

Colorado Springs Mineralogical Society Founded in 1936 September 2016 PICK&PACK

Vol 56 Number 7

CSMS General Meeting Thursday, Sept. 15 7:00 PM

Refreshments provided by the Lapidary Group

Guest Speakers: Pebble Pups & Earth Scholars

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WILLARD WULFF, LAZARD CAHN AND JORDANITE: A SERONDIPINOUS FIND

Mike Nelson csrockguy@yahoo.com

Willard Wulff was one of the original members of the Colorado Springs Mineralogical Society, along with Lazard Cahn (Honorary President for Life), Dr. E. L. Timmons, Willet R. Willis, Ceil Graves, O. A. Reese, Leonard Sutton, George M. White, Robert D. Wilfley, Mrs. Edward L. Kernochan, Miss Billie Bennett, Arthur Roe, Edwin Over, William E. Davis, Ralph Monnell, H. E. Mathis, Frank Young, and Sigfrid Gross. Willard was born in 1904 and seemed interested in rocks and minerals at a very young age. In 1928 he graduated from Colorado College with a baccalaureate degree in Geological Engineering. Like many of his Colorado Springs mineral colleagues, Willard spent time down at the office of Lazard Cahn who had "sessions with the microscope" for a small group of "students" learning about crystallography and micromounts (Fig. 1). Evidently, Willard took a strong liking to collecting minerals via micromounts and he collected. purchased, traded and mounted hundreds (?thousands) of specimens in small cardboard boxes and later in those ubiguitous perky boxes. Willard passed away in late 1998 and left behind a tremendous collection of micromounts, and some larger mineral specimens, that were managed by his daughter Wanda. Recently, Kristalle of Laguna Beach, California, acquired several (200 or so) specimens from Willard's collection and have offered them for sale. And on July 23rd of 2016, an estate sale sold most other specimens and equipment belonging to Willard and Wanda.



Fig.1. Love that microscope! Lazard Cahn, Honorary President of the Colorado Springs Mineralogical Society. Photo by permission from the Colorado Springs Library District in the Stewarts Commercial Photographers Collection.

I was at the estate sale right on time and was able to purchase several micromounts, especially perky boxes filled with gold, silver and diamond crystals. I also acquired Willard's binocular microscope, a couple of macro specimens, and 36 specimen labels hand-printed by Lazard Cahn! For my perspective on Lazard Cahn see my article in the

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

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CSMS Calendar

September & October 2016

Please note Faceting Group is now meeting the 2nd Thursday of each Month

Tue., Sept 6 &Oct 4 —Fossil Group, 7 pm, Senior Center. Jerry Suchan 303 648-3410

Thu., Sept 1 & Oct 6 —Board Meeting, 7 pm, Senior Center.

Tue., Sept 13 & Oct 11 —Micromounts, 7 p.m., Senior Center. Dave Olsen, 719-495-8720

Thu., Sept 8 & Oct 13—Faceting Group, 7 pm, Senior Center. Doreen Schmidt, 719-577-4165

Thu., Sept 15 & Oct 20—Pebble Pups & Juniors, 5:30 pm Senior Center. Steven Veatch, 719 -748-5010

Thu., Sept 15 & Oct 20 — General Assembly, 7 p.m., Senior Center "August Picnic" Date & Time TBD

Thu., Sept 22 & Oct 27—Crystal Group, 7 p.m., Senior Center. Kevin Witte, 719-638-7919

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, csms-web.org

Upcoming Events of Interest to CSMS Members

Submitted by Pete Modreski

Sept. 10-18, Denver Coliseum Mineral, Fossil, and Gem Show, 10-6 daily, 4600 Humboldt St., Denver CO. Free admission.

See http://www.coliseumshow.com/.

- **Sept. 11-18**, Colorado Mineral and Fossil Show, 10-6 daily except 10-5 Sun. 9/18. Ramada Plaza Denver Central, 4849 Bannock St., Denver, CO. Free admission, and free shuttle to the Denver Mart. See http://www.mzexpos.com/denver.
- **Wed. Sat., Sept. 14-17**, Denver Fine Mineral Show, at Marriott Denver West, 10-6 Wed.-Fri., 10-5 Sat., 1717 Denver West Blvd., Golden CO. Free admission. See http://www.finemineralshow.com/.
- **Wed., Sept. 14, 6:00-9:00 p.m.**, Open House at the Colorado School of Mines Geology Museum. All are invited; refreshments and viewing of new exhibits prepared for the coming year. A chance to meet museum curators, mineral collectors, and dealers who are in town for the Denver Gem and Mineral Show.
- **Thurs, Sept. 15**, 5:45-9:00 p.m., Colorado Scientific Society, Student Presentation Night, at Arbor House, in Maple Grove Park, 14600 W. 32nd Ave., Golden (Applewood area). All are welcome to attend, no admission charge, free refreshments. A selected group of graduate students from area universities will give presentations about their geology/earth science thesis research topics, and all attending will be able to vote for "the best presentation". For details (to be posted in the coming month) see http://www.coloscisoc.org/.
- **Sept. 16-18**, 49th annual Denver Gem and Mineral Show, Denver Mart, Denver, CO. Minerals of Africa is the 2016 show theme. 9-6 Fri., 10-6 Sat., 10-5 Sun. See http://www.denvermineralshow.com/ or https://www.facebook.com/Denver-Gem-And-Mineral-Show-154290574610235/?fref=ts
- **Fri., Sept. 23**, 3:00 p.m., Earth Sciences Colloquium at the Denver Museum of Nature & Science, Jurassic-Cretaceous paleogeographic evolution of the Western Interior Seaway, by Ron Blakey, Colorado Plateau Geosystems. In Ricketson Auditorium. All are welcome, museum admission is not required.
- **Mon., Sept. 29,** 3:00 p.m., Earth Sciences Colloquium at the Denver Museum of Nature & Science, Deciphering the Rocky Mountains, by Beth McMillan, University of Arkansas-Little Rock . In VIP Room. All are welcome, museum admission is not required.
- **Thurs., Oct. 20**, 7:00 p.m., Colorado Scientific Society October meeting, Climate Change, Part I and II, by William W. Little & Thom Fisher. Shepherd of the Hills Presbyterian Church, 11500 W. 20th Ave., Lakewood CO. Social time beginning at 6:30; meeting & program at 7:00. All are welcome to attend; see www.coloscisoc.org.
- **Oct. 25-28**, Geological Society of American Annual Meeting, Denver, CO (plus pre- and post-meeting field trips). See http://community.geosociety.org/gsa2016/home.

February 2016 CSMS Newsletter (www.csms.us). For additional information on Willard's life see his autobiography printed in March 2016 edition of the CSMS Newsletter.

But the best part of this entire purchase was one macro specimen, jordanite, that not only has the mineral label of Willard Wulff, but the original collecting label of Lazard Cahn (located in my Cahn label collection). I suppose this little bit of personal happiness may not resonate with some readers: however, matching a mineral specimen with a label from the famous Lazard Cahn collection is a "big deal."

Jordanite is a rather uncommon lead-antimony-arsenic sulfide (Pb14(As,Sb)6S23]. A long time ago, in my beginning mineralogy course, we classified minerals with a metal ion *plus* a semimetal (replacing part of the lead like arsenic, bismuth or antimony) *plus* sulfur as a sulfosalt. Arsenic is the dominant semimetal in jordanite and the mineral is in solid solution with the antimony-rich variety, geocronite.

Jordanite is a mineral that certainly was not on my radar until I saw the Wulff specimen indicating Cahn was the original owner (Figs. 1-4). Then after seeing specimen photos on MinDat.com, I decided that it actually was a pretty good specimen. It was collected from the Lengenbach Quarry near Wallis, Switzerland (in the Alps), that MinDat describes as a "world famous metamorphosed sulphosalt/sulfide deposit in sugary dolomite." The quarry has yielded an amazing number of minerals (141) with 39 of these minerals claiming Lengenbach as their Type Locality (including jordanite). As best that I can determine, the quarry wall rock was originally Triassic in age until metamorphosed during the late Cretaceous-Tertiary. A later hydrothermal event produced a solution enriched in arsenic, antimony and bismuth and also deposited the sulfosalt minerals no sooner than 11 Ma (www.lengenbach.com).

Jordanite has a lead-gray to black color and produces a bright metallic luster and is very opaque. It has an interesting conchoidal fracture, a dark brown streak and is soft (3.0 Mohs). Jordanite belongs to the Monoclinic Crystal System and produces striated (at times) prismatic and dipyramidal crystals and sometimes forms pseudohexagonal twins. At times the individual grains appear as globular and do not resemble any crystal shape while others are tabular. Without knowing something about locality information, jordanite would be difficult (for me) to recognize. Even then it could be easily confused with some of the other sulfosalts such as geocronite.



Fig. 2. Left: Sugar-grain, white dolomite with seams of metallic luster jordanite. Length FOV ~4.5 cm.

Fig. 2. Right: Reverse side of Figure 2.



Fig. 3.
Veins of jordanite running through a white sugargrained dolomite.
Width photo ~2.2 cm.





Fig. 4. Photograph of gemmy sphalerite (S) and jordanite crystals. Note the dipyramidal crystal (J). Width of photo ~4 mm.

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Fig. 5. Photomicrograph of cuprite from Ray, AZ in the Cahn/Wulff collection. The red crystals (C) are cuprite as are the needle-like crystals. I believe the green (M) is probably malachite. Width FOV ~1 cm.

A second micromount picked up at the sale once belonged to Cahn but Willard mounted the specimen: cuprite from Ray, Arizona (Fig. 5). Cuprite is a simple oxide [Cu2O] that is usually found in the oxidation zone and is a product of the oxidation of the copper primary minerals (the sulfides). Cuprite is Isometric but produces a number of crystal forms, including cubes, octahedrons, dodecahedrons and in special cases long tubes or needles. This is an interesting specimen since there is a mixture of tiny cubes and the acicular needles. Most cuprite is a bright red color and has been known as ruby copper; however, the crystals on my specimen are so dark red, and have such a bright vitreous luster, that the tiny crystals almost seem black until examined under a microscope. Other specimens of cuprite show up as globular or earthy masses. These latter examples of cuprite then have an earthy dull luster. The cleavage is usually conchoidal and cuprite is fairly soft at 3.5-4.0 (Mohs). Twinning is common with penetration twins.

One particular variety of cuprite is known as chalcotrichite and is composed of fibrous mats of hair- or needle-like elongated crystals. At times these hair-like crystals are scattered among other cubes or octahedrons. In addition, down at Bisbee, Arizona, in the Campbell Mine (1800-2300-foot level) the chalcotrichite masses are embedded in white calcite along with some native copper and produces a lapidary stone known as campbellite—the rock is hard enough to take a nice polish (**Fig. 6**).

The cuprite specimen from the Cahn-Wulff collection came from "Ray, Arizona" with no other specific locality information. I presume it was collected at what MinDat terms the Ray Mine, Scott Mountain area, Mineral Creek District (Ray District), Dripping Spring Mts, Pinal Co. The Ray mines have produced, since initial production in 1911, various amounts of copper, silver, gold, zinc, lead, and molybdenum. Initially the target mineral was silver but with better and newer mining techniques the mine began producing copper from one of those low-grade porphyry deposits and after 1955 all mining was from a giant open-pit. So large, in fact, the Mine has consumed the original mining town of Ray. A smelter was built at the nearby community of Hayden in 1910 and "the Copper Basin Railway transports ore from the mine to the processing facilities...which include a 27,400-ton-per-day concentrator and a 720,000-ton-per-year smelter, where more than



Fig. 6. Polished "campbellite" with white calcite, the blood-red cuprite/chalcotrichite and a few flecks of native copper. Width ~5.4 cm.

380 tons of copper are refined every day to a purity of 99 percent" (Arizona Daily Star, Nov 11, 2013). Several years ago I had the opportunity to collect at the mine and came home with pieces of raw native copper and nice blue chrysocolla. In addition, after cleaning up a "piece of copper", I decided it was arborescent cuprite with small crystals and scattered needles (Figs. 7 & 8).



Fig. 7 Left- Mass of red cuprite crystals and a lesser number of needle-like cuprite crystals. Width ~1cm.

Fig. 8 Right- As above in Fig. 7, width ~1.4 cm.



So, it was an enjoyable estate sale and I look forward to studying my mineral acquisitions.

MOLEN REEF UTAH

Submitted by Bob & Leesa Baker

Molen Reef is located in central Utah, trending north – south, crossing I -70. Leesa and I were camped on the east side of Molen Reef about 10 miles northwest of I 70 and Exit 116

on Emery County Road 803. Our campsite was covered with agate, jasper, and a wide range of interesting rock specimens (including limb and root casts).

We had chosen the area in order to see the spherical concretion boulders found in Short Canyon located a few miles away. The concretions ranged in size from 5'-12' in diameter and were found in a layer of Mancos Shale about 100' above the valley floor and extended for more than a mile.



Some of the boulders had weathered out and tumbled down the slope.

Short Canyon is accessed off CR 803. Just before mile marker 8 there is an easily travelled dirt road heading north for 2.4 miles then turn west on a rougher dirt road (4WD) for 1 mile. For more information on Short Canyon, Google search: Geologic Map of Short Canyon Quadrangle, Emery County, Utah.





There were many other adventures in the area: petroglyph panels (Dry Wash Petroglyphs and Rochester Petroglyph Panels)

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And one of the most exciting finds we have experienced:



A dinosaur bone (6"x18") found on top of a hill in the Cretaceous Cedar Mountain Formation.

An easy walk from our campsite we discovered thousands of Thunder Eggs (jasper and calcite). Our good fortunes were not over yet as we drove to a reported site of Septarian Nodules and within an hour of digging we had found a large (12" diameter) nodule.



Below are a few updates Steve emailed during the summer regarding Pebble Pups and Earth Scholars.

Hello Board members,

With a number of coauthors, I sent in an abstract for presentation at the Geological Society of America's Annual Meeting in Denver this September. The abstract was peer-reviewed and accepted by the society. You can look at our abstract by following this link:

https://gsa.confex.com/gsa/2016AM/webprogram/Paper283087.html

Note: I would like the editor to make a brief statement about this in our newsletter.

Thanks.

Steve

Ahoy to the Boards of the CSMS and the LGGMC,

This is a short note to let you know that the Pebble Pups from the CSMS and Lake George Club will be presenting original research at the Denver Gem Show in September. They speak Saturday at noon. We will also sell the remaining chapbooks to the audience and return that money to the clubs. Also, a CSMS pebble pup is entering a case.

Here is the lineup

JERROD AND NATHAN GALLUP MAMMOTH CAVES

DESTIN BOGART AN OVERVIEW OF DIMORPHODON

JENNA SALVAT A GARDEN OF THE GODS DINOSAUR

JACK SHIMON THE RUDIST FOSSIL STORY

Please come and support these young scientists.

Steve!

The Pebble Pups are launching a new video channel. Teens are producing and directing this program. A new program will be released each Friday and will feature teens and younger kids hosting and interviewing their peers. Subscribe to our channel and join the Pebble Pup's program: "Stories of the Earth." Here is a link to the first one:

https://youtu.be/5Yapx8v1si0

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 and through the CSMS website.

Ready to have some fun? Here's a place where announcements are made and lessons can be worked on independently...

http://
pebblepups.blogspot.com

Visit Pebble Pups on Facebook: http://www.facebook.com/ PikesPeakPebblePups.com

For more information, email:

steven.veatch@gmail.com

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Sub-Group Responsibilities for Refreshments for General Assembly Meetings		
May	June	July
Faceting	Fossil	Jewelry
Aug.	Sept.	Oct.
Picnic	Lapidary	Micromount
Nov. Board	December Christmas Party	

SECRETARY'S SPOT

by Ronald "Yam" Yamiolkoski

No CSMS General Meeting Minutes for the month of August due to the Annual Picnic at Golden Corral

Due to the pending status of paperwork filed for the April Fools Claim, it is critical that no digging or collecting takes place there until further notice. More specifics will be presented via email blast or the General Assembly meeting on Sept. 15th.

It's that time again!!! If you've considered volunteering to help keep CSMS strong and vibrant, please come to this month's meeting or contact one of the officers. Below is a portion of CSMS's Constitution regarding the nominating process.

3. Election of Officers and Executive Committee Members: At the September General Assembly meeting, the President or presiding officer shall appoint a nominating committee to present a list of nominees at the October General Assembly meeting. At the November General Assembly meeting, additional nominations may be made from the floor. NO PERSON MAY BE NOMINATED OR APPOINTED TO OFFICE WITHOUT HIS OR HER CONSENT. Following the nominations at the November General Assembly meeting, election will be made by a vote of the members present. When there is but one candidate for an office, this requirement may be waived and a unanimous vote called for by the President or presiding officer. Elected officers will take office at the JANUARY Banquet and/or General Assembly meeting.

"Here are the pictures from Saturday's field trip to The Sedalia Copper mine. Thank you Don Bray for leading a great trip!"

Above email & photos submitted by Frank Rosenberg























Topaz Mountain Topaz Claim Field Trip. Many thanks to the Dorris Family for allowing us access and especially Krystle Dorris for hosting us all day!!!

Photos submitted by Aja Alexander















Just in case your looking for another event in Denver this month!!!

TRILOBITE TALES E-NEWS

September 2016 Program





An Introduction to Colorado's Transportation Paleontology Program

Speaker: Nicole Peavey, Ph.D.

Tuesday, September 6, 2016, 7 p.m.

Denver Museum of Nature & Science, Ricketson Auditorium

When Nicole Peavey, the Colorado Department of Transportation Staff Paleontologist, tells friends and family what she does, the most common response is "Cool!" and the second most common response is "Why does CDOT need a paleontologist?" Of course, Colorado's combination of high-relief terrain and fossil-

rich rock formations create an excellent environment for fossil recovery in its roadsides. But odd combinations of state and federal regulations, along with the relative youth of the field of mitigation paleontology, can create confusion about paleontology's place in environmental policy. State and federal agencies, road maintenance crews, museum specialists, and avocational paleo enthusiasts all have a role to play in protecting and preserving Colorado's fossils.

About our Speaker – Dr. Nicole Peavey took over the Paleontological Resources program at the Colorado Department of Transportation in late 2013, only a few weeks after defending her dissertation on late Silurian and early Devonian conodonts — none of which occur in Colorado! (Fortunately she loves learning new things!) She obtained her PhD from Texas Tech University, her Master's degree from Fort Hays State University, and her Bachelor's from Whitman College. When not immersed in paleontology, Nicole spends time with her husband and their retired greyhound, practices Aikido, and reads anything from biographies to comic books.

Up Next: Mark Your Calendars

Saturday, September 10, 2016 • WIPS Table at Rocky Mountain Dinosaur Resource Center Fun with Science Day

Friday-Sunday, September 16-18, 2016 • Denver Gem & Mineral Show – Visit the WIPS table!

Sunday-Wednesday, September 25-28 — FOSSIL Project Booth at Geological Society of America Meeting (WIPS will be the featured local club.)

Keep Up with Us

westernpaleo.org

Find us on **f**





Our Staff... Norma Rhodes—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 2014 or 2015, you are eligible for your one year pin award

Please see Storekeeper, Ann Proctor

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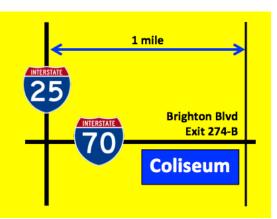
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Denver Coliseum Mineral, Fossil & Gem Show

September 10 - 18, 2016 10am - 6pm Daily



Free Parking & Entry Public Welcomed 30,000 Visitors USA's Largest Show!









PICK&PACK
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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 organizations:

American Federation of Mineralogical Societies (AFMS) <u>www.amfed.org</u>
Rocky Mountain Federation of Mineralogical Societies (RMFMS) <u>www.rmfms.org</u>