

THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

Colorado Springs
Mineralogical Society
Founded in 1936
Lazard Cahn
Honorary President
September 2019
PICK & PACK
Vol 59 Number 7

CSMS General Assembly

Thursday, September 19, 7:00 PM

Speaker: Bob Hickey

Topic: "Volcanoes and Magma Flows"

Please note: Members whose names begin with M-Z are responsible for refreshments in September

****In case of inclement weather please call**
Mt. Carmel Veteran's Service Center 719 309-4714**

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SEPTEMBER PROGRAM

Dr. Robert (Bob) Hickey is a volunteer naturalist and geologist for the Arkansas Headwaters Recreation Area (AHRA). He has led many hikes and outings with the AHRA for several years exploring the geologic timeline and events of places around the state. At right, Mr. Hickey displays a sample of schist during a presentation named *Touching a Piece of Geologic Time* in 2017.



Photo courtesy of Sherrie Horn

COLORADO SPRINGS MINERALOGICAL SOCIETY PO BOX 2 COLORADO SPRINGS, COLORADO 80901-0002

CSMS Calendar

September & October 2019

Thu. Sep 5, Oct 3 -----	Board Meeting	7p.m., Pikes Peak United Methodist Church
Tue. Sep 2, Oct 1 -----	Fossil Group	7p.m., Methodist Church, Jerry Suchan, 303 648-3410
Thu. Sep 19, Oct 17 ----	Pebble Pups, Jrs.	5:30p.m., Mt. Carmel Ctr., Steve Veatch, 719 748-5010
Thu. Sep 19, Oct 17 ----	General Assembly	7p.m., Mt. Carmel Center
Thu. Sep 26, Oct 24 ----	Crystal Group	7p.m., Mt Carmel Ctr. Kevin Witte, 719 638-7919
Thu. Sep 26, Oct 24 ----	Faceting Group	7p.m. Home of Bertha Medina 2120 Princeton Way John Massie 719 338-4276 CO Springs 80909
Appointment Only -----	Jewelry Group	Bill Arnson, 719 337-8070
Appointment Only -----	Lapidary Group	Sharon Holte, 719 217-5683

For more information on any of the sub-groups, meetings, and other CSMS valuable information, go to our website: www.csms1936.com

Upcoming Events of Interest to CSMS Members

Submitted by Pete Modreski

Calendar of Coming Events

Unless as noted, all of these societies' and institutions' lecture series are free and open to the public:

Tues, Sept. 3, "Golden Beer Talks" at the Buffalo Rose, 1119 Washington Ave., Golden. First talk for the Fall: Rebecca Lynn Brice, **"Tree Rings and Snow Drought: What Trees Tell Us About our Changing Snowpack"**. Held on (usually?) 2nd Tuesdays. Doors open at 6; Talk begins at 6:35; Intermission – 7-7:15; Q&A/clean up 7:15-8. Here is the rest of the schedule for the Fall:

Oct 15, Donald Sweetkind, Geologist, USGS, **"From Uravan to Rulison: Tales from Colorado's Nuclear Past"**

Nov 12, Bob Raynolds, Geologist, CSM Adjunct Prof and DMNS Research Associate, **"Australopithecines to the Anthropocene: A Geologist's View of Where We Came from and Where We Are Going"**

Dec 10, Barb Warden, Goldentoday.com, **"Funiculars of Golden Colorado"**.

Wed., Sept. 4, 4-5 p.m., CU Geological Sciences Colloquium Series, Benson Earth Science Building Room 180, Karen Chin, Department of Geological Sciences: Associate Professor, University of Colorado Boulder, **"Analyses of dietary residues within Cretaceous dinosaur dung: surprising insights into the feeding habits of large herbivorous dinosaurs."**

Abstract:

Fossilized feces shed light on the behavior of extinct animals, the structure of ancient ecosystems, and the movement of carbon resources through paleoecosystems. A rare assemblage of fossilized feces from the Upper Cretaceous Kaiparowits Formation of Southern Utah reveals unusual dietary habits that challenge common assumptions about the feeding behavior of large herbivorous dinosaurs. Analyses of multiple coprolite deposits from different stratigraphic levels indicate that some plant-eating dinosaurs consumed rotted wood and crustaceans, probably as a seasonal food source. This discovery suggests feeding behaviors that have no modern equivalents and appear to reflect nutritional requirements related to fundamental differences in life history strategies between megaherbivorous mammals and dinosaurs.

(CONTINUED ON PAGE 3)

Please also join us for Colloquium Social Hour after the Colloquium, 5 to 6 p.m., BESC 185, "An hour of science, socialization, and good food and drink!"

Fri., Sept. 6, 3:00-4:00 p.m., [Denver Museum of Nature & Science Earth Sciences Colloquium](#).

Flowering plants enter the canopy: Fossil woods and the Cretaceous diversification of flowering plants, by Nathan Jud, William Jewell College. VIP Room at DMNS; all are welcome.

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

Sept. 6-16, Denver Coliseum Mineral, Fossil, and Gem Show. There are actually 5 separate gem & mineral shows taking place here, at the Denver Coliseum (south side of I-70) and the National Western complex (north side), one of which is wholesale only, the rest are retail and open to the public; <http://www.coliseumshow.com/>

Sept. 7-8, 10 a.m.—5 p.m. 1st Annual Denver "Just Minerals Event" Embassy Suites Hotel, 4444 N. Havana St.; wholesale and retail mineral dealers. See <https://www.facebook.com/TucsonDenver/>

Wed., Sept. 11, 6-9 p.m., Colorado School of Mines Geology Museum Annual Open House Showcasing new exhibits for the opening of the Denver Gem and Mineral Show. 1310 Maple St., Golden CO; all are invited. Campus parking is free after 5 p.m. See <https://www.mines.edu/>

Sept. 11-14, 10 a.m.—6 p.m. Denver Fine Mineral Show Denver Marriott West, 1717 Denver West Blvd. Golden, CO 80401 (303) 279-9100; see <http://finemineralshow.com/denver/>

Sept. 13-15, 9 a.m.—6 p.m., 52nd Annual Denver Gem and Mineral Show, Denver Mart, 451 E 58th Ave., Denver, CO. **Minerals of Canada** is the 2019 show theme. See <http://denvershow.org>

Thurs., Sept. 19, 5:30 p.m., Colorado Scientific Society hosts an evening of short oral talks and geology/earth science poster presentations; all are invited and welcome. At the Arbor House, Maple Grove Park, 14600 W. 32nd Ave., Golden (Applewood area). Social time, complimentary refreshments, and poster viewing,

5:30 p.m.; 7:00 p.m., oral presentations (4 15-minute talks). For more info see <https://coloscisoc.org/>.

Sat., Sept. 28, 9 a.m. – 3 p.m., "Scout Day" at Dinosaur Ridge. Join us for Scout Day at Dinosaur Ridge. Scouts of all ages will have a fun-filled day of geology and paleontology. Cub Scouts and Webelos will be able to earn belt loops and academic pins. Boy Scouts will be able to earn their Geology Merit Badges. There will be amazing vendors such as: Mr. Bones, Western Interior Paleontological Society, USGS, Wildlife Experience, Rocky Mountain Bird Observatory plus Dinosaur Ridge volunteers at the paleontological sites along the Ridge AND manning hands-on activities such as gold panning, metal detecting, track painting, and fossil sifting at our Main Visitor Center. For more info, and to register in advance (\$6 for Scouts, \$5 for non-Scout accompanying friends/family) see <http://dinoridge.org/scout-day/>

Sat.-Sun., Oct. 5-6, Colorado Scientific Society will host a weekend field trip, "Geology and Geoheritage of the Florissant-Cañon City-Florence area". It will include Florissant Fossil Beds National Monument; Skyline Drive by Cañon City; Royal Gorge; the Florence coal, oil, and gas basin; the Cope-Marsh quarries at Garden Park; and the Cripple Creek and Victor Gold Mine. You must be a CSS member to take part, but anyone may join the Society if they wish to go on the trip; see <http://coloscisoc.org/>

Tues., Oct. 8, 7:00-9:00 p.m. Western Museum of Mining and Industry Speakers' Bureau Lecture: "**Cripple Creek's Cresson Mine: The Untold Stories**", by Ben Elick. WMMI, 225 North Gate Rd., Colorado Springs. \$5 per person, free to museum members. RSVP to 718-488-0880 or rsvp@wmmi.org; to book in advance: <https://fareharbor.com/embeds/book/wmmi/items/108438/calendar/?flow=41147>

Oct. 13-19 is the annual **Earth Science Week**. I (Pete Modreski) will be leading a geology hike/field trip for the public sometime during or around this week--details TBA.

Sat., Oct. 19, 9 a.m. – 3 p.m., "Girl Scout Day" at Dinosaur Ridge. An event similar to Scout Day on Sept. 28; more info about this day will be forthcoming.

Mon., Oct. 28, 3:00-4:00 p.m., Denver Museum of Nature & Science Earth Sciences Colloquium, Physical processes in carbonate sediments: Ooids, mud, hurricanes, and more, by Lizzy Trower, CU Boulder. All are welcome. VIP Room at DMNS.

CSMS CLUB PICNIC 2019

On August 24 our club held their annual picnic and “rock exchange” at the Western Museum of Mining and Industry (WMMI). About 25 people showed up with good food, great mineral specimens, and an enjoyable time was had by all!

CSMS President Sharon Holte presented our yearly \$500.00 donation to the Western Museum of Mining and Industry—I would hate to see the ATM needed to deposit that check :-)



Several members brought mineral specimens for viewing and/or trade; including some exquisite hand-crafted jewelry presented by longtime CSMS member Bill Arnson.



(Left) A group of three Pebble Pups and Roger Pittman enjoying the picnic.

(Right) The weather was just about perfect for a Saturday morning outing! We look forward to next year's event.



PHILIPSBORNITE, OSARIZAWAITE, AURICHALCITE: GRAND CANYON, ARIZONA



Mike Nelson csrockguy@yahoo.com

It is always nice to run across minerals at a show that you recognize as coming from a mine or area that no longer is available for collecting. At the 2019 Tucson Show I was rummaging around and was delighted to find a specimen of philipsbornite (an arsenate) that was collected from the Grandview Mine in northern Arizona. I then remembered that somewhere in my home collection there was a specimen of aurichalcite from the Grandview that I had picked up at the Colorado Springs show a few years ago. That little tidbit may seem insignificant to many readers; however, The Grandview Mine (AKA Last Chance Mine, Canyon Copper Mine) is located on Horseshoe Mesa in Grand Canyon National Park. Most of us know that mineral collecting is prohibited in national parks. So, how did these specimens arrive in my collection? A United States National Park Service (NPS) sign above the mine states: "In 1890 prospector Pete Berry staked the Last Chance copper claim 3,000 feet below you on Horseshoe Mesa. The Last Chance Mine began a 17-year flurry of activity here at Grandview Point.

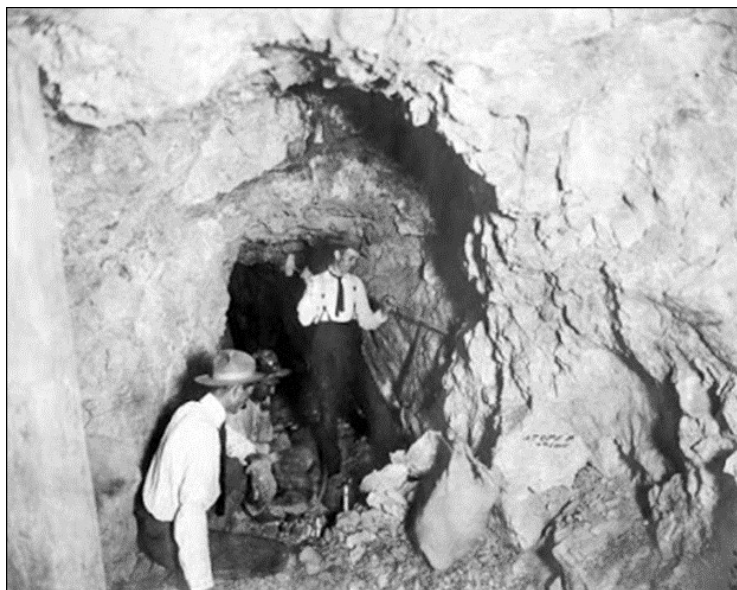
For a few years the Last Chance Mine thrived. The ore was rich; it claimed a World Fair's prize in Chicago in 1893 for being over 70% pure copper. But the high cost of packing ore to the rim, then shipping it to be refined, doomed the operation. Berry and his partners sold the mine in 1901 to Canyon Copper Company. The new owners continued mining but ceased when copper prices plunged in 1907.

Mining on Horseshoe Mesa, though short-lived, had a lasting impact. Grandview became Grand Canyon's most



ABOVE: Grandview (Last Chance) Mine ca. 1900. Photo courtesy of Minegates.com.

popular tourist area for about 10 years when Grand Canyon tourism was in its infancy. [Along with his mining endeavors, Berry and wife Martha started a tourist business at Grandview Point in the early 1890s that remained the South Rim's most popular destination until 1901. (Anderson, 2000)]



ABOVE: Miners working in Stope B, 4th level in 1906. Photo courtesy of Grand Canyon National Park Museum Collection.

Mining on Horseshoe Mesa, though short-lived, had a lasting impact. Grandview became Grand Canyon's most popular tourist area for about 10 years when Grand Canyon tourism was in its infancy. [Along with his mining endeavors, Berry and wife Martha started a tourist business at Grandview Point in the early 1890s that remained the South Rim's most

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PEBBLE PUPS CORNER



CSMS Pebble Pups & Earth Science Scholars

The Earth Science Scholars & Pebble Pups meet at the Mt. Carmel Veterans Center every THIRD Thursday at 5:30 PM until 6:15 PM or so. We only meet during the academic year, and we include January. So, it is Sept through May.

Special announcements and field trips are noted on our blog:

<http://pebblepups.blogspot.com>

and through the CSMS website: <http://www.csms1936.com>

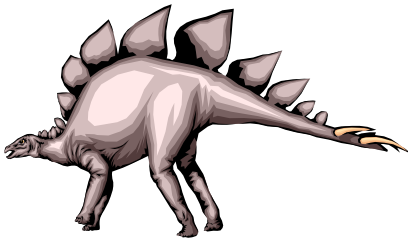
Cripple Creek Park and Recreation Department Presents

A Geoscience Adventure Class

Field Studies in Paleontology:

Exploring the Shelf Road

From Cripple Creek to Garden Park, Colorado



Hot Science
cool Programs!

September 7, 2019



Starting in Cripple Creek, this outdoor excursion offers an unsurpassed opportunity to explore the geological and paleontological wonders along the Shelf Road. The class will begin with a brief discussion of local gold mining operations, rocks, minerals, and fossils. The group will then set off for observation points south of Cripple Creek to explore geological features spanning millions of years. The field trip down the Shelf Road is a perfect route to investigate rocks, an ancient seabed, and incredible fossils. Participants will follow old wagon roads used to haul dinosaur bones from Garden Park to Cañon City, explore a site where dinosaur bones were quarried, and investigate nearby dinosaur tracks.

(CONTINUED ON PAGE 7)

Participants will board a park and recreation bus and begin exploring the back country of Cripple Creek, and then travel down the Shelf Road with many stops and photo opportunities.

The basics of paleontology will be reviewed while in the field.

Collecting techniques and field photography will be demonstrated.

Participants can collect specimens at several stops.

Regional geology will be reviewed from overlooks in the area.

Several archaeological sites will be examined along the way.

This class is perfect for teachers K-12 (recertification credits: 0.5 semester credit hour available through the Colorado School of Mines for additional fee (\$40.00) payable at start of the class).

Date: **September 7, 2019**

Time: **8:30 am to 6:00 pm**

Place: June Hack Community Center in Cripple Creek
128 E. Bennett Avenue, Cripple Creek, CO 80813

Fee: \$45.00 adults, \$12 students (high school and middle school) includes field guide, and transportation from Cripple Creek to field sites. Snacks will be served on board the bus.

Register: Call Cripple Creek Parks and Recreation at 719-689-3514 today. This class will fill quickly. Payment of registration fee in advance is the only way to reserve your spot on the trip.

Please bring a sack lunch to enjoy. The bus will return to Cripple Creek around 6 p.m. If you wish to stay after class, Cripple Creek offers many interesting diversions.



popular destination until 1901. (Anderson, 2000)] The Grandview Trail, built by Last Chance miners to reach their mines now serves thousands of hikers each year.”

Ascarza (2014) noted that “Ore was transported from the drifts to the top of Horseshoe Mesa using a mule-powered hoist, then taken by pack train on the four-mile long Grandview Trail. The mules carried 200 pounds of ore per trip, averaging a trip and a half a day. Afterwards, the concentrate was hauled by wagon to Apex Junction and shipped by rail to the El Paso smelter.”

Ross (1972), in nominating the mine area for the National Register of Historic Places, stated: “A few years later [after 1907], William Randolph Hearst acquired the property and in 1940, he sold it to the National Park Service.” I was uncertain about the mine history from 1907 to 1940 until I located some NPS historical documents that noted: “William Randolph Hearst’s acquisition of Pete Berry’s and the Canyon Copper Company’s patented lands in 1913, totaling 207.7 acres, posed a much greater threat as the newspaper magnate clearly had the political clout to disregard informal pressure and the capital to develop anything he wished. Hearst did taunt the NPS with rumors of grand developmental schemes but generally cooperated with authorities, agreeing to exchange 48.9 acres at Grandview Point for 25.8 acres elsewhere in 1926, and occasionally discussed the gift or sale of his lands to the government. Cooperation vanished, however, when Hearst’s attorneys once again broached the subject of a sale and the NPS responded with a Declaration of Taking in September 1939. Park officials sustained criticism from the regional press, chambers of commerce, local residents, and the county board of supervisors for employing condemnation, the only time it has done so in park history, and for offering only \$25,000 for the prime real estate. Hearst’s appraisers estimated its value at \$367,000, and his lawyers fought for the higher figure until October 1941, when federal judge David W. Ling ordered the payment of \$85,000. The taking, however, was legally effected in July 1940.” (National Park Service, 2019).

I presume then, that collecting of minerals from the Grandview Mine became illegal after the incorporation into Grand Canyon National Park (although I noted a specimen shown on MinDat.org was collected in 1966, another in 1997). However, many years ago I asked geologists in Arizona about Grandview specimens seeing daylight. A few informed me that collectors and/or tourists had often visited the mine after 1940 and illegal collecting did not finally cease until “bat gates” were installed in 2009. These gates protect the Townsend’s Long-eared bat colony, and various cultural artifacts, while keeping out human trespassers.



ABOVE: A bat gate worker ogles a nice specimen left in the Grandview Mine. Sorry you can’t take it home! Photo courtesy of Minegates.com.



ABOVE: Bat gate installed during 2009. Photo courtesy of National Park Service Resource Management.

As I understand the situation (sometimes that is a stretch) the copper minerals at the Grandview Mine were concentrated in breccia zones situated alongside structural flexing features. MinDat.org stated, and this is important later on in this story, the “ore body is a pipe-like body [entirely] hosted in the upper Redwall Limestone.” The Grandview Mine is the most famous mineral locality of these breccia pipes (Anthony and others, 1995) and is associated with the Breccia Pipe Uranium District described by Wenrich and others (2018) and presented at the Metallic Ore Deposits of the American Southwest Symposium sponsored by the Friends of Mineralogy, Colorado Chapter. I attended the August symposium but do not remember if she specifically mentioned the Grandview Mine.

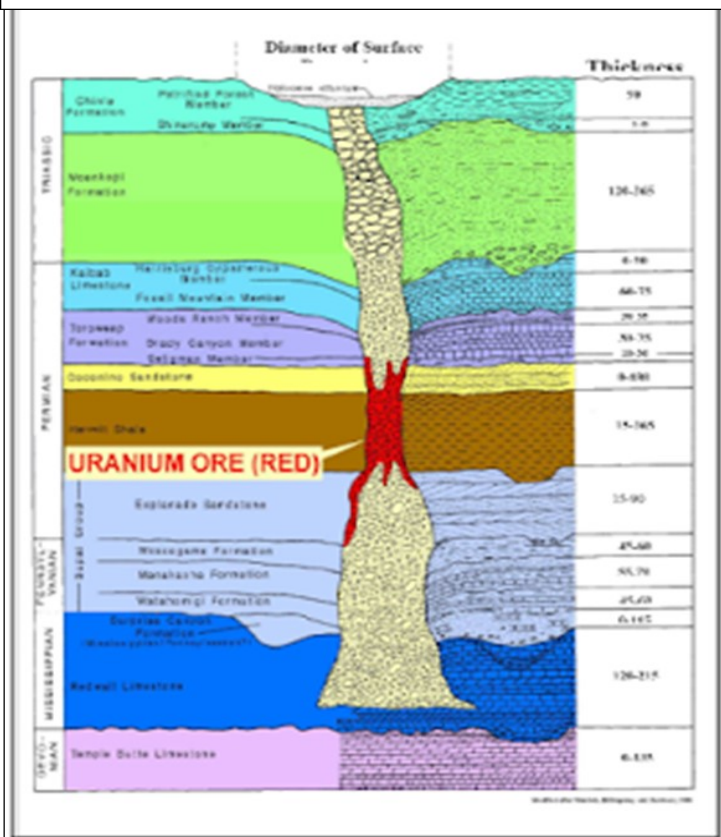
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Wenrich and others (1992, 2018) noted “the northern Arizona metallic district can be thought of as a paleo-karst terrain, pock-marked with sink holes, where in this case most “holes” represent a collapse feature that has bottomed out over 3000 ft (850 m) below the surface in the underlying Mississippian Redwall Limestone. These breccia pipes are vertical pipes that formed when the Paleozoic layers of sandstone, shale and limestone collapsed downward into underlying caverns.” The base-metal ores (copper and silver) may be related to, or similar to, Mississippi Valley Type deposits where emplacement of ores suggest low temperatures (as opposed to hydrothermal emplacement).

Besides the gold and silver the breccia pipes attracted the attention of the U.S. Atomic Energy Commission as they searched for uranium. “In 1951, the U. S. Atomic Energy Commission contracted with Dr. Russell Gibson, Harvard University to make a radiometric reconnaissance survey of “red bed” copper deposits in the south-western United States for their uranium content, and possible production capabilities. He examined 36 properties in 4 states -Arizona, New Mexico, Texas, and Oklahoma. Properties examined in Arizona were the Anita Mine, Grandview Mine, White Mesa district, and the Warm Springs district. The old Grandview copper mine in Grand Canyon National Park exhibited the greatest uranium concentration of all the 36 properties examined.” (Arizona Geological Survey, 2019). Perhaps even more interesting in today’s geopolitical world is that Rare Earth Elements (REEs), and especially Heavy Rare Earth Elements (HREEs), are significantly enriched in the uraninite (UO₂) found in many breccia pipes. “Mixing of oxidizing groundwaters from overlying sandstones with reducing brines that had entered the pipes due to dewatering of the Mississippian limestone created the uranium deposits.” (Weinrich and others, 2018). I wondered if REEs are also present at the Grandview Mine.

According to MinDat.org the Grandview Mine has produced 32 valid minerals and is the type locality of grandviewite, a copper aluminum sulfate (Cu₃Al₉(SO₄)₂(OH)₂₉). Anthony and others (1995) noted that erosion has removed large amounts of overlying rock and has resulted in the oxidation of the primary minerals. A suite of secondary copper, zinc, iron, uranium, and arsenic minerals such as cyanotrichite, brochantite, chalcoalumite, langite, metazeunerite, scorodite, olivinite, and adamite was then preserved. MinDat did not list uraninite as occurring in the pipe—with good reason, I guess! Weinrich and others (1992) believed that breccia pipes restricted to the Redwall Limestone have little or no uranium and REE potential (see above diagram). The few Redwall pipes that do contain elevated gamma radiation (as

SCHEMATIC CROSS-SECTION OF A “TYPICAL” BRECCIA PIPE



The breccia pipe at Grandview is restricted to the Redwall Limestone (the dark blue layer near the bottom). The uranium (the red blob in the brown layer near the middle), and hence the REEs and HREEs, accumulates in rocks younger than the Redwall and higher in the stratigraphic section, Weinrich and others (2018) describe this schematic drawing as representing a typical, “complete” breccia pipe.

at Grandview), have anomalies are entirely restricted to down dropped sandstone blocks from the Surprise Canyon Formation or the lower part of the Supai Group.

One of the specimens in my collection from the Grandview Mine is aurichalcite, a secondary zinc copper carbonate [(Zn,Cu)₅(CO₃)₂(OH)₆]. The crystals are pale green-blue, prismatic and lath-like that often radiate from a single point and cover the matrix (??gypsum). They are “typical looking” aurichalcite crystals.

The really interesting specimen I acquired from Grandview is the rare lead aluminum arsenate, philipsbornite [PbAl₂(AsO₄)AsO₃OH)(OH)₆]. Philipsbornite is usually associated with lead deposits as a secondary mineral such as at the Red Lead Mine in Tasmania, Australia (home of the famous crocoite). Although several articles refer to the Grand-

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2019 CSMS OFFICERS

Sharon Holte, President
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Sarah Shilling, Secretary
Ann Proctor, Treasurer
Adelaide Bahr, Membership Secretary
Taylor Harper, Editor
Laurann Briding, Member-at-Large
Bill Arnson, Member-at-Large
Ernie Hanlon, Past President

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John Massie, Show Volunteer Coordinator
Mike Webb, Field Trip Coordinator
Steven Veatch, Science Fair Chair
Frank & Ellie Rosenberg, Librarians
Mark Schultz, Social Committee Chair
Ann Proctor, Store Keeper
Lisa Kinder, Show Chairman
Lisa Kinder, Webmaster
Lisa Kinder, Facebook Keeper
Mike Nelson, Federation Representative
TBD, Federation Representative

SECRETARY'S SPOT by Sarah Shilling

General Meeting Minutes for the
Colorado Springs Mineralogical
Society - 7/17/2019

CSMS General Assembly Meeting

The Colorado Springs Mineralogical Society General Assembly meeting took place July 17, 2019 at Mt Carmel Veteran's Service Center. The meeting was called to order by our President, Sharon Holte, at 7:00 PM. The Pledge of Allegiance was led by our Vice President, John Massie. There were 32 members in attendance. Two new members were introduced, Karen Imgrund and Al Wetzel. There were no guests in attendance. The program of the evening was "A Collector's View of Colorado Minerals", presented by Roger Pittman. The script recording of the presentation was read by the late Ray Berry, a longtime member of CSMS.

The meeting took a break for refreshments and socializing, and Sharon handed out five door prizes. Sarah Shilling was introduced as the new Secretary, appointed by Sharon Holte. We are still in need of an additional Field Trip Coordinator to help Mike Webb. President Sharon Holte announced there will be a Post Meeting regarding the show, held in between the Pebble Pups and General Assembly meetings in September. We will have a Potluck Picnic in August in place of our regular meeting, with a silent auction and tailgate sales. Please BYO drinks and chairs, and Taylor Harper will send out more information as it comes available. If you are not receiving blast-o-grams or monthly newsletters, please reach out to Taylor Harper to get added to the list.

Our Speakers for the next few meetings: September- Bob Hickey will present on Volcanoes, October- Ben Elick will present the History of CSMS Pebble Pups, and November will be Tracie Cardwell. The Crystal group will meet next in September, with a Show & Tell of your best summer finds. John announced that the faceting group has a club machine that may be rented out for 30 days, and he also will give lessons. Please see him for more details. Pebble Pups will resume meetings in September, more details to come. Jerry Suchan will be leading the Fossil Group in August with a presentation of the Paleozoic Geology of the Front Range. The Jewelry Group is led by Bill Arnson by appointment only. Sharon Holte receives calls on Sunday evenings after 6:30 pm to make appointments for the Jewelry Group. The library is run by Frank & Ellie Rosenberg, who are currently enjoying a trip in Australia. Our Storekeeper, Ann Proctor, will have a report in January. There were no unfinished business items, and no new business introduced. The meeting was adjourned by our President Sharon Holte at 8:24 pm.

2019 SATELLITE GROUP CHAIRPERSONS

Crystal, Kevin Witte/Bob Germano

Faceting, John Massie/Doreen Schmidt

Fossil, Jerry Suchan/Joyce Price

Jewelry, Bill Arnson

Lapidary, Sharon Holte

Pebble Pups, Steven Veatch/
Betty Marchant

2019 CSMS LIAISONS

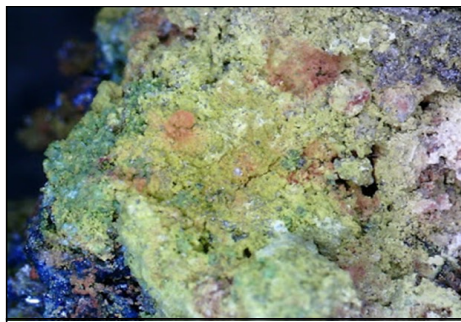
Florissant Fossil Beds
National Monument, Steven Veatch

Western Museum of
Mining & Industry, Steven Veatch


view Mine as the single locality in the U.S. for philipsbornite, recent notes have indicated a second locality in Montana (see MinDat.org).

Philipsbornite from Grandview is usually an earthy mass of tiny, yellow to yellow-orange, indistinguishable crystals. If not in an earthy mass, it can be somewhat hard at ~4.5 (Mohs) and have a vitreous luster. It just looks sort of dull except that it is studded with blue crystals that have been identified as osarizawaite and green aggregates that may be brochantite. Now, osarizawaite (an iron aluminum copper sulfate; $\text{Pb}(\text{Al}_2\text{Cu})(\text{SO}_4)_2(\text{OH})_6$) is usually listed as having green or teal blue or green-yellow color. However, a Michael Kline photo on the MinDat.org Grandview Mine gallery describes his specimen

as “Yellowish clusters of minute Philipsbornite with blue Osarizawaite and green Brochantite.” Description of a similar specimen shown on findin-grocks.com states, “the Osarizawaite is the finest I’ve seen for the species, featuring crystals of unusual size, form, clarity, and color-- deep blue!”



The photomicrograph above shows earthy, vuggy, yellow, yellow-tan philipsbornite with scattered blue crystals of osarizawaite. Width FOV ~8 mm.

There are specimens from the Grandview Mine out there in the mineral world, but they do not often appear on the market. With the bat gates now locked, and collecting prohibited, any specimen is probably from some collector breaking up their collection. However, I noted that in 2010 more than 1,200 mineral specimens from the Grandview Mine were added to the Grand Canyon National Park’s Museum Collection (Grand Canyon National Park, 2012). 



Photomicrograph showing aurichalcite individual crystals. Width FOV ~7 mm.

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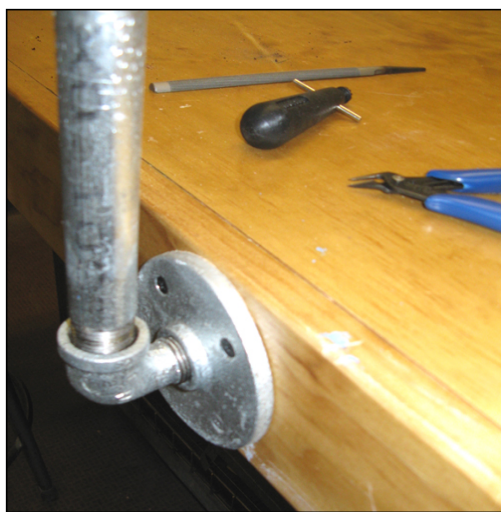
Brad's Bench Tips

FOREDOM STAND

A quick and easy way to suspend a flexshaft over your jewelry bench is to use some steel pipe components from the hardware store. You can buy it today, attaches with a couple screws, and only costs about \$10



I use 1/2 inch galvanized pipe and fittings. To build a stand that attaches to the top of your bench, all you'll need is a flange and a thirty inch length of the pipe. If you prefer a stand that attaches to the side of your bench, you'll need a little longer pipe, three foot, a flange, and a 90 degree "street elle".



Finally, make a hook that goes into the top of the pipe to hang the motor from. You can use heavy coat hanger wire or 1/8 steel rod from the hardware store.

BROKEN DRILLS

Have you ever broken a drill bit off in a hole? Sometimes you can grab it with pliers, but other times the steel piece is below the surface in the hole. If this happens, a quick fix is to dissolve the steel in a solution of alum or fresh pickle. The solution will not affect your silver or gold piece.

Alum is typically available from a food store. It's used to preserve some foods. Use about a tablespoon per cup of warm water. Submerge your piece so that the partially drilled hole is facing up to let the bubbles float free and not block the hole.



**Work Smarter & Be More Productive With Brad's
"How To" Jewelry Books**
[Amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)

Our Staff...

Taylor Harper—Editor

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

Share your experiences, your new finds, or simply your enjoyment of 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 **20th of the preceeding-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 can be submitted at resolutions above 200 dpi in ANY format.

Articles are preferred in MS Publisher, but the editor 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 2017 or 2018, you are eligible for your one year pin award!

Please see Storekeeper,
Ann Proctor

Classifieds & Announcements



I have JARVI Facetron machine (96) with dial indicator which I am looking to sell. It has never been used and is in mint-new condition (I always thought I'd get around to it and I never did). It comes complete with: Variable axis preformer with compounder block, 260 grit lap, 600 grit lap, 1200 grit lap, Corian lap 8" polishing lap, minimast, digital protractor, two quart water coolant system, urethane splash bowl, dop chuck with exclusive cam lock system, micro-height adjustment, powerful permanent magnet motor. Base is 12"x 18"x half-inch cast aluminum. Also would include all dop sticks, bits and miscellaneous related equipment. I purchased this in 2009 for \$2850 (but it has never been used except to test run the motor when I first got it). **I would be willing to sell it for cash for \$1500 inclusive.**

If you know if anyone in the club who might be interested, I would appreciate it if you could pass this information along.

email: petroman76@msn.com

73rd Grand Junction Gem & Mineral Show

Have a Blast!

September 21 & 22, 2019
Sat. 9am-5pm; Sun. 10am - 4pm

- Jewelry ■ Beads
- Fossils
- Rock & Mineral Specimens
- Tools & Equipment
- Kids Activities
- Interactive Exhibits
- Displays

A Non-Profit Supporting the Earth Sciences
Mesa County Fairgrounds, 2785 Hwy. 50, Grand Junction, CO

Adults \$5, Sr. & Mil. \$4, Kids under 12 Free



PICK&PACK
P.O. Box 2
COLORADO SPRINGS, CO 80901-0002

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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 Mt. Carmel Center of Excellence, 530 Communication Circle, Colorado Springs, CO 80905. (Starting (9/21/2017) **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, 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.csms1936.com

Colorado Springs Mineralogical Society 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