

PICK&PACK

THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

April 2010
PICK&PACK
Volume 50 Number 3

BABY PACK YOUR LEAVING TRUNK: RIFLE FALLS

BY DR. MIKE NELSON, CSMS

As I sit here on cold January days, dreaming about geology and nature and the out-of-doors, I often listen to 60's and 70's music for inspiration. Some people might prefer comforting classical music but I prefer good old rock and roll to get my writing juices going. So, I was listening to Canned Heat (not



Fig. 1. The Grand Hogback north of Rifle along Colorado 13. Photo by author.

the most familiar band around but one that performed at Woodstock, one of the defining events of "my generation"! sing *Now baby pack your leaving trunk, you know we got to leave today, just exactly where we going I just cannot say*. The last phrase resonated with me, for Colorado is one of the great states in the Union for a personal discovery, in out of the way places, for all things geologic.

It is such a joy to take a less-traveled road and serendipitously come upon a point of geologic interest that will bring a broad smile to your face and a "WOW" from your lips. For me, one of those moments happened last fall when I started west, not really knowing where I was going, and ended up at Rifle Falls.

There have been an innumerable number of times in the last 40+ years that I

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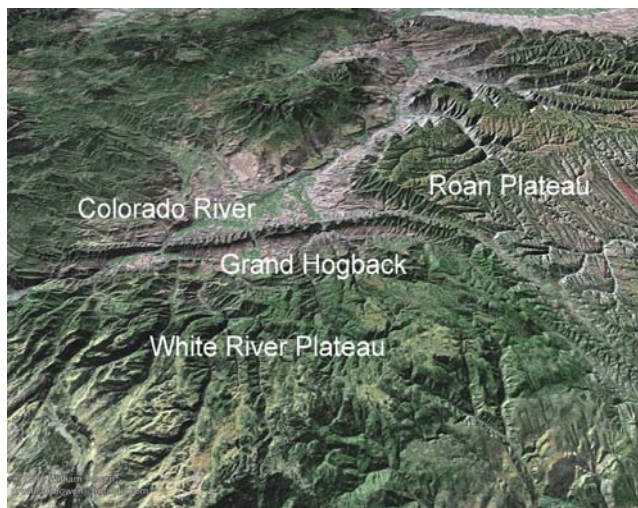


Fig. 2. The Grand Hogback. I-70 travels along the Colorado River and both breach the Hogback near New Castle. At Rifle the Grand Hogback turns north. Photorealistic aerial view by permission of Dr William A. Bowen - California Geographical Survey (<http://geogdata.csun.edu>)

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.

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Colorado Federation of Gem & Mineral Societies (CFGMS)

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Founded in 1936

Lazard Cahn

Honorary President

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have zoomed past the city of Rifle in Garfield County heading to Utah, or returning back to the Plains. Perhaps a quick stop for coffee or gasoline, but never time to examine the geology. Priorities change when one “retires” from a “regular” job and hurried trips may no longer be necessary.

Such was the case last fall when a roadside decision was made to explore Rifle Falls State Park and the surrounding area, such as the Grand Hogback; in retrospect, a great decision.

I had observed the Grand Hogback (GH) of Colorado many times in the past, mostly while traveling parallel to the magnificent structure on CO 13 from Rifle to Meeker (Fig. 1), or cutting through the structure at New Castle (where the Colorado River breaches the ridge). The GH is a 70+ mile long S-shaped monocline that essentially marks the boundary between the Rocky Mountains (to the east; locally the White River Plateau) and the Plateau Country (to the west; locally the Piceance Basin) (Fig. 2). The up-thrusted beds of the monocline are mostly resistant beds of the Late Cretaceous Mesa Verde Formation, a unit representing an oscillating, generally regressive (receding), shore-



Fig.3. A cross section of the Grand Hogback north of Rifle along Colorado 325 at Rifle Gap. The rocks belong to the Cretaceous Mesa Verde Formation. Photo by author

line/coastal swamp area in the Western Interior Seaway (Fig.3). The Mesa Verde is perhaps 6000 feet in thickness near Rifle and many beds of coal have been mined in the past, beginning in 1886 (Fig. 4); however, numerous coal gas explosions with mine accidents have closed down the mines. The GH, a large monocline (only one set of dipping beds), is a Lara-

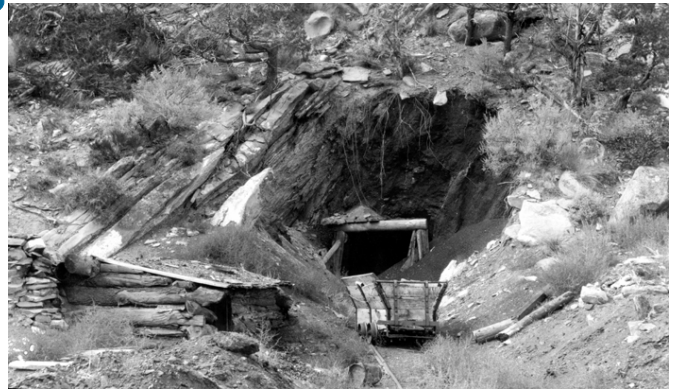


Fig. 4. Coal mine entrance at Harvey Gap in the Grand Hogback. Photo courtesy of the United States Geological Survey.

mide (the mountain building event of the Rocky Mountains; see past issues of Pick & Pack) structure that formed over reactivated faults in the Precambrian rocks. Previously I wrote about related monoclines at Dinosaur National Monument and Colorado National Monument.



Fig. 5. The “Valley Curtain” erected at Rifle Gap in 1972. Photo courtesy of ©1972 Christo.

As one leaves Rifle and travels north on Colorado 13, with a right turn on Colorado 325, the roads traverse the Cenozoic Wasatch Formation along Rifle Creek; however, upon reaching Rifle Gap the beds of the Mesa Verde Formation are violently uplifted with some beds essentially vertical (Fig. 3). It was at Rifle Gap that in 1972 the Christos erected the “Valley Curtain” (Fig. 5). After passing through the Gap the road “detours” around Rifle Gap Reservoir, situated in the Mancos Shale and partially dammed by the GH. The road then passes through the Dakota Formation, the Morrison Formation, some Triassic rocks and finally the Paleozoic rocks near Rifle Falls State Park.

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Fig. 6. The falls at Rifle Falls State Park. The lip of the falls is composed of travertine. Photo by author.

Rifle Falls State Park (RFSP) is a small area, as state parks go, with 48 acres, but has some spectacular scenery anchored by the falls themselves (Fig. 6.). The area surrounding the falls is a lush oasis of exotic looking vegetation, cascading waterfalls, and crystal clear streams. The Leadville Limestone (Mississippian in age) is the bedrock at the Falls with East Rifle Creek providing the water. The Leadville is quite porous (in other parts of the state the Leadville is the host rock for metallic deposits) and numerous small caves may be observed in the Park. Ground and surface water flowing over and through the Leadville has dissolved parts of the limestone and the water then becomes saturated with calcium carbonate. As East Rifle Creek cascades over the Leadville Limestone cliff, a gas, carbon dioxide, is released and the chemistry of the water is changed and calcium carbonate is rapidly deposited in the form of travertine, a dense, usually banded, sedimentary rock composed of calcium carbonate. Some geologists classify travertine as a variety of limestone.

Upon returning to Rifle one goes by an abandoned uranium/vanadium mine that operated, off and on, from its discovery in 1909 to the late 1970's. In later years the ore was processed at Rifle but the mill was declared "clean" by the Colorado Department of Public Health and Environment in 2004.

And of course, just west of Rifle are the famous "oil shale" deposits of the Green River Formation, but that is a story for another issue.

As for my future explorations into Colorado geology:

I wish to be an inspector of waterfalls. I want to study cloud formations and memorize the wind and learn by heart the habits of the ponderosa pine. Edward Abbey with apologies.

Field Trip Report – Yam: There are currently three CSMS Field trips posted on our web-site, with more in the works. The three include the Holcim Cement Quarry, the April Fools Claim and the trip to Grand Junction and Utah for collecting.

Membership Report – Dues for 2010 are past due. Please make sure you provide complete updated information on your application form so that our database is accurate. Dues can be paid to Roni Poteat if you want to pay tonight. Roni also has copies of the Application Form so you can do your update.

Pick & Pack – The February issue of the Pick & Pack has been e-mailed to all based on the database. We will mail them as soon as time permits. A March issue is in the works and should be out before the end of the month. Hard copies will be mailed shortly.

Final reminders: Make sure you put the Silent Auction and Bake Sale on your calendar- April 17th.

Make sure that you pay your dues. We would hate to drop you from our membership list.

Don't forget we are still looking for permanent replacements for the Editor.

I am still looking for Field Trips to offer to our members. Please help out. It's easy and fun.

Lastly, thank you to Maria Weisser our Social Committee Chair and the Faceting Group for tonight's treats.

Yam also announced that the 2010 Denver Spring Show, Colorado Mineral & Fossil show is scheduled for April 23-25 at the Denver Holiday Inn, 4849 Bannock Street.

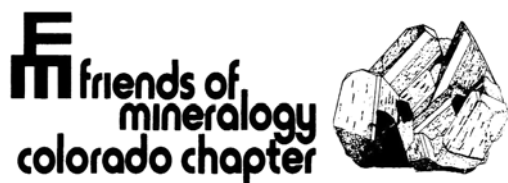
Close Meeting 9:20 PM

Dave Olsen introduced our speaker: Ray Berry who gave a presentation on Pseudomorphs. Mr. Berry provided details and lots of pictures that reinforced the pseudomorph process in a variety of minerals. Thanks much to Mr. Berry for providing insight to this aspect of the mineral world.

CSMS KUDOS CORNER

CHRIS RETZLAFF TO BE PUBLISHED

Steve Veatch just got word Chris' article (see the article in this P&P issue) has just been accepted by an international glossy rock and gem magazine. What an achievement for a 13 year old! Chris is a distance CSMS Junior member! The editor is working on the article layout. Steve will have copies of the final galley proofs when they are finished.



Creede Mineral Symposium

**Sponsored by the Colorado Chapter,
Friends of Mineralogy**

**September 10-12, 2010, Creede,
Mineral County, Colorado**

Call for Papers and Topics

"Minerals of the Creede Mining District and Mineral County, Colorado" will be the theme of the 2010 Denver Gem and Mineral Show (Sept. 17-19, 2010). The weekend preceding the show a companion event, the Creede Mineral Symposium, will be held in Creede, Sept. 10-12. The Program Committee invites prospective speakers to submit titles of papers related to this theme for presentation at the symposium. The audience is anticipated to consist of around 75 primarily non-technical attendees, mainly mineral collectors plus persons interested in Creede geology and mining history. Titles should be closely related to the minerals found in that area or to its economic geology. The symposium will include a short welcoming session Friday evening, presentation of papers on Saturday, and a field trip on Sunday, as well as a tour of the local mining museum.

Proposed titles for presentations should be submitted by e-mail to the Program Committee for review no later than June 1. Several invited lectures are already planned; there are a limited number of spaces available for additional speakers. If your topic is selected, a digital abstract or extended abstract of 250-750 words will be required by July 1 for inclu-

sion in our abstracts/proceedings volume. Each abstract should contain the names, affiliations/addresses, e-mail addresses, and phone numbers for the speaker and all co-authors. Please clearly indicate the name of the presenter and any anticipated equipment needs. If your topic/abstract is selected for the conference your symposium registration fees will be waived (for the presenter only) and you will receive a one-year complimentary membership in the Friends of Mineralogy.

We look forward to hearing from potential speakers with the titles of their suggested presentations. Submissions and inquiries may be sent directly to either of the following Program Committee members: Bruce Geller, <bgeller@mines.edu>, or Pete Modreski, <pmodreski@usgs.gov>.

Details about registration, lodging options, and the symposium schedule will be forthcoming as soon as they are available.

PRESIDENT'S CORNER

BY RON YAMOLKOSKI,

Like many of you, I keep wondering when this winter will end. Snow and now wind seem to be the themes. I don't know about you, but I do not enjoy collecting in a driving wind. It's just like fishing is no fun in the wind.



In March, Roni Poteat became our new Membership Secretary. I have been working with Roni to try and update our membership lists so we can better serve our membership. One thing we are stressing is e-mail addresses that can receive the Pick & Pack. It costs \$1.26 to print, fold, and staple a copy of the Pick & Pack. When you add postage and consider we send out 10 copies a year, you can see the advantage of e-mail distribution. Without e-mail we would need to raise our dues significantly. Please make sure that Roni has your up to date information and in particular a good e-mail address.

As I mentioned last month, we have the Silent Auction and Bake Sale at WMMI coming up on April 17th from 10:00 AM until 2:00 PM. This is a very important event for CSMS. The receipts from this Silent Auction fund our group needs and the Pebble Pups/Juniors. The Pp/J budget for this year is at least \$600 and I know we will need money for our Lapidary Group and other Groups. Please donate some material or baked goods and come to the event and buy something to take home. I will be bringing a few items from the estate of Dale R. Corbin to our April General Assembly Meeting for a mini Silent Auction to get everyone warmed up.

Field Trips!!!! I know that everyone is thinking about getting out. We have a few posted, but this is the month that a lot more will be popping up on the website. Make sure you check the site periodically so you don't miss a chance to enjoy one of the field trips that we offer. A few of the Field Trips will be with other clubs so this will give you a chance to meet some folks outside of CSMS with similar interests. By the way, I am still looking for people to lead field trips so if you can, please get back to me as soon as possible.

The Rock Fair is coming up in June (26th and 27th) and vendors have been sending their contracts in. We will need volunteers for the event including people to help with setup, tear down, security, and trash collection. We will also need volunteers to be speakers. Last year, the speakers were an extremely popular addition to our one day event. Now we have two days so we will need more speakers. Please volunteer. Another opportunity to participate is by having a

case on display. Although we have a limited amount of space, we would like to get some cases. There will be no judging and no theme so you can provide a case without any fears. Bob Landgraf is coordinating the cases and there is more information from him in this Pick & Pack. Also, on Saturday night, as part of the Rock Fair (after the guests have departed), we will have a Pot Luck for the volunteers and Vendors. We hope that this will be a way for all of us to get to know each other a little better.

In case you were not aware of it, we have a Rock Fair planning meeting before the General Assembly meeting (6:30PM) each month until the Rock Fair. All members are welcome to come and also to volunteer. I will be passing out Rock Fair flyers at this month's meeting for anyone who can get them out there.

The Annual Show continues to be a problem. We are still hopeful that we can put something together. As soon as we have something we will get the word out to all.

The Rocky Mountain Federation meeting is this month in Wichita. I'll be providing the information on our new plans for using the Rock Fair at WMMI in June of 2011 as our replacement for the Annual Show. The WMMI is happy that we are going to do this and the RMFMS officers feel it will work fine. It will be different, but it should work. It will also mean that we can offer some Field Trips as part of the multi-day event. More details to come on this after Wichita.

Take care,

Yam

RMFMS PRESIDENT'S LETTER

BY BILL SMITH, RMFMS

It has been a month of travel for Janet and me; we spent three weeks cruising Central America. Our first stop was Aruba off the coast of Argentina and then on to Cartagena, Columbia. One of our objectives while in Cartagena was to purchase an emerald specimen for the museum. This velvety green gem is very scarce, and Columbia is the source of the most, and certainly the finest, of the world's production. Emerald is a member of the beryl family, and its green color is caused by traces of chromium. We were able to make contact with Dr. Leland Miles who has been a key player in the emerald business in Cartagena for over twenty-five years. He gave us a very informative tour of the city, and then we visited his Mister Emerald shop. Our very large specimen piece and a beautiful cut emerald are on display at the museum. *(The museum mentioned is Bill and Janet's Nature Museum in Hardtner, KS. See their website at <www.bandjnaturemuseum.com>.)*



We then set sail for the Panama Canal, which is considered the Eighth Wonder of the World. If you have been there, I am sure you agree. Construction on the Panama Canal began in 1881 by France. During the French unsuccessful attempt to build the Canal, it is estimated that 25,000 workers died, predominately from malaria and yellow fever. The Canal was completed by the US Government in 1914. This is a fresh water canal receiving its water from a 2,134 square mile watershed which flows into Gatun Lake. Acting as a fresh water elevator, each vessel is lifted eighty-five feet above sea level to reach the height of Gatun Lake, being lowered back to sea level on the Canal's opposing side. It cost our ship \$147,000 to go through. Over 40% of present day vessels are too large to go through the locks, and the Panamanians, who now own the Canal after the turn over by President Carter, are building a much larger set of locks alongside the current locks which will continue to operate.

Our travels moved on to Puntarenas, Costa Rica; Puerto Quetzal, Guatemala; Acapulco, Zihuatanejo, and Topolobampo, Mexico. This was a great trip with sunshine and eighty degree temperatures.

This past week we headed to the monthly meeting of the newly formed, actually a year old, North Central Kansas Rock and Gem Club. Janet has more about this meeting in the April RMF Newsletter.

We headed south to Kerrville, Texas, where we picked up a mountain lion. It is on display at the museum.

If you are on distribution for a hardcopy of this (RFM) newsletter, you have not received one this year. Several of us new people did not understand the distribution process. I hope with this copy you now have received all back copies. Make sure to check to see if you have any action items that need action prior to the Wichita show.

See you in Wichita.

A SPECIAL NOTICE FROM CSMS MEMBER DIANA WING, OWNER OF DICK'S ROCK SHOP

"As we have done for the past several years, we are offering a special sale for the entire month of April to all members of CSMS showing their 2010 membership card, A 20% DISCOUNT ON ANY IN STOCK ITEM IN THE STORE. There are several exceptions: This sale does not include books, coin pictures, wire, tools or equipment. On those items, we can offer a 10% discount. As an additional incentive, we will offer an additional 5% off on total purchases of \$100.00 during this special sale."

From Yam: "This is just another great reason to pay your 2010 dues. Being a CSMS member has its benefits."

THE CSMS LAPIDARY GROUP IS UP AND RUNNING AGAIN

Under the leadership of Jennifer Bailey the CSMS Lapidary Group is up and running again. This popular group meets the 2nd Saturday of each month at Jennifer's home.

Thanks to the recent donations by the estate of Dale R. Corbin we have some additional equipment for the group. Bob Germano has been checking the equipment over and doing some "tweaking" to make sure it works. Although the equipment has had some use it will allow more members to participate in the group's activities. One item is a 24" saw which still needs some blade cooling material before we start using it. We also received a 10" trim saw and a six wheel unit similar in configuration to the Group's Genie.

Jennifer says you should bring your rocks to identify, slab, trim, and polish them. Make something fun and beautiful for yourself, your friends, and your family.

Please contact Jennifer directly for directions to her home.



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Second Annual Rock Fair at WMMI

Date: June 26, 2010 / 9:00AM—4:00PM & June 27, 2010 / 9:00AM—3:00PM

Lots of fun for the whole family. We will have gem, jewelry, mineral and fossil vendors; educational talks on rockhounding, geology and paleontology; demonstrations of goldpanning by the Gold Prospectors of Colorado; rock identification, a special Kid's Area; food vendors; the exhibits of the Museum, CSMS display cases; and WMMI equipment operation. WMMI has chosen Fair Saturday to run their Yellow Jacket Stamp Mill at 10:00AM and 1:00PM. Come to the Fair and see this awesome machine in action.

Heritage Lecture—Oil Sands

Date: July 15, 2010 @ 7 p.m.

Free to the Public. Call for Reservations.

Burro Birthday Bluegrass Bash

Date: August 7, 2010 / 10 a.m. to 5 p.m.

Oro & Nugget's Bluegrass Birthday Celebration—more details to follow.

Exploring Earth Science at the Frontiers of Discovery: Redhill Ridge's Dakota Sandstones Contain Trace Fossils

Chris Retzlaff, *Colorado Springs Mineralogical Society Junior Member*

The Redhill Ridge area in Park County, Colorado is a hogback composed of Dakota Sandstone. This fine-grained, Cretaceous-age sandstone—near the town of Fairplay—contains trace fossils (Figures 1 and 2) that help paleontologists understand what the environment was like there more than 65 million years ago. Trace fossils, also called ichnofossils, are like fossils of any kind—they are traces of organisms preserved in the Earth's crust from prehistoric times (Hantula, 2002). Trace fossils can be important to paleontologists for many reasons. Trace fossils capture paleo behavior of prehistoric creatures revealed through the traces they left behind, such as burrows, tracks, trails, coprolites (excrement), and boreholes (Pannell, 2004). Trace fossils also provide information on the climate and the environment they were formed in. When examined, trace fossils may reveal many important facts about the rock they are embedded in such as the sedimentary environment, the rate of deposition, and if water flowed on or near the rock (Kusky, 2005).



Figure 1. Burrows made by prehistoric organisms can be seen going in all directions on this piece of fine-grained Dakota Sandstone collected in the Redhill Ridge area near Fairplay, Colorado. Photo by S. Veatch, 2009.

Generally, if the maker of the trace is not found in direct involvement with its trace, it is difficult or impossible to know what organism made the trace. For instance, an entirely different organism may produce identical traces. Because of this problem, trace fossils are classified into either genus or species groups—ichnogenera and ichnospecies respectively—and do not relate to the organisms that created them. For the most part, the only way to truly determine what organism created a trace fossil is to find the actual fossilized remains, or body fossils, of the organism that made the traces in direct association with those traces.



Figure 2. Close up view of a trace fossil on the Dakota Sandstone study specimen. Photo by S. Veatch, 2009

The Redhill Ridge trace fossils hold some interesting clues as to what organisms lived there. First, during the Cretaceous Period, the area near present day Fairplay was near the shore of a huge inland sea—the Western Interior Seaway (Chronic and Williams, 2002). This shows that whatever creature made these fossils in the Redhill Ridge area lived in shallow water near the shore. . Using these clues it is possible to hypothesize that the organisms that made these traces were worms or similar animals.

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Geologic Folio Red Rock Canyon Open Space Colorado Springs, Colorado

by

Ken Weissenburger, Sharon Milito, and Don Ellis

295 pages ~ Large 8½" x 11" format ~ Profusely illustrated

- ✦ 250 photographs
- ✦ 35 maps including maps of the best places in Red Rock Canyon to see geologic features of interest
- ✦ Over 65 drawings

In depth treatment of:

- ✦ Geologic mapping of the Pikes Peak Region and the West
- ✦ Geology of Red Rock Canyon
- ✦ The fossil record
- ✦ Red Rock Canyon Quarrying and mining
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IMPORTANT ISSUE TO BE VOTED ON BY GENERAL ASSEMBLY

For many months the CSMS Board has been trying to figure out ways to either reduce costs or gain additional revenue for its General Fund. This is the fund that covers member expenses, the Pick & Pack and the costs of the space for our various meetings at the Colorado Springs Senior Center.

While the Board has been successful in reducing some costs, the problem of income still exists. The subject has been discussed extensively by last year's Board as well as this year's Board. Some ideas that have been placed on the table are charging for the Pick & Pack mailing, running a lottery, increasing the dues, and reducing the number of issues of the Pick & Pack. While all of these ideas have good points and would help, only one addresses the fundamental problem that has occurred because of changes that have occurred since the last increase in dues. Things cost more and that is the bottom line.

As a result, the CSMS Board at its April 1, 2010 meeting voted to bring to the General assembly the following motion: **Be it resolved that effective in 2011 annual dues will increase for Juniors to \$10.00, for Regular (Individual) Members to \$30.00, for Family Membership to \$40.00 and for Corporate Membership to stay the same at \$100.00.** It should be pointed out that the usual \$5.00 reduction in dues for payment for Regular and Family Memberships by January 31st will still apply.

This new dues structure would go into effect for anyone wishing to pay 2011 dues from the time of approval of the

change forward.

This motion was read to the General Assembly at the regular April meeting and will be read and voted upon at the May General Assembly meeting.

NEW EDITORIAL STAFF EAGER TO PRODUCE

Beginning with this issue, there will be two Co-Editors for the Pick & Pack: Ann Proctor (who will attend the meetings and review the issue for grammatical, punctuation, and spelling problems), and Teri Stoiber (who will collect articles and information and format the Pick & Pack).

Ann and Teri appreciate your patience, and would like to remind all members that any articles relating to the CSMS, your "rocking" adventures with or without the CSMS, and rocks/gems/minerals, are all welcome. Spelling, grammar, and punctuation will be changed only when necessary, and the author's original voice and ideas will remain intact.

You can e-mail documents and pictures to blacklabaccounting@gmail.com—it is most expeditious to save in pdf or doc formats—other formats are also accepted, they will be modified to work within those formats.

You can also submit hand-written or type-written documents, so long as you provide a contact phone number or e-mail in case of questions.

We look forward to providing a consistently formatted, well-put together Pick & Pack for all members to enjoy.

Exploring Earth Science at the Frontiers of Discovery: Redhill Ridge's Dakota Sandstones Contain Trace Fossils, cont. from page 6

Next, the trace fossils show that the maker could dig a system of burrows and tunnels in the sand. Furthermore, it is possible to assume that the organism's habitat was wet because of its ability to burrow in sand. Finally, from measurements of the actual trace fossil specimens it is easy to tell their widths range from 3 to 5 millimeters.

The Redhill Ridge area is rich in trace fossils and these fossils continue to aid paleontologists to better understand the local environment as it was during the Cretaceous.

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About the author:

Chris Retzlaff is 13 years old and in the eighth grade. He is interested in many subjects in school especially science. He enjoys the outdoors and likes to hike, ski, and run. Also, he plays the piano and enjoys all types of music. Retzlaff lives in the Denver metro area.

THINGS TO DO FROM CSMS MEMBER PETE MODRESKI

Thurs., Apr. 8, Flatirons Mineral Club, Silent Auction; 7:00 pm, West Boulder Senior Center, 909 Arapahoe Ave. (just West of the Main Boulder Public Library), Boulder CO; all are welcome. (These mineral club silent auctions are a lot of fun and tend to be a good place to pick up rock, mineral, and fossil specimens at very reasonable prices.)

Sun., Apr. 18, Earth Day Geology-Nature Hike on Green Mountain, Lakewood, CO (April 22 is the actual date of the 40th annual Earth Day). Led by USGS geologist Pete Modreski; all are welcome, no charge. Meet at the Alameda Parkway trailhead (opposite W. Florida Dr., about 1.7 miles west of Union Blvd.) to at 9 a.m. Bad weather alternate date will be April 25; to confirm the date or for more info, call 303-202-4766 or email pmodreski@usgs.gov. Be prepared for an approx. 4-mile round trip hike, climbing and descending about 600 feet to the summit and return; we hope to view petrified logs and other geologic and natural history features on Green Mountain.

Fri-Sat-Sun., Apr. 23-25, Spring Colorado Mineral and Fossil Show, at the Holiday Inn -- Denver Central, 4849 Bannock St. (Frontage road west side of I-25, just north of I-70); free admission and parking, 10 a.m.-6 p.m. Fri. & Sat., 10 a.m.-5 p.m. Sunday; many dealers with a variety of minerals, fossils, gems & jewelry.

Wed., Apr. 28, one event that I missed putting in my lecture calendar last time: CSI: La Brea: Murder & Mayhem on Wilshire Blvd., lecture by Dr. Sue Ware at the University of Colorado Natural History Museum, CU campus, Boulder. <http://cumuseum.colorado.edu/index.html>

Sat., May 1: first Dinosaur Discovery Day public tour day of the year, at Dinosaur Ridge, Morrison. This will be Cub Scout/Boy Scout Day; geology exhibits and hands-on dinosaur activities at the Visitor Center; expert guides at stops on the Dinosaur Ridge Trail. Activities

suitable for scouts to earn the belt loop, academic pin and the Geology Merit Badge. Public is welcome (free). 10 am – 3 pm. Scouts must register.

See www.dinoridge.org or call 303-697-3466 for more information.

Sat., May 8; Colorado Mineral Society Silent Auction, Holy Shepherd Lutheran Church, 920 Kipling St., Lakewood; 11 a.m. to 3 p.m. All are welcome.

Sat., May 15, Friends of Mineralogy Silent Auction, to be held at Clement Community Center, 1580 Yarrow St. (near Colfax & Wadsworth), Lakewood, noon to 3 p.m. All welcome!

Fri-Sat., June 25-26, some may be interested in a "South Park Symposium" on history and natural resources of South Park, to be held at Fairplay RE-2 School these two days. Talks will include local history and historic preservation, "Shepherding", "South Park Salt Works 1862-1883", "Miner's Partner--the Burro", "Evolution of Colorado water use and laws", and an afternoon field trip to see Ice Age landforms in South Park. One can register for a half day, full day, or both days; complete 2-day registration is just \$15. I am not able to find a website with info about this event online, but if you email me (pmodreski@usgs.gov) I will forward you an e-copy of the program & registration flier.

Sat-Sun., June 26-27, "Rock Fair" at the Western Museum of Mining & Industry, Colorado Springs, co-sponsored by the Colorado Springs Mineralogical Society; a mini-mineral show with related activities, in tents outside the Museum. For more info see <http://wmmi.org/>.

Aug. 12-15, "Contin-Tail" mineral show and swap, Rodeo Grounds, Buena Vista, CO.

Aug 20-22, Lake George Gem & Mineral Show, Lake George, CO. For more info see <http://www.lggmclub.org/>.

Sep. 11-12, Creede, Colorado, Mineral Field Symposium, to be held in Creede, CO, sponsored by the Colorado Chapter, Friends of Mineralogy, and the Colorado School of Mines Geology Museum; a two-day symposium with lectures and field trips. More information will be available soon.

Cont. on Page 12



PART II,

CONTINUED FROM LAST MONTH

Mineral cleavage is often confused with the crystal form. Cleavage is the ability of a mineral to break along preferred planes of weakness (Fig. 6). Perhaps the best example of cleavage is found in the micas--biotite and muscovite. Both split easily into thin sheets in a single direction. The mineral halite, rock salt, has three planes of cleavage at right angles to each other (cleaving parallel to its crystal planes and forming cubes). Calcite has three planes of cleavage but not at right angles to each other (forming rhombohedrons). Quartz, with its nice crystal faces, does not cleave.

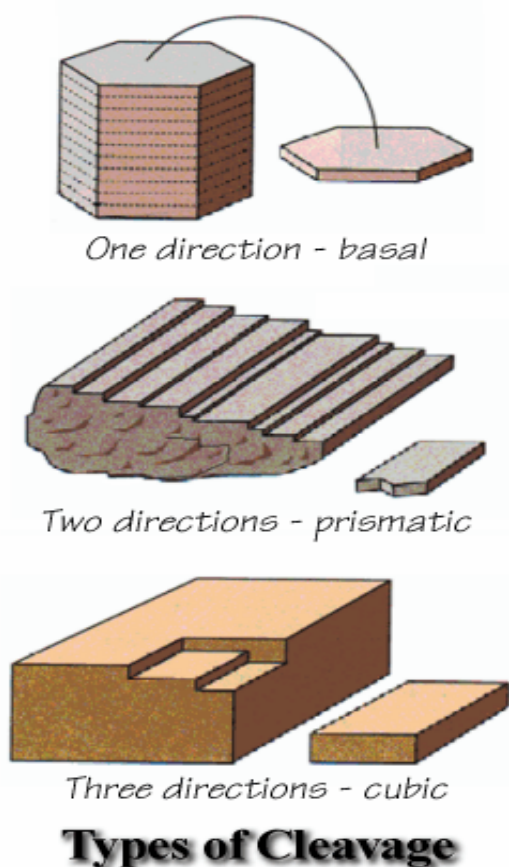


Fig. 6. Diagram showing some types of cleavage. Photo courtesy of California State University, Pomona.

Fracture describes how a mineral breaks if planes of cleavage are not present. The most diagnostic fracture is the type seen in quartz and obsidian termed conchoidal—like the edge of a clam shell (Fig. 7). Hackly refers to the jagged edge of some metallic minerals. Fibrous minerals often have a splintery fracture and the clay minerals, such as kaolinite, have an earthy fracture. Most minerals have a non-descriptive irregular fracture.



Fig. 7. Illustration of conchoidal fracture. Photo courtesy of Georgia Perimeter College.

Specific gravity is sometimes useful in identifying minerals. Water has a specific gravity of 1 and mineral specific gravity compares the density of a mineral (or an object) to the water standard. The non-metallic minerals such as quartz and the feldspars check in about 2.55-2.65, while the metallics average perhaps 4.5-5. Gold comes in at about 19.3, a feature that allows the recovery of the mineral by panning. Although “lab geologists” devise and build scales for precise measurements of specific gravity, field geologists simply use “heft”. Does the specimen seem “heavy”, heavier than quartz? I have found specific gravity to be useful in identifying barite as it just “seems heavy” with a specific gravity of 4.5.

The term tenacity refers to several physical properties that may be useful in identification: elastic—capable of being bent out of shape but rebounding back into the original shape; flexible—being able to bend; ductile—being able to be drawn into a wire; malleable—able to be flattened without breaking; sectile—able to be cut smoothly with a knife. Malleability is important in some of the metallic minerals such as gold and silver.

Field geologists carry a small vial (a dropper bottle or plastic squeezer) of dilute hydrochloric acid to check for effervescence (formation of carbon dioxide gas) and identify calcite (freely fizzes) and dolomite (only the powder fizzes). Beginning geology students often taste a clear looking mineral to try and identify halite (salty taste) but often follow a student who has covered the specimen with acid! If CSMS members have difficulty finding hydrochloric acid try using the muriatic acid available in hardware stores. And, this feature is actually a chemical property rather than a physical property of a mineral!

Geologists also carry a small magnet to check for magnetism (to identify magnetite---a common “black sand” in the gold pan “heavies”). In some instances they carry a black light (ultraviolet-UV) to check for fluorescence (mineral gives off light when the UV light is on) and phosphorescence (continues to give off light after the UV light is extinguished). The fluorescent minerals emit a visible light, often different in color from the “normal” mineral color, when activated by an UV light. UV light sources may be longwave, the common “black light”, or the rarer shortwave (dangerous to the human eye). Many of the fluorescent minerals emit very beautiful colors (perhaps different under longwave than shortwave) and several CSMS members have great collections. Fluorescent minerals are interesting to examine and may be useful in some identifications such as

willemite, calcite, and franklinite from Franklin, New Jersey. However, one should not run out and buy a UV light in order to identify common minerals. But, if you have access to a number of underground mines a UV light (include both shortwave and longwave) might be useful.

Some minerals glow when they are heated (thermoluminescence) and some even glow when they are scratched or rubbed (triboluminescence). I have seen these mineral properties in museum exhibits but certainly have never used them to help identify minerals. Perhaps I see a science fair project in a Pebble Pups' future?

There are some exotic physical properties that rockhounds may encounter. One is the Index of Refraction. The velocity of light depends on the nature of the material that it travels through and the wavelength of the light. "The Index of Refraction is the geometric ratio of the angle at which light comes to the crystal (called the angle of incidence) by the angle at which light is bent as it enters a crystal (called the angle of refraction). Metallic minerals do not have an index of refraction because they do not allow light to enter the crystal in the first place. Generally gemstones that have a high index of refraction are desired above others. Gemstones that have an index or refraction near 2.0 or higher are considered good refractive stones." (information from Mineral Galleries at <http://mineral.galleries.com/minerals/property/index.htm>). Universities and gemologists have an instrument that can measure the Index of Refraction. However, unless you are a serious student of the gems this meter might seem excessive.

Closely related to the Index of Refraction is dispersion (a mineral's fire), something that is important to gemologists as they study and identify gemstones. "The index of refraction of an isometric mineral is not the same for all wavelengths of light. When a ray of white light travels from air into a triangular glass prism, the light not only bends but it also is separated into its component colors or wavelengths, the colors of the spectrum. The violet light is bent slightly more than the red, for instance, because it travels more slowly through the glass. As the light emerges from the prism the colors separate even more. This phenomenon, called dispersion, can be observed in some minerals such as diamond" (information from University of Texas at: (www.utexas.edu/tmm/npl/mineralogy/science_of_minerals/optical_properties.html)).

What I can say, if you can see "fire", then you are looking at dispersion. It is something that you "know when you see it" and most likely you will have little use for the scientific explanation. I learned about the Index of Refraction as a child trying to spear fish. The animals just really were not where they appeared to be in the water!

If a geologist has a piece of clear mineral and

believes it to be a carbonate then perhaps the physical property known as double refraction will be useful in identification. One often sees pieces of calcite at mineral shows or in mall shops touting it as "magic". Double refraction is impressive for when the clear piece of calcite is laid over something like a line or dot, the image will appear as double (Fig. 8). Calcite has a very high birefringence (or the difference between the highest and lowest index of refraction) and this causes the entering light to split into two different beams and these beams are bent into two different angles as they exit the specimen. As with many optical properties, the mechanics are quite complicated as I would encourage interested readers to consult a mineralogy textbook.

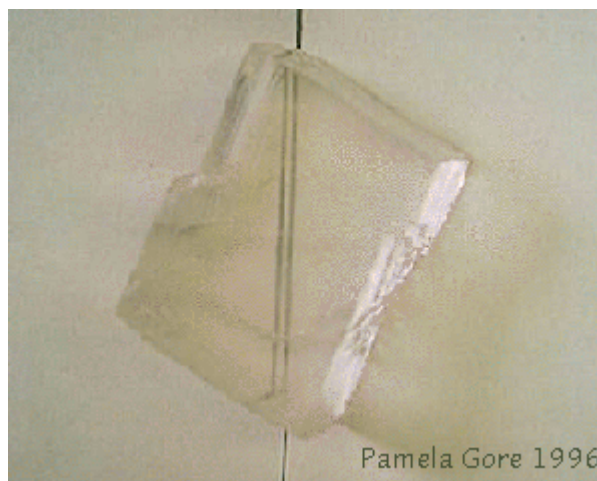


Fig. 8. Double refraction of calcite. Photo courtesy of Georgia Perimeter College.

Iridescence is a term applied to interference of light reflected from either the surface of a mineral or slightly below the surface. This interference may cause the color to change as one rotates the mineral and imparts iridescence to the specimen. Bornite (peacock ore) has perhaps the best known iridescence (due to an external tarnish) and I usually can identify the plagioclase mineral labradorite by the iridescence (due to twinned cleavage surfaces).

Geologists will often use a physical property known as scent to identify a few minerals with perhaps sulfur being the poster boy/girl. Marcasite also smells like sulfur as it decomposes. The clay minerals often have an earthy smell.

Talc is usually an easy mineral to identify as it feels slippery, like bar soap, to the touch. Combine that feel with its softness and the identification is easy. Graphite has a greasy feel, as does molybdenite. As with smell, feel is very personal and subjective and is used in conjunction with other properties.

And finally, at times geologists may use a Geiger Counter to examine possible natural radioactivity of specific minerals.

With a little practice, most people can learn to identify common minerals by examining a few physical properties. To start off, purchase one of several books on the market such as **The Audubon Society Field Guide to North American Rocks and Minerals** and/or the Smithsonian's **Rock and Gem**. Also become familiar with the MinDat web site: <http://www.mindat.org/index.php> If all else fails, some geologists also have the ability to identify minerals by thin sections, x-ray diffraction, and electron microprobes.

CSMS FIELD TRIPS

Although it is early in the season, some Field Trips for 2010 have already been set. As usual, check the CSMS website (www.csms.us) for the latest list of Field Trips. Also, if you have an idea about a field trip or would like to lead a field trip, contact Yam our Field Trip Chair at ron.yamiolkoski@aecom.com.

April 24: Holcim Cement Quarry, Bob Germano, Gliders1@hotmail.com —TO BE RESCHEDULED—FLOODED SITE

May 8-9: Yellow Cat/Cisco UT & Grand Junction Mineral Show Field Trip, Marg Regel, marjory.regel@yahoo.com

June 5: Peridot Claim, Yam, ron.yamiolkoski@aecom.com

June 12: Spruce Grove Topaz, John Rakowski, LGGMC, rak873john@centurytel.net

July 10: April Fools Claim, John Casto, Jcasto@fvs.edu

July 10: Peridot Claim, Yam, ron.yamiolkoski@aecom.com



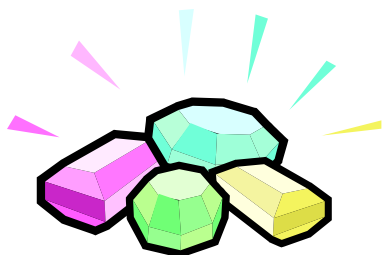
PETE MEDROSKI, CONT.

From Page 9

Sep. 17-18, Denver Gem and Mineral Show, Denver Merchandise Mart. For more info see <http://www.denvermineralshow.com>. The theme of the 2010 show will be "The Creede Mining District".

Sep 15-19, Colorado Mineral and Fossil Show, Holiday Inn - Denver Central, 4849 Bannock St.

Stay tuned for more info from Pete.



FIELD TRIP—THE MUSICAL

BY MIKE WHEAT

He had spent many years digging in the nearby mountains. He'd lost count of the number of holes he'd dug, and then re-filled, looking for the perfect amazonite and smoky quartz cluster, sky blue topaz crystals, or a handsome spray of goethite blades. Oh, he had found a few nice crystals good enough for his collection, but nothing spectacular. Most of what he'd dug up was more suitable for grab bags or silent auctions for kids. He longed to discover that elusive pocket, full of crystals with glassy surfaces and interiors and with classic shape and color. If they were a bit on the large size, that would be nice too. As he watched the snow fall outside his window, he sang "The Impossible Dream" from "Man of La Mancha". A seed of hope was planted.

Winter passed into Spring and the days grew warmer. His eagerness grew along with them and soon peaked into unbridled enthusiasm. He thought of the treks soon to come and sang "Climb Every Mountain" from "The Sound of Music" with all the optimism he could muster.

The day finally came when the weather was just right. He checked his equipment, hopped into his Jeep and headed for higher elevations. He went to a new location he'd heard about, but when he arrived his face fell. There was evidence of previous digging everywhere. The place looked like a recent battlefield. He shrugged his shoulders and moved on beyond the torn up earth.

The sun grew hot and his strength was flagging. He went to a nearby tree and sat down in the cool shade. His eyes grew heavy and his head drooped to his chest. As he began to snooze, he felt a sharp pain coming from an area near his back pocket. He moved over, looked down and discovered a partially broken smoky. He looked around for signs of previous digging, but found none. With mounting excitement, he began to dig. Within two feet, he hit a pegmatite. Following it carefully, he exposed a large pocket full of beautiful crystals. His every dream had come true. With tears of joy welling in his eyes, he sang "Stranger In Paradise" from "Kismet".

MORE FROM THE SUBURBAN ROCKHOUND

Rock hounding takes all sorts of equipment. It doesn't seem so at first, but as time goes on you find yourself buying this or that to help you collect. Now, one of the things that almost every collector has is a 5 gallon bucket (I have 5 or 6). The free ones tend to be white while the colored ones required some cash. These buckets serve us rock hounds well. Besides carrying rocks and tools they can also serve as a good seat or even as a cooler for some beverages after a long day.

The problem with the five gallon bucket is that they tend to take up space and roll around in the back end of your vehicle. Also, the spouse or girlfriend thinks they don't really look that sharp. My wife sort of feels that way when we go to the mall or someplace she wants to shop. Well, I found a solution that solves a myriad of problems and garners me a few "points" in the deal. I went out and bought a few of those cloth recycling bags. You know, like the ones Wal-Mart and King Soopers so proudly display. I just put them in the back of the vehicle and use them when I go rock hounding. Now they don't do all the same things my 5 gallon bucket did; but they are lighter, don't roll down hills, the soft handles don't hurt as much, and they don't hold as much so I don't hurt my back. On top of all that my wife thinks that I have become environmentally conscious, because I always have the bags in the back of the vehicle when she/we go shopping. Ah, peace in the family and rocks in the garage. What more could a Suburban Rockhound want?

<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>
				1 7p Board Meeting	2	3
APRIL 2010 — CSMS CALENDAR						
4 Easter Sunday	5	6	7	8	9	10 12n-4p Lapidary Group
11	12	13 7p Micro-mounts Group	14	15 5:15p Junior Group 6:30p Pebble Pups 6:30p Rock Fair Mtg. 7:30p Gen Assembly	16	17 10a-2p Silent Auction at WMMI 9a North Table Mtn. FT 3p Jewelry Group
18	19	20	21	22 7p Crystal Study Group 7p Faceting Group	23	24 8a-Holcim Quarry FT 10a-4p Micro-mounts Group !NEW!
25	26	27	28	29	30	5/1

REFRESHMENTS FOR GENERAL ASSEMBLY MEETINGS

Feb—Crystal
May—Jewelry
Aug—Picnic

Mar—Faceting
June—Lapidary
Sept—Projects

April—Fossil
July—Micromounts
Oct—Board

Area Code 719

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MICROMOUNT GROUP	Phil McCollum		acc@frii.com
PROJECTS GROUP	Ron Yamiolkoski	488-5526	Ron.Yamiolkoski@aecom.com
WEBMASTER	Allen Tyson	268-0775	allentyson@yahoo.com

Locations

Board Meeting: 1st Thursday @ 7:00p. Senior Center, David Olsen: 495-8720

Crystal Study Group: 4th Thursday of the month @ 7:00p, Senior Center; Kerry Burroughs: 634-4576

Faceting Group: 4th Thursday @ 7:00p, Senior Center, Paul Berry, 578-5466

Fossil Study Group: 3rd Tuesday @ 7:00p every other month, Senior Center, Mike Nelson, 522-1608

Jewelry Group: 3rd Saturday @ 12:00p, 15610 Alta Plaza Circle, Peyton, Bill Arnson, 749-2328

Juniors & Pebble Pups: 3rd Thursday @ 5:15p & 6:30p, Senior Center, Steven Veatch, 748-5010

Lapidary Group: 2nd Saturday @ 12:00p, 6570 Ramrod Road, Colorado Springs,, Jennifer Bailey, 638-8169

Micromounts Group: 2nd Tuesday @ 7:00p, 1514 North Hancock, Phil McCollum, acc@frii.com, Moyra Lyne, 442-2673

Project Group: Meeting time TBD, Ron "Yam" Yamiolkoski

MARCH 18, 2010 GENERAL ASSEMBLY MINUTES

BY JENNIFER BEISEL, CSMS SECRETARY

Yam called the meeting to order at 7:34 PM and continued with our traditional Salute to the American Flag.

A motion was made, seconded and approved to accept the December 17th, 2009 General Assembly Minutes as they appeared in Pick & Pack.

Treasurer's Report – Al Zelenak, our new Treasurer, reported the audit for the CSMS financial book has been completed and all is well and the CSMS financial standing is well in the green.

Yam recognized our attending new members Al, Steve, Leslie, Ben and John and one guest Dan.

Yam announced, "As President, I have made the following appointments for 2010:

Crystal Study Group – Kerry Burroughs on the 4th Thursday of the month at 7:00 PM at the Senior Center

Fossil Study Group – Mike Nelson on the 3rd Tuesday of every other month (January, March etc.) at 7:00 PM at the Senior Center

Micromount Group – Phil McCollum (Moyra Lyne) On the 2nd Tuesday of the month at 7:00 PM at the Senior Center and the 3rd Saturday of each month (except Dec. & June thru Aug.) from 10:00 AM to 4:00 PM at 3609 Windsor Ave. in Colorado Springs, CO.

Faceting Group – Paul Berry on the 4th Thursday of the month at 7:00 PM at the Senior Center

Lapidary Group – Jennifer Bailey on the 2nd Sat. of the month from 12:00 PM until 4:00 PM, 6570 Ramrod Rd., Colorado Springs, CO

Jewelry Group – Bill Arnson on the 3rd Saturday of the month from 12:00 PM until 4:00 PM at Bill Arnson's house – 1560 Alta Plaza Circle, Peyton, CO

Pebble Pups/Juniors – Steven Veatch on the 3rd Tuesday of the month at the Senior Center. Juniors meet at 5:15 PM and Pebble Pups meet at 6:30 P.M. Roger Pitman announced the Pebble Pups field trip "Going for the Green" originally scheduled for March had been changed to May 8th due to snow on the Peridot claim. Additionally, Steve has "Egyptian stones and artifacts" for the Pebble Pups to study.

Librarians – Ellie & Frank Rosenberg. All the CSMS books are on our website, to obtain/check out a book just email the Rosenbergs with your request.

Webmaster – Allen Tyson

Rock Fair Chair – Ronald "Yam" Yamiolkoski informed the general assembly that the dates have been set for June 26 & 27, 2010

Field Trip Chair – Ronald "Yam" Yamiolkoski announced the current list of field trips: Holcim Cement Quarry (Apr. 24), April Fools (July 10), Table Mt. (a combined trip with the Boulder, Colorado Flatiron Club)-- hunting for Zeolites (May 8 & 9). Grand Junction and Utah is in the planning stages.

Publicity Chairs – Mike Christianson

CSMS Historian – Brenda Hawley

Presidents Report (Yam): We have a new Membership Chair, Roni Poteat. We are still looking for a new Editor. Tracey Yamiolkoski is filling the position on a temporary basis but would prefer to have someone else

takeover.

As you know, the RMFMS has selected CSMS to host their Annual Show & Convention in 2011. We have received approval from the officers to move the Show to June and use the Rock Fair at WMMI as the Show. We are looking into using the Air Force Academy for the RMFMS Banquet and will secure a hotel for the actual meetings. The Board will be working on the details of this event, so we can report to the RMFMS at their annual meeting in Wichita in April.

The status of our Annual Show for 2010 is still not resolved. We were looking at Mr. Biggs Event Center, but it is unavailable on Sunday because of a long term commitment with a Church that holds services there.

The 2010 Pikes Peak Regional Science fair was last weekend. Roni Poteat and I served as judges for the Club. We selected the following winners:

FIRST PRIZE: \$125 to Sophia Schneider, "Reducing global warming? The effect of microorganisms on geologic sequestration."

8th Grade, North Middle School; Teacher: Greg Busby

SECOND PRIZE: \$75 to Sara Kurko, "The trickle down effect."

7th Grade, Pikes Peak Christian School; Teacher: Mr. Smith

THIRD PRIZE: \$50 to Caitlin Heier, "Underground water flow."

8th Grade, Russell Middle School

Motion that Each of the winners will be asked to present their Projects at an upcoming CSMS meeting.

The next big event is our Annual Spring Silent Auction and Bake Sale. This year it will be held at the WMMI from on April 17th from 10:00 AM until 2:00 PM. We will need donations for the Silent Auction and the Bake Sale as well as volunteers to make sure it all gets done. Since all members of CSMS get in to the WMMI for free, all you need to do is bring your membership card, donations and money. We are excited to report that we will be offering the rocks from the estate of Dale Corbin of Castle Rock along with some of his lapidary equipment and materials. Our agreement with his family is that we will share equally in the proceeds from the items from his estate sold at the Silent Auction.

Also, Maria Weisser, our Social Committee Chair will be looking for help in providing coffee, juice and milk at the Silent Auction for those who buy a treat and want to eat it right there and then.

On that same note, the family of Dale Corbin has given to CSMS for use by the Lapidary Group a number of pieces of equipment that had been used by Mr. Corbin in pursuit of his hobby. Bob Germano of the Board is evaluating the condition of the equipment and will turn it over to the Lapidary Group as soon as he deems it is ready for use. The equipment includes a homemade 24" saw, a 10" trim saw and a six wheel polisher grinder. CSMS will provide a receipt to the Dale Corbin estate based on the estimated value of these items.

The Board in trying to reduce costs decided to reconsider an action taken in 2008 to raise the amount of the



Our Staff...

Teri Stoiber and Ann Proctor
Editors

CSMS Members Reporters

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

Share your experiences, trials and tribulations, your new finds, or simply your experience at our last field trip.

The ability to write well is NOT a requirement. We will fix the grammar while keeping the author's voice, style, and work intact.

Handwrite it, type it, or email it. Format does not matter. All submissions are welcomed.

DEADLINE for items to be included is the Saturday after the General Assembly every month.

To submit an item, please use the following:

For hardcopy photos or articles, mail to the address below or bring them to the General Assembly 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.

All articles not shown with an author are provided by the Editor.

Mail or email to:
blacklabaccounting@gmail.com
PO Box 2
Colorado Springs, CO 80901

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prizes awarded by CSMS at the Science Fair. As you all know we do not sponsor the Science Fair, but have for a considerable number of years provided prizes to students whose projects relate to the Geology. In looking over the amounts of awards given by other groups who are considered sponsors, we have found that CSMS has some of the most significant monetary prizes awarded. The Board felt that we may have been too generous in our previous action and as a result passed a motion to reduce the amounts at the January 7th Board Meeting. Since this is a change in our By-Laws the action must come before the General Assembly for their Approval. This is the second vote on this By-Laws change. Therefore: "Be it resolved that Article VII – AWARDS & SCHOLARSHIPS, SECTION 2 – Regional Science Award or the CSMS By-Laws be changed to read in part: First, second, and third place will receive a monetary award and a certificate. The amounts will be determined by the board annually." The previous language was: "As resolved on April 18, 2008, first place will receive \$250.00, \$175.00 for second place, and \$75.00 for third place." A motion was made and seconded followed by discussion to clarify what amounts were given this year. All approved.

Vice Presidents Report (Dave Olsen): Dave had nothing to discuss or report.

Secretary's Report (Jennifer Beisel): Was happily basking in the sun in Hawaii

Members-at-Large Report (Sharon Holte & Bob Germano): Nothing to report or discuss

Cont. on Page 3

CLASSIFIEDS . . .

NOTICE—Items listed for sale in the Pick & Pack are displayed only as an informational service to our members and advertisers. CSMS and/or the Pick & Pack do not promote nor warranty any item displayed. The sellers and buyers are responsible for the condition and ownership of any item shown.

CSMS T-Shirts, Badges, and Pins are available for sale at each meeting. See Store Keeper, Ann Proctor.

Have You Picked Up Your Membership Award Pin?

If you celebrated a CSMS anniversary in 2007, 2008 or 2009, your year pin award is available from the Storekeeper, Ann Proctor. Last call for 2007 pins.

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Denver-Spring Mineral & Fossil Show

April 24 - 26, 2009

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PICK&PACK
P.O. Box 2
COLORADO SPRINGS, CO 80901-0002

Time Value
Do Not Delay
Apr. 2010



Joining the Colorado Springs Mineralogical Society (CSMS)

General Assembly meetings are held the third (3rd) Thursday of each month, except January & August, beginning at 7:30 p.m. at the Colorado Springs Senior Center, 1514 North Hancock Blvd., Colorado Springs, CO. **Visitors are always welcome.**

CSMS also offers Satellite Group meetings that allow more focused attention in specific areas of our members' interests. Our current Satellite Groups consist of the following: Crystal Study Group, Faceting Group, Fossil Group, Jewelry Group, Lapidary Group, Micromounts Group, and Pebble Pups/Juniors. For details on Satellite Group meetings, see page 13.

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—\$20

Family—\$30

Juniors—\$5

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