



Colorado Springs Mineralogical Society

Founded in 1936

Lazard Cahn

Honorary President

Nov 2020

"Pick & Pack"

Vol 60 Number 9

CSMS General Assembly Thursday, Nov 19, 2020, 7:00 PM Mt. Carmel Veterans Center

CANCELED

Please note: Members whose names begin with M-Z are responsible for refreshments in November

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

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Fossil Feature - C. Burris

To the left is a Ripple Horn Ammonite fossil found by CSMS Member at Large Chris Burris. The specimen is wholly intact.

Ammonoid, also called ammonite, are any of a group of extinct cephalopods (of the phylum Mollusca), forms related to the modern pearly nautilus (Nautilus), that are frequently found as fossils in marine rocks dating from the Devonian Period (began 419 million years ago) to the Cretaceous Period (ended 66 million years ago). The shells, which are either straight or coiled, served as protective and supportive

structures.

Source: Britannica.com



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

Upcoming CSMS Events

ALL CSMS activities are CANCELED until further notice

General Assembly Meeting	CANCELED	Nov '20
Pebble Pup Meeting	CANCELED	Nov '20
Crystal Club Meeting	CANCELED	Nov '20
Board Meeting	CANCELED	Nov '20
Fossil Club Meeting	CANCELED	Nov '20
Faceting Club Meeting	CANCELED	Nov '20

CSMS Calendar

Nov '20	Dec '20						
11/03/20	12/01/20	Fossil Group	1st Tues	7:00 PM	Pikes Peak United Methodist Church	Jerry Suchan	303-648-3410
11/05/20	12/03/20	Board Meeting	1st Thur	7:00 PM	Pikes Peak United Methodist Church	John Massie	719-338-4276
11/19/20	12/17/20	See session online	3rd Thur	5:30 PM	Mt. Carmel Center	Steve Veatch	719-213-1475
11/19/20	12/17/20	General Assy Meeting	3rd Thur	7:00 PM	Mt. Carmel Center	John Massie	719-338-4276
11/16/20	12/24/20	Crystal Group	4th Thur	7:00 PM	Mt. Carmel Center	Kevin Witte	719-638-7919
11/16/20	12/24/20	Faceting Group	4th Thur	7:00 PM	Berta's House	John Massie	719-338-4276
by appt	by appt	Lapidary Group	by appt	by appt	Sharon's House	Sharon Holte	719-217-5683

For more information on sub-groups, meetings or other CSMS information, go to our website: www.csms1936.com

Upcoming Community Events

Nov 2 7:00 PM, virtual meeting, *Fossil Discoveries Around the Ridge*, Erin LaCount, Dinosaur Ridge. Explore the history of Dinosaur Ridge and the importance of the organization that oversees the fossil and geological sites. Join from computer, tablet or smartphone: <https://www.gotomeet.me/dfangrow/wips-general-meetings>

Nov 19 4:00 PM - 5:00 PM Van Tuyl Lecture (Virtual), Colorado School of Mines, *Elephants in Northeastern South America: The Origin and Evolution of Cross-shelf Valleys Feeding the Huge Discoveries in Offshore Guyana and Suriname* by Lesli Wood, Colorado School of Mines. Abstract: TBA: Zoom info: TBA

CANCELED December 13 – 15, 2020; Flatirons Mineral Club's Annual Show; Longmont, Colorado is cancelled.

TBD Florissant Scientific Society: All live meetings are cancelled until further notice. Meanwhile check out some recent meetings that you may have missed on the FSS YouTube Channel: <https://www.youtube.com/channel/UCmA-JzMgXLWbAtJLVzOFQTg/videos>

End of Event Section



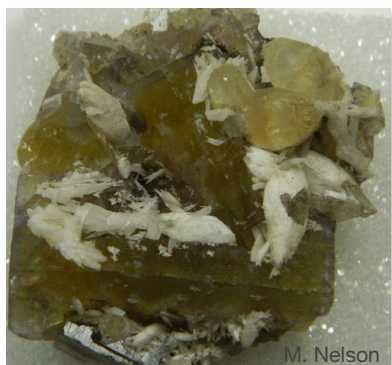
Minerals of the Briding Estate Sale: Part II

Mike Nelson, CSMS

csrockguy@yahoo.com

As noted in previous postings, Rebecca Nohe Estate Sales recently dispersed the rock and mineral collection of longtime Colorado Springs Mineralogical Society Member Laurann Briding. The sale attracted a large number of buyers wearing masks who were admitted via reservation (due to Covid-19 pandemic). I was in the second group on Friday and came home with a few interesting specimens. The narrative that follows is a continuation from Part I (September '20 Pick n Pack) and starts with fluorite and calcite from the Illinois-Kentucky Fluorspar District.

The flat held a nice fluorite with calcite that has a small old-looking label stating it came from Cave-in-Rock, Illinois. This, of course refers to the famous Illinois-Kentucky Fluorspar Area with the most famous mine being (probably) the Minerva #1. Most specimens that simply say Hardin County, Illinois, or even just Illinois, are routinely assigned to the Minerva #1 (Ozark-Mahoning No. 1 Mine). There certainly are rockhounds and mineralogists who can assign the specimens to specific mines; however, that is above my pay grade. I have several specimens from the Area picked up on a field trip back in the 1960s, but this specimen was included in the flat and actually is pretty attractive.



Honey-yellow fluorite, white sharply point crystals of calcite, translucent almost colorless, large calcite crystals, and colorless fluorite at top. Width FOV ~4.7 cm. Photo: M. Nelson



A second generation of clear cubic fluorite crystals. The top border mater is synthetic material that was glued to, and held by, the specimen. Width FOV ~1.4 cm. Photo: M. Nelson



There are a few large, translucent "first generation" calcite crystals. Width FOV ~1.7 cm. Photo: M. Nelson

The fluorite (CaF_2) in the specimen is composed of interlocking washed-out, honey-yellow cubes (with one small purple cube) along with a second generation of much smaller clear cubes. Scattered around on the cubes are what appears to be three or more generations of calcite crystals. The largest are clouded, poorly formed, colorless crystals with a matte luster that I first thought were witherite. However, they effervesced rapidly in dilute HCL and so I called them calcite.

continued...

A second generation consists of long, prismatic, sharply terminated, colorless to white crystals some of which are encased, partially or completely, within the fluorite.



Two generations of calcite crystals scattered on the fluorite crystals. Width FOV ~1.4 cm. Photo: M. Nelson

There appears to be a later generation of a snow-white, slender long crystals covering these original prismatic crystals. Finally, there are clusters of very tiny, prismatic, colorless, transparent calcite crystals scattered around. Quite a selection.



This is an interesting situation. The larger transparent calcite crystal is covered with a later generation of slender, prismatic, snow-white calcite crystals. Width FOV ~1.4 cm. Photo: M. Nelson

The colors of fluorite in the District vary considerably but perhaps it best known for purples and blues with color caused by various

elements substituting for some of the calcium in the chemical composition. The cubic fluorite crystals have perfect cleavage and will produce a nice octahedron. Tourist stores across the nation sell these cleaved specimens by the thousands.

Although we have fluorite here in Colorado associated with pegmatites, the Illinois-Kentucky District fluorite was deposited in fractures and faults associated with fairly flat lying Mississippian Age limestones (~330 Ma). Low temperature hydrothermal brines, of later age (~150-250 Ma), then migrated into the voids while also partially dissolving some of the wall rock before depositing the fluorite. The District seems related to the Mississippi Valley Type mineral deposits that produced the lead-zinc districts of Missouri, Wisconsin, and other states in the Midwest. The question of the day is, did the brines originate locally around hidden igneous intrusions, or did they migrate from the southern U.S. (today's geography) that was tectonically active due to plate collisions?

The Mexican State of Zacatecas is in the north central part of the country and is known for the tremendous abundance of minerals and especially silver. MineraliA (2011) noted that "today the state produces 60% of the national product of silver, placing it as the second largest producer in the world. The soil is riddled with veins of silver, gold, mercury, iron, zinc, lead, bismuth, antimony, salt, copper, quartz, kaolin, onyx, calcite, cadmium, and wollastonite."

One of the great mining towns in Zacatecas is Concepcion Del Oro. Iron, lead, copper, zinc, silver, and gold have been mined since at least

the mid-1500s and the production of silver, gold and copper continue today. The mines around the town are not well known for pyrite; however, a pyrite specimen was in the mixed flat and so it came home with me. I wanted to check it out since I am not into collecting pyrite due to possible “pyrite disease” and the release of corrosive sulfuric acid and harmful sulfur dioxide gas.



The three photomicrographs above show pyrite replacing pyrrhotite. The middle and upper photos show the crude hexagonal shape of original pyrrhotite. Width FOV ~1.2 cm. Photos: M. Nelson

In examining the specimen under a scope, I decided “something was kooky” with the way the numerous pyrite crystals were displayed. The 5 x 7 cm specimen is covered with small, gemmy, terminated quartz crystals with (up to ~6 x 11 mm) projections of interlocking pyrite crystals (actually the crystals look glued together). It was confusing. In searching the photo gallery on MinDat (Concepción del Oro Municipality, Zacatecas, Mexico) I did notice an interesting specimen posted by Dan Winder: “Nice pseudomorph showing granular pyrite that has replaced elongated hexagonal crystals (or stacks) of pyrrhotite. The tallest of these is 5 cm in length and looks like a calcite.”



Sprays of quartz crystals are numerous and randomly mixed in with pyrite pseudomorphs (after pyrrhotite). Width FOV ~9 mm. Photo: M. Nelson

Now these pseudomorphs certainly looked like the original mineral was calcite but what about pyrrhotite? So off I go to a browser and type in “pyrite after pyrrhotite.” Bingo, serendipity again. Dan Weinrich has a nice specimen of “Sparkling pyrite replacing previous pseudo-hexagonal crystals of pyrrhotite” collected from Romania, and others from Russia. Keep looking. Luis Burillo Minerales has a number of specimens of the same; however, they were collected in Kosovo. When all else fails, try

EBAY! For \$160 one may purchase a single clump of “Pyrite after Pyrrhotite, Noche Buena Mine, Zacatecas, Mexico.” That got me closer although the mine is in a different Zacatecas municipality than Concepcion Del Oro; however, it is close. The Mine also happens to be one of the largest silver mines in the world with reserves of about 1 million oz of gold and 32.4 million oz of silver. So, an interesting way to solve a small problem of probable interest only to an ole rockhound like me. The replacement of pyrrhotite (Fe_{1-x}S where $x=0-0.125$) to pyrite (FeS_2) seems to involve dissolution and then replacement with perhaps an intermediate formation of marcasite thrown in (see Qian and others, 2011) for a more complete explanation.

Finally, at least for this round, the flat contained a sparkly group of brown to brownish-red quartz crystals.



Pavement of hematite and goethite included quartz crystals. Width FOV ~7 cm. Photo: M. Nelson

Closer examination shows the crystals are gemmy, terminated or double terminated, with the color imparted by the iron minerals goethite and/or hematite. The specimen is not anything that I would pick up on an individual basis but, it was in the flat. The specimen was collected from Indian Mountain, Alabama, a

location well known for producing phosphate minerals.



Zoomed in photomicrograph of the aforementioned hematite and goethite included quartz crystals. Width FOV ~8 mm. Photo: M. Nelson

However, close examination did not produce visible phosphates. MinDat had single photo of included quartz from the locality; otherwise, I am shy of information except that an old looking, handwritten label stated it was collected by one Preston Watts.

REFERENCES CITED

Gujie, Fang Xia, Joël Brugger, William M. Skinner, Jiafang Bei, Guorong Chen, and Allan Pring, 2011, Replacement of pyrrhotite by pyrite and marcasite under hydrothermal conditions up to 220 °C: An experimental study of reaction textures and mechanisms: *American Mineralogist*, vol. 96, no. 11-12.

MineraliA, 2011, *Minerals of Mexico: Oaxaca, Mexico*.

Morgan, Helen, Greg Arehart, Naomi Oreskes and Half Zantop, 2014, Origin of epithermal Ag–Au–Cu–Pb–Zn mineralization in Guanajuato, Mexico: *Mineralium Deposita*, vol. 49.

President's Corner

John Massie

Presidential Matters



No matters to discuss

2020 Satellite Group Chairs

Kevin Witte/ Bob Germano, Crystals

John Massie/ Bertha Medina, Faceting

Jerry Suchan/ Joy Price, Fossils

Vacant, Jewelry

Sharon Holte, Lapidary

Vacant, Micro-mount

Vacant, Photography

Steven Veatch/ Betty Marchant, Pebble Pups

2020 Liaisons

Florissant Fossil Beds National Monument:
Steven Veatch

Western Museum of Mining and History:
Steven Veatch

Pebble Pups

Steven Veatch

CSMS Pebble Pups and Earth Science Scholars



NOTICE: Regular Pebble Pup meetings are **SUSPENDED** until TBD

- Please visit our blog for special announcements and field trips:

<http://pebblepups.blogspot.com>

<http://www.csms1936.com>

Secretary's Spot

Lisa Cooper

Meeting Minutes

Colorado Springs Mineralogical Society

2020 CSMS Officers

John Massie, President

Vacant, Vice-President

Lisa Cooper, Secretary

Ann Proctor, Treasurer

Adelaide Bahr, Membership Secretary

John Emery, Editor

Chris Burris, Member-at-Large

Renee Swanson, Member-at-Large

Sharon Holte, Past President

No minutes to present

Hey! We still need to nominate and elect a 2020 CSMS Adult Rockhound of the Year!

- Please refer to the November 2019 issue of the Pick & Pack, page 3. If you do not have a copy, you can access www.CSMS1936.com and go to the Newsletters. Print off a form or two and nominate your best rockhound!!

2020 CSMS Chairpersons

John Massie, Program Coordinator

John Massie, Show Vol Coordinator

Mike Webb, Field Trip Coordinator

Steven Veatch, Science Fair Chair

Frank and Ellie Rosenberg, Librarians

Mark Schultz, Social Committee Chair

Ann Proctor, Store Keeper

Lisa Cooper, Show Chairman

Lisa Cooper, Webmaster

Lisa Cooper, Facebook Keeper

Mike Nelson, Federation Representative

Vacant, Federation Representative



"Code of Ethics"

A large measure of the enjoyment of our hobby consists of collecting in the field. For that reason, the members are proud to endorse the following:

I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.

I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.

I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.

I will use no firearms or blasting material in collecting areas.

I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.

I will leave all gates as found.

I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.

I will discard no burning material - matches, cigarettes, etc.

I will fill all excavation holes which may be dangerous to livestock.

I will not contaminate wells, creeks, or other water supplies.

I will cause no willful damage to collecting material and will take home only what I can reasonably use.

I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.

I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.

I will cooperate with field-trip leaders and those in designated authority in all collecting areas.

I will report to my club or federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.

I will appreciate and protect our heritage of natural resources.

I will observe the "Golden Rule", will use Good Outdoor Manners and will at all times conduct myself in a manner which will add to the stature and Public Image of Rockhounds everywhere.



John Emery
Editor

Thanks to our contributors. We encourage everyone to submit articles, photos, illustrations or observations.

Share your experiences, your new finds, or simply your enjoyment of 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 **last day 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 can be submitted at resolutions above 200 dpi in ANY format.

Articles are preferred in MS Word, preferably NOT pdf, but the editor will correct font.

e-mail to the editor:
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). Unless otherwise marked, materials from this publication may be reprinted. Please give credit to the author and CSMS PICK & PACK.

Classifieds and Announcements

Blue Stone Challenge

Feeling **blue**? We are too! Club member **Mike Nelson** has something for us to do. He's writing a paper (for the newsletter) on **blue minerals** and needs club members' help with it.

Mike needs photos of the **blue minerals** from your collection: agates, sapphires, faceted gems, rough, crystals, whatever! Include the owner's name, the name of the mineral and the collecting locality.

Send as many photos as you like to club member, major newsletter contributor and talented writer Mike Nelson at csrockguy@yahoo.com. Please submit to Mike by 15 Nov so we can cut off and prepare for publication in the December newsletter. JPEG preferred but Mike can work with most formats. Maybe not film but something could probably be worked out.

Let's see how **blue** our December newsletter can be! Send those pics. Make our newsletter glow **blue**, like this:



Note: your gem/mineral doesn't have to look like this. Photo: amazon.com



Pick & Pack
P.O. Box 2
Colorado Springs, CO 80901-0002

Postage Here



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 newsletter 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 PM at Mt. Carmel Veterans Service Center; 530 Communication Circle, Colorado Springs, CO 80905
- Visitors are always welcome.
- Individuals—\$30, Family—\$40, Juniors—\$15, Corporate—\$100.
- Find the application at the web site: www.csms1936.com. 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.

Meetings:

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, Lapidary Group, and Pebble Pups/Juniors. For details on Satellite Group meetings, check out the calendars on page 2 and the web site.

Membership Benefits:

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* (carry your card), a year of learning and enjoyment, plus a lifetime of memories.

Colorado Springs Mineralogical Society is a Member of the following organizations:

- American Federation of Mineralogical Societies (AFMS) www.amfed.org
- Rocky Mountain Federation of Mineralogical Societies (RMFMS) www.rmfm.org