PICK&PACK

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CSMS General Assembly

Thursday, October 18, 7:00 PM

Speaker: Steven Veatch

Topic: The Greater Alma Mining District: A Colorado Mining Legend

Please note: Members whose last names begin with M—Z are responsible for refreshments in October

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

Inside this Issue:

OCTOBER PROGRAM

The Greater Alma Mining District: A Colorado Mining Legend

By Steven Wade Veatch

The first gold strike in Park County, Colorado was on the eastern slope of the Mosquito Range in the northwest part of the county at Buckskin Gulch in 1859—the same year the "Pikes Peak or Bust" gold rush started. This remote area of mountains, streams, and forests was still part of Kansas Territory when a number of mining camps were established. The Greater Alma District included the Alma Placers, Montgomery, Buckskin, Horseshoe, Mosquito, and the Pennsylvania subdistricts. The extremes of the landscape presented harsh conditions to those who came to mine gold, silver, and other valuable mineral deposits. People came and established frontier mining districts, built towns, and created roads and rail routes. All this activity, combined with other mining camps in the region, accelerated the settlement

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CSMS Calendar

October & November 2018

Thu., Oct. 4, Nov. 1 — Board Meeting, 7p.m., Pikes Peak United Methodist Church

Tue., Oct. 2, Nov. 6 — Fossil Group, 7p.m., Methodist Church, Jerry Suchan, 303 648-3410

Thu., Oct. 18, Nov. 15 — Pebble Pups & Jrs, 5:30p.m., Mt. Carmel Ctr., Steve Veatch, 719 748-5010

Thu., Oct 18, Nov. 15 — General Assembly, 7p.m., Mt. Carmel Center

Thu., Oct. 25, Nov. TBA — Crystal Group, 7p.m., Mt. Carmel Center, Kevin Witte, 719 638-7919

Thu., Oct. 25, Nov. TBA — Faceting Group 7p.m., TBA John Massie, 719 338-4276

Note: The Micromount Group is not meeting at this time. If you are interested in meeting, please call Dave Olsen, 719 495-8720

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, csms1936.com

Upcoming Events of Interest to CSMS Members

Submitted by Pete Modreski

Mon., Oct. 1, 7:00 p.m., monthly meeting of DREGS (Denver Region Exploration Geologists' Society), featuring **Hydrothermal evolution of pyrite-quartz veins and gold-bearingbase-metal veins in the Central City District, Colorado**, by Dr. Alexander Gysi. Berthoud Hall Room 241, Colorado School of Mines campus, Golden; social time at 6 p.m., program at 7. All are welcome.

Wed., Oct. 3, 4:00 p.m., CU Geological Sciences Colloquium,**. "Rifts basins, volcanoes and hominin diversity in Pliocene Ethiopia"**, by Naomi Levin, University of Michigan. Benson Earth Sciences Building, Room 180; refreshments follow meeting; all welcome.

Thurs., Oct. 4, 4:00 p.m., **Water, Climate, Food, Energy, Society: A Case Study of Sri Lanka**, by George Hornberger, Vanderbilt Institute for Energy & Environment. Van Tuyl lecture at Colorado School of Mines, Berthoud Hall Room 241, all welcome.

Thurs., Oct. 4, 7:00 p.m., Colorado School of Mines Geology Museum, "First Thursday" lecture series, **Huge explosive eruptions: Their nature and effects**, by Tom Casadevall, USGS Scientist Emeritus. CSM Geology Museum, 1310 Maple St., Golden, Room GRL 201 (the large conference room across the hall from the Museum). Socializing at 6:30 p.m., program at 7:00. All are welcome.

Fri., Oct. 5, 3:00 p.m., Denver Museum of Nature & Science, Earth Science Colloquium, **Colorado's Triassic Paradox: The salty evolution of the Moenkopi Fm.**, by Rob Fillmore, Western State Colorado University. VIP Room, museum admission not required. **NOTICE, THIS OCT. 5 TALK IS CANCELLED, DUE TO ILLNESS OF THE SPEAKER** (will be rescheduled later). See http://www.dmns.org/science/research/earth-sciences/ for the schedule of DMNS Colloquia for the rest of the year:

Fri., Oct. 12, Tectonics and Stratigraphy of the Denver Basin: Insights from Zircons and Apatites by Glenn Sharman, University of Arkansas. 3rd floor Community Room, 3–4 p.m.

Thurs., Nov. 15, Mammals Inherit the Earth: How the K/Pg Mass Extinction Killed off Dinosaurs and Opened the Way for Mammals ,by Greg Wilson, University of Washington. VIP Room, 3–4 p.m.

Mon., Dec. 3, The Improbable Fossil Record of Jellyfish and Their Kin, by Graham Young, Manitoba Museum.

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VIP Room, 3–4 p.m.

Tues., Oct. 9, 6-8 p.m., at "Golden Beer Talks", Windy Saddle Café, 1110 Washington Ave., Golden, **Applying Geological Exploration Methods Towards Locating Clandestine Graves Related to Homicide Investigations**, by Jim Reed, Director of R&D at RockWare, Inc, a geological software development and consulting company with offices in Golden, Colorado and Lugano, Switzerland. See http://goldenbeertalks.org/; "Golden's grassroots version of TED talks, expand your mind with a beer in your hand".

Sat., Oct. 13, 9 a.m. – 3 p.m., **Dinosaur Discovery Day** at Dinosaur Ridge, featuring "**Girl Scout Day**". Public tour day at Dinosaur Ridge, 16831 W. Alameda Parkway, Morrison. Walk up and down the Ridge to see interpretive guides explain the various fossil and geology stations, or ride a guided shuttle up and/or back for $4. There will be special activities and earth science badges to complete for Girl Scouts, who may register in advance [$6 for Scouts to register]. See www.dinoridge.org for more info.

Sat., Oct. 13, 10 a.m. – 4 p.m., **"Dan's Used Rocks, 20th Anniversary Open House & Mineral Sale"**. 12296 W. Mississippi Ave., Lakewood CO; email dansrocks@comcast.net . All are welcome. "Celebrating 20 years in business with hundred of specimens at 50% or more off, dozens of inexpensive flat lots, some one-time only deals, and of course plenty of food and drink."

Tues., Oct. 16, and Wed., Oct. 17, two short after-work **Geology Hikes** for the public will be held for the occasion of Earth Science Week, which runs Oct. 14-20. Meet at 5 p.m.; on Oct. 16, at the "Sleeping Elk Trailhead" at 18th St. & Belvedere St., Golden, for a hike up to the top of "Castle Rock" on South Table Mountain. Meet at 5 p.m. on Oct. 17 at the Rooney Road Trailhead on S. Rooney Road (Lakewood/Morrison/Golden), south of W. Colfax and I-70 and north of Alameda Parkway, for a short hike along the Green Mountain Trail. Back by dusk. For more information or if weather is questionable, contact USGS geologist Pete Modreski, pmodreski@usgs.gov, office 303-202-4766, cell 720-205-2553.

Thurs., Oct. 18, 7:00 p.m., **Colorado Scientific Society** October meeting, **"Structural Geology of Colorado"** by Ned Sterne, plus "**Electric log cross sections of Colorado"** by Steve Cumella. Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood; all are welcome.

Sat., Oct. 20, 12 noon**, Littleton Gem & Mineral Club, silent and verbal auction**. Columbine Hills Church, 9700 Old Coal Mine Avenue, Littleton, CO. Seller setups (club retains 20% commission) at 11, silent auction begins at noon, verbal auction at 1 p.m., checkout starts at 3:30 p.m. All are welcome.

Fri., Nov. 9, Colorado Science Conference for Professional Development. Held at the Denver Mart, 451 E. 58th Ave., Denver; for all science educators. For full information and registration website see http://coloradoscienceconference.org/ .

Nov. 10-11, 39th annual New Mexico Mineral Symposium, at New Mexico Institute of Mining & Technology, Socorro, NM; see https://geoinfo.nmt.edu/museum/minsymp/home.cfml .

Wed., Nov. 14, 7:30 p.m., **Friends of Mineralogy, Colorado Chapter** bimonthly meeting; **"Still Crazy (about Franklin) after all these years: The minerals of Franklin and Sterling Hill, New Jersey**", by Carl (Bob) Carnein. Lakeview Event Center, 7864 W. Jewell Ave., Lakewood CO; all welcome.

Thurs. Nov. 15, 7:00 p.m., Colorado Scientific Society November meeting, **"Geothermal Energy**", by Jeff Winick, DOE, plus a possible 2nd speaker. Shepherd of the Hills Church, 11500 W. 20th Ave.,Lakewood.

Nov. 16-18, **Denver Area Mineral Dealers Show,** Jefferson County Fairgrounds, Golden CO**.** Free admission, public welcome.

Worth noting: the Program, Abstracts, and Field Trip Guides, for the recent Aug. 4-5, 2018 symposium, "**Minerals from the Metallic Ore Deposits of the American Southwest**" are available for free download at the Friends of Mineralogy, Colorado Chapter, website, at http://friendsofmineralogycolorado.org/mmodas/ . Video recordings of the oral presentations will also be available soon at the CSM Library website. Likewise, both the abstracts and field guides and video recordings of most presentations from last year's symposium, **"Gold and Silver Deposits in Colorado"** (July 20-24, 2017) are available for free viewing and download online via the Colorado School of Mines Library website, at https://dspace.library.colostate.edu/handle/11124/172170 .

For more lecture series during the year see: *(most of the universities and societies do not hold seminars during the summer, but some groups (Denver Mining Club, Florissant Scientific Society) continue to meet.*

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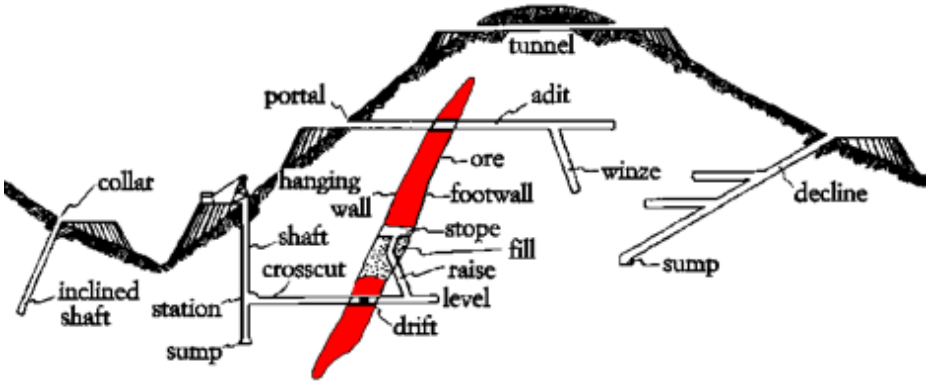
MINERALS FROM THE METALLIC ORE DEPOSITS OF THE AMERICAN SOUTHWEST

Mike Nelson: Colorado Springs Mineralogical Society csrockguy@yahoo.com

I recently had the opportunity to attend the annual symposium sponsored by the Friends of Mineralogy-Colorado Chapter, the Colorado School of Mines Geology Museum (CSMGM), and the Friends of the Colorado School of Mines Geology Museum. The meeting, held on the campus of School of Mines, was entitled *Minerals from the Metallic Ore Deposits of the American Southwest.* Rather than focus just on the ore minerals, the speakers presented quality information about the accessory minerals present at the mines. All speakers had tremendous photos (including many photomicrographs) of both the ore minerals and the accessory minerals. The meeting was well planned, parking (on the weekend was free) was available, lunch was close by, break snacks were plentiful and tasty, and the camaraderie among attedees was quite evident. As a soft rock paleo person, I certainly enjoyed learning from mineralogy professionals and experienced rock hounds with much more mineral knowledge than is stuffed in my noggin.

Mark Ivan Jacobson, one of Colorado's pegmatite specialists, served as meeting moderator and introduced Ed Raines, a wonderful and informative storyteller who was the perfect speaker to lead off the sessions. Ed is currently the Curator and Collections Manager for the CSMGM and has a wealth of information he is willing to share about Colorado mines and minerals.

To begin his presentation, *Frontier Mining Methods*, Ed gave a little history and terminology review for the non-miners like me. I finally learned something about stopes, winzes and adits. The following diagram was nabbed from the Internet (imagersizetool.com) but does not approach the more detailed diagram featured in his talk; however, it gives some understanding to the complex terminology.



I was fascinated with the history of mining in the southwest but what stuck in my mind was how dangerous hard rock mining was, and probably still is! In order to drill holes for setting the charges (to "blow off" chunks of rock), single miners used a steel star drill (the jack) and whapped it with an 8-pound sledge hammer. They then rotated it a quarter turn and whopped it again. This was a slow process, so someone decided teams of two men (females were never allowed in the mine) might be able to drill holes at a faster rate. So, the shaker held the star drill while the hammer man hit it with a larger sledge hammer, maybe 16 pounds. At times, there were two hammer men taking alternate turns whopping the drill—all of this activity took place with the light furnished, in the early days, by candles. I presume, but am uncertain, that newly hired miners served as the shakers! Got to trust the hammer man!!

Two miners with a star drill punching holes for the charges. Drawing courtesy of nevada-outback-gems.com.

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The next step in hard rock mining involved replacing the double jack miners with pneumatic drills powered by compressors supplying air through hoses. The pneumatic drills allowed the bit to hammer, rather than turn, and this action produced a large amount of dust that was inhaled by the miners and often produced a disease called silicosis. Nasty stuff that killed many miners.

Eventually someone thought of putting a hole through the center of the drill iron and pumping water to mix with the dust and produce a slurry. This action created quite a mess in the mine, but it did control the dust and silicosis.

After the charges and dust had settled down muckers came in and loaded the fragments of rock and pushed (later mules were used) the ore cars to a dump station where it was transferred to locations where the metals were extracted.

Ore muckers with their cart. Probably a posed photo before starting work as their clothes are clean. Photo courtesy of miningartifacts.org.

I have not collected many minerals from New Mexico and therefore knew very little about the Cook's Peak locality in Luna County, New Mexico, part of the Basin and Range. Phil Simmons seemed quite excited about the gangue minerals he is collecting from the old lead-silver-zinc mines ($4.2 million), especially the fluorite. A recent discovery of sidwellite, a rare molybdenum oxide [MoO_3-$2H_2O$], is also noteworthy.

Since I have a great interest in minerals from Utah, I especially appreciated Brent Thorne's presentation on the secondary minerals found in the Tintic (copper, lead and gold) and Ophir (lead and zinc) mining districts. Brent is a fantastic photographer (3,800 photos on MinDat.org) and specializes in photomicrographs of some pretty exotic and rare minerals (discovered and co-discovered 15 new mineral species). His photomicrographs were of specific minerals scaled in microns (1000 microns are equal to 1 mm). Unfortunately, my digital camera cannot come close to producing photomicrographs of this scale!

The geology of the Mining Districts is related to several large volcanoes that erupted in much of western Utah during the early Oligocene (Hintze and Kowallis, 2009) and covered Paleozoic rocks that were folded and faulted by an earlier mountain building event termed the Sevier Orogeny (Cretaceous). During the later Oligocene, these volcanoes began collapsing and large calderas formed. The hydrothermal solutions associated with the volcanics followed the cracks and faults in the Paleozoic rocks and helped dissolve portions of the limestones. As these solutions cooled the minerals began to crystallize forming the ore bodies in the host rock.

One of the smaller mines in the Tintic District is the Carissa, a mine found on the slope of Mammoth Peak, home of the well-known Mammoth Mine. It was connected by a tunnel to its more productive neighbor, the Northern Spy Mine. Carissa may not have been a large gold-silver producer; however, it was, in later years, a specimen producer of very nice crystals of the arsenates: adamite [$(Zn,Cu)_2AsO_4OH$], conichalcite [(CaCuAsO4(OH)], mimetite [$Pb_5(AsO_4)_3Cl$], olivenite [CuAsO4(OH)], mixite [$Cu_6Bi(AsO_4)_3(OH)_6$-3H2O)], and the copper carbonates rosasite [$(Cu,Zn)_2(CO_3)(OH)_2$]

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and azurite [$Cu_3(CO_3)_2(OH)_2$]. All of these minerals are secondary and found in the oxidation zone where primary lead (argentiferous galena), zinc (hemimorphite?), bismuth (bismuth) and copper (copper, cuprite, enargite) were present. The enargite [Cu_3AsS_4] could also have provided the arsenic for the arsenate (AsO_4) ion in the secondary minerals.

The copper zinc carbonate, rosasite (R) and the copper bismuth arsenate, mixite (M) from the Tintic district. FOV ~ 1 cm.

Dealers offering minerals “for sale” in many Colorado shows often display numerous chunks of fluorite. More than likely the larger hunks are labeled “Blanchard Blue” the signature mineral mined from the Blanchard Mine, Hansonburg District, Socorro County, New Mexico, Erin Delventhal presented information on the geology of the District (Pennsylvanian rocks on top of Proterozoic granite and gneiss), and the many secondary and gangue minerals of interest to collectors. It seems that hard rock miners could not make a living producing lead from galena; however, as a specimen mine the place is a tremendous producer best known for the fluorite [CaF_2] and the world’s largest known linerite crystals [$PbCu(SO_4)(OH)_2$]. Personally, I appreciate the fine specimens of brochantite [$Cu_4(SO_4)(OH)_6$].

Penetrating twins of galena, along with some cubes of fluorite, Royal Flush Mine, Hansonburg District, New Mexico. FOV ~2 cm.

Crystals of blue linerite and a spray of green brochantite. FOV ~1 cm (photomicrograph).

Sprays of brochantite on quartz terminations (photomicrograph). Width FOV ~1 cm.

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Robert Larson, a long-time geologist with much experience in southwestern Colorado, enlightened the audience with tales of exploration in the base metal mines of the San Juan Mountains. Robert explained how many rock hounds concentrated their searches for metallic minerals and overlooked the many accessory minerals available in the mine dumps. Some localities in the San Juans are famous for their pink specimens of a manganese carbonate, rhodochrosite [$MnCO_3$], and a manganese silicate, pyroxmangite [$MnSio_3$] (formally known as rhodonite). We also learned how the Sunnyside Mine, a rich gold mine, extended under Lake Emma—much to the apprehension of the knowledgeable miners. On Sunday, June 4, 1978, when all miners were off work, Lake Emma broke through a glacial flour plug into the mine and the resulting "toilet flush", completely emptied the Lake (but without loss of life).

Translucent green fluorite, Sunnyside Mine Group. Width ~2.9 cm.

Not many members attending the Symposium have visited the Republic of Kazakhstan, the largest country in central Asia! However, Bob Embry, a mining engineer, spent several years of his career working there. He also had time to explore the mines of the Magdalena District near Socorro, New Mexico, and presented information about mineral collecting, especially at the Kelly Mine. Although the Kelly was originally mined to produce gold, silver, copper, zinc and lead, it is best known to modern rock hounds as a specimen mine. Coloradans are very familiar with the Kelly as many groups have taken field trips to the area to collect the zinc carbonate, smithsonite [$ZnCO_3$].

Botryoidal smithsonite from the Kelly Mine. FOV ~2.1 cm.

The Carlin Trend in east-central Nevada is one of the largest gold- producing areas in the world and the top producer in the United States. According to presenter Jeffrey Blackmon, the Trend has produced over 100 million ounces of gold with another 30 million in reserve. The Carlin Trend has carbonaceous limestone-hosted gold supplied by hydrothermal action. Most of the gold is dissolved or disseminated in pyrite and/or arsenopyrite and is invisible to the naked eye.

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Blackmon noted that over 100 species of microminerals have been identified from Carlin Trend rocks; however, minerals favored by rock hounds include stibnite (antimony sulfide), cinnabar (mercury sulfide), barite (barium sulfate), realgar (arsenic sulfide) and orpiment (arsenic sulfide created by decay of realgar). Since Carlin Trend rocks are enriched in arsenic, antimony, mercury, barium and thallium, prospectors use these elements as indicators in their hunt for new gold deposits. In fact, the Carlin gold deposits have supplied the name Carlin Type Deposits to several other similar gold producing areas, both in the United States and internationally.

Carlin Type Deposits are enriched in arsenic. This specimen of realgar (arsenic sulfide) was collected from the Getchell Mine located in the Getchell Trend. The longest crystal in the photomicrograph in ~1 cm in length.

Karen Wenrich gave a quite technical presentation on the importance of Rare Earth Elements (REE) and uranium oxide in these rather strange/interesting solution collapse features found in northeastern Arizona. These small "sink holes" (maybe 300 feet in diameter) can extend for hundreds of feet in a vertical direction. She explained the collapse breccia inside the pipes perhaps contain 40% of the nation's known uranium resources. In addition, many pipes are rich in REE that could play a critically important role if supplies from China (producing over 90% of the world's supply and controlling the market prices) became non-importable. It seems as if these pipes really do not contain minerals of much interest to rock hounds.

After a long, but interesting day, the session adjourned and migrated to a nearby Inn for refreshments, the banquet, and a verbal auction of deaccessioned CSM minerals.

Sphalerite v. marmatite with minor siderite. Gilman District. Width ~5.1 cm.

Sunday morning brought back storyteller Ed Raines with a presentation on the Gilman District north of Leadville, an area well known to many Coloradans due to environmental concerns widely disseminated in the media. Gilman was the largest mining area in Eagle County and was first claimed in the 1870s by prospectors looking for similar rock associations (Leadville Limestone cooked by an igneous intrusion) as found at nearby Leadville. The mines originally produced silver and lead from an argentiferous (silver-bearing) galena. By around 1900 the oxidized ore was generally "mined out" (or so they thought). By 1905 production of zinc was going strong from iron-rich sphalerite called marmatite [(Zn,Fe)S] that produced spectacular shiny black crystals. Today one can easily still acquire specimens of siderite ($FeCO_3$), marmatite, and pyrite collected from Gilman. These early mined ore sulfides were mostly flat bodies (mantos) replacing portions of the Leadville Limestone. In the 1920s, rich chimney (vertical) deposits of copper and silver were discovered and mined until production ceased in 1981. The production of zinc had continued until 1974. Pro-

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duction over the years totals nearly 400,000 ounces of gold, 67.6 million ounces of silver, 212 million pounds of copper, 317 million pounds of lead, and 1.868 billion pounds of zinc, from 13.1 million tons of ore (Rodabaugh and others, 1968; Smith, 1977).

The second presentation of the morning again moved south to New Mexico basin and range country when Michael Michayluk talked about his collecting at mines situated along the Torpedo-Bennett Fault Zone in the Organ Mountains. These mountains are Tertiary volcanic and intrusive igneous rocks that were once part of an active caldera. In fact, these rocks are all that remain of the volcano that blew its top. The mineralization seems to occur, as hydrothermal replacements, along this fault zone where Precambrian granites are next to Paleozoic sedimentary rocks. The ore production, silver, copper and zinc, was not spectacular in tonnage. Michayluk noted that the mines are most famous for "exceptional wulfenite specimens" although an entire suite of secondary and gangue minerals are present. In fact, he showed several nice photomicrographs of the secondary minerals collected from three mines along the fault zone. In reality, I knew very little (perhaps nothing) about the area until listening to the presentation. I did go back to my collection to check on any wulfenites but only located hemimorphite.

Cluster of hemimorphite crystals each about 6-7 mm in length. Torpedo-Bennett Fault Zone.

I will throw in one of my photomicrographs from the Rowley Mine in Arizona: a single crystal of wulfenite (lead molybdate) along with acicular mimitite crystals (lead arsenate chloride). The length of the wulfenite crystal is ~2.5 mm.

Pete Modreski from the USGS came in and previewed a few minerals from Arizona (perhaps Arizona was slighted at the Symposium?) and then reviewed New Mexico districts and mines that "are of the most mineralogical interest." He presented information about the important metallic ores from each district/mine along with the collectable secondary and nonmetallic gangue minerals.

Mark Jacobson capped the presentation portion of the symposium by regaling information about three gentlemen who, in the middle and late 1800s, played a critical part in expanding "our knowledge of minerals and mineral localities in Colorado": 1) J. Alden Smith, Territorial and State Geologist; 2) Frederic Miller Endlich, helped develop mines in the San Juan Mountains; and 3) Jesse Summers Randall, newspaper writer and owner who advocated for development of mines around Georgetown. Jacobson noted that "most of the mineral localities that clubs collect at today were either exploited or documented by these three men." That fact seems quite an accomplishment.

The Symposium concluded with a choice of field excursions to either the Phoenix Gold Mine in Idaho Springs or the Hidee Gold Mine in Central City. Previous commitments did not permit my attendance.

REFERENCES CITED

Hintze, L.F. and B.J. Kowallis, 2009, Geologic History of Utah: Brigham Young University Geology Studies, Special Publication 9.

Radabaugh, R. E., Merchant, J. S., and Brown, J. M.,1968, Geology and ore deposits of the Gilman (Red Cliff, Battle Mountain) district, Eagle County, Colorado, *in* Ridge, J. D., editor, Ore deposits of the United States, 1933-1967 (Graton -Sales volume): New York, American Institute of Mining Engineers.

Smith, D.A., 1977, Colorado Mining-A photographic history: Albuquerque, University of New Mexico Press.

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Colorado Beer Talks (2nd Tuesday, 6-8 p.m.), Windy Saddle Café, 1110 Washington Avenue, Golden, "Golden's grassroots version of TED talks, Expand your mind with a beer in your hand", http://goldenbeertalks.org/

Colorado Café Scientifique in Denver, monthly lectures on science topics held either at Blake Street Station or Brooklyn's, Denver; open to the public, no charge other than refreshments you may choose to purchase; see http://cafescicolorado.org/ .

Colorado Scientific Society (3rd Thursday, 7 p.m.), see http://coloscisoc.org/ . Meets at Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood CO, except when noted.

CU Geological Science Colloquium (Wednesdays, 4 p.m.) see http://www.colorado.edu/geologicalsciences/colloquium

CSU Dept. of Geoscience Seminars (Fridays, 4 p.m.), see https://warnercnr.colostate.edu/geosciences/geosciences-seminar-series/

Van Tuyl Lecture Series, Colorado School of Mines, (Thursdays, 4 p.m.): https://geology.mines.edu/events-calendar/lectures/

Denver Mining Club (Mondays, 11:30), see http://www.denverminingclub.org/ **.**

Denver Museum of Nature and Science, Earth Science Colloquium series, 3:00-4:00 p.m., VIP Room unless noted, day of the week varies. Museum admission is not required; see http://www.dmns.org/science/research/earth-sciences/

Denver Region Exploration Geologists Society (DREGS; 1st Monday, 7 p.m.), http://www.dregs.org/index.html

Florissant Scientific Society (FSS); meets monthly in various Front Range locations for a lecture or field trip; meeting locations vary, normally on Sundays at noon; all interested persons are welcome to attend the meetings and trips; see http://www.fss-co.org/ for details and schedules.

Nerd Night Denver is a theater-style evening featuring usually 3 short (20-minute) TED-style talks on science or related topics; held more-or-less monthly at the Oriental Theater, 4335 W. 44th Ave., Denver; drinks are available; for ages 18+. Admission is $6 online in advance, $10 at the door. See https://www.nerdnitedenver.com/ .

Rocky Mountain Map Society (RMMS; Denver Public Library, Gates Room, 3rd Tuesday, 5:30 p.m.), http://rmmaps.org/

Western Interior Paleontology Society (WIPS; Denver Museum of Nature & Science, 2nd Monday, 7 p.m.), http://westernpaleo.org/. Meetings are held either in the Ricketson Auditorium or the Planetarium at the Denver Museum of Nature & Science, unless otherwise noted.

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of the West and made significant contributions to the economic growth of Colorado. Steven Veatch draws from hundreds of hours of interviews with firsthand sources, meeting notes, personal diaries, rare photos, files and documents to reveal the stories of these early Colorado mining camps. Do not miss this presentation.

Presenter bio: Steven Veatch is known for his articles, papers, workshops, and classes on Earth science. Veatch holds an MA in Management from Webster University and an MS in Earth science from Emporia State University. Veatch first joined the Colorado Springs Mineralogical Society in 1965 and was recently inducted into the National Rockhound and Lapidary Hall of Fame. His family came to Cripple Creek, Colorado in the 1890s from England and worked in the district's mines for over 30 years. Another branch of the family built a ranch in the wilderness near Boulder, Colorado in 1865 and, later, moved to the Caribou mining camp where Veatch's great-grandfather attended Caribou's first school session in 1872. Today Veatch lives with his wife on a meadow between Cripple Creek and Florissant, Colorado.

PEBBLE PUPS CORNER

CSMS Pebble Pups & Junior Group

The Junior Group & Pebble Pups meet at the Senior 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

The Colorado Springs Mineralogical Society Contributes Support for Summer Interns at The Florissant Fossil Beds National Monument

By Steven Wade Veatch

For more than a decade the Colorado Springs Mineralogical Society (CSMS) has assisted in the direct support of one or more interns at the Florissant Fossil Beds National Monument. On June 8, 2018, Patty Glatfelter, President of the Friends of the Florissant Fossil Beds (FFFB), received the 2018 support check from CSMS board member John Massie in front of the park's visitor center. The FFFB administers the donated funds on behalf of the interns and the national monument.

These college-age interns perform essential work in the fields of paleontology or geology in one of the most beautiful national parks in the Rocky Mountains. This internship also provides valuable experience for each student. The internship lasts during the summer.

Presentation of the CSMS support check to the FFFB. Front row: CSMS member Linda Laverty looks on as CSMS board member John Massie presents a check to Patty Glatfelter (president of the FFFB). **The back row:** John Schwabe (FFFB), Randy Hurley (CSMS Vice President), Steven Veatch (CSMS and a past president of the FFFB) Sally Maertens, (past president of the FFFB), park superintendent Michelle Wheatley, and ranger Jeff Wolin. Photo by Shelly Veatch.

2018 CSMS Officers

Sharon Holte, President

Randy Hurley, Vice-President

Open, Secretary

Ann Proctor, Treasurer

Adelaide Bahr, Membership Secretary

Larry Jones, Editor

John Massie, Member-at-Large

Laurann Briding, Member-at-Large

Ernie Hanlon, Past President

2018 CSMS Chairpersons

Randy Hurley, Program Coordinator,

Mike Webb, Field Trip Co Coordinator

Ernie Hanlon, Field Trip Co Coordinator

TBD, Science Fair Chair

Frank & Ellie Rosenberg, Librarians

Mark Schultz Social Committee Chair

Ann Proctor, Store Keeper

Michael Kosc, Webmaster

Lisa Kinder, Facebook Keeper

Mike Nelson, Federation Representative

TBD, Federation Representative

SECRETARY'S SPOT

by Sharon Holte

General Meeting Minutes for the Colorado Springs Mineralogical Society — 09/20/2018

Please Note: The September General Assembly Meeting Minutes are abbreviated due to the lack of a designated Secretary on the current board.

The meeting was called to order at approximately 7PM.

Vice President Randy Burley introduced the speaker Bob Hickey who spoke about Colorado Mountain Building.

After Bob's talk, a break for refreshments was announced, and 5 door prizes were given out.

During the break, Randy took a head count to ensure that a quorum was present for a vote.

The membership present voted to approve the acquisition and donation of a nearly complete collection of the Mineralogical Record to the Western Museum of Mining and Industry. The cost to CSMS is $1000.00.

Randy announced that the Rock Hound of the Year nominations will be handed in at the October General Assembly. The Board will count the votes at the November Board Meeting and deliver the three finalist's names at the November General Assembly where we will vote on the winner of the award.

The July General Assembly Minutes were approved as published in the Pick & Pack..

The meeting was adjourned at approximately 9PM.

Respectfully submitted,

Larry Jones, Pick & Pack Editor

2018 Satellite Group Chairpersons

Crystal, Kevin Witte/Bob Germano

Faceting, John Massie/Doreen

Fossil, Jerry Suchan/Joyce Price

Jewelry, Bill Arnson

Lapidary, Sharon, Holte

Pebble Pups, Steven Veatch/ Betty Marchant

2018 CSMS Liaisons

Florissant Fossil Beds National Monument, Steven Veatch

Western Museum of Mining & Industry, Steve Veatch

Nominations for the 2019 CSMS Board of Directors

At the October General Assembly, we will be taking nominations for several vacant Board of Directors' positions for 2019.

Please be thinking of how you can help CSMS continue to function and grow in the future.

Job descriptions and responsibilities of the Board are listed in our Constitution on pages 9 & 10. The Constitution is posted on our website at csms1936.com.

At the November General Assembly, we will vote for the 2019 Board of Directors.

As a volunteer organization, we depend on all of our members to contribute in any way that they can to make sure that we accomplish our goals:

1. To promote and disseminate knowledge of the earth sciences, especially as they relate to mineralogy, lapidary, and fossils.
2. To encourage study, collection, and fashioning of minerals.
3. To accomplish the same through social meetings, lectures, programs, displays, shows, and field trips.

Donations Presented to Western Museum of Mining and Industry

Steven Veatch presents a $500.00 check to Rick Sauers Curater of the WMMI on September 26, 2018. Randy Hurley Vice president of the CSMS Board of Directors also presented a collection of the Mineralogical Record to the WMMI as approved at the General Assembly on September 20, 2018.

Photo courtesy Randy Hurley

Salida Field Trips September 29, 30 2018

By Mike Webb

CSMS had a strong showing with 17 members participating at the Sedalia Copper Mine located north of Salida, Colorado in the Trout Creek Hills. Weather conditions and group enthusiasm made for a successful and pleasant outing.

The deposits at the Sedalia Mine were discovered in 1881 and was the largest copper mine in Colorado when work in the mine ceased in 1910. Amazingly 108 years later the Sedalia mine still produced almandine garnet crystals both in the dumps and from in situ chlorite schist zones throughout the property. Copper minerals are still abundant and some rare spinel crystals where found in the area of the large garnets.

This area is private property and permission must be secured before collecting.

Sedalia Mine photos courtesy Mike Webb

Calumet Iron Mine photos courtesy Randy Hurley

PICK&PACK
THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

Our Staff…
Larry Jones—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 **20th 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. 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).

CSMS

T-Shirts, Badges, and Pins
are available for sale.
If you celebrated a CSMS anniversary in 2016 or 2017, you are eligible for your one year pin award
Please see Storekeeper, Ann Proctor

Classifieds

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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, 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.csms1936.com

CSMS is a Member of the following organizatons:

American Federation of Mineralogical Societies (AFMS) www.amfed.org

Rocky Mountain Federation of Mineralogical Societies (RMFMS) www.rmfms.org