PICK&PACK

THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

Colorado Springs Mineralogical Society
Founded in 1936
Lazard Cahn
Honorary President
May 2017
PICK&PACK
Vol 57.... Number #4

CSMS General Meeting

Thursday, May 18, 7:00 PM

This month's speaker is Mark Jacobson

Topic: Cultural Aspects of Mineral Collecting in China

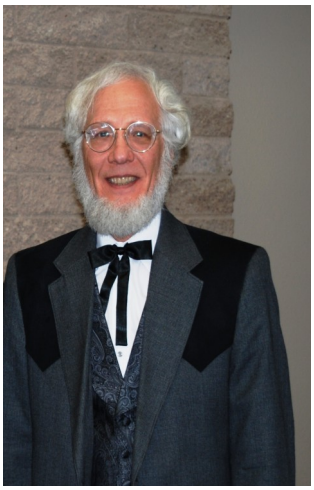
Reminder: There will be an organizational meeting for the June show at 6PM on May 18 prior to the General Assembly

Refreshments provided by the Jewelry Group

****In case of inclement weather, please call the Senior Center at 719 955-3400 to make sure it's open****

Inside this Issue:

May Speaker Introduction



Mark Ivan Jacobson grew up on the sandbar of Long Beach, New York with an unrequited love for mountains and minerals. After High School he obtained a BS degree in Geology-Mineralogy from Pennsylvania State University and an MS degree in Geology from the University of California at Berkeley in 1976. He started working in the oil industry, first for Amoco Production Company and then Chevron Corporation in San Francisco, Denver, Houston, Jakarta, Cairns, Perth, Lafayette, LA, and lastly Chengdu, China. He retired to Denver in April 2013. As a mineral collector since 1962, he has specialized in pegmatites, an igneous rock type known for its colored tourmalines, beryls, smoky quartz, amazonite, and minerals containing phosphorus, niobium and lithium. In Colorado, he is known for writing the book *Antero Aquamarines* in 1993 and in Australia for the *Guidebook to Pegmatites of Western Australia* in 2007. Since retirement he has been active in the mineral community giving presentations, preparing articles for magazines and assisting in symposiums.

His presentation about the "Cultural Aspects of Mineral Collecting in China," is based on his experiences of living in Chengdu from 2008 to 2013.

Please see page 13 for more pictures related to this presentation.

CSMS Calendar

May & June 2017

Thu., May 4 & June 1—Board Meeting, 7 p.m., Senior Center

Tue., May 2 & June 6—Fossil Group, 7 p.m., Senior Center. Jerry Suchan, 303 648-3410

Thu., May 11 & June 8—Faceting Group, 7 p.m., Senior Center. Paul Berry, 719 578-5466

Thu., May 18 & June 15—Pebble Pups & Juniors, 5:30 - 6:15 p.m., Sr. Ctr. Steve Veatch, 719 748-5010

Thu., May 18 & June 15—General Assembly, 7 p.m., Senior Center

Thu., May 25 & June 22—Crystal Group, 7 p.m., Senior Center. Kevin Witte, 719 638-7919

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

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, go to our website, csms1936.com

Upcoming Events of Interest to CSMS Members

Submitted by Pete Modreski

Wed., May 3, 4:00 p.m., CU Geological Sciences Seminar, Boulder, **The Obstacles Are Largely the Same: On Climate Change and Education Reform**, by Don Duggan-Haas, the Paleontological Research Institution and Museum of the Earth, Ithaca, NY; Benson Earth Sciences Building Auditorium (room 180). All welcome; refreshments are served at 3:30 in the 2nd floor atrium.

Sat., May 6, 11 a.m. – 2:45 p.m., **Colorado Mineral Society's Silent and Verbal Auction,** Holy Shepherd Lutheran Church, 920 Kipling St. (3 blocks north of West 6th Ave.) Lakewood, CO 80215. **"**Minerals, fossils, faceted stones, lapidary pieces, books, jewelry, and fluorescent minerals. Door prizes every half hour, raffle at 2:45pm. Special verbal auction at 1:00pm of museum quality specimens donated by special dealers. Abundant parking, refreshments, and easy handicap access. A few auction tables reserved for only children to bid on. Checkout will begin at 2:45pm (cash or check only)**.** **A special invitation is extended to non-CMS members to participate in this auction as sellers and buyers.** Limit of sales to three flats of materials. Sellers can get copies of bidding slips on our club website (fillable and printable pdf file): see http://www.coloradomineralsociety.org/ . Checkout will be by bidder number, so contact Leslie Osgood at 303-986-4488 for a bidder number and/or seller letter. Any questions about the auction should be directed to Ben Geller by phone at 303-550-5993 or by email at geller520@gmail.com ."

Thurs., May 11, 7:30 p.m., monthly meeting of the **Colorado Chapter, Friends of Mineralogy**. 7:30 p.m., social time to meet & talk with members, and all are invited to bring specimens to show or pictures to share as Powerpoint or .jpg images. 8:00 p.m., formal meeting and program—speaker & topic still TBA at this time. VIP Room, Denver Museum of Nature & Science. All are welcome. See http://friendsofmineralogycolorado.org/events/ for more info.

Fri., May 12, 3:00 p.m., **The Evolution of Sensory Systems in Mammals**, by Simone Hoffman, New York Institute of Technology; Denver Museum of Nature & Science Earth Sciences Colloquium, VIP Room, DMNS, all are welcome, Museum admission not required to attend.

Sat., May 13, Friends of Mineralogy, Colorado Chapter, Silent Auction. Clements Community Center, 1580 Yarrow St., Lakewood CO, 12:00-4:00 (setup begins at 10:30 a.m., auction begins at 12:00, verbal auction 1:00, all tables will close by 3:00 p.m., checkout follows). For more info see http://friendsofmineralogycolorado.org/ .

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PURPURITE (PHOSPHATE) FROM COLORADO AND SOUTH DAKOTA

Mike Nelson csrockguy@yahoo.com

For my part, I travel not to go anywhere, but to go. I travel for travel's sake. The great affair is to move.
Robert Louis Stevenson

This past summer I had an opportunity to revisit the Helen Beryl Mine in Custer County, South Dakota, in the Black Hills. I had first explored the area in the spring of 1966 as a geology graduate student enrolled in the University of South Dakota. I, and a few of my geology friends, initiated a road trip to prospect for minerals in the Hills. Our intention was to collect specimens for our introductory geology labs with the "leftovers" made into kits for sale to other interested students.

If I remember correctly, we really did not sell any specimen kits back on campus. But I do remember locating places and "things" in the Hills that I had never seen before. We explored caves and mines and roadcuts and roadhouses with beer and country music and even had time to pound and collect minerals. Growing up in Kansas I had never seen the mineral beryl before, let alone spodumene. The trip opened my eyes to the wonders of the Hills and was the highlight of the semester!

In revisiting the Helen Beryl Mine, I only had an opportunity to sort through part of the dump piles since I was hobbling around on my cane awaiting another knee surgery upon returning to Colorado Springs. I did not find much of real interest but did bring home small specimens of purpurite and alluaudite, both phosphate minerals.

Purpurite [$Mn^{+++}PO_4$] is an interesting mineral that is the oxidation product of a lithium-rich mineral called lithiophilite [$LiMn^{++}PO_4$] and/or triphylite [$LiFe^{++}PO_4$]. There is a little confusion here and some of these minerals are difficult to distinguish between. For example, purpurite is the manganese-dominant phosphate and is solid solution with the iron-dominant phosphate called heterosite [$Fe^{+++}PO4$]; both are similar appearing to each other. The parent of heterosite is triphylite with the latter in solid solution with lithium-iron-manganese phosphates that weather to purple- to reddish purple- to rose- colored purpurite or heterosite. During the weathering process, the lithium leaches away. Can I tell the difference between purpurite and heterosite? Maybe, but probably not. My identification is based up two things: 1) the more purple to purple- red colored specimens are probably manganese-dominant purpurite since an increase in iron darkens the color; and 2) the locality mineral list published by MinDat!

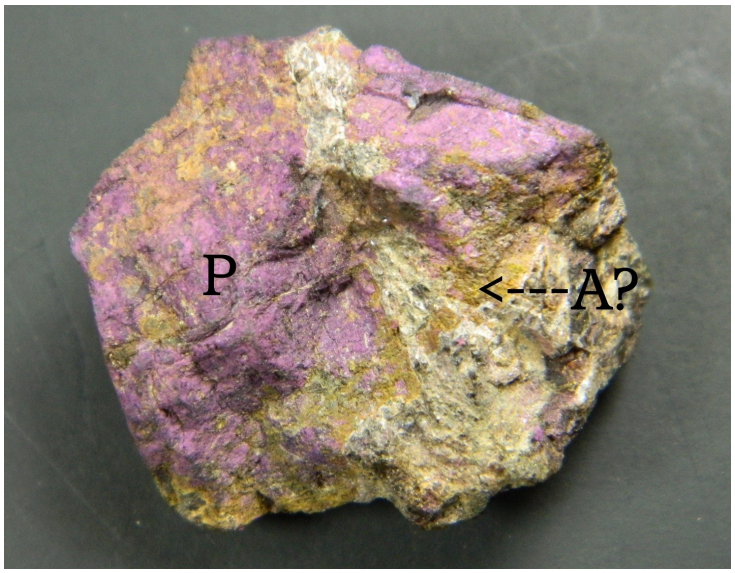

Fig. 1. Purpurite (P) from the Helen Beryl Mine. A? may be alluaudite. Specimen maximum width ~2.6 cm.

Purpurite seems never to form crystals but is always massive to granular. Mineralogists with much more knowledge than me have placed the mineral in the Orthorhombic Crystal System. I have described the color, and the hardness is about 4.5 (Mohs). It has a dull or earthy luster and I obtained a red streak. Once observed, purpurite/heterosite is easy to spot as it appears as a purple or purple-red "stain" on the matrix.

For purpurite/heterosite to form, a lithium(s) mineral must be present in the parent rock (precursor), usually igneous in nature. As I understand the situation, lithium-rich minerals are not all that common in the rock record with the most abundant being "the lithium aluminosilicates spodumene, petalite, and eucryptite, the phosphates amblygonite-

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montebrasite and lithiophilite-triphylite, several species of mica (mostly known as lepidolite), and the tourmalines (elbaite, rossmanite, liddicoatite)" (London, 2017). It also seems these lithium-rich minerals are most abundant in pegmatites. My next question then was—what was the original source of the lithium?

London (2017), in a fantastic article in *Rocks and Minerals,* explained the situation quite clearly: sediments containing fine-grained micas and clays that are lithium-rich collect in ocean basins and form a mud drape over the oceanic basaltic crust. This mud lithifies into shale that later, during mountain building events, becomes a metamorphic mica schist. During even later tectonic events the lithium in the mica is incorporated into molten granitic magma that upon slow cooling becomes pegmatites with lithium-rich minerals. The formation of lithium-rich pegmatites is much more complex than this skeletal summary and I would suggest interested readers examine Professor London's article.

The Black Hills of South Dakota have numerous pegmatites containing many lithium-rich minerals. For example, some of the largest spodumene crystals in the world have been identified in pegmatites of the Etta Mine near Keystone.

The Helen Beryl Mine, mass of pegmatite about (Lufkin and others, presence of lithium precurtriphylite and montebrasiteanalysis to distinguish). abundance of amblygonitetriphylite is indicative of the marine shales from which rived." As the name imwas mined primarily for

Fig. 2. Photomicrograph of tan alluaudite from a second small specimen from the Helen Beryl Mine. Length of tan spot ~2 mm. The black matrix could also be alluaudite or some sort of phosphate.

southwest of Custer, is an oval 250 feet long and 130 feet wide 2009). MinDat.org indicates the sors spodumene, lithiophylite-amblygonite (need chemical London (2017) noted that "an montebrasite or lithiophilitehigh phosphorus content of the most Li-rich pegmatites are deplies, the Helen Beryl location beryl.

The phosphate mineral al- luaudite [(Na,Ca)(Mn,Mg,Fe^{++})$(Fe^{+++},Mn^{++})_2(PO_4)_3$] also occurs at the Helen Beryl Mine. This uncommon phosphate has a range of colors from green to yellow to tan to brownish yellow but is usually observed as a dirty yellow, opaque, earthy mass of tiny fibers and/or nodules---pretty non- descript; however, I have seen samples that are a dark greenish-black. MinDat.org noted alluaudite is an alteration product of the complex phosphates varulite and arrojadite.

My next question revolved around the "cause" for oxidation of divalent (++ charge) iron and manganese to the trivalent (+++ charge) forms. At least in some cases the oxidation is due to bacteria. However, I doubt that is the case in South Dakota pegmatites. One of life's persistent questions waiting for an answer!

But, hold on, and paraphrasing the NPR show *Wait, Wait Don't Tell Me,* London (2017) again provided an answer. It seems as lithium-rich minerals in pegmatites decompose rather rapidly! Toward the end of pegmatite formation, and in the presence of hot aqueous solutions, the early formed lithium-rich minerals undergo alteration: "spodumene and petalite alter to eucryptite + albite and to mica + albite. Montebrasite is commonly replaced by intergrowths of apatite + mica… Lithiophilite-triphylite alter to a large array of hydrous and more oxidized species of phosphates." In addition, the oxidation of lithium-rich minerals continues with surface weathering. At the Helen Beryl Mine the minerals include the oxidized (and lithium leached) heterosite, purpurite and sicklerite (intermediate solid solution mineral between unoxidized and oxidized end members). Ain't learning fun?

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I recently attended the Denver Gem and Mineral Guild spring show and picked up a nice specimen of purpurite collected from the Rainbow's End Claim, Storm Mountain Pegmatite, Crystal Mountain District, Larimer County, Colorado: ~13 miles west of Fort Collins and Loveland. The pegmatites seem related to the Silver Plume granites (Precambrian: ~1.4 Ga) and were intruded into schists of the Idaho Springs Formation (Precambrian: ~1.7 Ga) (Martin, 1993). Jacobson (1986) was one of the last authors (I think) to report on the Crystal Mountain District and noted "blue apatite crystals, purpurite, spodumene, chrysoberyl and beryl are some of the choice mineral specimens available for collecting… This is one of the few pegmatite districts in Colorado where neither all the pegmatites have been found and studied or mapped nor all the minerals described." He listed 41 minerals of record. Thirty years later MinDat.org has listed 55 valid minerals from ~ 60 claims, mines, prospects. Most of the mining activity in the District, starting in 1884, centered around production of "mica" and beryl although most mines were rather unsuccessful (Thurston, 1952). Jacobson (1986) stated that the pegmatites are beryl-rich and the rare lithium-rich minerals are in the most distal part away from the "parental granite."

Purpurite is the most common phosphate mineral in the District and occurs in several of the prospects, mines, etc. (Eckel and others, 1997). In addition, the purpurite specimens are a bright purple-lavender mass and are quite spectacular. Many most purpurite specimens from the District are accompanied by the uncommon, tan alkaline manganese iron phosphate, alluaudite. Chemical analysis (EDS) by Modreski (Eckel, 1997) noted that some mines, prospects, etc. in the District produce purpurite while others offer heterosite. At any rate, the Crystal Mountain District seems the only locality in Colorado that contains the phosphates purpurite/heterosite and alluaudite

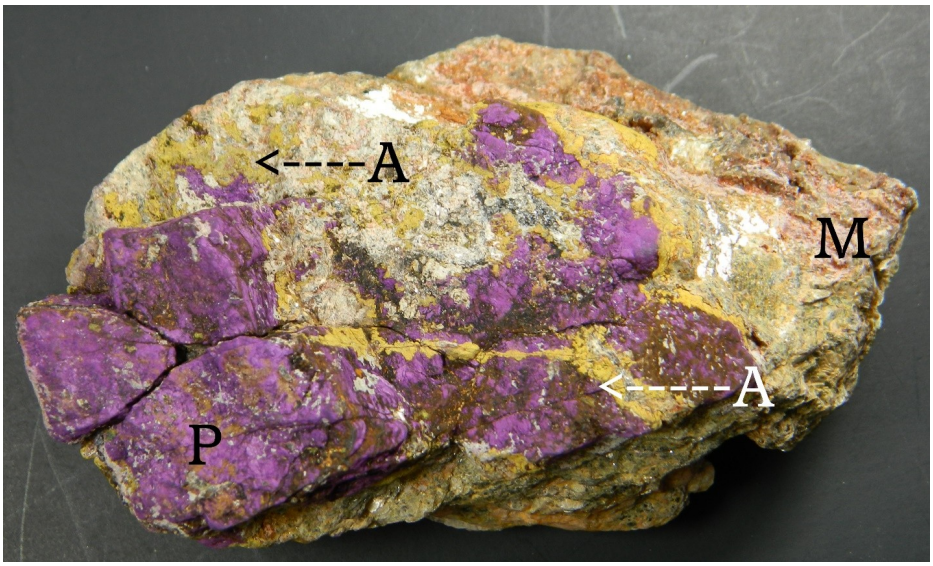

Fig. 3. Purpurite (P) and alluaudite (A) on a "mica" schist (M) collected from the Rainbow's End Claim. Width of specimen ~10.5 cm.

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Eckel, E.B. and others, 1997, Minerals of Colorado: Fulcrum Publishing, Golden, Colorado.

Jacobson, M.I., 1996, Pegmatites of the Crystal Mountain District, Larimer County, Colorado: *in* Modreski, P.J., ed., Colorado pegmatites---Abstracts, Short Papers, and Field Guides of the Colorado Pegmatite Symposium, May 30-June 2, 1986: Denver, Colorado Chapter, Friends of Mineralogy.

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Lufkin, J.L., J.A. Redden, A. Lisenbee and T. Loomis, 2009, Guidebook to the Geology of the Black Hills, South Dakota: Golden Publishers, Golden, Colorado.

Martin, C. M., 1993, Reconnaissance investigations of selected columbium and tantalum occurrences in Colorado: U.S. Bureau of Mines Open File Report 17-93.

Thurston, W. R., 1952, Pegmatites of the Crystal Mountain District, Larimer County, Colorado: U.S. Geological Survey Trace Elements Investigations 139.

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Sat., May 13, Dinosaur Discovery Day – Boy Scout Day at Dinosaur Ridge, Morrison, CO. Scouts as well as the public are invited. Parking will be off-site at the Bandimere Speedway overflow lot located east of C-470 and south of Alameda along S. Rooney Road. Signs will be posted. Parking is $5 per car, paid as you enter. More than 80 earth scientists and other volunteers, including certified Merit Badge Counselors, assist with the event. There is a registration fee for participating Scouts, and a $4 per person charge for persons (over age 3) who wish to take a bus tour of the ridge (no charge for just a walking tour). For full information see http://www.dinoridge.org/scoutdays.html#bsa. The next Dinosaur Discovery Day will be **Saturday, June 10**. For a full list of upcoming lectures, field days, and other events at Dinosaur Ridge please see http://www.dinoridge.org/calendar.html .

Tues., May 16, 10:30 a.m., USGS Rocky Mountain Science Seminar series, "**Middle Cenozoic Patagonian marine transgressions: eustasy or tectonic loading during uplift of the Andes?**, by Julie Fosdick, Univ. of Connecticut. Visitors are welcome; in the Building 25 auditorium (enter the Federal Center at the main gate, Gate 1, on Kipling St.; park east of building 25 and use building entrance E-14).

Thurs., May 18, 7:00 p.m., **Too Warm, Two Poles: How Past Super Interglacials Should Inform Future Coastal Policy**, Julie Brigham-Grette, University of Massachusetts-Amherst. Annual S.F. Emmons Lecture of the Colorado Scientific Society; American Mountaineering Center Auditorium, 710 10th St., Golden. No admission charge and all are welcome.

Sun, May 21, noon (shared potluck lunch), 1 p.m. (lecture), **"A geologic cross section of Colorado along the I-70 corridor",** by geologist Ned Sterne. At the Dinosaur Discovery Center, west side of Dinosaur Ridge, 17681 W. Alameda Parkway Morrison (located at Entrance 1, the north entrance, to Red Rocks Park). See http://www.fss-co.org/ for details, or contact Beth Simmons at cloverknoll@comcast.net . All are welcome.

Mon., May 22, 3:00 p.m., **Hyperthermals: Extreme Global Warming Events in the Geological Past**, by William Clyde, University of New Hampshire;. Denver Museum of Nature & Science Earth Sciences Colloquium, VIP Room, DMNS, all are welcome, Museum admission not required to attend.

Fri.-Sun., May 26-28, Fossil Fish Dig, Kemmerer, Wyoming. Friends of Dinosaur Ridge is sponsoring a field trip to collect fossil fish at a private quarry in Kemmerer, WY. The registration fee of $550 per person ($525 for Friends members and volunteers) includes transportation to and from Kemmerer, 2 nights lodging, 2 breakfasts and 2 lunches, 2 speaker sessions about the fossils, and 2 days (4 hours each) digging for fossils. Registration and full payment is due by May 5. For full info and a copy of the registration form, please write to volunteer@dinoridge.org.

Fri.-Sat.-Sun., June 2-4, Pikes Peak Gem & Mineral Show, sponsored by the Colorado Springs Mineralogical Society. At Mortgage Solutions Financial Expo Center, 3650 N. Nevada Ave., Colorado Springs. 10-5 Fri. & Sat., 10-4 Sun.

June 8-11, Fairplay Contin-Tail rock, gem, and mineral show, MiddleFork RV Resort, 255 Highway 285, Fairplay, CO; see www.facebook.com/ContinTail.

Sat.-Sun., June 10-11, 9 am to 3 pm, **GEOdyssey's Annual Mineral & Fossil Home Sale,** 15339 West Ellsworth Drive, Golden, CO 80401 (303-279-5504)**. "**This will be a 2-day sale! Help us reduce our inventory, and celebrate our 20 years in business, at our annual mineral and fossil "garage sale". This year we will be featuring specimens that we obtained on our trip to Bulgaria, as well as specimens from our personal collection. All specimens are a minimum of 20% off, with bigger discounts for volume purchases. We'll have many new specimens priced at 50% off, and some at 75% off. We will also be featuring jewelry and beads. Drinks and snacks provided while you relax on our shaded patio. You can preview some representative specimens on our web site, www.geodyssey-rocks.com.

Directions: from west 6th Avenue, exit onto Indiana Street and go south on Indiana. Drive into Mesa View Estates. Turn right at the first street (McIntyre Circle) and right at the next street (Ellsworth Drive). We are about midway down the street on the left." --- **Pat & Zelda**

June 16-18, Victor, CO Gem and Mineral Show, Victor, CO; see http://victorcolorado.com

Sunday, June 25, a geologic field trip through South Park, led by Peter Barkmann, Colorado Geological Survey. A one-day field trip sponsored by the Florissant Scientific Society; all are welcome to attend. Details are still TBA. The trip will generally follow the route of a trip Peter led during the 2016 Geological Society of America annual meeting,

July 14-15-16, 9 a.m. – 6 p.m. daily, there will be a "**Home Rock Show (Sale)"** by John Haney, 4242 Thompson Court, Denver CO. 80216 (south of I-70, east of York St. & west of Steele St.). "Rough rock, slabs, cabs, enhydros, fossils, amber, minerals, crystals, gemstone bowls & boxes, lapidary equipment & supplies; discounts for lapidary students." Contact, Rock-

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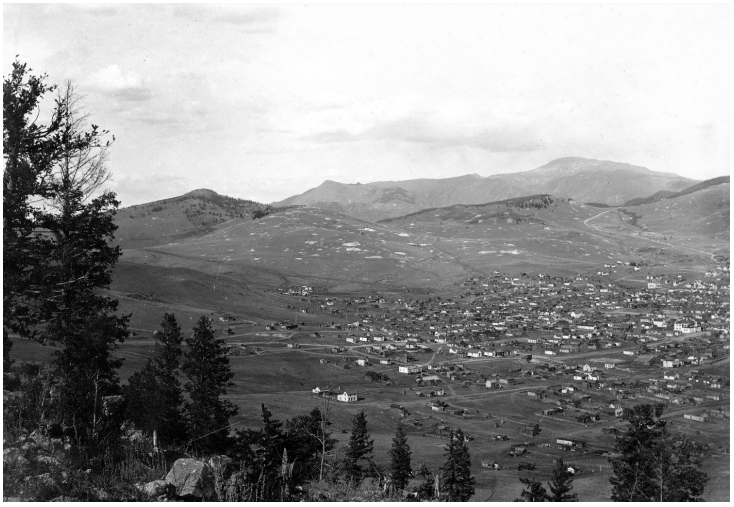
LONG-TIME MEMBER OF COLORADO SPRINGS MINERALOGICAL SOCIETY PRESENTING RESEARCH ON CRIPPLE CREEK

By Chase Alexander

Steven Veatch, a long-time member of the Colorado Springs Mineralogical Society is writing a detailed history of Cripple Creek, and will present his work at a symposium on Colorado gold and silver deposits this summer. Bob Carnein, a member of the Lake George Gem and Mineral Club will present a paper on the geology of Cripple Creek. There will be other speakers presenting their work on other mining districts in Colorado. The symposium will include two days of incredible field trips associated with the symposium. Veatch will co-host a field trip with Bob Carnein to the Cripple Creek District.

Save the date: Fri.–Mon., July 21-24, **Gold and Silver Deposits in Colorado**, a symposium cosponsored by the Friends of the Colorado School of Mines Geology Museum, the CSM Museum, DREGS (Denver Region Exploration Geologists Society), and Friends of Mineralogy, Colorado Chapter. “The event will feature two days of talks (July 22 - 23) and two days of field trips (July 21 and 24) to historic Colorado gold and silver mining areas, focusing on the Front Range and the northern half of the Colorado Mineral Belt. Registration cost will be $100; students, $50; banquet, $40; each field trip, $40. A complete registration form will be available soon. More information is available here: https://www.facebook.com/LikeCSMGeoMuseum/posts/1822491981371516



Veatch teaches community classes on Earth science and writing based in the Pikes Peak region and teaches graduate classes on geoscience courses for the Colorado School of Mines in the Special Programs and Continuing Education (SPACE) department. Veatch is a former adjunct professor of Earth science at Emporia State University.

Veatch retired from El Paso County government. He served in the Navy Reserves for 16 years. He is a volunteer interpretive ranger at the Florissant Fossil Beds National Monument. Veatch is currently the director of the Pikes Peak Pebble Pups, an award-winning youth group that studies the geosciences. Veatch serves the Cripple Creek City Council as a member of its Historic Preservation Commission. He is also a member of the Board of Trustees for the Western Museum of Mining and Industry in Colorado Springs.

Veatch’s family came to Cripple Creek in the 1890s from England and worked in the district’s mines for over 40 years. The other side of the family established a ranch in the wilderness near Boulder in 1865. They later moved to the rough-and-tumble Caribou mining camp. His great-grandfather, who was 14 years old; attended Caribou’s first school session in 1872.

PEBBLE PUPS CORNER

CSMS Pebble Pups & Junior Group

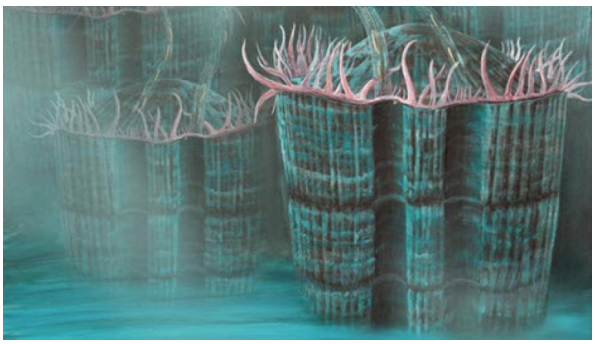
The Junior Group & Pebble Pups meet at the Senior Center every third Thursday at 5:30 PM until 6:15 PM or so. We only meet during the academic year, and we include January. So, it is Sept through May.
Special announcements and field trips are noted on our blog:
http://pebblepups.blogspot.com
and through the CSMS website:
http://www.csms1936.com

The Rudist Fossil Story

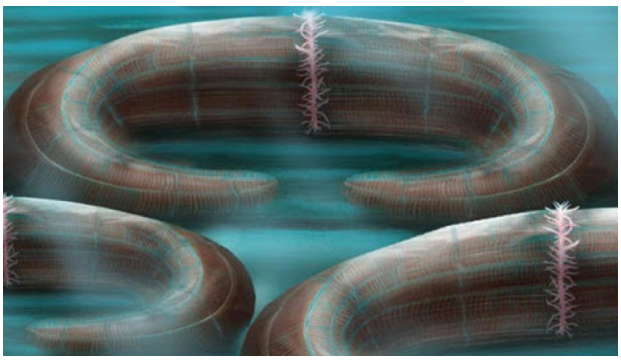
By Jack Shimon (adapted from a presentation given at the Denver Gem Show, September 17, 2016)

Final Installment: Continued from the April 2017 issue of Pick & Pack

There are two primary shapes that rudists take. Elevator rudists attach to the sea floor and have an upright stalk. In the picture below those are probably radiolites, very similar to the caprinulids we found except for the shape of the lid. Recliner rudists lie on the bottom of the sea. We only found one example at the quarry, a titanosarcolite. It is possible these fossils are washed away because they don't appear to anchor to the sea floor.



Elevator Rudists. Permission to use courtesy of the Smithsonian Institute



Recliner Rudists. Permission to use courtesy of the Smithsonian Institute

This is a nice artist's picture of a living rudist reef. There are ammonites swimming by, recliner rudists in the front and an elevator colony in the background, probably flat-lidded radiolites. A colony of caprinula would look similar except for the different shaped top lid.

Permission to use courtesy of the Smithsonian Institute

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2017 CSMS Officers

Ernie Hanlon, President

Lisa Kinder, Vice-President

Mark Lemesany, Vice –President

Barbara Middlemist, Secretary

Ann Proctor, Treasurer

Norma Alexander, Membership Secretary

Larry Jones, Editor

Doreen Schmidt, Member-at-Large

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Mike Webb, Field Trip Coordinator

TBD, Science Fair Chair

Frank & Ellie Rosenberg, Librarians

TBD, Social Committee Chair

Ann Proctor, Store Keeper

Michael Kosc, Webmaster

Mike Nelson, Federation Representative

Ernie Hanlon, Federation Representative

Sub-Group Responsibilities for Refreshments for General Assembly Meetings		
Feb. Crystal	Mar. Faceting	Apr. Fossil
May Jewelry	June Lapidary	July Micromount
Aug. No Meeting	Sept. Board	Oct. Crystal
Nov. Faceting	Dec. Christmas Party	

SECRETARY'S SPOT

by Barbara Middlemist

General Meeting Minutes for the Colorado Springs Mineralogical Society — April 20, 2017

The president, Ernie Hanlon, called the meeting to order at 7:02, followed by the pledge of allegiance.

Guests were introduced from the audience. Two were interested in faceting. One guest asked if there was anyone who would volunteer to polish a piece of jasper that he brought.

Awards

Awards from the Rocky Mountain Federation of Mineralogical Societies were presented.

Steven Veatch, leader of the Pebble Pubs Group, presented the Pebble Pub Awards which are as follows:

Destin Bogart – 1st Place Stegosaurus Colo. State Fossil

Ben Flack – 1st Place Barite

Blake Reher – 3rd Place A Historical Note on Amber

Jenna Salvat – 2nd Place A Cripple Creek Tribute

Jake Shimon – 1st Place The Rudist Fossil Story

Jane Shimon – 3rd Place A Mysterious Cave

Ernie Hanlon presented the following awards.

Bob & Leesa Baker – 2nd Place Molen Reef Utah

Mike Nelson - CSMS Research Grant Program for Undergraduate Geology Students

Oscar Price – A Thimbleful of Gold

Frank RosenBerg - April Fools Claim Stewardship Field Trip

Steven Veatch – Impact of the Pikes Peak Pebble Pups

Lisa Kinder, show chair, reported volunteers are still needed, ticket takers, people for directing attendees among others.

The show will be advertised on many local radio stations. Show flyers were available for distribution. The show will need a new location next year due to the present venue being sold.

Lisa Kinder presented the evening's program "**Proposed Field Trips 2017**". The list of field trips, created by Field Trip Organizer Mike Webb, was passed out to the audience. This list will not be available on the web in order to keep the information limited to club members. Information will be available at the general meetings and limited to CSMS members.

Lisa discussed the details of each field trip including photos of many of the types of minerals to be collected and of digging areas.

May – two field trips – barite and calcite

June – Two field trips - Volunteer needed to lead one of these. – topaz, quartz, smoky quartz, microcline

July – Three field trips - Volunteers needed to lead two of these. – fluorite, zircon, quartz amethyst, amazonite, smoky quartz, goethite

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This is a photo of the recliner rudist bivalve we found, probably a titanosarcolite. It is also possible it is an intact caprinid. The joint in the middle makes me think it is a recliner because it doesn't have a long stalk-like body as I observed in my other fossils. If they were just resting on the sea floor they would have been washed away by currents.

Photo credit: Mike Hursey

Rudist Bivalve Morphology: The four main components of a rudist are the lower conical valve which serves as the anchor, the tube shaped body, the internal body cavity which is not shown but would run the length of the outer body and the upper hooked valve that served as a lid. Both valves are hinged and often fall off when the animal dies, which is why we were finding them separately at the quarry.

Permission to use courtesy of Riccardo Cestari

(Continued one page11)

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sisme@comcast.net, 303-296-8268.

Sat.-Sun., July 15-16, The **Florissant Scientific Society** will hold its annual multi-day event at the Bear Basin Ranch in southern Colorado, south of Canon City. Gary Ziegler, ranch owner and international archeologist will show us the culturally modified trees there and tell us about his work in Peru. There is a cabin where 6-8 people can bed down for the night. Campers are welcome. You can look at the Bear Basin Ranch's website to get a feel for the ranch. Other accommodations are available in Westcliffe and Florence. More information, including costs, to come later." See http://www.fss-co.org/ for future info to be posted.

Thurs.–Mon., July 20-24, Gold and Silver Deposits in Colorado, a symposium cosponsored by the Friends of the Colorado School of Mines Geology Museum, the CSM Museum, DREGS (Denver Region Exploration Geologists Society), and

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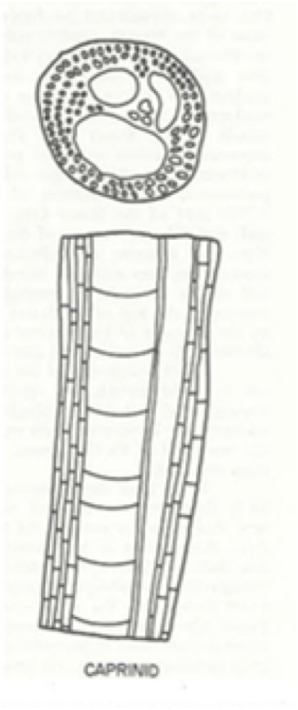
Taking a detailed look inside I think I can finally correlate the live animal with the fossil remains. It took a lot of research to understand what is happening in the live rudist and what changed as it became a fossil. The living rudist had a central hollow body cavity with chambers that closed off as it grew, as you can see depicted in the drawing. This forms the segments we saw. The living rudist also had hollow outer tubes, much smaller in diameter, making up the shell. These aided in support. When the rudist becomes a fossil all the hollow spaces are filled with sediment, creating a cast of the original animal. The spinney ridges I observed in the mold of the fossil are actually casts of the outer shell tubes. Some of the fossils create a really nice picture of this morphology like the photo below.



Permission to use diagram courtesy of the Bureau of Economic Geology. Photo credit: Mike Hursey

Eureka! Mystery Solved: You can see the mold above is lined with spinney tubes. These are casts of the outer body tubes. The central body cavity fits within this mold and was broken at several chamber junctions. Quite possibly the associated hooked upper valve is embedded in the rock just below. It is amazing how a day digging at the quarry turned into an unexpected adventure.

Conclusion: At Jacob's well in Texas this past summer I was climbing around (yet again) and found an upper hooked valve of a rudist. I had a ton of fun hunting for fossils at a quarry and talking to a bunch of experts about my fossils. Climbing around on piles of limestone finding extraordinary things is perfect for a weekend trip. Overall, all of the hard work like researching about my finds and driving around Denver to find out what we had was all worth it.

References:

1. Texas Water Development Board http://www.twdb.texas.gov/groundwater/aquifer/GAT/
2. The Rudists http://www.ucmp.berkeley.edu/taxa/inverts/mollusca/rudists.php
3. Wooster Geologists https://woostergeologists.scotblogs.wooster.edu/2011/01/23/wooster%E2%80%99s-fossil-of-the-week-a-most-unlikely-clam-rudists-from-the-upper-cretaceous-of-the-oman-mountains/
4. Bureau of Economic Geology, the University of Texas at Austin. Stuart City Trend, Lower Cretaceous South Texas
5. Fossils Explained: Rudists http://www.academia.edu/1316778/Fossils_Explained_Rudists

(CONTINUED FROM PAGE 9)

August – two field trips - Volunteer needed to lead one of these. – goethite after pyrite, quartz, garnet, silver, gold, sphalerite , galena

September – One field trip – topaz, red beryl, amethyst, garnet

If volunteers are not found to lead the field trips, they will be cancelled.

After the refreshment break, three names were called for door prizes.

Thanks for the fossil group for bring refreshments. The March minutes, published in the Pick and Pack, were accepted.

Membership Secretary reported that membership directories were mailed to members. Some corrections were made to information of life time members whose information was not available earlier.

Satellite Groups:

Crystal – Kevin Witte reported that there will be two more meetings (April and May) before the groups' summer digging break. Meetings will resume in September. 4th Thurs.

Faceting – John Massie reported that he is now leading the faceting group, contact him for information concerning the group. 2nd Thurs.

Fossil – Jerry Suchan reported that since this month's meeting was canceled due to weather, May's meeting will be part II on dinosaur extinction. 1st Tues.

Jewelry – Bill Arnson, call Bill to set up a time to work on jewelry projects. A wire wrapping class is being planned.

Lapidary – Sharon Holte reported that the equipment at her home is nearly readied for use. More details soon.

President Hanlon has been working on getting the clubs constitution up to date. It should be ready next month.

Frank Rosenbloom reported that the club claim has been approved by Forest Services and BLM but is waiting on Dept. of Natural Resources. Our claim has a new representative at the dept., however, an update is expected soon.

Sharon Holte has a mineral collection at her home that needs to be classified. She asked for volunteers.

"Yam" Yamiolkoski introduced a motion for Mike Nelson for scholarship grants. There are grants for six students. The total amount to be given in scholarships grants is $3155. Motion was made, seconded and passed. The club raises the funds for these grants with the yearly gem show. The most recent scholarships have been awarded to undergraduate students at Colorado academic institutions, completing research on various aspects of Colorado geology . The Society's program has received national recognition. The graduation rate for past participants has been 100%. The yearly amount awarded by CSMS varies each year based on number of qualified participants.

Yam said that he is trying to set up a field trip to the Sedalia copper mine. He will let the club know as soon as he has information as to whether the trip is a go or not.

Several display cases of minerals were brought in for our enjoyment and education. All specimens were labeled. It was easy to see why identifying specimens requires both education and experience. Several minerals have very similar appearances. The labels on these minerals helped us understand the identifying differences. There was a large crowd at the display table.

Meeting was adjourned at 8:51

Frank Rosenberg: April Fools Claim Stewardship Field Trip Award

Photo courtesy of Barbara Middlemist

Oscar Price: A Thimbleful of Gold article award

Photo courtesy of Barbara Middlemist

CSMS 2017 Field Trips:

Book Cliffs: Grand Junction, CO., May 6&7, Field trip leader: Ernie Hanlon
Contact: eehanlon@netzero.net, Barite & Calcite

Hartsel, CO: Barite Claim, May 20, Field Trip leader: Mike Webb
Contact: mwebbstudent@yahoo.com, Barite

Topaz Mountain Gem Mine: Park Co., CO, June 10, Leaders: Krystle Dorris & Mike Webb
Contact: mwebbstudent@yahoo.com, Topaz & Quartz

****Devils Head:** Topaz Point, June 18**
****CSMS needs a volunteer-field trip leader**** Smoky Quartz, Microcline & Topaz

****Saint Peter's Dome:** Eureka Tunnel Mine. July 2**
****CSMS needs a volunteer-field trip leader**** Fluorite & Zircon

****Red Feather Lakes, CO:** Margrette (Rainbow) Lode Claim. July 15, **
****CSMS needs a volunteer-field trip leader**** Quartz var., Amethyst

Smoky Hawk Mine: Florissant, CO, July 21, Leaders: Joe Dorris & Mike Webb
Contact: mwebbstudent@yahoo.com, Amazonite, Smoky Quartz, Fluorite, Goethite

Montezuma, CO: Burke & Martin Mine, August 26., Leader: Mike Webb
Contact: mwebbstudent@yahoo.com, Silver, Gold, Sphalerite & Galena

Delta, Utah: Topaz Mountain, September 8,9 & 10, Leader: Mike Webb
Contact: mwebbstudent@yahoo.com, Topaz, Red Beryl, Amethyst, & Garnet

Submitted by: Mike Webb, CSMS Field Trip Coordinator 2017

Photos/illustration continued from Mark Jacobson introduction on page 1.

Figure 2. Gem quality "orthoclase" from the Boziquoer（REE-Nb-Ta-Zr）pegmatite field, Baicheng County, Akesu prefecture, northwest area of Xinjiang Province. Qinglang LUO specimen. Other crystal vug specimens from this pegmatite are associated with clear quartz and schorl. Jacobson photograph, March 2013.

Figure 1. Index map of the provinces of China with the areas to be discussed. Map courtesy of and copyright© Australian National University, College of Asia and the Pacific, CartoGIS CAP-027.

Figure 3. The Panda band playing bamboo, Giant Panda Breeding Research Park, northeast Chengdu, Sichuan Province, November 2012. Jacobson photograph

(CONTINUED FROM PAGE 10)

Friends of Mineralogy, Colorado Chapter. The event will include a welcoming reception at the CSM Museum (Thursday evening), two days of talks (Sat.-Sun., July 22 - 23), a Saturday evening banquet with a speaker, and two days of field trips (Fri. July 21 and Mon. July 24) to historic Colorado gold and silver mining areas, focusing on the Front Range and the northern half of the Colorado Mineral Belt. More information about the symposium is at: https://www.facebook.com/LikeCSMGeoMuseum/posts/1822491981371516 . Registration cost will be $100; students, $50; banquet, $40; each field trip, $40. The registration form, including the list of field trips, is now available on the Friends of Mineralogy-Colorado Chapter website, at http://friendsofmineralogycolorado.org/gold-and-silver-deposits-in-colorado-a-symposium/ .

Mammoth Site

By Gavin Seltz

Underground water dissolved limestone and shale
About 26,000 years ago.
The rock collapsed.
A water-filled sink hole began to grow.

Young bull mammoths
Looking for an easy lunch
Drank the warm water
And the grass they did munch.

But the pond was too deep,
The bank was too slippery and steep.
The ice age mammals could not
Escape their fate: eternal sleep.

For thousands of years
Coarse sand and clay
Covered their bones,
Preserving them until the day

A bulldozer hit a tusk!
Scientists came and found the remains
Of 61 mammoths
In the South Dakota plains.

A teenage mammoth walks near a dangerous hot spring during the Ice Age. Original art By Gavin Seltz.

About the author:
Gavin Seltz, a member of the Pikes Peak Pebble Pups, is 7 years old. He has been a member of this group for one year.

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 2015 or 2016, you are eligible for your one year pin award

Please see Storekeeper, Ann Proctor

Classifieds

RMFMS ROCKY MOUNTAIN

RENDEZVOUS 2018

There will be a meeting of Colorado clubs on May 6, 2017, at the Pikes Peak Historical Museum in Florissant (10833 Teller County Road #1) at 10:00 to begin planning for the RMFMS 2018 Rock Rendezvous in Fairplay on June 8-9-10, 2018.

Hopefully every club will send a rep or two…. High hopes! But DGMG is the host club, so we will be there in mass.

This is a chance for you to see the big smokies if you haven't already.

Colorado Mineral Society's Silent and Verbal Auction

Saturday - May 6, 2017

Minerals, fossils, faceted stones, lapidary pieces, books, jewelry, and fluorescent minerals

- Door prizes every half hour, raffle at 2:45pm
- Special verbal auction at 1:00pm of museum quality specimens donated by special dealers
- Abundant parking, refreshments, and easy handicap access
- A few auction tables reserved for only children to bid on

Location: Holy Shepherd Lutheran Church
920 Kipling Street (3 blocks north of West 6th Ave.)
Lakewood, Colorado 80215

Time: 11:00am to 2:45pm
Checkout will begin at 2:45pm (Cash or Check Only)

****A special invitation is extended to non-CMS members to participate in this auction as sellers and buyers****

Limit of sales to three flats of materials. Sellers can get copies of bidding slips on our club website (fillable and printable pdf file):

www.coloradomineralsociety.org

Checkout will be by bidder number, so contact Leslie Osgood at 303-986-4488 for a bidder number and/or seller letter

Any questions about the auction should be directed to Ben Geller by phone at 303-550-5993 or by email at geller520@gmail.com

54th Annual

Pikes Peak Gem, Mineral, and Jewelry Show

Featuring Pyrite

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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.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