge-

ologists know this event as the Pan-African Orogeny. In addition, these rocks were later uplifted by compressional mountain building during the late Paleozoic (Hercynian Orogeny) (Ahmed and others, 2009). So, the enrichment of primary sulfides came from hydrothermal interaction of magmatic solutions with the serpentinites.

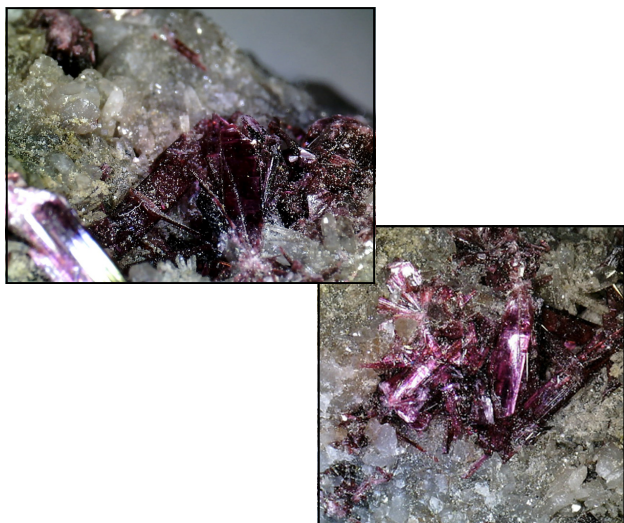


Figure 3. Photomicrographs: clusters of erythrite sheaths and radial aggregates from Bou Azzer. Note different crystal form than roselite above.

Bou Azzer also produces another beautiful cobalt-colored mineral: erythrite, a hydrated cobalt arsenate $[\text{Co}_3(\text{AsO}_4)_2 \cdot 8\text{H}_2\text{O}]$. It also has that crimson to red to pink-violet color, is translucent to transparent, and is very soft at ~ 2 (Mohs). Crystals, usually striated and prismatic, are flattened and these factors, plus the softness, distinguish erythrite from roselite. However, they are found together at Bou Azzer along with a variety of other cobalt-rich minerals (cobaltite) and varieties (pink cobaltoan calcite; pink cobaltoan dolomite). Since erythrite and roselite are secondary minerals in the oxide zone they most likely oxidized from one of the primary cobalt sulfides such as cobaltite $[(\text{Co},\text{Fe})\text{AsS}]$.

There is also a second variety of erythrite in the mineral world commonly known as *cobalt bloom*

where the specimens contain cobalt as a druzy-like coating of earthy, non-crystalline material. It still has the pink to red color but is much "duller" than the nice crystals since it is sort of a weathering crust.

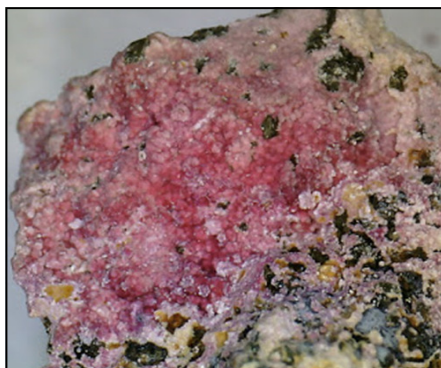


Figure 5. Photomicrograph pink *cobalt bloom* (erythrite) on specimen from Cobalt, Ontario, Canada. Width FOV ~ 7 mm.

Since Bou Azzer also has abundant nickel it would be worthwhile to note that erythrite is in a complete solid solution series with annabergite---the nickel ion substitutes for cobalt ions: $\text{Ni}_3(\text{AsO}_4)_2 \cdot 8(\text{H}_2\text{O})$. Evidently there are less attractive "middle members" of the series that I have not observed. Annabergite also occurs in two forms: 1) the common druzy, dull and earthy weathering crust called *nickel bloom*; and 2) very nice apple green, translucent to transparent, vitreous crystals. The crystals are either the flattened blades like erythrite, or acicular masses, often in radial aggregates. My specimen of annabergite



Figure 4. Photomicrograph of two nicely flattened erythrite crystal, common for the mineral. Crystal β ----- α is perpendicular to camera and specimen surface while second noted crystal β -----* is parallel to specimen surface. Length of longest crystal ~ 5 mm.

(Continued on page 7)

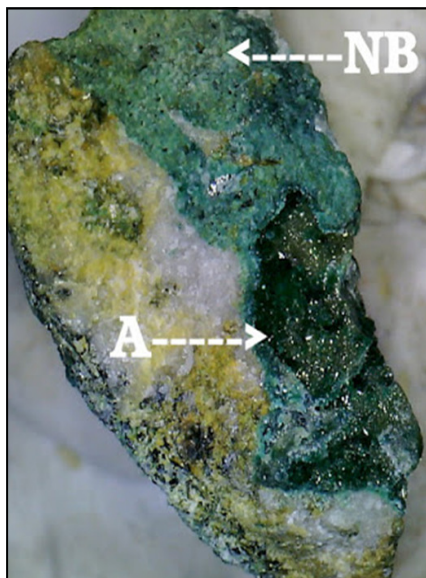


Figure 6. Photomicrograph green *nickel bloom* (NB; annabergite) and massive tiny, apple-green crystals of annabergite (A). Specimen collected KM4 Mine, Laurium, Attica, Greece. Width FOV ~ 5 mm.

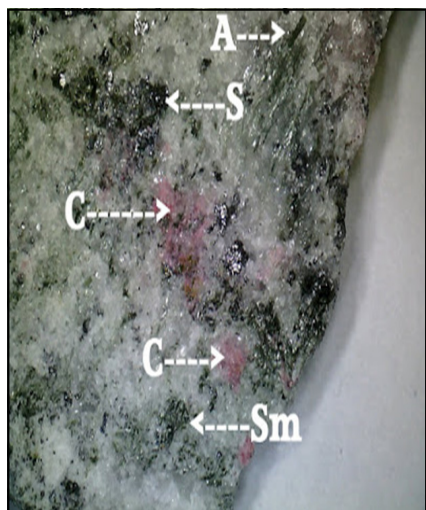


Figure 7. Specimen collected from Cobalt, Ontario, Canada, with pink cobalt bloom (C), skutterudite (S), arsenic-deficient skutterudite (Sm "smaltite"), and ?annabergite (A). Width FOV ~2.2 cm.

does not come from Bou Azzer but from the Lavrion District in Greece and contains both *cobalt bloom* and a mass of tiny acicular crystals.

Erythrite is also the cobalt analogue (isostructural; same structure but different chemistry), and annabergite is the nickel analogue, of the rare hydrated arsenates kottigite (zinc), parasymphesite (Fe), and hornsrite (Mg).

I have a third specimen of erythrite collected from near "Cobalt, Canada," one of those old prolific mining areas in Ontario. Regardless of its name, silver was the major metallic commodity with production starting in the early 1900s and ceasing in the 1930s. At one time the Cobalt District mines were the world's largest producer of silver and production over the years totaled nearly a thousand tons. The silver was associated with nickel and arsenic minerals like skutterudite and very little of these toxic elements were removed from the landscape; there are a host of environmental problems today.

I was unable to locate exact production figures of cobalt and nickel for the Cobalt District; however, Young and Perrone (2013) noted that "small high-grade deposits of nickel-cobalt arsenides furnish significant quantities of cobalt. Arsenide ores from Cobalt, Ontario, gave Canada world leadership in production for the period 1905-25. Cobalt output from this area stopped in 1971 but was reactivated in 1995 as a primary production...Canada produced 2013 t of cobalt as recoverable metal...in 2000."

My specimen has small areas of *cobalt bloom* along with several "globs" of skutterudite (cobalt iron nickel arsenide; see Post April 21, 2013) and an old label noting the presence of "smaltite an arsenic-deficient skutterudite." At once time smaltite was recognized as a distinct mineral that was lighter in color, more tin white in color, than skutterudite. However, smaltite is now considered as a variety of skutterudite.

The Canadian specimen also exhibits several slender lathes and sprays that have a green to light green to almost clear color. My wild guess is that they are lathes of annabergite!

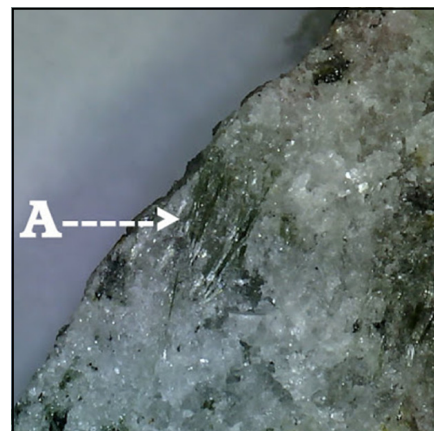


Figure 8. Photomicrograph green to clear lathes of ?annabergite from specimen noted above. Width FOV ~ 9 mm.

REFERENCES CITED

- Ahmed, A.H., S. Arai, and M. Ikenne, 2009, Mineralogy and Paragenesis of the Co-Ni Arsenide Ores of Bou Azzer, Anti-Atlas, Morocco: *Economic Geology*, v. 104.
- Hawkins, M., 2006, Cobalt News: The Cobalt Development Institute, www.thecdi.com/cobaltnews.php.
- Young, R.S. and L. Perrone, 2013, Cobalt: www.thecanadianencyclopedia.ca

Giant Amazonite Coming to the Denver Museum of Nature and Science

Submitted by James Hagadorn, Denver Museum of Nature and Science

In 2012, the Dorris family of Colorado Springs (and Prospectors fame) opened a pocket that contained some of the biggest amazonites ever discovered. See photos below or go to <https://www.youtube.com/watch?v=rqQcvoZSVX4#t=6m48s> for an example. Over the next two years, Tim Dorris cleaned and restored a massive plate from the ceiling of this pocket, called the Smoky Hawk King. The plate weighs over 85 pounds and is nearly three feet long and almost two feet wide. It is dominated by extraordinarily large amazonite, smoky quartz and cleavelandite crystals. Perhaps you've seen this piece on TV or on display at the 2015 Tucson or 2014 Denver mineral and gem shows. At the Denver show it handily won "Best in Show" for its size, color, completeness, and overall wow factor. Many of you, both individually and through your clubs, have already had a role in making this specimen possible through your advocacy for the gem and mineral hobby and through supporting local mining operations like the Dorris family's. Without your support for the earth sciences, it is quite likely this specimen would never have come to light. Thank you.

Over the past year, the Denver Museum of Nature and Science, in partnership with Joe Dorris and other supporters, has been working to secure this specimen for permanent public display. Like the Alma King rhodochrosite or Diane's Pocket aquamarine, this amazonite specimen is a key piece of US and Rocky Mountain history and of our mining heritage. Once on display it can inspire the next generation of mineral, rock, and fossil collectors and catalyze public interest in the stunning natural features of our landscape.

To learn more or arrange a behind-the-scenes showing for your group, please get in touch with the museum's geology curator, James Hagadorn, at jwhagadorn@dmns.org. Or stop by the museum when you're in the neighborhood!

If you or your club would like to help support the acquisition and display of the Smoky Hawk King, please go to <http://dmns.org/amazonite> to make a donation. Or, contact the museum's advancement director, Megan Fisher, at megan.fisher@dmns.org or 303-370-8259. The Museum greatly appreciates your support.



Above left: Joe and Tim Dorris pulling specimens from the partially-opened Icon Pocket at their Smoky Hawk claim, near Lake George, Colorado. *Right:* A spectacular amazonite, immediately after being pulled from the pocket. Images courtesy of Joe Dorris.

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PEBBLE PUPS CORNER

Pebble Pups and Earth Science Scholars Field Trip to Jurassic World Movie

by Julie Shimon



Jurassic World exploded into theaters this summer and on July 9th a group of 19 Pebble Pups/ESS, siblings, parents and friends finally joined Steve to watch the movie together and talk about it over lunch at iHop. For most of us it was our second viewing; I know my kids couldn't wait almost a month for this most anticipated movie of the summer so we went opening week as well. The second time there, with Steve, only served to create even more questions about the real and not so real elements of the movie while enjoying the pretty scenery, cool gadgets and thrilling action yet again. In critic terminology the

movie scored a hearty 38 thumbs up from our group with a collective positive and enthusiastic review from all of us.

If you missed out on the dino details discussed over pancakes here is a review—did we think the raptors could be trained? What about running alongside the hero's dirt bike? Did ANY of the dinosaurs look real (our clever group picked up on the fact that none of them had feathers)? Can we actually clone a dinosaur? Or what about creating a hybrid like *Indominus rex*? Those pterosaurs seemed to have super powers picking up and carrying people in their beaks... and exactly how can you run away from a dinosaur in three inch heels?? It was certainly a fun twist on a club field trip and I think all the kids greatly enjoyed the opportunity to have lunch with Steve and talk about something they all love. The *T. rex* is still out there—maybe we can do this again for Jurassic World 2.



Other Events of Interest to CSMS Members—continued

Sep. 12-20, Denver Coliseum Mineral, Fossil, and Gem Show, see <http://www.coliseumshow.com/> .

Sep. 13-20, Colorado (Fall) Mineral and Fossil Show, Ramada Plaza Hotel (formerly Holiday Inn - Central Denver), 4849 Bannock St, Denver, CO; see http://www.mzexpos.com/colorado_fall.html .

Tues., Sep. 15, 3:00 p.m., DMNS Earth Science Seminar, ""The WHAT of conodont science: Insights into Permian oceans and beyond", by Charles Henderson, Univ. of Calgary. Free lecture, museum admission not required.

Wed., Sept. 16, 6-9 p.m., Annual Open House (all are invited) at the **Colorado School of Mines Geology Museum**, 1310 Maple St., Golden. Refreshments, music, preview new displays, and meet museum staff. Held during the week of the Denver Gem and Mineral Show. For more information see <https://www.facebook.com/LikeCSMGeoMuseum> .

Thurs., Sept. 17, 7:00 p.m., monthly meeting of the Colorado Scientific Society, Shepherd of the Hills Presbyterian Church, 11500 W. 20th Ave., Lakewood. Speaker TBA; all welcome.

Sep. 18-20, Denver Gem and Mineral show, at The Denver Mart, 58th Ave. and I-25 (ext 215), sponsored by the Greater Denver Area Gem and Mineral Council; dealers, exhibits by clubs, individuals and museums nationwide, lectures, demonstrations, and kids' activities; theme, "Minerals of the American Southwest". 9-6 Fri., 10-6 Sat., 10-5 Sun. See <http://www.denvermineralshow.com/> .

Thurs., Sept. 24, 7:30 p.m., Friends of Mineralogy Colorado Chapter bimonthly meeting; speaker TBA. In the VIP Room, Denver Museum of Nature & Science. All welcome.

Sat., Oct. 10, 10 a.m. – 2 p.m., monthly "**Dinosaur Discovery Day**" at Dinosaur Ridge, Morrison. Guides are stationed all along the ridge to show and explain the fossils and geology, plus educational booths and activities by the Visitors Center. Walk up & down the ridge, or ride a tour bus for \$4. See www.dinoridge.org . This date will feature "Girl Scout Day", with special activities for Girl Scouts.

Nov. 1-4, Geological Society of American Annual Meeting, Baltimore, MD.

Nov. 12, FM Colorado Chapter bimonthly meeting; speaker, Dan Wray, **Cave Minerals in 3-D**.

Nov. 14-15, New Mexico Mineral Symposium, Socorro, NM; see <https://geoinfo.nmt.edu/museum/minsymp/home.cfm> for details.

Fri., Nov. 20, Colorado Science Conference for Professional Development (a.k.a. Colorado Science Teachers' Conference), held at the Denver Mart, 58th Ave. at I-25. The year's major educational conference for all fields of science teachers in Colorado. See <http://coloradoscience.org/> for full information about registration, presentations, and special speakers.

Special exhibits continuing in 2015:

Steps in Stone: Walking Through Time, at the University of Colorado Museum of Natural History, CU campus, Boulder. "A new exhibition that features real fossil tracks and trackways from the University of Colorado Museum of Natural History collections". Open 9-5 weekdays, 9-4 Saturdays, 10-4 Sundays; closed on university holidays. Exhibit runs through December 2015; see <http://cumuseum.colorado.edu/> .

Explore Colorado's Mining and Mineral Heritage: Colorado minerals, gemstones, and mining history material from the Colorado School of Mines Geology Museum and Colorado's State Mineral Collection continues on display on the third floor of the Colorado State Capital Building in Denver, at least through the end of the year. You can explore this online by following this link to the Friends of the CSM Geology Museum facebook page (you don't need to have a personal Facebook account to view this information.): <https://www.facebook.com/pages/Colorado-Mining-and-Mineral-History-on-Display/358587847669017>

CSMS FIELD TRIPS

Please review specific trip information in the Event Calendar at www.csms.us. If you have trip suggestions would like to lead a field trip, please contact Sharon Holte, Field Trip Director, at sharonrocksCO@gmail.com.

- ♦ **Saturday, September 19: New Hope Amethyst Claim**, *near Canon City, Colorado* — This is a joint field trip with the Canon City Geology Club, to their club claim. A fee of \$5.00 per person is required. Trip Leader: Phil Spry; Meeting Place: Dirt parking area on west side of Hwy 9, approximately ¼ mile north of Hwy 50. (About 8.5 miles west of Canon City); Meeting Time: 8:30 a.m.
- ♦ Photographs from the **Calumet Iron Mine** field trip are available on the CSMS share drive. Please click this link or copy and paste or type it into your browser. <http://1drv.ms/1KJ4JyA>. The photos will also be available on the CSMS Facebook page. Thank you, Frank Rosenberg, for the photo contributions!!

2015 CSMS Officers

Mark Lemesany, President
 Jean Miller-Luce, Vice President
 Melanie Glascoe, Secretary
 Ann Proctor, Treasurer
 Lisa Kinder, Editor
 Ariel Dickens, Membership Secretary
 Doreen Schmidt, Member-at-Large
 Yam Yamiolkoski, Member-at-Large
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2015 CSMS Chairpersons

Kim & Bodie Packham, Show Chairs
 Sharon Holte, Field Trip Director
 TBD, Science Fair Chair
 Frank & Ellie Rosenberg, Librarians
 Georgia Woodworth, Social Committee
 Ann Proctor, Store Keeper
 Jackson Pierce, Webmaster

Sub-Group Responsibilities for Refreshments for General Assembly Meetings

Feb. Jewelry	Mar. Lapidary	Apr. Micromount
May Board	June Crystal	July Faceting
Aug. Picnic	Sept. Fossil	Oct. Jewelry
Nov. Lapidary	Dec. Christmas Party	

SECRETARY'S SPOT

by Melanie Glascoe

Minutes of the Colorado Springs Mineralogical Society General Meeting—July 17, 2015

Minutes for the July General Meeting were not submitted.



Above: The nearly-restored Smoky Hawk plate, as it was displayed at the 2014 Denver Mineral & Gem Show.

The Gravel Pit

- ◆ CSMS now has a Facebook page! Please look up Colorado Springs Mineralogical Society on Facebook (<https://www.facebook.com/coloradospringsmineralogicalsociety>), “Like” the page, and then invite others to “Like” it too. We will try to post regular events, updates, photos, meetings and fun stuff too. If you’d like to contribute articles, pictures, meetings or info for posting, please email Deborah Covert at his.redeemed.daughter@gmail.com. We hope to use this as a way to keep everyone connected in real-time on Facebook.
- ◆ The Cañon City Geology Club auction will be September 14 at the First United Methodist Church Fellowship Hall on the northwest corner of 9th St and Main, Cañon City, starting at 6PM. All are welcome.
The auction will have some exceptional mineral specimens, a flat lap, a tumbler, and various gift certificates from local merchants. Many of these items can be seen at <http://www.canoncitygeologyclub.com/ccgc-september-auction.html>.
- ◆ The minutes from the 2015 Rocky Mountain Federation of Mineralogical Societies Convention are available on the CSMS share drive at <http://1drv.ms/1EzRn6A>.

Our Staff...

Lisa Kinder—Editor

We encourage everyone to submit articles, photos, illustrations or observations.

Share your experiences, your new finds, or simply your experience at our last field trip.

Handwrite it, type it, or email it. Format does not matter. All submissions are welcomed. The DEADLINE for items to be included in the next Pick & Pack, is the **21st of the month**

To submit an item:

For hardcopy photos or articles, mail to the address below or bring them to the General Meeting. All hardcopy photos remain the property of the submitter and will be returned. Electronic photos should be submitted at resolutions above 200 dpi in TIF, BMP, JPG, or PIC format. Articles are preferred in word. Editors will correct font.

E-Mail to:

csmseditor@hotmail.com

Mail to:

Pick & Pack Editor

PO Box 2

Colorado Springs, CO 80901

The PICK&PACK is published ten (10) times per year (no issues in January or August). Unless otherwise marked, materials from this publication may be reprinted. Please give credit to the author and CSMS PICK&PACK.

CSMS

T-Shirts, Badges, and Pins are available for sale.

If you celebrated a CSMS anniversary in 2013 or 2014, you are eligible for your one year pin award

Please see Storekeeper,
Ann Proctor

Classifieds

DENVER - FALL



Smithsonite - AZ
Photo by Jeff Scovil©

COLORADO MINERAL & FOSSIL SHOW

September 13-20, 2015

Ramanda Plaza - Denver Central
(formerly Holiday Inn)
4849 Bannock Street, Denver
(where I-25 meets I-70)

Sangre de Cristo

Gallery & Rockshop

Steve & Peggy Wilman

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PICK&PACK

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CSMS is an incorporated nonprofit organization with these goals:

To promote and disseminate knowledge of the earth sciences, especially as they relate to mineralogy, lapidary, and fossils.

To encourage study, collection, and fashioning of minerals.

To accomplish the same through social meetings, lectures, programs, displays, shows, and field trips.

The Pick & Pack is published 10 times each year to assist and promote the above.

Joining the Colorado Springs Mineralogical Society (CSMS):

Meetings are held the **third (3rd) Thursday of each month**, except January & August, **7:00 p.m.** at the Colorado Springs Senior Center, 1514 North Hancock Ave., Colorado Springs, CO. **Visitors are always welcome.**

CSMS also offers Satellite Group meetings that allow more focused attention in specific areas of our members' interests. Our current Satellite Groups consist of the following: Crystal Study Group, Faceting Group, Fossil Group, Jewelry Group, Lapidary Group, Micromounts Group, and Pebble Pups/Juniors. For details on Satellite Group meetings, check out the calendars on page 2 and the web site.

Yearly dues include 10 issues of the *PICK&PACK*, all field trips (additional fees may be required on some field trips, and members are responsible for all transportation to and from), participation in all Satellite Groups (some groups may request additional fees to help cover resource costs), free admission to the *Western Museum of Mining & Industry*, a year of learning and enjoyment, plus a lifetime of memories.

Individuals—\$30, Family—\$40, Juniors—\$15, Corporate—\$100, *****Application is on the web site.

If you are interested in joining CSMS or would like more information, we encourage you to attend our next General Meeting or visit our web site: www.csms.us.

CSMS is a Member of the following organizations:

American Federation of Mineralogical Societies (AFMS)

www.amfed.org

Rocky Mountain Federation of Mineralogical Societies (RMFMS)

www.rmfmts.org