

PICK&PACK

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CSMS is an incorporated non-profit 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 monthly to assist and promote the above.

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- Colorado Federation of Gem & Mineral Societies (CFGMS) www.coloradorocks.org

Colorado Springs Mineralogical Society
Founded in 1936
Lazard Cahn
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GRAB THE KIDS, MA; SHE'S AGOIN' TA BLOW: SAND DUNES, VOLCANOES AND UNIFORMITARIANISM

BY MIKE NELSON, CSMS

The science of geology has several principles that are basic to understanding the complex physical world that we call home. Among the fundamental doctrines is one geologists term uniformitarianism—"the view that the interpretations of earth history can be based on the present-day evidence of natural processes. From this comes the maxim the 'present is the key to the past'. Although the processes may be the same, the rate of change may vary over geological time" (from the Geography Dictionary at <<http://www.answers.com>>). What this means is that scientists study current geologic processes to understand the rocks and geomorphic features of the past, an idea first put forth by James Hutton in 1785.

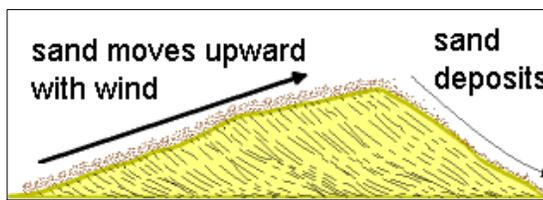


Fig. 1. Diagram showing construction of sand dunes

One example of using this doctrine is to examine modern day sand dunes, such as those at Great Sand Dunes National Park in the San Luis Valley (see <<http://www.nps.gov/grsa>>). Here, the majestic dunes display sand blown from the west to pile up against the Sangre de Cristo Mountains on the eastern margin. In cross section, it is quite easy to observe the inclined bedding so characteristic of dunes (Fig. 1). Remembering the Doctrine of Uniformitarianism, it seems logical to infer



Fig. 2. An outcrop of Navajo Sandstone showing cross-bedding indicative of original deposition in a dune field. Photo by author.

that the Navajo Sandstone (Jurassic in age), so well exposed in the Colorado Plateau, was originally deposited in a large dune field (Fig. 2).

Another example of using the Doctrine is to examine the modern volcanoes in the State of Hawaii, such as Kilauea. Many of us have seen the great videos of this erupting volcano on numerous television programs. Viewers have seen the flowing lava, the volcanic bombs

being shot in the air, and the accumulating cinders. Older readers certainly remember May 18, 1980 and the catastrophic eruption of Mt. Saint Helens in Skamania County, Washington. Therefore, when geologists see accumulations of volcanic cinders, volcanic ash, and lava hardened into a rock called basalt, they understand that a volcano has erupted at some time in the geologic past.

Colorado has a number of sites that display great examples of past volcanoes including the 39 Mile Volcanic Field (responsible for the ash preservation at Florissant Fossil Beds National Monument) and the spectacular La Garita Caldera (the site of a supervolcano) and its tremendous explosions in the Oligocene. However, it is nice to study your volcanoes up close and personal and in Colorado

See "Dotsero" on pg 4

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**Our Staff...**

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Bill Cain	<i>Mailer</i>
CSMS Members	<i>Reporters</i>

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.

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PRESIDENT-ELECT'S CORNER

BY RON YAMIOLKOSKI, CSMS



As I write this message, I can't believe it is February! We have had some really warm days when we could escape and do a little collecting. It makes me think of field trips. We have twelve scheduled so far, with more brewing. The Holcim Cement Quarry trip on 4/25 is half full already, and I'm sure others will fill up as people look at their calendars.

Speaking of calendars, make sure you mark yours boldly for 3/7—our Silent Auction and Bake Sale at the Embassy Suites (10:00 – 2:00). Donations for both may be brought to the Embassy Suites that day. The real fun comes in bidding and buying. Remember, you can always bring a friend to help buy up the bargains. It is a great time to add some special items to your collection, buy a gift for someone, or get some material to polish.

At the last General Assembly Meeting, I introduced the new 2009 officers and chairs. These folks are all volunteers, so when they need a little help, please give them a hand. The position of Publicity Chair is open, and we need a volunteer. This is a new position that is intended to help with making CSMS better known in the community and to assist with getting the word out about our various activities. This work has been handled by various people in the past, but there has been no consistent or organized methodology. We are looking for someone who can bring that to the position.

I know that 6/20 sounds a long way off, but when you are working on a new event, it is just around the corner. Bob Germano and I met with the folks at WMMI and worked on resolving all of the things necessary for our event. We agreed on a name—the Rock Fair at WMMI, sponsored by CSMS. The time is 9:00a until 3:00p; like any event, we will need volunteers starting earlier in the day, throughout the day, and after shutdown. We will need experts to identify rocks, minerals, and fossils brought in by folks attending the Fair. We will need speakers to talk about rocks, minerals and collecting, people to coordinate vendors, volunteers for the kid's area, and folks for cleanup and security. Drew and I will be having Fair meetings in April, May, and June to coordinate volunteers and iron out the details.

Life Member Steve Veatch gave a great talk at our General Assembly Meeting in November. He and a bunch of the Lake George Gem & Mineral Club members did a study of Guffey, CO. Many of you in attendance expressed a desire to do something similar. The Board has established a Project Group to work on a group of projects. We have a list of 3 projects that we believe offer a variety of opportunities to become involved. The projects are: "A Study of Colorado Springs Area Coal Mining Activity", "A Study of the Formation of Tufo near Penrose, Colorado" and the creation of a CSMS Mineral Calendar for 2010. We had our first meeting of the Project Group on 2/23, but unfortunately attendance was weak. I think we didn't give folks enough advanced notice, so we will try again to have a meeting in March.

Our February speaker, Bob Carnein, was unable to make his presentation on copper minerals due to AV difficulties. We asking him to come back real soon to make his presentation. I want to thank all the members present for their patience. Otherwise, we had a great meeting, and I think most of you took the chance to catch up with fellow members and to get to know some of the new members including five that joined during the meeting.

Take care out there,

Yam

NEXT GENERAL ASSEMBLY PROGRAM

The March 19th program will be exhibit presentations by the Pikes Peak Regional Science Fair winners that will be selected on March 7th. This is a very important function of our organization—encouraging the study of Earth Sciences. These middle school students put a lot of work into their exhibits and are always excited about attending our General Assembly. Show your support of them and CSMS!

After our horrendous winter this year with altogether too much ice and snow, I am not sure if we should follow the admonition given to Julius Caesar to "Beware the Ides of March," or not - but I do know for sure that March marks the opening of the Rock & Mineral Club Show Season in the Northern Tier of Pennsylvania and Southern Tier of New York. And we are all looking forward to our own Che-Hanna Rock & Mineral Club Show which traditionally is the first in our area. The dealers are all signed up; geodes have been obtained for the Che-Hanna Cut-ups to set up their saws, and the members of our workshop classes are already at work making cab preforms and dopping them up for the Juniors' hands-on booth at the show.



Shows have always been an important part of rock & mineral clubs' activities. Rockhounds like to show off their finds, and before long, rather than just bringing their finds to the meetings to show off, someone had the great idea of having a special "Show" to which the public could be invited just for the purpose. (I think they really wanted to have time for the club business meetings and program). Of course, the swapping of rocks was soon augmented by the dealer trade; and before we knew it, we were in the era of draped tables, wholesale sections in the sales floor, and Uniform Rules judging of competitive exhibits.

We met so many interesting rockhounds at shows in those early days, and everyone had a bigger and better place to hunt for rocks - all locations were freely shared. I recall we were directed to the fabulous green apatite in orange calcite location at Otter Lake, Quebec by a rockhound we met tailgating outside a show in the Auto Auction barn in Nedrow, NY in about 1969. His specimens were absolutely beautiful, and we decided to find the place for ourselves. So we got the directions, packed up the camper and our five kids plus one nephew, and started out. What wonderful week we had! Years later, we learned that we had been collecting in the now-infamous Yates Uranium Mine. We still have several magnificent specimens on our shelves and boxes of specimens in the cabin on the hill.

We still meet warm, friendly and sharing people at shows, and it does not matter whether we meet them on a dig, at a club meeting, a local, regional or Federation show - If they are rockhounds, they are a special breed!

Hope to see you at one or more of the Regional AFMS Shows this summer. Announced as of this date are CFMS-San Jose, CA, in April; MWF- Parma OH in May; NFMS/AFMS-Billings, MT in July-August and EFMLS-Bristol CT in October, Watch the AFMS Newsletter for RMFMS and SCFMS dates and locations.

UPCOMING SHOWS

Mar 20-22

Albuquerque 40th Annual Gem & Mineral Show, Paul Hlava 505-255-5478

Mar 27-29

Fort Collins Gem & Mineral Show, Dave Halliburton, 970-493-6168

Apr 24-26

Denver Spring Mineral & Fossil show, mzexpos@aol.com

April 24-26

56th Annual Wichita Gem & Mineral Show, Wichita, Ks; Paul Hlava 505-255-5478

May 1-3

17th annual McPherson, KS Gem & Mineral Club Rock Sale & Swap, Jim Nutter 620-241-2433

May 16-17

Cheyenne, WY American Legion Post 6, Donna Durako 307-634-4229, bluebarite1@bresnan.net

Upcoming Events

Mar 7

CSMS 2009 Silent Auction

Mar 14-15

WIPS Symposium, www.wipsppc.com or symp09@aol.com

Mar 21

Writing Workshop, Florissant Fossil Beds, 719-748-3253

May 16-17

New Member Orientation, WMMI, \$15, 719-488-0880

May 20-25

Inter-regional Rockhound Rendezvous hosted by NFMS & CFMS; dickpankey@juno.comm; Davis Creek/Lassen Creek for Obsidian.

Jun 19

Cave of the Winds: A GeoAdventure, 719-633-4991

Jun 20

CSMS Rock Fair at WMMI.

Jul 12

Kemmerer, WY field trip, \$60/pp. White Mnt Gem & Mineral Club; Eunice McQuiston, 928-536-7209

WMMI HAPPENINGS

PPLD MONUMENT BRANCH PARTNERSHIP, FEB 28

Ropin' ~ Wranglin' fun at the WMMI as they host "Pikes Peak or Bust" presented by the Pikes Peak Library District Monument Branch. "Cowboy Steve" will perform roping tricks, a live melodrama, music, pioneer crafts, face painting, gold panning and much more! FREE—no reservations required.

WOMEN IN MINING, MARCH 14

Join us at the WMMI as we explore the life of women in pioneer/mining camp days. Augusta Tabor portrayal starts at 10a followed by an Edwardian tea and another performance at 1p. Local displays of miniatures, pioneer kitchen accessories, quilting, and much more. This popular event fills fast so call to make your reservations soon. Call 488-0880 for reservations. FREE with CSMS membership card.

SPRING BREAK WITH THE BURROS, MARCH 28

WMMI presents a day full of hee-hawing' fun! Tour the Museum to learn about life in the 1890's, then afterwards meet and greet our two burro mascots, Oro and Nugget. Learn what makes a donkey "pink". Use your imagination and venture into a time of limited technology, but tons of creativity! Picnic grounds available for sack lunch and over 27 acres on the Museum grounds to explore. Tours at 10a & 1p.



that would be the Dotsero Volcano.

Thousands of people drive by the small community of Dotsero (Mile Marker 133



Fig. 3. Remnants of the Dotsero Volcano as seen from I-70. Note layered cinders. Photo by author.

west of Vail) everyday as they busily traverse Interstate 70. Most do not realize that adjacent to the Interstate is a nice compact volcano (Fig. 3) that is readily accessible by auto. In addition, few understand the road crosses the lava (basalt) field created by the eruption (Fig. 4).

The volcano is classified by the Smithsonian Institution (2008) as a maar and scoria cone. Scoria is a type of volcanic rock that has numerous vesicles or open spaces and is quite "light" in weight. A maar volcano is caused by groundwater coming in contact with the hot lava. The maar at Dotsero is a "700 m wide and 400 m deep" crater that erupted about 4150 radiocarbon years ago—2200 BC +/- 300 years (Smithsonian Institution, 2008). The resulting basaltic lava flow traveled south down a small valley and crossed the floodplain of the Eagle River and actually caused the River to move its course to the south side of the valley, something easily seen on maps and air photos (Fig. 4). A frontage road south of I-70 allows one to drive to the flows for a close examination (Fig. 5) while a frontage road north of the Interstate will get you to the volcanic maar. Unfortunately, a commercial mining company has destroyed much of the volcano in its search for decorative cinders.

Ancient peoples lived in Colorado during the time of the eruption (the earliest people arrived over 11,000 years ago; Colorado Historical Society, 2008) and perhaps some of the people saw the eruption and marveled at it much as we do watching Kilauea erupt. Perhaps, just perhaps, some father did say, "grab the kids . . ."

Hence, we are led to conclude that the

greater part of our land, if not the whole, had been produced by operations natural to this globe (Hutton, 1785).

References Cited:

Colorado Historical Society, 2008: <<http://www.coloradohistory.org/exhibits/ancientvoices.htm>>
Hutton, James, 1785, concerning the System of the Earth, its Duration and Stability: read before the Royal Society of Edinburgh and published privately.
Smithsonian Institution Global Volcanism Program, 2008: <<http://www.volcano.si.edu/world/volcano.cfm?ynum=1208-01>>

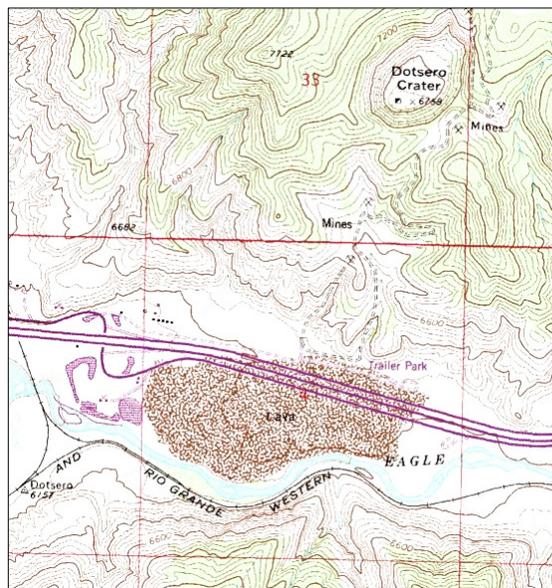


Fig. 4. Topographic map (from mapcard.com) showing location of Dotsero Volcano, and the lava flow near I-70. Note southward bend in Eagle River (parallel to DRGW railroad). Lava flowed down valleys from the crater.



Fig. 5. Edge of lava flow south of I-70 along frontage road. Photo by author.

CSMS FIELD TRIPS

Apr 11

Behind the Scenes at the CO School of Mines Museum, Marj Regel, Marjory.regel@yahoo.com

Apr 25

Holcim Cement Quarry, ron.yamiolkoski@aecom.com

May 2

Fountain Creek Walk, Drew Malin, advanceone@comcast.net

May 9

Geology of Ute Valley Park and Popes Bluff Area, Mike Nelson, csrockguy@yahoo.com

May 9

Yellow Cat/Cisco, UT & Grand Junction Mineral Show Field Trip, Marj Regel, marjory.regel@yahoo.com

May 13

Geology of Pulpit Rock, Mike Nelson csrockguy@yahoo.com

May 16

Geology of Paint Mines Regional Park, Mike Nelson, csrockguy@yahoo.com

Jun 6

Hartsel Barite, Mike Nelson, csrockguy@yahoo.com

Jun 14

CSMS Claim, Ray Berry, rayber@q.com

Jul 11

Peridot Claim Restaking, ron.yamiolkoski@aecom.com

Jul 18

Gold Camp Road, Ray Berry, rayber@q.com

Sep 12

Peridot Claim, ron.yamiolkoski @aecom.com

NATURE AND SCIENCE WRITING WORKSHOP

Date: March 21, 2009

Time: 10:00 am-2:00 pm

Location: Florissant Fossil Beds National Monument

Instructor: Steven Veatch

To Register: call the Florissant Fossil Beds National Monument at 748-1156

Cost: \$3.00

Nature and science writing, a popular kind of contemporary literature, offers endless opportunities for craft, creativity, and publication. The Florissant Fossil Beds National Monument is offering this discovery program for anyone wishing to learn how to write clearly and effectively about nature and science. This course introduces you to the fundamentals of nature and science writing and includes the process of completing a single piece of writing. The workshop will include tips on: finding and developing story ideas (hikes, stargazing, fossil hunts, etc.); discovering the difference between a subject and a story; outlining and structuring stories; strategies for opening leads and making transitions between your story and its larger contexts; and discovering the role of the editor in publication.

This is also a perfect class for teachers. With all the state standards and other competencies required of students, writing is an essential skill. This class will be a valuable asset for anyone interested in integrating science and literacy strategies in their classrooms, informal education programs, or for their own use. There

will be a practical session on using photography for articles. Formal scientific writing will also be covered. A certificate of completion will be awarded.

Please bring a sack lunch. Depending on the weather, there will be an optional walk in the park after the class.

What others have said about the workshop . . . *"The instructor taught us incredible techniques for investigating the natural world around us, and revealed the most compelling ways to write about our discoveries to others."*

"This workshop is an absolute treasure trove of information for anyone interested in writing about nature and science."

LAST CALL FOR DUES

Don't miss out on all the field trips, fun, activities, and benefits of CSMS membership—renew your 2009 dues now.

The cut-off for the 2008-2009 Membership Directory is March 30; printing and distribution will occur in April. The Pick&Pack distribution list will be scrubbed as of that date.

Memberships are for a calendar year—you may pay dues anytime during the year, but a full year's membership is charged for renewing members; only new members receive a discounted price after January 31st.

TIPS & TIDBITS . . .

How to remove stains from marble — Use a paste of cornstarch and water. Spread over the stain and allow to dry overnight. Rinse with clear water. If the stain remains, repeat with a paste of cornstarch and hydrogen peroxide, except rinse off after a couple of hours. *Source: via Cabber Gabber, via THE CORAL GEODE 10/91, SCRIBE 2008 CD*

Lack of polish — When you have a cab or flat-lapped rock that cannot be brought up to a good finish, give it several coats of neutral (clear) shoe polish with a good buffing between coats. *Source: from The Boondocker 12/85, via BURRO EXPRESS 11/91, SCRIBE 2008 CD*

Working soft stone — When working a soft stone such as onyx or marble, soak the stone in water for a couple of days before cutting. The absorbed water will keep the saw oil from being absorbed and will result in a higher polish. *Source: from Gem-n-i via Rock Chip Reporter 10/01, SCRIBE 2008 CD*

SILENT AUCTION—A WHOLE LOT OF FUN!

EDITOR

Did you make it to the last Silent Auction? Well, you missed a lot of fun and some really great bargains! A change in club activity timelines has moved the 2009 Annual Silent Auction to March 7th instead of December (the Show will be held in December). The silent auction held at the Show funds our Scholarship Program.

For the new members, a silent auction consists of a number of tables containing donated specimens and other rockhounding goodies that have a bid sheet near them. You decide how much you are willing to pay for the article, write it on the bid sheet, wait for the emcee to close that table number (every 5-15 minutes), and hope you're the last person to bid. The article then becomes yours! The fun is watching the tables to make sure that your bid is the last one before closing is called. Kinda' like musical chairs.

Our generous members donate a wide variety of slabs, specimens, and other "unwanted" items. This is an excellent place to start or increase your collection, find just the right piece to work into a spectacular cab, or give as a gift. The prices go for anywhere from 50¢ to \$50 (depending on whether Yam, Drew, or Jim are the last bidder)© Believe me, we always have some extraordinary pieces and fantastic bargains.

Don't forget the Bake Sale, too. Even if you don't have specimens, you can donate homemade cookies, a cake, a pie, brownies, or candy. We've done very well since including the Bake Sale at the Auction.

This is a fundraising event for our Satellite Groups, new CSMS claims, etc. If you can't donate, come and bid! You'll be glad you did. The Pebble Pups seem to get the best bargains and really get into the spirit.

March 7th, 10a-2p, Embassy Suites, 7290 Commerce Center Drive.

Contact **Linda Laverty**, 964-6222, chili-pepper24@juno.com for donations.

Volunteers are always welcomed to help refresh the tables. Come early and stay late to see who had the winning bids on the premium items.

SUPPORT YOUR CLUB!

ASK A GEOLOGIST

BY MIKE NELSON, CSMS

Betty asked, "I love the formations in the Garden of the Gods and understand the 'uplift', what I don't understand is how the formations are of such a variety. How is it possible for side-by-side rocks to be of such different composition?"



Betty, that is a great question since one does see a great diversity of rock types in Garden of the Gods and its close relative to the south, Red Rock Canyon Open Space. The short answer would be: 1) unconformities; 2) faulting; 3) different depositional environments; and 4) miscellaneous. Let's take a look at each and cite some specific examples.

A geological unconformity is a prehistoric erosion surface separating rock units of different ages. It is a break in the depositional record and indicates a period of erosion on the older layer (before the younger sediments were deposited). In some cases, the unconformity is quite obvious while in others it is very subtle. Perhaps the best-known unconformity in the region is the break between the Pikes Peak Granite (dated at approximately 1.05 billion years) and overlying sedimentary rocks of varying ages (Paleozoic and younger than 570 million years). In other words, the Granite was exposed to the forces of erosion for nearly a half billion years. Geologists refer to this type of break in deposition as a nonconformity (sedimentary rocks overlying igneous/metamorphic rocks). Since the Pikes Peak Granite is not exposed at either Garden of the Gods or Red Rock Canyon, one must look at other localities. Near Cave of the Winds, the Cambrian Sawatch Sandstone



Fig. 1. The nonconformity along Fountain Creek near Manitou Springs. The Cambrian Sawatch Sandstone is draped over the Pikes Peak Granite with its spheroidal weathering; nearly a half billion years of time is missing. The Sawatch represents sandy nearshore and beach deposits of a transgressing sea. All photos by the author.

(sedimentary sandstone deposited in marine waters such as a beach or near shore environment) overlies the igneous rocks of the Pikes Peak Granite (Fig. 1).

Another type of unconformity is termed a disconformity and these are common in rocks exposed at Garden of the Gods and Red Rock Canyon. Disconformities are breaks in deposition, or a period of erosion and non-deposition, in parallel sedimentary rocks. In other words, disconformities often separate rocks of two different compositions; however, the break may not be obvious. At times, the amount of geologic time represented is quite short while other disconformities represent long periods of geologic time. In most instances, rocks on either side of a disconformity represent different depositional environments so the compositions differ (Fig. 2).



Fig. 2. A disconformity between the upper sandstone of the Lyons Formation and the overlying Lykins Formation (the red shale). Approximately 30 million years of geologic time is missing between these two rock units exposed in Garden of the Gods.

Let's examine the Morrison Formation, perhaps the most famous rock unit in the western United States—because of the dinosaur fossils the formation has produced. In



Fig. 3. Part of the Cretaceous section at Red Rock Canyon Open Space (rocks are tilted nearly 90 degrees to vertical). The beach/near shore sandstone to the left grades into a sandy shale and finally to the deeper water marine black shale.

the Colorado Springs area, the Morrison Formation is composed of “reddish-brown, maroon, green, white to brown” sandstones, siltstones and shales deposited in streams and swamps during the late Jurassic (Carroll and Crawford, 2000). a few thin beds of the underlying Ralston Creek Formation may be present at some localities. Turner and Peterson

(2004) have reported that the Morrison was deposited over about seven million years from 148-155 million years ago. Overlying the Morrison are the sandstones beds of the undifferentiated Purgatoire and Dakota formations with an age of a few million years either side of 100 million years ago. Therefore, approximately 40-45 million years separate the Morrison/Ralston Creek from the Purgatoire/Dakota; rock units of different compositions are superimposed. Underlying the Morrison/Ralston Creek are the reddish-brown shales of the Lower Triassic-Upper Permian Lykins Formation (Carroll and Crawford, 2000), perhaps with an age of a few million years on either side of 250 million years ago. So, the geologic section is missing perhaps 100 million years between these rock units. It is not obvious that such a large amount of geologic time separates these stacked rocks of different composition. It is interesting to note that much of this missing geologic time is represented in the red rock section of the Colorado Plateau.

Faulting also may bring rocks of different compositions together. The Rampart Range Fault is a very large fault trending along the east side of the Rampart Range from Colorado Springs north for 35 or so miles to Perry Park. A close relative, the Ute Pass Fault, trends from Cheyenne Mountain northward and then follows U. S. 24 to localities beyond Woodland Park. Both of these faults juxtapose Paleozoic and/or Mesozoic sedimentary rocks against the Pikes Peak Granite—a drastic change in rock composition. The Rampart Range Fault trends along the western side of Garden of the Gods but is difficult to observe as a zone of broken rocks (fault gouge) separates the Pikes Peak Granite from the Fountain Formation. An easier locality to observe a fault is at the north end of Gateway Rock where beds of the Fountain Formation (Pennsylvanian and Permian) are faulted against the younger Lyons Formation (Permian).



Fig. 4. Roadcut of the Fountain Formation exposed along U. S. 24 near Manitou Springs. Note the repeating layers of sandstone, shale, and conglomerate. Each layer represents different environments of deposition and stream energies.

Perhaps the most obvious example where juxtaposed rocks differ in composition may be attributed to changing environments at the time of original deposition. A simplified example would be transgressing marine waters—a sea slowly encroaching on the land. In the Colorado Springs area, the Dakota Formation represents the beach and near shore sands of the great inland seaway

of the Cretaceous. Overlying the Dakota, and deposited in somewhat deeper waters, is the Graneros Shale, followed by the more open sea deposits of the Greenhorn Limestone. So, the stratigraphic section would consist of, in ascending order, sandstone, shale, and limestone—rocks of different composition stacked on top of each other. This change in sediment composition took place over several million years (Fig. 3).

Another, more rapid, change in rock composition, may be observed in the Fountain Formation (Pennsylvanian and early Permian in age; Carroll and Crawford, 2000), the red rocks so prominent at Balanced Rock in Garden of the Gods, Red Rocks Canyon Open Space, Red Rocks Amphitheater, Roxborough State Park, and the Boulder Flatirons. The Fountain is a reddish, reddish-gray, reddish-brown sandstone, conglomerate and shale whose original sediments were shed off an ancient rising mountain range termed the Ancestral Rockies. The Fountain was deposited in a stream/floodplain and alluvial fan sort of environment so the different rock types represent different energies of the stream. A high-energy stream can transport large cobbles and boulders whereas a stream with a lower velocity and gradient will transport smaller particles of sand and silt. The energy of streams can easily fluctuate—we all know what a stream in flood can transport. The road cuts on U. S. Highway 24 near Manitou Springs display some fantastic exposures of the Fountain illustrating the many different rock types created by differing deposition environments (Fig. 4).

The miscellaneous category includes a rather unique feature found at Garden of the Gods—the bleaching of part of the sandstones found in the Lyons Formation (Fig. 5). Very noticeable at Garden of the Gods are the large fins of reddish sandstone positioned next to light colored, almost white, sandstone. At first glance one would think these are two different rock units of dissimilar composition. However,



Fig. 6. Outcrops of the red colored lower Lyons Formation with the bleached upper Lyons in the foreground. Photo taken at Garden of the Gods.

both belong to the Lyons For- See next page

mation and are quite similar in composition. The white sandstone has been "bleached" and may be the result of reducing fluids, possibly gas hydrocarbons, moving through the sandstone pores and removing the red pigment (Breitler and others, 2003).

So Betty, thanks for your question, and in summary, there are a variety of geological conditions that may cause "side-by-side rocks to be of such different composition". Most are well displayed in and around Colorado Springs.

References Cited:

- Beitler, B., Chan, M.A., & Parry, W.T., 2003, Bleaching of Jurassic Navajo Sandstone on Colorado Plateau Laramide Highs: Evidence of Exhumed Hydrocarbon Supergiants?: *Geology*, v. 31, p. 1041-1044.
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Have a question concerning geology? Send it to csrockguy@yahoo.com and look for an answer in the Pick&Pack.

SCHOLARSHIP AWARDER'S SUMMER ADVENTURE

BY MICHAEL MITCHELL, COLORADO SCHOOL OF MINES STUDENT

Editor's Note: Michael was selected to receive the annual CSMS College Scholarship in 2006, 2007, and 2008 and continues to justify our believe in him each year! Good job, Michael.

As part of the IRIS (Incorporated Research Institutions for Seismology) internship program, I had the opportunity to work with research scientist, Lee Liberty, out of Boise State University this past summer. IRIS is a nonprofit consortium funded by the National Science Foundation that works to pair undergraduate interns with researchers in the field of seismology who could use some help with their research projects. Along with another IRIS intern, Patrick Karel from Eckerd College, I spent the summer studying the structure of the Seattle and Tacoma Basins and their associated faults.

We spent most of June and the first week in July getting ready to go out to the field. The month of field preparation included completing and working the bugs out of the 500 lb hydraulic weight drop, testing hundreds of geophones and the cables to which they are connected and packing all of the equipment. On July 9th, we drove from Boise up to Bremerton, WA and began the fieldwork portion of the experience. The overall purpose of our fieldwork was to collect high resolution seismic data to try and better understand the tectonics and faulting of the Seattle region. At the current time the location of the western most end of the Seattle Fault is not well constrained. If we are able to better characterize the geometry and western most extent of the Seattle Fault, we will be able to better model the seismic hazards of the region and estimate the maximum magnitude earthquake that the fault structures can accommodate.

A typical day in the field for us started around 7:00a when we met for breakfast before departing for the field at around 7:30a. After a 30-45 minute drive out to the site, two people would be-



gin prepping the source, and Dr. Liberty would ready the equipment in the recording van, while the rest of us laid out cable, planted geophones, and painted identifying numbers next to the geophones. We could begin shooting after enough of the line was laid out. Typically, we fired 4 hammer blows at the midpoint between each of the geophones which were planted at 5m intervals. As the source progressed along the line, we would have to pull up cables and geophones from the beginning of the line and relay them at the far end of the line so that we could continue to shoot or hammer without interruption. Once we got started shooting, one person would begin surveying the line by recording the position of each geophone with the GPS unit. From day to day, we alternated jobs so that everyone had many opportunities to lay and pick up cable out of the Mule (a small ATV like vehicle with a 4'x4' bed for hauling equipment), operate the source (weight drop or hammer for short), survey the line with the GPS, or work with Lee in the recording van.

After a couple of weeks in the field, we drove back to Boise on July 25th. We then spent the last several weeks of our time in Boise analyzing seismic data. While Pat



processed the data we collected out in the field, I worked with marine seismic lines shot in some of the southern arms of Puget Sound. The results of both these data sets are significant as far as characterizing the faulting geometries of the region, allowing us to better understand the magnitude of the seismic hazards. We will have the opportunity to present our results at the annual AGU (American Geophysical Union) meeting in San Francisco in December.

This summer was amazing. I had the opportunity to experience the joys and frustrations of fieldwork, learn the basics of seismology, develop a better understanding of the faulting and tectonics of the Seattle region, and produce an end project worthy of presentation at AGU. I cannot say enough good things about the IRIS internship program and all the wonderful people with whom I had the opportunity to work this summer.

At this time, I would also like to thank the Colorado Springs Mineralogical Society for your investment in my future as a prospective geophysicist. I appreciate your ongoing support as I continue my studies at the Colorado School of Mines.

A MINERAL THAT WAS AS GOOD AS GOLD

Once upon a time, a mineral we now consider common was "worth its weight in gold" - literally! That mineral is halite, more commonly known as salt. NaCl. It is a critical nutrient to all animal life, including humans. In fact, it is so important to survival that one of our four tastes was developed to detect it. (We can actually taste only four things: sweet, sour, bitter, and salty. Flavor, what we usually think of as "taste," is actually a combination of taste and aroma, i.e., what we smell.)

The phrase "not worth his salt" comes from the ancient Greeks, when salt was used to pay for slaves. Roman soldiers were sometimes paid in salt. In fact, our word for monetary payment for work, "salary," comes from the Latin for salt—sal. Our word "salad" (from the Latin "saltar," meaning "salted") comes from the Roman habit of salting their fresh greens.

Today, many town names reflect their origins as sites of ancient or medieval salt mines or salt springs. "Wich" or "wytych" is the Old English word for "brine well" (what we now call a salt springs) and is seen in names like Northwich and Middlewich. The German word for salt, "salz," appears in Salsburg ("salt city"), a large city located on the Salzach (meaning "saltwater" or "brine") River.

As with many precious materials, ancient lore grew around salt. It was so precious that the spilling of salt was deemed by the ancient Romans to be the work of the Devil. Salt thrown over the left shoulder (where evil lurks) was believed to drive the Devil away. BY HOMER ESHBAUGH, RANDOM FACTS CURATOR, FROM MWF NEWS 11/08, VIA ROCKY READER 12/08

Sea Salt is actually good for you!

Salt obtained from solar evaporation of sea water is entirely different from modern refined salt, and it contains a variety of minerals that play a role in keeping the body's electrolytes in a healthy balance. Sea salt is left in its natural state. While table salt is sodium chloride, two chemical that are in fact dangerous to the human body, sea salt still contains trace minerals and the pure elements of potassium, magnesium and calcium. Trace minerals in the news include selenium for preventing cancer, boron for preventing osteoporosis, and chromium for regulating blood sugar level.

Our bodies require salt for optimal functioning. Salt is essential for regulating blood pressure, maintaining balanced blood sugar levels, and proper metabolism down to the cellular level. Sea salt is one of the purest forms of salt you can find. Source: <<http://www.saltistry.us>> Food of Love, Inc. 2008



Earth Science Courses that Rock

Colorado Mineral Exploration Seminar (AKA New Member Orientation)

May 16 and 17, 2009

Western Museum of Mining and Industry

Cost: \$15.00

Call 719 488-0880 to register

Mineral deposits supply many of the raw materials that sustain developed societies. The minerals industry is currently in a "boom" period, in fact, the need for natural resources has never been greater. This increased demand for metals is from rapidly developing Asian countries (mainly China and India). The study of mineral deposits is one of the most fascinating fields in geology. The geological and economic nature of mineral deposits will be the focus of the seminar and will enable educators to better understand the geologic nature of mineral deposits, methods of mineral exploration and exploitation, and the environmental consequences of utilizing mineral resources.

This course has 0.5 semester of graduate credit from the Colorado School of Mines (tuition is a separate cost).

Cave of the Winds: A GeoAdventure

June 19, 2009

Pillar Institute of Lifelong Learning

Call 719- 633-4991 to register

Cost: TBD

This adventure is designed for everyone! The morning will start with a PowerPoint lecture on the geology of caves at a Pillar classroom, and then entering a world underground, we will investigate cave formations in the cool air of the incredible Cave of the Winds. This is one of the more complex maze caves in the state. Skilled guides and Professor Steven Veatch will lead you into a surreal underground world of magnificent natural formations. Colorado Caves: Hidden Worlds Beneath the Peaks is included with this field trip. This 144 page book includes 158 beautiful full-color and historic black-and-white photographs and details the discovery, exploration, history, scientific study, surveying, commercial development, conservation, and photography of the state's unique collection of caves. After our adventure we will have a brown bag lunch in the area.

The Fossil Record: An Introduction to Paleontology

June 20, 2009

Cripple Creek Park and Recreation

Cost: \$69.00

Call 719-689-3514 to register

This class provides a basic introduction to paleontology, the study of the ancient life on earth and the fossils that remain behind. Paleontology is a field of continuous discovery where advances in technology and procedures of inquiry allow scientists to reconstruct earlier and very different worlds. Two field trips included. This course has 0.5 semester of graduate credit from the Colorado School of Mines. (tuition is a separate cost)

RMFMS TREASURER'S

MESSAGE

BY GENE MAGGARD



It is still winter here in Kansas as I write this article on Jan. 29, but the weather forecast is for a warming trend, and, besides, Peggy and I are headed for New Mexico and Arizona bright and early tomorrow morning. Rocks watch out, here we come.

On the treasurer subject, I am finally winding down the most frustrating part of the job as treasurer; getting the last 21 clubs to send in their reports, dues and insurance (if they want it). You would be surprised at how many of the late reporting clubs also depend on the RMFMS club liability insurance, and seem to have no awareness that it expires on Feb. 1 if we have not received their payment. I also have to pay our AFMS dues by Feb. 1 and need an accurate membership count in order to calculate the payment. Two clubs have still not reported, so I will just have to use last year's membership count for them.

The problem of late reporting seems to be twofold. Many clubs elect officers in December or January, and do not want to report until the new officers take over. If elections were held in November or December for January installation, then these clubs could report on time. The old treasurer often does not tell the new treasurer about the need for reporting, dues and insurance, and then ignores my notices that are sent out in October, December and January. Then I start telephoning, often multiple times, to find one member of a club that knows who is in charge. If only the retiring officer would tell the new officer about their responsibilities, life would sure be a lot easier for me.

Are you a retiring club treasurer? Did you tell your new treasurer about RMFMS reporting? Did you or the new treasurer notify me of the change so that I can update my mailing list? If not, please do.

Next month I will have a report on the number of clubs reporting and membership numbers. It looks like we are in the process of losing two clubs, Santa Fe and Custer City (SD). They both report that they are currently inactive.

As always, if you have any comments or feedback on my articles, please feel free to email or call.

ABANDONED MINES ARE A BIG SAFETY HAZARD

EDITOR

The BLM recently sent us a safety notice regarding the hazards of abandoned mines; approximately 29 people die each year due to accidents involving land mine features.

In the past many abandoned mine lands were considered remote, but with population growth, urban sprawl, and increased recreation use (e.g., motorcycles and off-highway vehicles [OHV]) accidents are on the rise.

While most of the deaths were caused by falling or driving into an open shaft, as mining claimants in Colorado we are held accountable for restoring the land to prevent injury to future users. It doesn't take much of a hole to ruin a weekend of outdoor fun, and the drivers are getting younger each year!

For additional information, check out the BLM Abandoned Mine Lands web site at <http://www.blm.gov/wo/st/en/prog/more/Abandoned_Mine_Lands.html>.

2009 AFMS WEBMASTER CONTEST IS OFF AND RUNNING

BY PHYLLIS GEORGE,
WEBMASTER CONTEST CHAIR

This contest exists to help webmasters enhance their club Web sites in order to increase the general public's interest in the gem and mineral hobby, to gain new members, and to serve as a source of current club info for their members. Through this contest, the judges assigned to the seven regional federations—Mike Baldwin, Stephen Douglas, Dan Imel, Wes Lingerfeldt, Al Pennington, Win Robertson, and Don Shurtz—are serving as mentors by giving webmasters encouragement and friendly constructive criticism on what they are doing right and where they could improve.

The Webmaster Contest also has its own logo! Ron Gibbs, editor and webmaster for the Charlotte Gem & Mineral Club of Charlotte, North Carolina, is also a graphic artiste extraordinaire. Ron donated his time and expertise to design and develop our logo. Thank you to Marty Hart for steering me to Ron.



All entries submitted to this brand new contest from the various regional federations are now in the hands of their assigned judges. Each region has two judges, but none of the judges are from the regions they are judging. Each contestant's combined scores from the two judges will be averaged to determine his or her final placement in their region. I just learned that the regional federations have not had an opportunity to vote on whether they support the Webmaster Contest, so no regional first place plaques can be awarded this year. However, we will be awarding certificates for each of the top ten places and for honorable mention. I apologize to everyone who is disappointed about this, but the contest will be running for at least two more years, so maybe the policy can be changed going forward.

All the contestants at the AFMS level will receive a certificate signifying their rank, and the first place winner will also receive an AFMS first place plaque. The results of the various regional Webmaster Contests will be announced at the annual meetings of the regional federations during their Bulletin Editors' Breakfast. The results of the AFMS Webmaster Contest will be announced at the NFMS/AFMS joint Show & Convention in Billings, Montana on August 1 during the Bulletin Editors' Breakfast.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
MARCH 2009 — CSMS CALENDAR				7p Board Meeting		10a-2p Annual Silent Auction 9:30-6 Science Fair
8	9	10	11	12	13	14
Daylight Saving Time Begins	Purim begins at sundown	Purim 7p Micromount Group			7:30p Crystal Group	
15	16	17	18	19	20	21
		7p Fossil Group St. Patrick's Day		5:15p Junior Group 6:30p Pebble Pups 7:30p Gen Assembly	Spring Begins	9a Writing Workshop 12n Jewelry Group
22	23	24	25	26	27	28
		7:30p Camera Group		7p Faceting Group		
29	30	31	4/1	4/2	4/3	4/4

"True success is overcoming the fear of being unsuccessful." - Paul Sweeney

REFRESHMENTS FOR GENERAL ASSEMBLY MEETINGS		
Mar—Camera	Apr—Crystal	May—Faceting
June—Fossil	Jul—Jewelry	August—Picnic
Sep—Lapidary	Oct—Micromounts	Nov—Projects
	December—All	

Area Code 719

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MICROMOUNT GROUP	Phil McCollum		acc@frii.com
PROJECTS GROUP	Mike Nelson	522-1608	csrockguy@yahoo.com
WEBMASTER	Allen Tyson	268-0775	allentyson@yahoo.com

Locations

Board Meeting: 1st Thursday @ 7:00p, Senior Center, Mike Nelson: 522-1608

Camera Club: 4th Tuesday @ 7:30p, Senior Center, Roger Pittman: 683-2603

Crystal Study Group: 2nd Friday @ 7:30p, Senior Center; Kerry Burroughs: 634-4576

Faceting Group: 4th Thursday @ 7:00p, Senior Center, Dave Wilson, 635-7891

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

Jewelry Group: 3rd Saturday @ 12n, 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: 1st Saturday @ Noon, 3085 Rhapsody Drive, Drew Malin, 531-7594

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

Project Group: Meeting time TBD, Mike Nelson, Ron "Yam" Yamiolkoski, Steven Veatch

FEBRUARY 19TH GENERAL ASSEMBLY MINUTES

BY BOB GERMANO, CSMS SECRETARY

President **Ron Yamiolkoski** called the February 19th General Assembly meeting to order at 7:35p. He began by addressing the membership, requesting that we begin each meeting with a salute to the American flag; there was no objection, and we proceeded with the Pledge of Allegiance.

To ensure all the members present knew the Board members, Yam introduced each one and gave them a chance to say a few words. **Betty Cain** asked Yam to explain what the mission is of the members-at-large. The members-at-large are liaisons for the members to get questions and opinions before the Board.

A motion was made to accept the December 2008 and January 2009 minutes as published in the Pick&Pack, seconded and passed.

Guests recognized and welcomed: **William Arvold, Dennis Bachoroski, Gary Buck & Linda Shepherd, Susan Crain, and Susan Freeman & Barry Reher.**

Treasurers Report: **Ann Proctor** provided a detailed financial CSMS status report. **Drew Malin** raised a question regarding in which account the monies collected from the Silent Auction appeared; Ann reported it was the Workshop checking account.

The Satellite Group chairs provided the following for each group:

- Camera Group: **Roger Pittman** reported their on-going 35mm slide competition, Pictures of Minerals, was going well.
- Crystal Study Group: **Kerry Burroughs** reported last month's focus was pegmatites; the topic for the next meeting will be crystals, presented by **Ray Berry.**
- Fossil Study Group: **Mike Nelson** was not available, so Yam reported the group studied owl pellets and will continue the topic at the next meeting.
- Micromount Study Group: **Moyra Lyne** reported they now have access to a microscope and have full size cookies for snacks.
- Faceting Group: **Dave Wilson** reported they will be working with Madagascar marble, and they have cookies for snacks as well.
- Lapidary Group: **Drew Malin** reported there will be no meeting in March due to the Silent Auction being on the first Saturday of March.
- Jewelry group: The CSMS Jewelry group will have a meeting at **Bill Arnsen's** house Saturday February 21, 2009 from noon till 4:00p. Last month, they had a class for making wire-wrap jewelry. At that time, they made a partial wire-wrap on which to hang a special casting. A second wire-wrap class will be scheduled at someone's home in Colorado Springs during March. They will be doing silver casting at the February meeting. Casting comes in 3 flavors: Lost Wax, Sand, and Cuttle Bone. They will be doing Cuttle Bone casting. No special equipment is needed, and Bill will have sufficient Cuttle Bones for all who attend. Attendees will be able to form, cast, and polish a completed cast on Saturday. Cuttle Bones cost \$1.00 each. If you have casting silver granules or scrap silver, bring it; he also will have scrap silver for sale at the class. You will need to bring or buy about 1/2 ounce of silver. This will be a workshop session, so bring your project or questions. Additional sessions or one-on-one training may be scheduled. Cookies and lemonade will be provided.
- Juniors & Pebble Pups: **Steve Veatch** reported they are

scheduling lots of field trips for the summer and are planning a couple of articles for the Pick&Pack.

The New Members Orientation Class has undergone a name change to Colorado Mineral Exploration Seminar. Steve Veatch commented this is an "everything you need to know" class. One can register at WMMI for \$15 for this May 15-16 event.

The writers' workshop is scheduled for March 21 at the Florissant Fossil Beds. The cost is \$3; bring a sack lunch. Contact **Steve Veatch** for details.

Librarians: **Ellie & Frank Rosenberg** have agreed to take over the CSMS library. They will have the library catalog posted on the CSMS website very soon.

CSMS College Scholarship: Mike Nelson is in the process of contacting schools and providing them with the requirements/application for Earth Science students to apply.

Science Fair: Yam reported there might be a schedule conflict with the March 7, 2009 Silent Auction, and he would investigate.

CSMS Filed Trips: To date, there are 12 field trips scheduled. Several trips will be purely educational. All trips to be posted on the CSMS website and in the Pick&Pack.

New Chairs for 2009:

- Publicity Chair: The CSMS is currently looking for a Publicity Chair; if you can help please consider volunteering.
- CSMS Historian: **Brenda Hawley** will be looking for some help taking an inventory of our past records.
- Projects Groups: **Mike Nelson** and Yam will conduct the first meeting February 23, 2009. Projects being considered are the Tufa formation near Penrose, developing a CSMS Colorado Minerals calendar, and the history of Coal mining in the Colorado Springs area. Any and all members are welcome.

The Rock Fair scheduled for June 20, 2009 at the WMMI is progressing well. Many exhibits are planned and will include gold panning, metal detection by the Adventures Club, participation by USGS, and many others as well as vendors.

Yam requested the CSMS Group leaders to provide a little more detail about their meetings and consider an occasional article for the Pick&Pack. By providing more details and occasional articles, new members could get a better understanding of each group and how they may fit their interests. The articles will aid the Pick & Pack in being an even more rounded publication.

Bill Cain provided a membership report; it's imperative that an application be submitted with the dues!

Roger Pitman was given the 2008 ACROY of the Year certificate (he and Pat were unable to attend the Awards Banquet).

Jack Thompson gave a general overview report on the Tucson show. The theme of the Tucson show was Mineral Oddballs, examples being calcified sneakers and bananas.

Terry Beh provided a medical update on **Don Bray.** He's doing well but recovery will be slow.

The presentation planned by **Bob Carnein**, entitled "Why Are There So Many Pretty Copper Minerals" was postponed due to irresolvable computer communication difficulties. We were able to enjoy his display of minerals, however!

Regular meetings of various groups

Café Scientifique features a talk and discussion on some current science topic; 6-30-8:00 p.m. Tuesday evening once a month (approximately the 3rd Tuesday) at the Wynkoop Brewery (Mercantile Room), corner of 18th & Wynkoop Streets, Denver. No charge; all are welcome. <http://cafescicolorado.org>

Colorado Scientific Society, monthly meetings with one or two speakers on an earth science topic, 3rd Thursday, 7:00 p.m. American Mountaineering Center, 710 10th St. (NE corner with Washington), Golden, CO. <http://www.coloscisoc.org>

Denver Mining Club, Informal weekly luncheon meetings with a speaker, every Monday, 11:30-1:00, Country Buffet, 8100 W. Crestline Ave, #A3, Littleton, CO (about 1/2 mile north and east of the intersection of Wadsworth Blvd. & Bowles), tel: 303-933-9923. No charge, but all who attend must purchase a lunch at the restaurant. See web site http://china-resources.net/den_min.html

Denver Region Exploration Geologists' Society (DREGS) meets monthly on the 2nd Monday, 7:00 p.m. Consolidated Mutual Water Company (lower level), 12700 W. 27th Ave., Lakewood, CO; no charge, all are welcome to the meetings. See <http://www.dregs.org/>

Rocky Mountain Assoc. of Geologists (RMAG) has monthly luncheon meetings with a speaker at the Marriott City Center, California St. between 17th & 18th Streets, 11:30 a.m. Luncheon cost is \$24; no reservations are needed for the talk only. See <http://www.rmag.org/>

USGS Colloquium Series, lectures on Thursday, 1:30-2:30 p.m. Foord Lecture Room, Bldg. 20, Denver Federal Center, Lakewood, CO. USGS staff, visitors, and guests are welcome. See <http://geology.cr.usgs.gov/crg/colloquia.htm>

Western Interior Paleontology Society (WIPS), meets 7:00 p.m. first Monday of the month, Sep-May, Ricketson Auditorium, Denver Museum of Nature and Science, <http://www.wipsppc.com>

CLASSIFIEDS . . .

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CSMS T-Shirts, Badges, and Pins are available for sale at each meeting. See Treasurer, 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 Membership Secretary, Bill Cain. Last call for 2007 pins.

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March 2009



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: Camera Club, 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 11.

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 (see page 2 for details of the next meeting) or visit our web site: www.csms.us.