

The objective of the Society is to promote the knowledge and understanding of Earth science, and its application to human needs

February Meeting – <u>All</u> are invited!

Thursday, Feb. 21, 2019, 6:30 p.m. social time 6:30 p.m., program at 7:00

Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood Two presentations:

Geology and Mining History of the Beulah Marble Deposit

Ken Balleweg, Exploration Geologist





Geographies Unrealized,
The Story of Four
Cartographic Myths of
North America

Donald L. McGuirk, Rocky Mountain Map Society

Geology and Mining History of the Beulah Marble Deposit

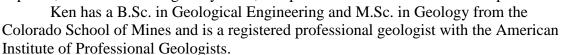
Ken Balleweg, Exploration Geologist

The little-known Beulah Marble Quarry, located in western Pueblo County in southern Colorado, was the source for the ornate ornamental stone wainscoting prominently displayed throughout the Colorado state capitol building. Three quarries were operated from 1894 through 1900 by the Beulah Marble Company and later the Denver Onyx and Marble company. All marble was hauled 25 miles by wagon to the railhead in Pueblo prior to shipment to Denver for cutting and polishing.

The marble, also known as Colorado Rose Onyx and Beulah Red, is hosted by the Mississippian Leadville Limestone and consists of elaborately patterned hematitic Liesegang-banded limestone. It was formed

by multi-stage paleokarst dissolution features localized at the Leadville/Fountain Formation unconformity. Paleocaverns and sinkholes infilled with hematitic Fountain Formation arkosic sandstones and karst breccias are closely spatially related to the 'marble' occurrences. Iron was leached out of the paleokarst features into the surrounding limestone in multiple episodes shortly after deposition and before deep burial.

Ken Balleweg is a geologist with over 35 years of exploration and production experience, including 17 years in Mexico. His positions included Placer Dome's senior project geologist for the Mulatos gold mine, Mexico MineEx Manager, and Senior Project Geologist at the Cortez and Getchell gold mines. He held positions with Alamos Gold over a 12-year period as Exploration Manager, Vice President Exploration, and Manager of Underground Geology. His expertise is primarily centered on high sulfidation gold deposits, sediment-hosted gold systems, and paleokarst control on mineral deposits.





"Geographies Unrealized, The Story of Four Cartographic Myths of North America." Don McGuirk, Rocky Mountain Map Society

Maps, as graphic depictions of geography, simplify and facilitate the dissemination of geographic information. However, occasionally, in the process of expanding geographic knowledge, errors of interpretation lead to misrepresentations of the geography portrayed. At times maps have depicted fancies rather than facts; at other times they have shown wishes rather than wisdom, based on alleged facts (paraphrasing Seymour Schwartz).

This presentation will discuss four such fanciful geographies depicted on North America from 1525 to 1780. These include: the Sea of Verrazano, California as an Island, Mer de L'Ouest (the Western Sea of the French), and The Extension of North America's West coast. The history of each cartographic myth will be discussed and illustrated with numerous contemporary maps.

Dr. Donald L. McGuirk is a retired physician with a keen interest in early World maps and Christopher Columbus. He has been a member of the Society for the History of Discoveries for over thirty years, currently serves as its Treasurer, and has twice served on its Council. Additionally, Dr. McGuirk is a former president of the Rocky Mountain Map Society and is a member, in long standing, of the Library of Congress's Philip Lee Phillips Society (and currently on their Steering Committee). Additionally, he is a current member of the Texas Map Society and the Washington Map Society. His publications have appeared in Imago Mundi, Terrae Incognitae, The IMCOS Journal, The Map Collector, and The Portolan.

A peek at our upcoming meetings & field trips in 2019: "Save the Dates!"

Thurs., February 21, Ken Balleweg (Consulting Geologist), "The Beulah marble: Ornamental stones of Colorado", and, Don McGuirk (Rocky Mountain Map Society), "Geographies Unrealized, The Story of Four Cartographic Myths of North America."

Thurs., March 21, Vince Matthews, past Colorado State Geologist, "A Cook's Tour of Colorado's Glacial Landscape".

Thurs., April 18, Colo. Sci. Soc. April Meeting & Past Presidents' Dinner featuring a dual presentation: Don Becker (USGS) and Jeff Sloan (USGS) Kilauea's 2018 eruption - new methods and perspectives for monitoring volcanic eruptions. Planned for the Mount Vernon Canyon Club (formerly, Mt. Vernon Country Club), Lookout Mountain, Golden, CO.

Tuesday, May 14, Colo. Sci. Soc annual Emmons Lecture, to take place in conjunction with a USGS-CSM-CGS joint symposium on Mineral Resources. More info will be forthcoming!

Sunday, May 19, CSS Spring Field Trip: "Volcanic Ash Beds of the Denver Basin". "A day-long field trip starting at the Morrison exit/Woolly Mammoth Park & Ride, with 4 to 6 field stops to examine beds of volcanic ash and how they related to the Quaternary/Pleistocene geology of the Denver Basin".

Sat.-Sun., Sept. 21-22 (tentative dates), Geology and Geoheritage of the Florissant-Cañon City-Florence area; a two-day field trip with an overnight in Cañon City. "Florissant Fossil Beds Nat. Mon.; Skyline Drive; Royal Gorge; Florence coal, oil, and gas basin; Cope-Marsh quarries."

Fall 2019 CSS planned meeting dates: Sept. 19, Oct. 17, Nov. 21, Dec. 19. Details to come.

Colorado Scientific Society dues are \$25 for regular members, \$20 if dues renewals are paid before Jan. 31

of each year, \$10 for corresponding members (outside the Colorado Front Range area) and only \$5 for students. A Lifetime Membership is now available, for \$395.00. Mail a check to the CSS or pay with a credit card using PayPal on the CSS website. Please contact CSS Treasurer Don Sweetkind at 303-236-1828 or dsweetkind@usgs.gov if you are uncertain of your dues or membership status. Extra payments to contribute to our Memorial Funds or Endowment Fund are always most welcome; you'll see a list of them on the membership form attached to this newsletter, or see our website at http://coloscisoc.org/membership-payment/. Or see http://www.coloscisoc.org/. To pay by mail, send payments to: Colorado Scientific Society, P.O. Box 150495, Lakewood CO 80215-0495

Calendar of Coming Events

Now through March 31: The Conifer Historical Society hosts a special exhibit on "Mining in Jefferson County" at Conifer's "Little White School House" meeting place at 26951 Barkley Road, Conifer. The exhibit will be open (no admission charge; donations accepted) just one day a week, every Sunday from 11 a.m. to 3 p.m. The exhibit/display are really superb and I'm sure you will enjoy seeing it! Two special programs will be presented in conjunction with the exhibit; admission to each program will be \$8/\$10 for members/nonmembers:

Sun., Feb. 10, 1:00 p.m., How the 1859 Gold Rush put Colorado on the map, by Wes Brown Sun. Mar. 10, 1:00 p.m., Frontier mining methods, by Ed Raines

In addition, there will be a special "Bring your favorite rocks and minerals" (and a School of Mines geology student will identify them) day, Sunday, Feb. 17, 11 a.m. – 1 p.m.; no charge to come.

For more information about the Historical Society and the exhibit, or to make reservations to attend the lectures, see https://www.coniferhistoricalsociety.org/events/. See the attached flier about the exhibit + special lectures.

Fri., Feb. 8, 7:30 p.m., "**Fossil Turtle Tracks, Marshall, Colorado**", by Dr. Sue Ellen Hirschfeld, of Boulder, CO. "Dr. Hirschfeld discovered a unique fossil track site just east of Marshall, CO. DGMG members helped map the original site in the spring of 2018. Since then over 500 tracks have been mapped and recorded, and some of the finest fossil turtle tracks ever found have been photographed, cast, and molded, along with crocodile and dinosaur tracks. Come hear about the discoveries!" At the monthly meeting of the Denver Gem and Mineral Guild, Berthoud Hall, Room 109 (lower level), Colorado School of Mines campus; all are welcome. Parking is on campus streets or lots (no parking charge after 5 p.m.). For details see the club's January or February newsletters (the program was rescheduled from January due to snow), https://mineralguild.wixsite.com/newsletters.

Tues., Feb. 12, 7:00-9:00 p.m., **WMMI Speakers' Bureau Lecture: "Mining High Grade Ore"**, presented by Calvin Johnson. "Calvin Johnson, with Gold Prospectors Of Colorado (GPOC), will give a presentation accounting his "Experience of a Lifetime" in the recovery of a quartz vein that assayed at 2281.7 ounces per ton containing crystalline (93.887 fine) gold wires. In layman's terms that equals \$2.8 million dollars per ton. The gold is in sugar quartz, which is very rare on its own. Calvin will have samples for all of us to gaze upon (sorry no touching). The samples are very fragile and some crystalline gold wire falls out when handled." Western Museum of Mining & Industry, 225 North Gate Blvd., Colorado Springs, CO 80921 (In the museum library). RSVP to 719-488-0880 or email rsvp@wmmi.org. Fee \$5, free to WMMI members.

Mon, Feb. 19, 10:30-11:30 a.m., USGS Rocky Mountain Seminar Series, **Earth's deep water cycle**, by Emily Pope, Colorado College. Denver Federal Center, Building 25 Lecture Hall. Visitors are welcome to attend; enter Building 25 at entrance E-14, by the security guard. A schedule of all the 2019 USGS Seminars is in this newsletter.

Tues., Feb. 19, 5:30 p.m., at the monthly meeting of the Rocky Mountain Map Society, "**Colorado: A Historical Atlas, and Color-Oddities**", by Dr. Thomas J. Noel. At Denver Public Library, 5th Floor, Gates Room; the meeting is free and open to the public. From the RMMS: "Don't miss Tom "Dr. Colorado" Noel's presentation on his book *Colorado: A Historical Atlas*. His book maps 90 chapters of Colorado history from Mesa Verde to the present. Tom will also share with us *Color-Oddities: Strangest Things about the Highest State*. Tom is a professor of history at CU-Denver. He has authored or contributed to 53 books, and is a former longtime Sunday columnist for the Rocky Mountain News and The Denver Post. He appears regularly as Dr. Colorado on Channel 9's Colorado & Company. Copies of *Colorado: A Historical Atlas* will be available for you to acquire a signed copy. For more information about Tom, see https://dr-colorado.com/; about the RMMS, see https://rmmaps.org/.

Thurs., Feb. 21, 7:00 p.m., New exhibit opening at the Western Museum of Mining & Industry, "Underground Mine Lighting," beginning at 7pm with a lecture by Joe Samek of the Division of Reclamation, Mining & Safety, part of Colorado's Department of Natural Resources, "Our Report Card in Mining" (Safety in the mining industry). See www.wmmi.org.

Thurs., Feb. 21, 7:00 p.m., Ken Balleweg (Consulting Geologist), "The Beulah marble: Ornamental stones of Colorado", and Don McGuirk (Rocky Mountain Map Society), "Geographies Unrealized, The Story of Four Cartographic Myths of North America." Monthly meeting of the Colorado Scientific Society, Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood; all are welcome; social time & refreshments at 6:30, meeting at 7:00.

Fri.-Sat.-Sun., Feb. 22-24, Denver Gem & Mineral Guild Jewelry, Gem, and Mineral Show, Jefferson County Fair Grounds, 15200 W. 6th Ave., Golden, CO. Free parking & free admission; hours 10-6 Fri. & Sat., 10-5 Sun.

Fri., Mar. 1, 3:00-4:00 p.m., The origins of C₄ photosynthesis: A fossil dilemma, an evolutionary hypothesis, and (possible) isotopic tests, by Boz Wing (CU Boulder). Denver Museum of Nature & Science, Earth Science Colloquium Series; VIP Room, DMNS, all are welcome, no charge, museum admission not required. Seminars in this series are given once or twice a month; always at 3 p.m., date and day of the week vary. See the full schedule in this newsletter.

Sat., Mar. 2, 10 a.m. – 6:00 p.m., **Mineral and Book Sale** at the Colorado School of Mines Geology Museum, 1310 Maple St., Golden. Public sale opens at 10 a.m.; advance sale for Friends of the Museum members only, 8 to 10 a.m. ("Drop by and become a member!").

Tues., Mar. 12, 7:00 p.m., WMMI Speakers' Bureau Lecture: Ben Elick, "Repeat Photography of the Pikes Peak Region". Admission \$5, free to WMMI members.

Sat., Mar. 16, 10 a.m.-3 p.m., **Family Science Day** at Western Museum of Mining & Industry, Colorado Springs. Regular admission rates apply; see www.wmmi.org.

Thurs., Mar. 21, 7:00 p.m., "A Cook's Tour of Colorado's Glacial Landscape" by Dr. Vince Matthews. Monthly meeting of the Colorado Scientific Society, Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood; all are welcome.

Fri.-Sat.-Sun., Mar. 22-24, Fort Collins Gem & Mineral Show; at Thomas M. McKee Building, at The Ranch/Larimer County Fairgrounds, 5280 Arena Circle, Loveland, CO (I-25 exit 259); hours 4-8 Fri., 9-6 Sat., 10-5 Sun. Sponsored by the Fort Collins Rockhounds Club.

Sat.-Sun., Mar. 23-24, WIPS (Western Interior Paletontological Society) semi-annual Founders Symposium, "**Lagerstätten: Exceptional Preservation, Extraordinary Fossils**". To be held at Lowry Conference Center, 1061 Akron Way, Denver. Two days of lectures, educational exhibits, displays of fossils, paleo art show and sale with over a dozen artists. See https://www.westernpaleo.org/symposiums/2019_pages/about-2019.php.

Apr. 2-11, geologist Lew Kleinhans is leading a 9-Day Grand Canyon Geology float trip from April 2-11 which has between 5 and 10 spaces remaining. This is scheduled at a time few get to float the river and generally is more attractive to the more adventurous adventurers, owing to variable temperatures (generally between 55 and 85); i.e., great hiking, fishing, sleeping, and occasional swimming weather and lots of wildflowers. For more info, please contact Lew, lewis.oysterclub@gmail.com, or write to me (pmodreski@gmail.com) and I'll forward you a flier about the trip.

Fri.-Sat.-Sun., Apr. 12-14, Colorado Mineral and Fossil Spring Show, Crown Plaza Hotel /Convention Center, 15500 E 40th Ave., Denver, Colorado, 10-6 Fri. & Sat., 10-5 Sun., free parking & admission.

Sun., May 19, Friends of Mineralogy, Colorado Chapter, Silent (+Vocal) Auction. Noon to 4 p.m., Clements Community Center, 1580 Yarrow St., Lakewood CO. All are welcome to attend.

Fri.-Sat.-Sun., May 31-June 2, Pikes Peak Gem & Mineral Show, Norris-Penrose Event Center, 1045 Lower Gold Camp Road, Colorado Springs, CO 80905. Sponsored by the Colorado Springs Mineralogical Society.

For more lecture series during the year see:

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 Paleontological Society (WIPS); beginning January 2019, WIPS will meet on the 1st Monday of the month, 7 p.m., at Lowry Conference Center, 1061 Akron Way, Denver. See http://westernpaleo.org/.

USGS Rocky Mountain Science Seminar

(Lecture Hall, Building 25, 10:30 am)

<u>Date</u>	<u>Speaker</u>	<u>Title</u>
2/19/19	Emily Pope	Earth's deep water cycle
	(Colorado College)	
3/5/19	Andy Calvert	Volume and composition changes over lifespans of arc volcanoes—examples from Alaska and the Cascades
	(USGS Menlo Park)	
3/19/19	Greg Tucker	ТВА
	(CU Boulder)	
4/2/19	Max Rudolph	Dynamics of mud volcanoes and geysers
	(Univ. Calif. Davis)	
4/16/19	Eve-Lyn Hinckley	It's Not Just About Nitrogen and Phosphorus: Why Sulfur in Agriculture Is a Growing Concern
	(CU Boulder)	
4/30/19	Shanan Peters	Leveraging published geological information in Macrostrat to test Earth systems hypotheses
	(Univ. Wisc. Madison)	
5/13/2019 (Monday)	Simone Runyan	Iron Oxide Copper Gold (IOCG) systems in the Yerington district, Nevada
	(University of Wyoming)	















2019 EARTH SCIENCES COLLOQUIUM

Talks are in the VIP Room, from 3-4 pm
* Museum admission not required to attend *

Jan 25 th	A large Paleozoic meteor impact crater field near Douglas, Wyoming Doug Cook (Independent Consultant)	
Mar 1 st	The origins of C ₄ photosynthesis: A fossil dilemma, an evolutionary hypothesis, and (possible) isotopic tests Boz Wing (CU Boulder)	
Apr 3 rd	The evolution of plant-mite mutualisms: Clues from the DMNS collections Gussie MacCracken (U. of Maryland)	
Apr 5 th	Exceptional fossils in carbonate concretions: Why they form and what they can tell us Tory McCoy (U. of Leicester)	
May 15 th	Before there were ankylosaurs there were aetosaurs Andy Heckert (Appalachian State U.)	
May 22 nd	The dinosaur resurrection: Modern birds, and their rise from Chicxulub's ashes Dan Field (Cambridge U.)	
May 30 th	Cursed seashells: Deciphering one of the most ubiquitous Paleozoic fossils, Rafinesquina Ben Dattilo (Purdue University, Ft. Wayne)	
Jun 5 th	Deciphering dinosaur lives: From microscopes to Madagascar Kristi Curry Rogers (Macalester College)	
Jul 29 th	The Fossil Atmospheres Project: A novel experiment to test CO₂ proxies using citizen scientists Rich Barclay (Smithsonian)	
Sep 6 th	Flowering plants enter the canopy: Fossil woods and the Cretaceous diversification of flowering plants Nathan Jud (William Jewell College)	
Oct 28 th	Physical processes in carbonate sediments: Qoids, mud, hurricanes, and more Lizzy Trower (CU Boulder)	
Nov 7 th	Evolution of topography in the southern and Patagonian Andes Mark Brandon (Yale U.)	

* * * * * * * * * * * * *

2019 Colorado Scientific Society Officers, Councilors, and Committee Chairs

Officers

President...... Tom Casadevall, tcasadev@gmail.com, 720-244-7052

President-elect Jim Paces, jamespaces@comcast.net

Past President...... Bob Raynolds, bob.raynolds@dmns.org

Secretary..... Lisa Fisher, 303-215-0480, lisa.fisher@alumni.mines.edu Treasurer..... Don Sweetkind, 303-236-1828, dsweetkind@usgs.gov, or

dsweetkind@gmail.com

Councilors

2017-2019: Jim Reed, jim@rockware.com

2017-2019: Chris Morrison, chris-morrison@comcast.net

2018-2020: Pete Modreski, pmodreski@aol.com, 720-205-2553

2018-2020: Matt Rhoades, rhoadesgeo1@gmail.com

2019-2021: Linda Barton Cronoble, lbarton1611@gmail.com, 720-338-1237

2019-2021: Yvette Kuiper, ykuiper@mines.edu, 303-273-3105

Committee Chairs

Database Manager: Paul Morgan, 303-384-2648, morgan@mines.edu Field Trip Chair: Cal Ruleman, 303-236-7804, cruleman@usgs.gov

GSA Meeting Co-chairs, Lisa Fisher & Libby Prueher History Chair: Beth Simmons, cloverknoll@comcast.net

Hospitality Chair: Mary-Margaret Coates, geotechedit@gmail.com

Membership Chair: Bob Raynolds, bob.raynolds@dmns.org

Newsletter & Publicity: Pete Modreski, office 303-202-4766, cell 720-205-2553, pmodreski@aol.com

Outreach: Linda Barton Cronoble, lbarton1611@gmail.com, 720-338-1237 Past Presidents' Best Paper Award: Bob Raynolds, bob.raynolds@dmns.org

Past Presidents Best Paper Award: Bob Raynolds, bob.raynolds@dmns.org

State Science Fair Awards: Chuck Weisenberg, 303-238-8806, cweisnbrg@msn.com Student Programs Chair: Melissa Foster, melissa.ann.foster@gmail.com, 707-498-2484

Student Research Grants Chair: Bob Raynolds, bob.raynolds@dmns.org

Webmaster: Chris Morrison, chris-morrison@comcast.net

* * * * * * * * * * * * * * *

The CSS website is www.coloscisoc.org. Anyone can also view our facebook page, whether you have a facebook account or not, at https://www.facebook.com/groups/511533159044226/. If you use facebook—please go there and "like" the CSS! (Just search there for Colorado Scientific Society.)

And once more: to pay dues online, please go to:

http://coloscisoc.org/membership-payment/

Thank you!