

February 2015 PICK&PACK

Vol 55..... Number 1

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THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

CSMS General Meeting Thursday, February 19, 7:00 PM This month's speaker is Steven Veatch

with Blake Reher, Susan Salvat, and Teddy Reeves

Topic: Pikes Peak Paleontology

Refreshments provided by the Jewelry Group

Pikes Peak Paleontology Presentation

The February General Assembly lecture will be a very special presentation on Pikes Peak Paleontology. The lecture will reveal some of the latest discoveries in the region, including an enigmatic sandstone unit that might contain traces of the earliest forms of life on Earth. In addition, a new fossil bird discovery, firsthand views of dinosaur tracks, and many other incredible discoveries will be shared along with a new look at some of the well -known sites. This is a lecture that must not be missed. The lecture is a special presentation by Steven Veatch, three Earth Science Scholars from the Pebble Pups, and coauthors from other parts of the globe. This work is the foundation of a new book that will be available in 2016. The speakers for the February lecture are:

Steven Veatch—Steven has been a member of the CSMS since he was in 5th grade. He is a professor of Earth Science and on the faculty of Emporia State University and he has taught in the continuing education program (SPACE) at the Colorado School of Mines for over 11 years.

Blake Reher—Blake has been a Earth Science Scholar for four years and is now the Assistant Pebble Pup Leader. Blake also assists as a coach for the Science Olympiad and is a volunteer ranger at the Florissant Fossil Beds National Monument.

Jenna Salvat—Jenna has been a Earth Science Scholar for over three years. Jenna has presented papers at the University of Denver as well as other locations and is also a volunteer ranger at the Florissant Fossil Beds National Monument.

Teddy Reeves—Teddy has been a Earth Science Scholar for over three years and has received numerous science writing awards. Teddy is currently doing independent research on the Ice Age.

CSMS Calendar

February 2015 Thu., Feb 5—Board Meeting, 7 p.m., Senior Center. Tue., Feb 3—Fossil Group, 7 p.m., Senior Center. Jerry Suchan 303 648-3410 Tue., Feb 10-Micromounts, 7 p.m., Senior Center. Dave Olsen, 719 495-8720 Thu., Feb 19—General Assembly, 7 p.m., Senior Center. Pebble Pups & Juniors, 5:30 to 6:15 p.m., Steven Veatch, 719 748-5010 Thu., Feb 26—Crystal Group, 7 p.m., Senior Center. Kevin Witte, 719 638-7919 Faceting Group, 7 p.m., Senior Center. Paul Berry, 719 578-5466 Jewelry Group, By appointment. Call, Bill Arnson, 719 337-8070. Lapidary Group, Appointment Only, Sharon Holte, 719 217-5683 March 2015 Thu., Mar 5—Board Meeting, 7 p.m., Senior Center. Tue., Mar 3—Fossil Group, 7 p.m., Senior Center. Jerry Suchan 303 648-3410 Tue., Mar 10-Micromounts, 7 p.m., Senior Center. Dave Olsen, 719 495-8720 Thu., Mar 19—General Assembly, 7 p.m., Senior Center. Pebble Pups & Juniors, 5:30 to 6:15 p.m., Steven Veatch, 719 748-5010 Thu., Mar 26—Crystal Group, 7 p.m., Senior Center. Kevin Witte, 719 638-7919 Faceting Group, 7 p.m., Senior Center. Paul Berry, 719 578-5466 Jewelry Group, By appointment. Call, Bill Arnson, 719 337-8070. Lapidary Group, Appointment Only, 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, csms.us

Other Events of Interest to CSMS Members

Wed., Feb. 11, 4:00 p.m., University of Colorado Geological Sciences Colloquium, Evolution of El Niño: New Perspectives from Biomarker Proxies, by Mark Pagani, Yale; Benson Earth Sciences Building 180. See <u>http://www.colorado.edu/geolsci/colloquium.htm</u> for the full Spring Term schedule.

Thurs., Feb. 12, 4:00 p.m., Van Tuyl Lecture Series at Colorado School of Mines; Roger Slatt, University of Oklahoma: "Sequence Stratigraphy, Geomechanics, Microseismicity, and Geochemistry Relation-ships in some Unconventional Resource Shales". Berthoud Hall Room 241.

Thurs., Feb. 12, 6:00 p.m., Heritage lecture and Exhibit Opening at the Western Museum of Nature and Science, Colorado Springs; **Molybdenum and the History of the Climax Mine**, by Mike McDonald, General Manager of the Henderson Mine and former GM of the Climax Mine in Leadville Colorado. Reception at 6 pm and lecture at 7 pm. All Heritage Lectures at WMMI are always free, but please RSVP to 719-488-0880 or rsvp@wmmi.org to reserve a seat.

Please note! The annual book and map sale at the Colorado School of Mines Library normally held during Presidents' Day week in February will *NOT* be held this year. The sale will return next year. However, there *will* be a sale of books and minerals at the *CSM Geology Museum*, the weekend of April 25-26.

Tues., Feb. 17, 10:30 a.m., USGS Rocky Mountain Seminar, Christine Smith-Siddoway (Colorado College), **Cryogenian sandstone in Colorado: A new terrestrial record for Rodinia revealed through detrital zircon provenance analysis**. Building 25 auditorium, east side entrance E-14, Denver Federal Center. *Continued on page 10*

ATACAMITE: THE DESERT AND THE MINERAL

Mike Nelson csrockguy@yahoo.com

I attended a very small elementary school in central Kansas where the norm was two grades in one room. At times both classes took the same course, while at others (English and Math especially) the classes were separate. During most of those years students studied geography of some sort—sometimes centered on the world, sometimes on the U.S. and in one instance we concentrated on Kansas. Although we were required to memorize the capital cities of the U.S. states, I was more fascinated by physical landforms, or understanding the physiography of the continents. I collected rocks and maps. That fascination continued on into my university studies until I caught the geology bug (there was not a major in geography). As stated before, I have never regretted becoming a geologist (and sort of self-taught geographer). Life has been good.

As I have gone through life, I've found that your chances for happiness are increased if you wind up doing something that is a reflection of what you loved most when you were somewhere between nine and 11 years old." ~ Walter Murch

Somewhere in the grade school curriculum I learned about the Atacama Desert in Chile (the "absolute desert") as being the driest place in the world (Fig.1). Now, it was dry in Kansas (most years) but we learned that some localities in the Atacama had not seen rain in hundreds of years—at least in recorded human history. That aspect made a deep impression on my developing brain and I wrote a little "theme paper" on the Desert (using a trusty encyclopedia for



Fig. 1. The Atacama in South America. Courtesy of Google Earth $\ensuremath{\mathbb{C}}$

some facts and most likely plagiarism)! The best answer in the Funk and Wagnall's for the dryness seemed to be a rain shadow created by the Andes Mountains.

Climatologists seem to know a little more today about the extreme aridity: The Atacama Desert represents an extreme habitat for life on Earth and scientists use it as an analogue for dry conditions on Mars. Aridity in the Atacama is primarily caused by the cold water of the Humboldt Current running parallel to the Chilean and southern Peruvian coast, preventing precipitation in the coastal areas. The hyperaridity is then intensified by the rain-shadow effect of the Andes Mountains to the east, which effectively block moisture transfer from the Amazon Basin. (Paraphrased from Dunai and others, 2005).

Later in life I found that a mineral, atacamite, a copper⁺⁺ chloride hydroxide [Cu₂Cl(OH)₂], was named for the Desert. Atacamite is a member of the Halides where one of the halogens, something like bromine, iodine, chlorine, or fluorine are the major anions. These anions (negative charge) combine with cations (positive charge) like sodium (NaCl, halite or salt), calcium (CaF, fluorite), potassium (KCl, sylvite), or copper with a hydroxyl radical thrown in (atacamite). The latter mineral is secondary mineral oxidized from other copper minerals and in Chile formed in an arid and saline condition. However, atacamite is also known to form as a sulfide weathering product around subsea black-smokers, volcanic sublimates associated with fumarole deposits, and interestingly, crystals have been located as alteration products on very old copper and bronze (alloy: copper plus tin or arsenic) human artifacts.

Atacamite is a fairly rare copper mineral except in a few localities such as southern Australia and Chile. The chisel-end crystals vary in color between a very dark, blackish green and a light, bright green. The mineral is soft (3.0-3.5 Mohs) and brittle with a vitreous luster. The transparency varies between translucent (in the dark

Continued on page 4

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green variety) and transparent (light green specimens). Collector crystals are slender prismatic and striated and/ or tabular (others are massive or fibrous). MinDat (www.mindat.org) noted that atacamite may alter to malachite or chrysocolla.

In many short internet blurbs (for example, see Wikipedia) atacamite (Orthorhombic) is listed as being a polymorph (minerals with the same chemical composition but different crystal structures) of botallackite (Monoclinic), clinoatacamite (Monoclinic) and paratacamite. However, a recent study (Welch and others, 2014) noted that the crystal chemistry of paratacamite indicates the presence of zinc and/or magnesium and therefore drops its des-

ignation as a polymorph. MinDat also has added anatacamite (Triclinic) as a polymorph. All of this is sort of confusing to an ole stratigrapher like me. What I do know is that all of these polymorphs are somewhat difficult to identify in hand samples without some sophisticated instrumentation.

In Chile, atacamite is a major constituent of the copper supergene deposits where circulating meteoric waters chemically weathered and oxidized the primary ore deposits (sulfides of the hypogene). The circulating waters redistributed these secondary sulfides (the oxidized sulfides). The early miners always valued the supergene zones since the newly formed minerals were



Fig. 2. Atacamite (A) sprays on malachite (M) with a base of chrysocolla (C) and small "balls" of halloysite (H). Collected from the La Farola Mine, Cerro Pintado, Las Pintadas district, Tierra Amarilla, Copiapó Province, Atacama Region, Chile. Width of specimen ~3.3 cm.

greatly enriched with metallic elements, and easy to extract.



Fig. 3. Photomicrograph of dark green, chisel-end atacamite crystals with "balls" of halloysite resting on malachite. Width of mineral section ~7 mm.

Now, the above paragraph sounds great to a nonmineralogist like me. Most articles indicate that atacamite is a constituent of the enriched supergene zone and assumed to be "primary" and oxidized from a copper sulfide (Figs. 2,3). But, in doing some extra reading in order to learn more about ore genesis, I ran onto an interesting article (Cameron and others, 2007) explaining the critical difference between *important* and *primary*! They go on to explain that: 1) atacamite requires saline solutions to form (to supply the Chloride) and supergene oxidation is caused by percolating meteoric (rainwater and fresh) waters; and 2) atacamite dissolves in fresh water or undergoes a phase change. The problem in Chile is that the supergene enrichment

lasted from ~44 Ma to ~9 Ma and was stopped by the onset of hyperaridity; however, during this period of time fresh water was present (not saline water). So, what is the answer? Cameron and others (2006) presented two possibilities: 1) the atacamite-bearing oxides resulted from the replacement of preexisting oxides after the onset of hyperaridity as this dryness allowed for the concentration of chloride in the meteoric waters; and/or 2) saline waters percolating upwards along fault zones supplied the chloride. How about that!! Chilean atacamite is an *important* mineral in the supergene but is not a *primary* constituent.

The second specimen in my collection is from the "Moonta Mines in South Australia." Information about the formation of atacamite in this area seems a bit more difficult to acquire. The Moonta copper deposits (including Wallaroo) operated between 1860 and 1923 when several hundred thousand tons of copper were produced *Continued on page 5*

(along with some gold). The price of copper forced the mine closing until 1988 when some open- pit mining produced addition copper and gold (423 kg) until again closing in 1993 (Geological Survey of South Australia, 2014).

At Moonta there are a series of steeply dipping pegmatitic veins hosted by the Precambrian Moonta Porphyry (1.737 Ga) of probable volcanic origin. Primary mineralization includes chalcopyrite, pyrite and bornite in a guartz, feldspar, tourmaline, chlorite and hematite gangue. However, there have been at least three, and most likely four, periods of later hydrothermal alteration. The enriched secondary sulfide zone, composed of chalcocite and covellite, caps the primary lodes (Geological Survey of South Australia, 2014). The atacamite seemed to form when copper-bearing solutions migrated upward into a previously barren Quaternary clay unit. Early miners used the presence of shallow atacamite nodules to indicate the presence of ore bodies directly below their occurrence (Keeling and others, 2003). Now, that is about my total knowledge of atacamite!

However, I could not leave without a final bit of trivia. A biologist I once worked with said something like "have you ever seen a blood-worm?" I had to admit that perhaps night crawlers were better fish bait in my quest for Kansas catfish. He noted that geologists ought to be interested in these little creatures since *Glycera dibranchiate* use copper mineral fibers



Fig. 4. Layer of atacamite crystals, some translucent, (and some unknown minerals) collected from "Moonta, South Australia." Width of specimen ~4 cm.



Fig. 5. Photomicrograph, width ~7 mm., of specimen in fig. 4.

to strengthen the outside of their teeth in order to help resist abrasion. He pointed to a new article in *Science* (Lichtenegger and others, 2002) describing the mineral atacamite as the strengthening copper mineral—" blood-worm jaws exhibit an extraordinary resistance to abrasion, significantly exceeding that of vertebrate dentin and approaching that of tooth enamel." Now, that is an interesting factoid that someday may win you a contest prize! Isn't learning fun?

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Cameron, E.F., M.L. Leybourne and C. Palacious, 2007, Atacamite in the oxide zones of copper deposits in northern Chile: involvement of deep formation waters: Miner Deposits, v. 42.

Dunai, T.J., G. A. Gonzalez and J. Juez-Larre, 2005, Oligocene–Miocene age of aridity in the Atacama Desert revealed by exposure dating of erosion-sensitive landforms: Geology, v. 33, no.4.

Geological Survey of South Australia, 2014, Minerals: Copper: <u>http://www.minerals.dmitre.sa.gov.au/</u> Keeling, J.L., A.J. Mauger, K.M. Scott, and K. Hartley, 2003, Alteration mineralogy and acid sulphate weathering at Moonta Copper Mines, South Australia *in* Roach, I.C. (ed.) Advances in Regolith, CRC LEME.

Lichtenegger1, H.C., T. Schöberl, M.H. Bartl, H. Waite, and G.D. Stucky, 2002, High abrasion resistance with sparse mineralization: copper biomineral in worm jaws: Science, v. 298, no. 5592.

CSMS 2015 Board Installation

Installation of the 2015 CSMS Board was held at the annual banquet on January 22, at the Golden Coral, on Woodmen Road. Please welcome our new and returning officers and thank the outgoing officers Sharon Holte (Secretary), Ellie Rosenberg (Editor), Frank Rosenberg (Member at Large), and Susan Freeman (Member at Large), for their service.



The 2015 officers are (left to right): Mark Lemesany—President, Ariel Dickens—Membership, Jean Miller-Luce— Vice President, Ronald "Yam" Yamiolkoski—Member at Large, Lisa Kinder—Editor, Melanie Glascoe— Secretary, Ann Proctor—Treasurer, Roger Pittman—Past President, and Doreen Schmidt—Member at Large.

Family Exploration Day! Geology!!

On January 3rd, the CSMS participated in the **Family Exploration Day! Geology!!** at the Western Museum of Mining and Industry (WMMI). Pikes Peak Pebble Pups' Earth Science Scholars assisted the National Park Service, Florissant Fossil Beds National Monument, to present and discuss fossils from the area. The Earth Science Scholars also presented interactive displays of minerals, fossils, dinosaur models, and mineral photography. Several CSMS members were available to identify minerals for visitors attending the event. Colorado Springs Mineralogical Society's President, Mark Lemesany, displayed and discussed minerals from the Pikes Peak Region. In addition, Mark presented a donation check to the WMMI Director, Rick Sauers, on behalf of the CSMS.



CSMS President, Mark Lemesany presenting a check to WMMI Director, Rick Sauers



Earth Science Scholar, Jenna Salvat and a Ranger from the Florissant Fossil Beds



Minerals and Fossils—Pikes Peak Earth Science Scholars' Interactive Display



Dinosaur Model—Pikes Peak Earth Science Scholars' Interactive Display



PEBBLE PUPS CORNER



Guide to Minerals: Amazonite

By Steven Marquez

Notes: This specimen is a variety of microcline feldspar. Many jewelers love this mineral for making cabochons because the brilliant color. The blue color is thought to be caused by traces of lead and water. This gemstone is called the "Stone of Hope" because it inspires confidence and hope. The name "Amazonite" comes from the Amazon River in South America. Amazonite can be found at the Lake George area along with smoky quartz. The occurrence of amazonite is very limited.

Facts on File

Chemical formula: KAlSi³O⁸

Composition: potassium aluminum silicate

Color: bluish green or verdigris green

Crystals: triclinic

Cleavage: good, two directions at 90°

Fracture: uneven

Luster: vitreous

Streak: white

Hardness: 6

Transparency: none

Specific gravity: 2.56-2.57

An Amazonite Haiku:

Microcline feldspar. Bluish or verdigris green. The perfect jewelry.



This specimen of amazonite was mined in the Lake George area of Colorado. A S.W. Veatch specimen, photo © Steven Marquez.

Bibliography

Chesterman, Charles W. The Audubon Society Field Guide to North American Rocks and Minerals. New York : Alfred A. Knopf, 1990.

Hall, Cathy. Smithsonian Handbooks: Gemstones. New York : Dorling-Kindersley, 2002.



About the author: Steven Marquez is an Earth Science Scholar with the Pikes Peak Pebble Pups and is a member of the Colorado Springs Mineralogical Society. He is a frequent contributor to magazines and newspapers. He is in the 8th grade and lives in Colorado Springs.

February 2015

Free Admission to Florissant Fossil Beds National Monument

In honor of President's Day Weekend, Florissant Fossil Beds National Monument, as well as 405 other national parks will waive entrance fees from Saturday, February 14th through Monday, February, 16th. Come and enjoy your park! During this fee-free weekend, Florissant Fossil Beds National Monument will offer visitors the opportunity to participate in a variety of ranger guided programs and other activities. For additional information visit the park's website at www.nps.gov/flfo or call at (719) 748 – 3253.

Saturday, February 14th

10:00 AM – 1:00 PM Guided hike on part of the Boulder Creek and Hornbek Wildlife Loop Trails.
9:00 AM – 3:00 PM The Great Backyard Bird Count.
6:00 PM – 8:00 PM Night Sky Program: Romance is Written in the Stars.

Sunday, February 15th

1:00 PM – 3:00 PM Join geologist Dr. Bob Carnein, for a fun, hands-on demonstration to see how paleontologists uncover tiny leaf and insect fossils at Florissant Fossil Beds. Meet in the visitor center any time between 1:00 PM and 3:00 PM.

Monday, February 16th

1:00 PM – 3:00 PM Bring your rocks to be identified! Geologist Dr. Bob Carnein will be available to identify all of the cool rocks you have lying around your house, closet, or garage. You can also learn about the rocks of the Florissant valley. Meet in the visitor center any time between 1:00 PM and 3:00 PM.

To learn more about fee-free days in national parks around the country in 2015, go to <u>http://www.nps.gov/findapark/feefreeparks.htm</u>.

"Fossils & Flight" Symposium to Explore How Life Conquered the Skies

The Western Interior Paleontological Society (WIPS) invites anyone interested in fossils and science to join them at "Fossils & Flight," a weekend symposium set for Saturday and Sunday, March 14-15, 2015. The event will be held at the Green Center, Colorado Schools of Mines, 16th and Cheyenne Streets, in Golden.

"Fossils & Flight," will explore what the fossil record and modern science reveal about how life took to the air. Over a dozen top scientists will tell the story of insects, pterosaurs, birds, bats and even the seeds and pollen of plants that became airborne long before humans. Speakers hail from leading institutions across the country including the Denver Museum of Nature & Science, the University of Colorado and the American Museum of Natural History.

The symposium will also have an exhibit area with an art gallery featuring the work of local natural science artists, displays of fossils, and hands-on exhibits the Friends of Dinosaur Ridge, Florissant Fossil Beds and other organizations. Sunday attendees will have the option of attending an afternoon workshop or local field trip after the talks have concluded.

The afternoon workshop will examine the paleontology of the Pikes Peak Region and will feature the work of Steven Veatch, a team of international coauthors, and three Earth Science Scholars from the Colorado Springs Mineralogical Society: Teddy Reeves, Blake Reher, and Jenna Salvat.

Registration for the two-day event is \$95 for a weekend package or \$60 per day if attending for one day. A highly discounted rate of only \$15 a day is available for students and teachers. For registration and more information, visit westernpaleo.org. Registration is now open for March 14-15, 2015 event. For the latest updates, follow the "WIPS Founders Symposium" Facebook page. For more information, click or **copy and paste** this link into your browser: <u>http://1drv.ms/1AU3fNX</u>

February 2015

Science and Nature Writing Class

For Students, Teachers and Learners of All Ages!

Immerse yourself in our intense one-day winter writing class designed for those who want to learn more about writing and publishing. Writing about nature, science, and history offers exciting opportunities to be published. Magazines, newspapers, bloggers, clubs, and schools are looking for articles to share with their audience, and this class can teach YOU how to PUBLISH.

The writing class will take place at the Western Museum of Mining and Industry, 225 North Gate Blvd., Colorado Springs, CO 80921. You must register for this class at 719-488-0880. The course fee is \$25 for adults and \$7 for students (21 and under). WMMI members receive \$5 off adult fee, and \$2 off the student fee. Class date: February 21, 2015 Class time: 9: 15 am to 1:15 pm.

To see the course flyer, click or copy and paste this entire link into your browser: http://1drv.ms/1zT6diM

| 20 Mark Lemes | 15 CSMS Off sany, Presiden | icers it it | | SECRETARY'S SPOT by Melanie Glascoe | Minutes of the Colorac Mineralogical Society Meeting December 18, | lo Springs General 2014 |
|--|-------------------------------|--------------------|--|---|---|-------------------------------|
| Sharon Holte, Secretary Ann Proctor, Treasurer Lisa Kinder, Editor Ariel Dickens, Membership Secretary Doreen Schmidt, Member-at-Large Yam Yamiolkowski, Member-at-Large Roger Pittman, Past President 2015 CSMS Chairpersons Kim & Bodie Packham, Show Chairs TBD, Field Trip Director TBD, Science Fair Chair Frank & Ellie Rosenberg, Librarians | | | Reported by outgoing secretary, Sharon Holte | | | |
| | | | Called to order: 7:04 p.m. By Mark Lemesany - President / Followed by Pledge of Allegiance. | | | |
| | | | Program for evening: Christmas Party and Silent Auction of part of the donation by Mr. Damon of his collection. | | | |
| | | | The Christmas potluck was a huge success! Thanks to all who vided the delicious food. Many thanks to Georgia Woodworth f contribution in making the goodies a fabulous success!!! | | | |
| | | | The Christmas mineral exchange was another huge success. All the special minerals were appreciated! We saw many specimens that were unusual and some that were rare. | | | |
| | | | Many thanks to all those who made the Silent Auction a huge suc- cess Special thanks to Jean and Michael Luce who organized the minerals for auction. Additionally thanks to the following for all the help: | | uge suc- ganized the for all their | |
| Gary del Valle, Camera Club Georgia Woodworth, Social Committee Chair | | | Sharon Holte – organizing the one of the one | | | |
| Ann Proctor, Store Keeper | | | Roger Pittman – mineral identification | | | |
| Jackson Pierce, Webmaster | | | Doreen Schmidt – writing and labeling minerals | | | |
| Sub-Group Responsibilities for Refreshments for General Assembly Meetings | | | Jerry Suchan – mineral identification | | | |
| Feb. Jewelry | Mar. Lapidary | Apr. Micromount | | Yam Yamiolkoski – writing and own broadcasting system | labeling minerals: and bei | ng our very |
| May Board | June Crystal | July Faceting | | If I missed anyone, I am sincere | ely sorry, my apologies! | |
| Aug. Picnic | Sept. Fossil | Oct. Jewelry | | Further, thanks to Ariel Dickens for all the membership renewals processed. | | |
| Nov. Lapidary | D Christn | ec. nas Party | | Adjourned at 8:50 p.m. | | |
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Gem and Mineral Collection for Sale

Annette Yates and David Stone of Bozeman, Montana, are selling their parent's cut gem and mineral collection. Below are links to online photographs and a inventory of items in the collection. If you are interested in purchasing this collection, please contact Annette Yates at 406-599-7477 or e-mail: yates.annie@hotmail.com

To view photographs, please **copy and paste** this entire link into your browser: <u>https://onedrive.live.com/?cid=138180934F8B42D1&id=138180934F8B42D1%</u> 21355&parId=138180934F8B42D1!397&authkey=%21ACWzAYFX58ZJoZ0&v=3

To view the price and an inventory of the collection, please **copy and paste** this entire link into your browser: <u>https://col131.mail.live.com/mail/ViewOfficePreview.aspx?</u> <u>messageid=mgzX1wl3qw5BGUSwAhWtcu9A2&folderid=flbxwDNueTOEGt5ZXabMcMAA2&attindex=0&cp=-1&attdepth=0&n=63275866</u>

Other Events of Interest to CSMS Members (continued)

Thurs., Feb. 19, 7:00 p.m., monthly Colorado Scientific Society meeting; **MOANA and HOBITSS Ocean Bottom Seismic Experiments: Information on Deep Structure, Anisotropy, and Slow Slip beneath New Zealand**, by Dr. Anne Sheehan, CU. At Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood.

Sat., Feb. 21, 9: 15 a.m. to 1:15 p.m., **Science and Nature Writing Class** (for students, teachers, and learners of all ages!) Western Museum of Mining and Industry, 225 North Gate Blvd., Colorado Springs, CO 80921. You must register for this class at 719-488-0880. The course fee is \$25 for adults and \$7 for students (21 and under). WMMI members receive \$5 off adult fee, and \$2 off the student fee. More information: http://ldrv.ms/lzT6diM

Sun., Feb. 22, 1:00 p.m., meeting of the Florissant Scientific Society in at the Woodland Park at the library (gathering room on lower level). We usually meet for lunch at the Casa Grande Mexican restaurant just down Highway 24 from the library at 11:30. Jay Temple, longtime FSS member and consulting geologist, will speak on **Climate Change and the Sun**. All are welcome; no charge. Please contact Beth Simmons, <u>cloverknoll@comcast.net</u>, for more information.

Fri.-Sat.-Sun., Feb. 27 – Mar. 1, Gem and Mineral Show, sponsored by the Denver Gem and Mineral Guild, at Jefferson County Fairgrounds, Golden. No admission charge, and free parking. (See Classifieds on page 11 for more information.)

Tues., Mar. 3, 10:30 a.m., USGS Rocky Mountain Seminar, James Jones (USGS Anchorage), Late Cretaceous through Oligocene magmatic and tectonic evolution of the western Alaska Range.

Thurs., Mar. 12, 3:00 p.m., VIP Room, DMNS Earth Science Seminar, David Krause, SUNY Stonybrook, "Bizarre and marvelous dinosaurs and other vertebrates of Madagascar: Insights into the southern end of the world".

Thurs., Mar. 12, 7:30 p.m., bimonthly meeting of Friends of Mineralogy, Colorado Chapter; **Thunder Bay Amethyst: crystallography, chemistry and a historical review of 1970-80s activity**, by Dan Kile. In the VIP Room, Denver Museum of Nature& Science. All are welcome.

Sat.-Sun., Mar. 14-15, The Western Interior Paleontological Society (WIPS) invites anyone interested in fossils and science to join them at "**Fossils & Flight**," a weekend symposium set for The event will be held at the Green Center, Colorado Schools of Mines, 16th and Cheyenne Streets, in Golden. Registration for the two-day event is \$95 for a weekend package or \$60 per day if attending for one day. A highly discounted rate of only \$15 a day is available for students and teachers. For registration and more information, visit westernpaleo.org. For the latest updates, follow the "WIPS Founders Symposium" Facebook page. For more information, click or **copy and paste** this link into your browser: <u>http://1drv.ms/1AU3fNX</u>

February 2015



Our Staff... Lisa Kinder—Editor

We encourage everyone to submit articles, photos, illustrations or observations. Share your experiences, your new finds, or simply your experience at our last field trip.

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

To submit an item:

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

E-Mail to: *csmseditor@hotmail.com* Mail to: Pick & Pack Editor PO Box 2 Colorado Springs, CO 80901

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CSMS

T-Shirts, Badges, and Pins are available for sale. If you celebrated a CSMS anniversary in 2012 or 2013, your year pin award See Storekeeper, Ann Proctor

Classifieds

Denver Gem & Mineral Guild Jewelry Gem & Mineral Show

February 27 - March 1, 2015 Friday: 10 a.m. - 6 p.m. Saturday: 10 a.m. - 6 p.m. Sunday: 10 a.m. - 5 p.m.

Jefferson County Fairgrounds 15200 W. 6th Ave. Golden CO

Free Parking & Free Admission

Educational and Entertaining

Gems, Minerals, Fossils, Geodes, Jewelry Gem Cutting Demonstrations Grab Bags and Door Prizes Mineral Displays Swap Area

For more information, visit the DGMG website at

http://denvergem.org/Shows.html

ACKLEY'S ROCKS

Cathy / David / Shawna Owners / CDM Rocks LLC Services: Lapidary, Silversmithing, Goldsmithing, and Jewelry Repairs **3230 Stone Ave. Colorado Springs, CO 80907 719-633-1153** ackleysrocks@comcast.net Hours: 9 to 5, every day but Sunday.



Steve & Peggy Willman 114 Main Street, Westcliffe, Colorado 81252 (719) 783-9459 gallery@ris.net





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Time Value Do Not Delay

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. <u>Visitors are always welcome</u>.

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

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

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

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

CSMS is a Member of: the following organizatons:

American Federation of Mineralogical Societies (AFMS)www.amfed.orgRocky Mountain Federation of Mineralogical Societies (RMFMS)www.rmfms.org

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