PICK&PACK
THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

November
2011
PICK&PACK
Volume 51 Number 08

**January 2012 Annual Meeting at Giuseppe's Depot Restaurant**

**January 19, 2012: 6:00 p.m. / Reservations by January 8, 2012**

**Italian buffet / Caesar Salad & Fruit Platter / Fresh Stone-Baked Pizza**

**Pasta Bar w/ Choice of two Sauces / Roast Beef & Potatoes**

**Garlic Bread / Dessert / Coffee or Tea Adult $ 25.00 Child $12.50**

# TRAVELING THE BLUE HIGHWAYS

By Mike Nelson

csrockguy@yahoo.com; www.csmsgeologypost.blogspot.com

A few years ago I shared the stage at the University of South Dakota with one of my favorite authors, William Least Heat Moon. I talked about undergraduate research while Heat Moon talked about his road and water travels. You can imagine who had the more excited audience! Heat Moon has authored a trilogy plus one of "on the road books": *Blue Highways, PrairyEarth, River Horse* and *The Road to Quoz-An American Mosey*; the first still being my favorite.

In 1978, after losing his teaching job and spouse, Heat Moon set out on a soul-searching, three month road trip to small-town America in an old van and covered ~13,000 miles. His major routes were on secondary roads, often printed in blue color on Rand McNally maps---hence the name *Blue Highways.* I have always been a Blue Highway sort of person, partially due to my geology interests and partially due to my general inquisitiveness of all things natural. It has been a good life.

In late summer of 2011 we started out on a five week camping, fishing, and rockhounding trip. Some of the trip was preplanned (boat reservations in northern Minnesota to fish for the giant pike) but most was just traveling Blue Highways and checking, or rechecking, out the country. We returned just in time to spend one day at home before heading out for another week on Colorado Blue Highways to leaf peep in the high mountains of Colorado. This month's article, mostly detailing spectacular geology without much collecting, and following compositions, will describe a few of my rockhounding experiences.

I-25 heading north out of Colorado Springs is a nice road for observation of the western mountains, but not a very good road to travel pulling a fifth-wheel. Mostly it is "eyes on the road and hands on the wheel". And, it certainly is not a Blue Highway so I will dispense of any geological observations.

The first stop was to locate U. S. 287 heading north out of Ft. Collins toward Laramie, Wyoming, and passing through some very interesting geology. Most of the early going is in a variety of marine Cretaceous formations deposited in the great Western Interior Seaway (WIS; see previous *Pick & Pack* articles). Near Teds Place the highway breeches the Dakota Hogback, a well-know feature along the Front Range, and moves to older rocks (Fig.1). About 17 miles north of Ft. Collins the Permian Lykins Formation (and others) crops out exposing extensive beds of gypsum. Rocks of the Lykins represent deposition in the final stages of the end-of-Paleozoic seaway, including evaporitic rocks such as gypsum.

The Owl Canyon Road (Larimer Co 72 running east) cuts through the Lykins and rockhounds will be able to examine road cuts and collect alabaster, satin spar and selenite. The alabaster is of high quality and has been used by "rock carvers" since the late 1800's. Today, a company called ColoAlabaster Company in Fort Collins markets the raw rock on a world-wide basis (Fig. 2).

*Continued on Page 4*

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.

***Proud Members of:***

American Federation of Mineralogical Societies (AFMS)
www.amfed.org

Rocky Mountain Federation of Mineralogical Societies (RMFMS)
www.rmfms.org

Colorado Federation of Gem & Mineral Societies (CFGMS)

**Colorado Springs Mineralogical Society**
*Founded in 1936*
**Lazard Cahn**
*Honorary President*

**Articles in this Issue:**

## Nov 2011 CSMS Calendar

Tues., Nov 1—*Fossil Group*, 7 p.m., Senior Center. Mike Nelson, Leader, csrockguy@yahoo.com

Thurs., Nov 3—*Board Meeting*, 7 p.m., Senior Center.

Tues., Nov 8—*Micromounts*, 7 p.m., Senior Center. Dave Olsen, Leader, 719.495.8720

Sat., Nov—*Lapidary*—RSVP please. If you would like to cut stones, call Sharon Holte at 217.5683 for an appointment.

Thurs., Nov 17—*General Assembly*, 7:30 p.m., Senior Center.

5:30 p.m. to 6:15 p.m. *Pebble Pups & Juniors*. Steven Veatch, Leader, 719.748.5010

Sat., Nov, *Jewelry Group*, By reservation only. Please call, 15610 Alta Plaza Cir., Peyton. Bill Arnson, Leader, 719.749.2328

Thurs., Nov??—*Crystal Group*, *CANCELED*

*Faceting Group*, 7 p.m., Senior Center. Paul Berry, Leader, 719.578.5466

*Camera Club* is looking for a leader and meeting place, date and time. Interested? Contact Roger Pittman.

*Project Group*—TBD—contact Ron "Yam" Yamiolkoski, yamofthewest@gmail.com

*For more information on any of the sub-groups, meetings, and other CSMS valuable information, go to our website, csms.us*

The Senior Center is located at 1514 North Hancock in Colorado Springs.

## Dec 2011 CSMS Calendar

Thurs., Dec 1—*Board Meeting*, 7 p.m., Senior Center.

Tues., Dec 8—*Micromounts*,

CANCELED / ??? Will discuss at November meeting.

7 p.m., Senior Center. Dave Olsen, Leader, 719.495.8720

Sat., Dec—*Lapidary*—RSVP please. If you would like to cut stones, call Sharon Holte at 217.5683 for an appointment.

Tues., Dec 13—*Fossil Group*, 7 p.m., Senior Center. Mike Nelson, Leader, csrockguy@yahoo.com

Thurs., Dec 15—*General Assembly*, 7:30 p.m., Senior Center. PARTY!!! PARTY!!!

6:30 p.m. to 7:15 p.m. *Pebble Pups & Juniors*. Steven Veatch, Leader,

Sat., Dec, *Jewelry Group*, By reservation only. Please call, 15610 Alta Plaza Cir., Peyton. Bill Arnson, Leader, 719.749.2328

Thurs., Dec??—*Crystal Group*, *CANCELED*

*Faceting Group*, 7 p.m., Senior Center. Paul Berry, Leader, 719.578.5466

*Camera Club* is looking for a leader and meeting place, date and time. Interested? Contact Roger Pittman.

*Project Group*—TBD—contact Ron "Yam" Yamiolkoski, yamofthewest@gmail.com

*For more information on any of the sub-groups, meetings, and other CSMS valuable information, go to our website, csms.us*

The Senior Center is located at 1514 North Hancock in Colorado Springs.

**CSMS Pebble Pup Program Starts New 2011-2012 Academic Year with New Changes**

***By Steven Wade Veatch***

The CSMS Pebble Pup program has started the 2011 -2012 year with great success. During the September meeting everyone worked on an assignment of weighing and working with various kinds of samples. Each pup enjoyed baked cookies and brownies and had time to feast, share rock stories, and have

fun.

**Figure 1.** Nate and Katie are carefully following the

steps of their pebble pup exercise.

**Figure 2.** Nate and Jack are doing the lab section of the pebble pup work for the evening's meeting. Jack is wearing the vest that all of the Pebble Pups will be wearing. Ordering information will be available.

Cont: There are a few changes being made to this year's program. First, our regular meeting times have changed. We still meet on the third Thursdays of each month, but we now **start at 5:30 pm**. This

**Figure 3.** Deerheart clam fossils, from a canyon near Austin, Texas, were provided to each Pebble Pup for their collection.

Cont: The pebble pup sessions are designed to last about 45 minutes. This will give the juniors the opportunity to help as mentors to the younger pebble pups and be able to aid the adult leaders on field trips. The second change is that we will be providing at low cost vests for the pebble pups to wear at meetings. The vests will be used for placement of earned merit badges. There is also space for any junior ranger badges earned at national parks. The third change will be a stronger emphasis on field trips during the entire year for the pebble pups. The CSMS pebble pups program is still accepting Internet pebble pups from wherever they may live.

*****Please visit the pebble pup website often for news and updates at: http://pebblepups.blogspot.com/*****

**November 2011 General Assembly Meeting Program**

**"WORLD of Perfect Minerals (Micro Minerals)**

**By Richard Parsons**

**Currently President of**

**www.rocky-mountain-micromineral-association.com**

**Do not miss seeing the wonders of the "Mineral World" that can only be seen through the lends of a microscope. This is a program that will expose you to a new side of minerals,**

***small and perfect.***

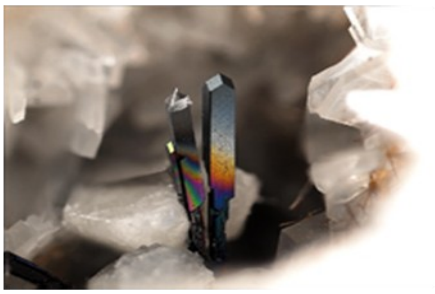


Photo by The Wannenköpfe, Eifel region, Germany

After leaving the Owl Canyon Road, U. S. 287 traverses the Permian-Pennsylvanian Fountain Formation until the small community of Livermore. It then cuts through an unnamed anticline (older Permian Owl Canyon and Ingleside formations exposed) before picking up the Fountain again about two miles from Livermore. The Fountain is a hodgepodge of arkosic (rich in feldspar) sandstone and conglomerate, and reddish-brown siltstone and shale shed off the rising Ancestral Rocky Mountains to the immediate west.

The big change in geology happens in another mile and one-half where the highway crosses the North Livermore Fault! Travelers can easily notice the change from the Fountain Arkose to the Precambrian (1.7 Ga event) gneiss and schist (Fig. 3). This is a great place to observe a fault contact of major proportions (for a map see Braddock, W.A. and Connor, J.J., 1988).

Approximately 10 miles north of Livermore, on the east side of the road, is a local landmark called Steamboat Rock (Fig. 4). The entire structure is due to erosion of the Fountain Formation (I think) although the area is mapped as Ingleside Formation-Fountain Formation (Braddock, W.A. and Cole, J.C., 1978).

The road continues on to Laramie and the stretch in Colorado, shortly after Steamboat Rock, traverses through the Precambrian Sherman Granite (~1.4 Ga). This unit was intruded into the older ~1.7 Ga metamorphic schists and gneisses. A really interesting geological feature called the Virginia Dale Ring Complex is exposed near the community with the same name (about four miles south of the state line). The complex is circular and approximately nine miles in diameter, and inserted into the base rock Sherman Granite (Fig. 5). The "rings" are composed of granite and quartz monzonite (intrusive igneous rocks rich in the feldspar, plagioclase). Some early geologists thought the complex was some sort of an impact structure; however, geologists now believe the ring rocks were emplaced into older ring fractures (Eggler, 1968).

For a history buff like me, Virginia Dale is also known as a stage stop (1862-67) on the Overland Trail Stage Line. The station agent was sort of a "desperado" by the name of Jack Slade. And, in his novel *Roughing It*, the famous writer Mark Twain described Virginia Dale.

One of the great highways in Colorado is CO 14 trending from Teds Place westward to Walden. For that reason the traveler will need to backtrack south from the Virginia Dale area to the CO 14 junction. Teds Place is situated in a valley between the Cretaceous Dakota Formation (forming the prominent "Dakota Hogback") and the ~1.7 Ga Precambrian metamorphic rocks. The valley contains rocks of Pennsylvanian, Permian, Triassic and Jurassic age but they are not well exposed (Fig. 1).

CO 14 generally follows the Poudre River, a Blue Ribbon trout stream, and travels through some of

Immediately after leaving Teds Place the road plunges into the canyon of the River and its exposures of Precambrian rocks. This lower section of the canyon is unglaciated and therefore has a characteristic "V-shape". The upper reaches of the canyon have been glaciated and visitors will notice a distinct difference between this upper "U-shaped" section beginning about Home Moraine (~mm 85). A glacial terminal moraine also backs up Chambers Lake near the summit of Cameron Pass.

The lower Cache la Poudre River, the "V-shape" part, preserves large meanders that are deeply entrenched into the hard crystalline Precambrian rocks. These features indicate the drainage network has adjusted to renewed uplift of the Front Range (Kellogg and Klein, 2011).

Cameron Pass and vicinity have a wonderful section of Mesozoic rocks that are upturned and well-exposed along the Never Summer Thrust Fault. These rocks reappear after so many miles of driving through the Precambrian. One of Colorado's rock units that is easily identifiable is the Pierre Shale of Cretaceous age, a dark- (black to gray) colored fissile shale originally deposited as "mud" in the vast Western Interior Seaway. The Pierre, and its western correlatives like the Mancos Shale, is exposed at many localities in Colorado but most often in the basins, in the Book Cliffs, and on the flanks of mountain ranges (such as the Colorado Springs-Pueblo corridor). Here at Cameron Pass not only is the Pierre exposed at a high elevation (10,245 feet), but across the highway the unit crops out as a hornfel (a low grade metamorphic rock) along the crest of a high mountain range: the Nokhu Crags-Mt. Richthofen area (Fig. 6).

As stated earlier, the Pierre was deposited as a marine layer in the WIS. During the Laramide Orogeny (uplift of the Colorado Rockies) the area now occupied by the Never Summer Range most likely was uplifted, and faulted, and then eroded. At a major fault, the Never Summer Thrust Fault, Precambrian rocks glided westward over the sedimentary section and the Pierre Shale was tilted upward. The entire area was then lifted again in a large block. New volcanism in the area began around 32 Ma and produced a thick layer, perhaps a mile, of volcanic flows and ashes (Larson, 2004). Then around 29 Ma the granodiorite and monzonite (intrusive igneous rocks rich in the feldspar, plagioclase) stock of Mt. Richthofen was emplaced (Larson, 2004). This hot magma then provided the "heat" for cooking the shale of the Pierre and the hornfel was formed. The entire area has been subjected to regional uplift in the last several million years and erosion and glaciation have produced the current dramatic landscape. It is truly a place to visit and observe some spectacular geology.

Also near Cameron Pass Larimer Co Rd 103 takes off north and follows the Laramie River to the

WY-CO state line (Fig. 7). Since the road is graveled rather than paved it could not qualify as a Blue Highway but would be listed as what, a Blue Back Road? The narrow river valley is bordered on the west by the Medicine Bow Mountains and on the east by the Front Range. Both of these ranges have bounding thrust faults.

As the Front Range of Colorado trends northward from Denver, then passing Boulder and Fort Collins, it splits into two different prongs as it reaches Wyoming (Fig. 8). In addition, the Park Range (of Colorado west of North Park) extends into Wyoming as the Sierra Madre Range (Fig. 8).

The eastern most range in Wyoming is the Laramie Mountains, extending almost to Casper, and bounded on the east by the Great Plains/Denver Basin and on the west by three intermountain basins: Laramie, Shirley and Hanna. Laramie Peak, at 10,274 feet, is at the north end of the Range but can be seen for many miles across the flat plains and basins. The Laramie Range is perhaps best known for lending its name to the defining mountain building event of the Rocky Mountains---the Laramide Orogeny. West of these basins are the Medicine Bow Mountains with a subrange, the Snowy Range, dominating the scenery west of Laramie, Wyoming? The westernmost prong is the Sierra Madre Mountains separated from the Medicine Bows by the Saratoga Valley.

The Colorado Medicine Bow Mountains (Fig. 7) are cored by Precambrian rocks—mostly granites and gneisses (~1.7 Ga event). They seem to rise directly up from the valley of the Laramie River and it is often tough to spot the high peaks (highest peak is Clark Peak at 12,951 feet). No roads cross the Colorado Medicine Bows and much of the land is tied up in the Rawah Wilderness Area.

In climbing around on the Medicine Bows I noticed a few glory hours and the rocks seemed not very interesting, certainly not for collecting! It is my understanding that a few early prospectors were out looking for copper. However, when the state line is crossed there are several old gold/silver mines in the Wyoming section.

The narrow valley of the Laramie River in Colorado exposes a section of Cretaceous rocks (and probably some of the basin filling Tertiary North Park Formation) that seems accidental and trapped between the two mountain ranges. I prospected the Pierre Shale but was unsuccessful. I was able to locate a few outcrops that contained numerous Cretaceous clams, mostly inoceramids (extinct clams quite common in the Mesozoic). Without a detailed geologic map I was a little uncertain as to exact location in the stratigraphic column; however, I suspect they were from the Cretaceous Carlile Formation/Group.

To be continued.

REFERENCES CITED


Braddock, W.A. and J. C. Cole, 1978, Preliminary Geologic Map of the Greeley 1 degree x 2 Degree Quadrangle, Colorado and Wyoming: U.S. Geological Survey, Open-File Report OF-78-532, scale 1:250000.

Braddock, W.A., D. D. Wohlford, and J. J. Connor, 1988, Geologic Map of the Livermore Quadrangle, Larimer County, Colorado: U.S. Geological Survey, Geologic Quadrangle Map GQ-1618, scale 1:24000.

Eggler, D.H., 1968, Virginia Dale Precambrian Ring-dike Complex, Colorado-Wyoming: Geological Society of America Bulletin, v. 79.

**Klein, T. and** K. Kellogg, 2011, Central Colorado Assessment Project: http://esp.cr.usgs.gov/research/central_colorado/index.html

Reed, J.C., Jr., M. E. Bickford, W. R. Premo, J. N. Aleinikoff, and J. S. Pallister, 1987, Evolution of the Early Proterozoic Colorado Province--Constraints from U-Pb geochronology: Geology, v. 15.



Fig. 1. Google Earth© image of area near Teds Place. CO 14 turns west off U.S. 287 crossing Quaternary sediments and poorly exposed Permian, Triassic and Jurassic rocks, hits the Precambrian schists and gneisses and heads west up the Cache la Poudre River Canyon. Note how the canyon narrows as the highway and river meet the Precambrian rocks.

*Continued on Page 6*

Fig. 2. Colorado Alabaster Company (courtesy photos) quarries stone from north of Fort Collins and markets the raw material (quarry to right) to a variety of artists (lathe-turned urn to left) and schools (for art projects). See www.coloradoalabaster.com/ for a gallery of completed projects by Colorado Springs students at Lewis Palmer High School.


Fig. 3. Google Earth© image of the Livermore area. Note the difference in topography along the North Livermore Fault. Farm land on the Paleozoic rocks change to the rugged topography of the Precambrian rocks.

Fig. 4. Steamboat Rock exposing rocks of the Fountain Formation (I think). Stream in the foreground exposes Precambrian rocks. The unconformity between the Fountain and the Precambrian is due to the late Paleozoic mountain building event termed the Ancestral Rockies Orogeny. Paleozoic rocks older than the Fountain were eroded away during the uplift. The Fountain represents debris shed off the mountains.

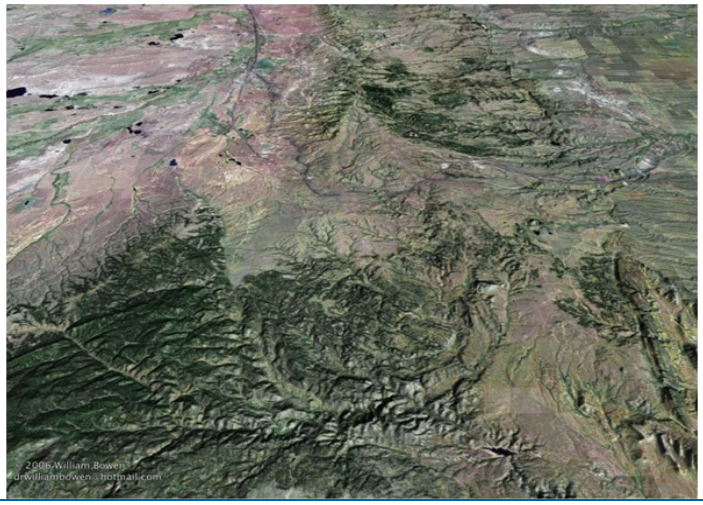



Fig. 5. Digital satellite image looking north at Virgina Dale Ring Complex, northern Larimer County. Image by permission Dr. William Bowen.


Fig. 6. The north end of the Never Summer Range taken from the summit of Diamond Peaks (11699'), Medicine Bow Range; looking south with Colorado 14 (unseen) in the valley between Diamond Peaks and the conifer forest. Nokhu Crags is an exposure of the Pierre Shale "cooked" to a low-grade metamorphic rock (hornfels) by igneous intrusions at Mt. Richthofen.

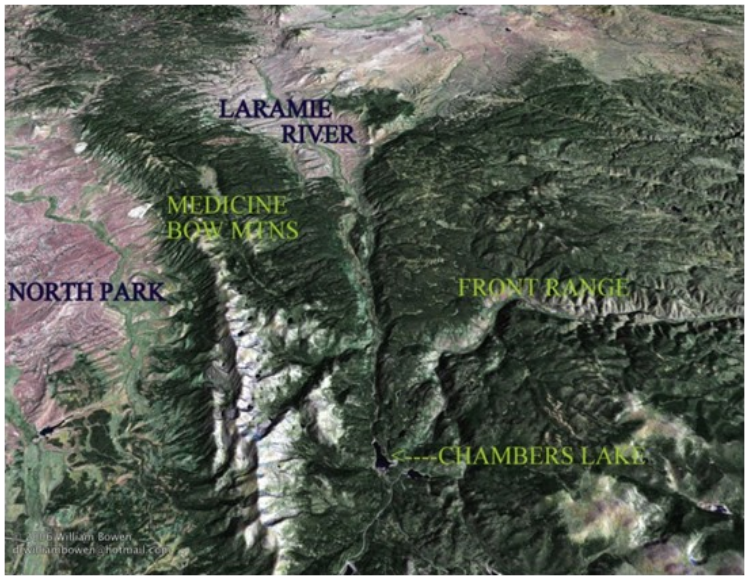



Fig. 7. Digital satellite image looking north from Chambers Lake along the course of the Laramie River.

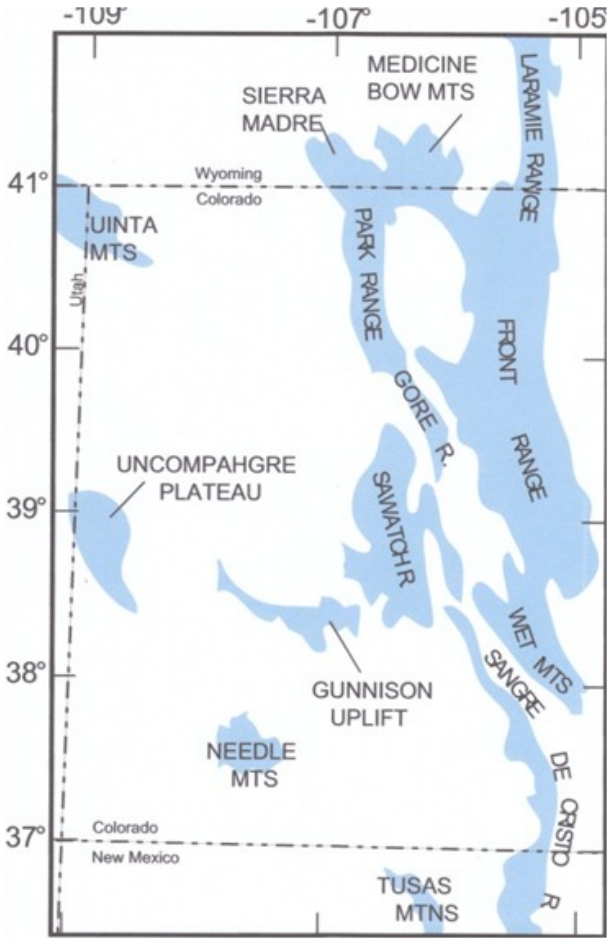



Fig. 8. Map showing principal uplifts exposing Precambrian rocks in Colorado. Note Front and Park ranges extending into Wyoming.

The End….

**Thunder Bay Amethyst**

**By Ellie Rosenberg**

There are some really good collecting sites still left in the world. One of them is at the Blue Points Amethyst Mine in Pass Lake, Ontario, Canada. It is owned by Lyndon Swanson and is open mid-May through Canadian Thanksgiving (which is the second Monday in October).

Back in the early seventies, a friend of ours brought back a magnificent amethyst specimen from Thunder Bay and ever since then Frank and I have wanted to go and visit the Amethyst mines. Since we were making a road trip to New York last September, we decided to make a detour through Canada and check it out. After doing some research on the internet I found that there were only 2 mines currently open for collecting: Amethyst Mine Panorama and Blue Points Amethyst Mine. Both mines are in the same general area and are not far from each other.

Amethyst Mine Panorama bills itself as North America's largest amethyst deposit and is an active, working quarry. There is an entry fee of $7.00 and a charge of $3.00 a pound for all the amethyst you keep. You are not allowed in the actual quarry but dig in an area where they have dumped tailings from the mine. We did not wind up going to this mine because we went to Blue Points Amethyst Mine first and collected all we could carry on the first day. People we met at the Blue Points mine had previously collected there and recommended it as well.

Blue Points Amethyst Mine is less of a commercial tourist enterprise and more a working mine, which appealed to us. We stopped by late in the afternoon of the day we arrived and talked with the owner, Lyndon Swanson. He was going to set off explosives early the next morning and told us to come back around 10 after they had inspected all the charges and verified that the mine was safe. We were really excited to be the first to dig in the newly excavated material.

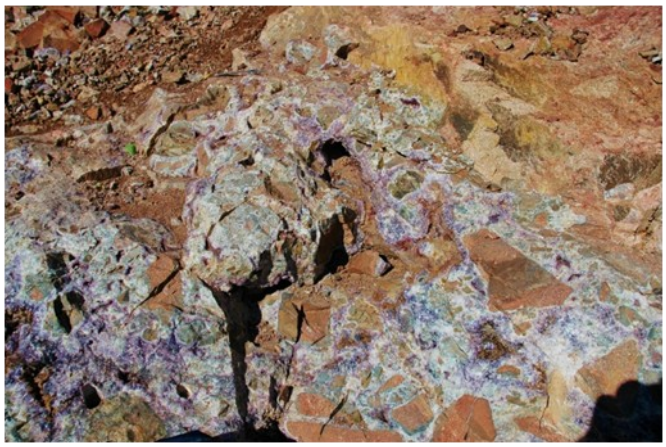
If you have a hard hat, safety glasses and some real experience working in open pit mines Lyndon is willing to allow you in the actual pit. If you would rather not climb down in the pit, there are still a lot of very good specimens to be found in the piles of rock excavated from the pit and lying around the fields surrounding the mine. But of course the best collecting is in the pit especially after it has been blasted.

This is a picture of the actual pit and that is Lyndon looking happy with what he is finding.

Another view of the mining area.

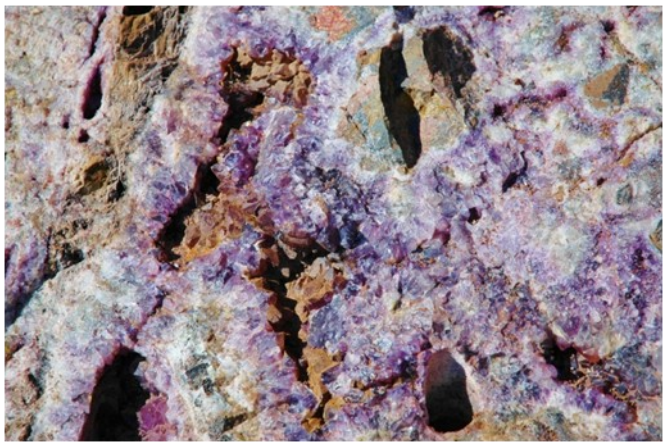
This is what the vein looks like inside the pit with the surrounding rock. = >>>>

Here is a close up of one of the veins. You can see



some very nice pockets with fairly large amethyst crystals. You can also see one of the drill holes where the charges were placed.

Unfortunately the surrounding rock is so hard it is



virtually impossible to chisel out these pockets. But you can find pieces that were broken off by the blasting. Some of which are far too large to lift.

This is the type of specimen that can be found in the

fields surrounding the pit. = >>>>

This is Paul who with his wife Thelma works with Lyndon in the mine. He also has a claim that is not open to the public, which he works when he has some time. He let Frank and I go over and take a look as well as allowed us to collect a few specimens. Paul's claim contains amethyst that is almost black in color. You can see he really enjoys his work.

This is the type of specimens found at Paul's claim.

We stayed at a very nice campground only a few minutes away from the mine. All the amethyst on the picnic table was collected in one day. .= >>>>

I also researched the geology of the area and found this information from the Ministry of Northern Development and Mines. Amethyst is the Mineral Emblem of Ontario. Below is an excerpt from their website.

**HTTP://WWW.MNDM.GOV.ON.CA/MINES/OGS/IMS/AMETHYST_E.ASP**

Amethyst is in rich supply along the Lake Superior's north shore near Thunder Bay. It is also found in the Bancroft and North Bay areas.
The earliest mention of amethyst near Lake Superior dates back to the 1600s, but the first large deposit was discovered in 1955 in McTavish Township just east of Thunder Bay. In the Thunder Bay area, amethyst crystals formed in cavities created during the Keweenawan faulting of the Lake Superior basin about 1.1 billion years ago. Here amethyst is found with other minerals such as pyrite, galena, sphalerite, chalcopyrite, calcite, fluorite, and native silver. Amethyst occurs as beautiful purple crystals, with some having a thin layer of reddish brown hematite trapped just beneath their surface.

## Legend and Facts

Although the reasons for the striking purple hue of amethyst are now known, the original naming of this gemstone stems from Greek mythology. In the legend, the god Dionysus, enraged by an insult, vows to set his tigers upon the first mortal to cross his path. A young girl on her way to the shrine of the goddess Diana comes upon the tigers. To protect her, Diana transforms her into 'rock crystal' (quartz). The remorseful Dionysus pours a goblet of wine onto the crystal in offering to the girl. This gives the crystal a purple hue and the name 'amethyst' which derives from the Greek word meaning 'not drunken'.
Amethyst, a variety of quartz, contains excess iron within its structure. When the atoms of iron are aligned, rather than scattered within the crystal, light passing through is seen as a purple color. The alignment of iron is caused by the emission of low-level radiation from the surrounding rocks.

In Ontario the six-sided purple amethyst crystals are found in thin sheet like deposits in crevices called veins and in vugs – pockets within rock where trapped liquids and gases have created an environment suitable for crystal formation. With the growth of crystals zoning takes place – layers of different colours caused by changing compositions of the fluids that formed amethyst. Thus no two amethyst crystals are alike in colour or composition. One crystal can be uniform in colour while another can vary from a subtle shade of lavender near the crystal base, to an intense, dark purple at its point.

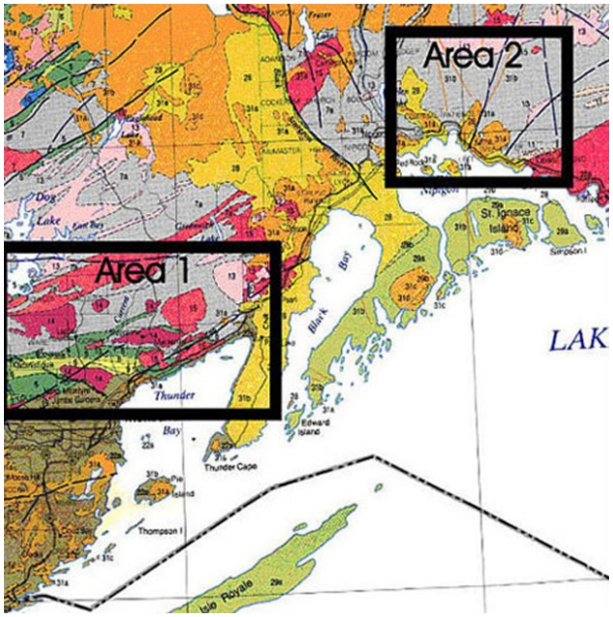
*Colour*

- Natural amethyst ranges in colour from very pale violet to dark purple.

The colour is caused by iron ions replacing silicon ions in quartz; the iron is then ionized with low level natural radiation.

## Geology of Amethyst in the Thunder Bay area

Amethyst veins in the Thunder Bay area occur in parallel to subparallel vein systems. Veins strike northeast and east, parallel to major Keweenawan faults. The best amethyst crystals occur in vugs and the largest vugs occur at the intersection between the northeast and east trending faults and fractures. There is a spatial relationship of amethyst deposits north of Thunder Bay to the 060° regional unconformity/vein system that stretches from Northern Light Lake in the southwest to Kabamichigama Lake in the northeast. This regional system also hosts silver, lead and zinc mineralization.
Because, in the Thunder Bay area, amethyst formation is restricted to near-surface conditions, the amethyst occurrences are located within 50 meters of the subhorizontal unconformity between the Archean and Proterozoic rocks shown on the map and cross-section below. The unconformity has also acted as a mechanism for concentrating radioactive minerals essential in the formation of the purple colour of amethyst.



Geology map and legend of the Thunder Bay area from Geology of Ontario map 2542.
Amethyst is currently being produced in Area 1 centered on Pearl, Ontario.
Amethyst occurrences have also been found in Area 2 northeast of Nipigon.
Additional information on the geology of this region is available at
http://www.mndm.gov.on.ca/mines/ogs/resgeol/geology/tbs_e.asp
The End*****

## CMS General Meeting
## By Roger Pittman

**Emeralds!**

The Colorado School of Mines currently has on loan from The Collectors Edge (Bryan & Kathryn Lees) several spectacular Emerald specimens. These specimens may go to Tucson in February so there is not a lot of time for you to view them. The CSM museum is open seven days a week , admission to the museum is free, but there is a small parking charge except on weekends. Don't miss

## WMMI Happenings

225 Northgate Blvd., CS, CO 80921
Main: 719.488.0880/Toll Free: 800.752.6558 info@wmmi.org
Hours: 9 a.m.- 5 p.m., Monday-Saturday (June-August)
9 a.m.- 4 p.m., Monday-Saturday (September-May)
Daily Guided tours at 10 a.m. and 1 p.m. (included in admission).

**The Western Museum of Mining and Industry is a private, nonprofit museum founded in 1970. We educate over 8,000 school children a year on the importance of mining in the American West.**

November 26, 2011
The Gold Assay Process: Magic or Chemistry
10:00 a.m. and 1:00 p.m.
For more information call: (719) 488-0880.
Gold does not come out of the ground ready to wear. Join us at the Western Museum of Mining & Industry to discover how ore is processed to extract gold. Hands-on learners of all ages will crush and classify ore as they learn the basics of gold ore assaying--determining the value of gold in the rock. This fast moving, interactive assay demonstration will overview the math, mechanics, and chemistry of this exciting process along with modern day techniques. Customary admission applies, and reservations are requested.

**Train and Toy Exhibit**
November 25 thru December 31
9:00 a.m.-4:00 p.m.
The Western Museum of Mining & Industry presents a unique exhibit featuring the 'HO' scale "Toy Story Train" circling many interesting toys that visitors can identify and reminisce about from their childhood. Vintage toys from the 1940's, 50's and 60's will be on display from a private collection. Visitors will decide what minerals and other materials were used to make the toys The museum will display their Virginia & Truckee large model engine and coal tender known as Nevada's Bonanza Railroad and "The Queen of the Shortline". The V & T hauled silver ore from the Comstock Lode in Virginia City as well as supplies up and down the line from Reno to Carson City to Virginia City to Minden. Come visit this new exciting Holiday display at the museum that celebrates trains.

**Trains! Trains! Trains! in November and December**
Pikes Peak N'gineers
December 9 & 10 only
9:00 a.m. - 4:00 p.m.
See the world come to life in miniature as the Pikes Peak 'N'gineers display their 'N' scale Model Railroad at The Western Museum of Mining & Industry. See miniature trains run through cities, by industries and in the countryside. Enjoy modeling workshops to learn how this small world is created.

## 2011 CSMS Officers

**Roger Pittman, President**

**Kay Thompson, Vice President**

**Joni Peterman, Secretary**

**Ann Proctor, Treasurer**

**Sharon Holte, Co-Editor**

**Ann Proctor, Co-Editor**

**Roni Poteat, Membership Secretary**

**Sharon Holte, Member-at-Large**

**Al Zelenak, Member-at-Large**

**Ron Yamiolkoski, Past President**

## 2011 CSMS ChairPersons

**Ron Yamiolkoski, Annual Show Chairperson**

**Ron Yamiolkoski, Field Trip Director**

**Ron Yamiolkoski, Science Fair Chair**

**Brenda Hawley, Historian**

**Frank & Ellie Rosenberg, Librarians**

**Camera Club Chair is Vacant**

**Maria Weisser, Social Committee Chair**

**Ann Proctor, Store Keeper**

**Kerry Burroughs, Crystal Studies Group**

**Paul Berry, Faceting Group**

**Mike Nelson, Fossil Group**

**Bill Arnson, Jewelry Group**

**Sharon Holte, Lapidary Group**
**Steven Veatch, Juniors & Pebble Pups**

**Dave Olsen, Micromount Group**

**Brian Paterson, Webmaster**

**To contact an officer or chairperson, go to csms.us, click on Board Members, and, if their name is underlined, click on it.**

| Sub-Group Responsibilities for Refreshments for | | |
|---|---|---|
| **Feb.—Crystal** | **Mar.—Faceting** | **Apr.—Fossil** |
| **May—Jewelry** | **June—Lapidary** | **July—Micromounts** |
| **Aug.—Picnic** | **Sept.—Projects** | **Oct.—Board** |

# Looking for Clifford & his friends in Palmer Park

Written/compiled by Julie Shimon for Jack Shimon, CSMS Pebble Pup and geocachekid, and geocachekids Reagan and Elijah Webster, Elli and James Bohanan and Jane Shimon

Today we let our imaginations run wild at Palmer Park. I took my kids geocaching club (Shimon, 2011) to work an on Earthcache (EC) called Clifford and his friends (SPIVEY, 2009). When you Earthcache, the person setting up the cache provides GPS coordinates to an interesting geologic feature, or location, and then lists the assignment you have to do in order to log the cache. This cache combined discovery of rock shapes, a bit of geology trivia and the opportunity to do a lot of exploring; consequently it was the ideal setting for a group of ambitious kids.

In Reagan's words, "At Palmer Park we were finding shapes in the rocks instead of boxes hidden. My favorite was the rock in the shape of the duck because it was shaped like a duck without anybody carving it like that."

*Caption: Julie Shimon, creator of thegeocachekids, with part of the group.*

A bit of history: Palmer Park is composed of white bluffs with feldspar-rich sandstone called the Dawson Arkose and reddish-brown mudstone and sandstone beds that are full of volcanic debris. The Dawson Arkose dates to the Late Cretaceous, about 60 million years old. There is a story in the layering of the rocks, which tells us that the volcanic rock was eroded off the mountains to the west before the granular rock was exposed. Therefore, this area containing sedimentary rocks eroded off Pikes Peak was not part of the sea floor, but rather, was spread out across the land by many eastward flowing streams (SPIVEY, 2009). Other areas in Colorado Springs where this pattern can be observed are the unique hoodoos of Pulpit Rock, Austin Bluffs, and the Woodmen area. In fact, there is a fun geocache by hiking_fool called Hoodoos (hiking_fool, 2007) that explores this area in photography and you have to find the location of where a photo was taken by a famous Colorado photographer many years ago. Of course, as far as the kids were concerned, the words Dawson Arkose went in one ear and out the other.

The first exercise in this EC was to spot Clifford the Big Red Dog and his friends. Do you see them?

Lets take a closer look. Based on the coordinates provided by the

As Elijah described our day "I liked all the different shapes in the rocks. I found part of the rock that was shaped like a seat. I really liked

cache owner, this feature is Clifford. The round face and big floppy ears are quite obvious if you've ever seen a picture of Clifford.

Caption: Clifford

But one of our geocachekids, James, actually saw Clifford in this feature. The face is the round part in the middle and he has long ears sticking out on both sides. Without the red ear part, some of the kids thought this same rock looked like a skeleton head.

Without the red ear part, some of the kids thought this same rock looked like a skeleton head.

*Caption: Another view of Clifford, or is it a skeleton? What about a turkey?*

And then there was Elli who found this turkey which is a third figure within this one small area. Clearly a work of imagination. Mine isn't working 100% at the moment because I don't quite visualize it, but the round holes are the eyes and lower on the right is a beak".

According to Elli, "the turkey was definitely my favorite thing, look, it even has a gobbler."

*Caption: Elli's turkey*

What about this one? I didn't see it until I was cropping images trying to find the turkey that Elli described. I thought THIS was Elli's turkey until she corrected me. See the head on the left and the big tail feathers on the right? Its funny what pops out at you.

*Caption: Julie's turkey*

This turkey could be something else as well. Looking at the entire red colored area us moms saw a camel. The "turkey" became its head and the other hump is of course its back. Plenty of fun to be had for moms too at Palmer Park.

*Caption: a camel with one hump*

So much fun and we had barely walked 200 feet from the car! All this weathered sandstone begs to be explored, and that means climbing if you are a kid!! Around the right side of this entire formation we picked up on some other rather neat shapes.

Not exactly the yellow rubber bath version, but Jane discovered this big yellowish rock duck. Even our youngest explorers could appreciate this day.

"The duck was quacking and quacking and I wanted to ride on its back" Jane said (and she tried hard to scramble on top of it too)

Can you name the animal Jack is riding on the back of? I'll give you a hint, this one has a really big shell.

Jack and James were all over this one- literally… climbing and scrambling up the "shell" of the turtle. It comes as no surprise that they agreed on this point:

"The turtle was our favorite shape!!"

So I would say all these fun observations definitely fulfilled the first assignment of using creativity and imagination to discover Clifford and his friends. So what was next? We were directed to another GPS location and told to measure the unique weathering in a specific pattern. The hint to pick it out on the rock face was "sometimes the rocks Smile back at you" (SPIVEY, 2009). Well, we looked and we climbed and many of the kids saw "frowns" but it took Reagan's careful eye to find exactly what the cache owner meant. Because she found the smiley face, we let Reagan measure it for the assignment. It was 9.5 inches tall and 7.5 inches wide.

*Caption: Reagan found and measured the smiley face*

Our final assignment was to take a photo in front of an example of the Dawson Arkose. By this point the boys were climbing EVERYTHING, so we assembled a group of the girls for a nice photo.

*Caption: Daya, Jane, Reagan, Dara and Emma at the Dawson Arkose layer*

All in all, this was a wonderful morning spent learning about the unique geology of our area and making new friends. There is a similarly exciting opportunity for our very own Pebble Pups club to go Earthcaching with Steve Veatch in Red Rock Canyon Open Space (RRCOS) in October. Who knows, maybe some of our geocaching friends will come along too.

*Caption: unique layering in Palmer Park*

References:


Shimon, J. (2011, July). *thegeocachekids*. Retrieved from http://www.thegeocachekids.com/

SPIVEY, Initials. (2009, July 29). *Clifford and his friends//palmer park*. Retrieved from http://www.geocaching.com/seek/cache_details.aspx?guid=ca8e9480-d2c5-409f-9fba-8f1981fc6a48

hiking_fool, Initials. (2007, August 17). *Hoodoos 1870-2000*. Retrieved from http://www.geocaching.com/seek/cache_details.aspx?guid=9f902a10-5d96-4010-a2d8-ae32d6e7cdd1


# President's Corner

by Roger Pittman, CSMS

October is over (and November has arrived) and we've been able to collect nearly until the end. If we have a typical Colorado winter there may be many days suitable for collecting if you have the freedom to collect when the weather allows it. While I don't suppose the club will have an official field trip for the remainder of this year, it's time to be researching places to go next year.

Read or re-read those books by Pearl, Kappele and Voynick, check out those rock magazines you haven't gotten to this year, talk with the more experienced members and let's get planning for next year!

We'll have a little business we have to finish at the November meeting – ELECTIONS! We currently have a candidate for most positions, however ***we will accept nominations from the floor for any position***. We still need help with the editors, Ellie Rosenberg has offered the be a co-editor with Sharon, and Sharon will continue through 2012, but Ellie gets to travel several months next year so Sharon still needs help. This can be writing articles, sending hobby related tips, poems funny stories etc. Always remember this is your club, let any of us on the board know what we're doing right or wrong (well). And, most importantly, let us know what you've seen or done at another club that made it fun.

# FROM THE LIBRARY

by Ellie Rosenberg, CSMS

We want to thank everyone for the large number of donations we received over the last few months. (We have created a list for the Pick & Pack: however, that Editor, for whatever reason; can not get it to paste in, so it will be available at the next General Meeting). But I do not have a complete record of who made the donations. So please let me know if you donated a book and your name is not on the list.. If you are interested in borrowing any of the books, e-mail me and I will bring them to the meeting or arrange for you to pick them up.

In addition to the list, (which is not below) we have had a large collection of Lapidary Journal Magazines ranging from 1969 to 2002 donated for the silent auction. I will be bringing several boxes of them to the CSMS meetings starting in November and make them available to any member who wants them for $0.25 per magazine. The proceeds will be added to the silent auction funds we raised at the Rock Fair this summer.

This is your library. We encourage all CSMS members to take advantage of our fairly extensive inventory of reading material. Check the CSMS website to make your selection then Email or call Frank or Ellie to make your request. We appreciate all mineralogical book donations.

# Things to do from CSMS member Pete Modreski

**November 2011**—December 2011

Coming Earth Science Events,

Let me begin with a request for volunteers for science fair judges for Blue Heron Elementary School, located about 2 miles east of Southwest Plaza in Littleton, for Thursday, Nov. 17; they are looking for five scientist/engineer judges to help interview the kids and judge their projects from 9:00 am to noon. Potential judges should contact Gregg Swayze, USGS, at gswayze@usgs.gov; volunteers will be very much appreciated!

Nov. 7-30, Sue's World: A Cretaceous Course with a Field Trip to the K-T Boundary, at the Denver Museum of Nature and Science. This first-time class will introduce you to the extinct world of the Cretaceous during the height of dinosaur evolution. The course will be team-taught by Museum paleontologists Kirk Johnson (chief curator), Joe Sertich (curator of vertebrate paleontology), Richard Stucky (curator of paleoecology and evolution), and Ian Miller (curator of paleobotany).

You will receive an unparalleled view of what the world looked like and how ecosystems operated during the time of Tyrannosaurus rex and its relatives. You will also get a chance to meet all of the Museum paleontologists who work on Cretaceous fossils and learn about ongoing research and volunteer opportunities. The course consists of five classes and a field trip to the locale where the K-T boundary was first recognized in rocks on land. Each of the five classes will tackle a different part of the world of the Cretaceous:

Dinosaurs and Reptiles of the Cretaceous with Joe Sertich

Plants and Cretaceous Ecosystems with Ian Miller

Mammals in the age of Dinosaurs with Richard Stucky

Shifting Climates, Seaways, and Continents with Joe Sertich

K-T Extinction: Close of the Age of Dinosaurs with Kirk Johnson.

All the classes will be augmented with exceptional specimens from the Museum collections. These will include bones of the well-known dinosaurs Triceratops and T-rex; extinct plants, some with no living relatives and others that are the ancestors to the world's rain forests; and the small mammals whose descendants now rule the planet but lived in the shadow of the dinosaurs. The field trip to the K-T boundary will reinforce what you've learned in class and cap your tour of the Cretaceous.

*Continued on Page 15*

# October 2011 General Assembly Minutes

By Roger Pittman, CSMS President

You will actually see, in a single hillside, the end of the time of the dinosaurs and the beginning of the age of mammals. This class fulfills the Paleontology Certification Program requirement for Paleontology of the Western Interior.? Mondays & Wednesdays, Nov. 7-30; no class on November 16, 21, or 23; 6:30 - 8:30 p.m.; field trip: Saturday, Nov. 19, morning and afternoon time slots; $150 member, $180 nonmember; see http://www.dmns.org/learn/adults/classes

Wed., Nov. 9, 4 p.m., CU Boulder Geological Sciences Colloquium,. The evolution of photosynthesis and the rise of oxygen?, by Woodward Fischer, Cal Tech. Benson Earth Science Building, Room 180, CU campus, Boulder CO. All are welcome; refreshments will be served outside Benson Room 380 at 3:30 p.m. For a complete schedule of the weekly colloquium see http://www.colorado.edu/GeolSci/colloquium.htm

Wed., Nov. 9, 7 p.m. at Denver Museum of Nature and Science, Digital Earth: Explore the World from Space; special guest Vance Howard, founder of Artists By Nature, joins geologist Bob Raynolds and space scientist Ka Chun Yu to show immersive, 360-degree panoramas of the Grand Canyon using Gates Planetarium's stunning digital projection system. Experience new footage illustrating the formation of the canyon and what's believed to be some of the oldest rock art in the United States, discuss challenges facing wild rivers across the globe, and enjoy a special screening of an award-winning short film utilizing spherical photography, Crossing Worlds, created by Greg Downing and Eric Hanson of xRez Studio. Gates Planetarium; $8 member, $10 nonmember; see http://www.dmns.org/learn/adults/after-hours

Fri., Nov. 11, Rock Out For the Ridge! Join the Friends of Dinosaur Ridge for their annual fundraiser, Rock Out For the Ridge! Starting at 7 p.m. at the Ship Rock Grille at the Red Rocks Visitor Center, with dinner, live music, a presentation about Mesozoic Crocodiles, a live auction and a silent auction, and awards presentations. See www.dinoridge.org for full information about making reservations. Please note! Dinosaur Ridge remains open to visitors throughout the winter. Winter hours, starting

Nov. 1, will be: Dinosaur Ridge Trail (free any time; $4 charge for optional bus ride, 10 a.m. ? 3 p.m.); Visitors Center & Gift Shop (free, 9 a.m. ? 4 p.m., 10-4 Sundays); indoor Trek Through Time exhibit ($1, open 10-3); and outdoor Triceratops Trail in Golden (free, any time). See www.dinoridge.org or call 303-697-3466.

*Continued on Page 16*

- **MEETING CALL TO ORDER**
  7:29 PM BY PRES/ ROGER PITTMAN
- **PLEDGE OF ALLEGIANCE**
- **PROGRAM FOR EVENING**
  "THE SNOWMASTADON PROJECT" PRESENTED BY IAN MILLER OF THE DENVER MUSEUM
- **APPROVAL OF MINUTES**
  JUNE 2011 AND JULY 2011 APPROVED
- **SATELLITE GROUP REPORTS**
  NO GROUPS REPORTING
- **NEW BUSINESS**
  PEBBLE PUP ITEMS
  S. VEACH'S REQUEST FOR PP BUDGET TO BE INCREASED PASSED WITH THE PROVISION ALL RECEIPTS BE PROVIDED FOR EXPENDITURES
  GENERAL MEMBERSHIP VOTED AS ACCORDING TO BY-LAWS FOR ANY AMOUNT OVER 500.00
- **REQUEST FOR BOARD**
  PRES – OPTIONS TO BE DISCUSSED
  SECRETARY – NOMINEE, JEAN MILLER
  EDITOR
  MEMBER AT LARGE – NOMINEE, MARK LAMESANY
- **OLD BUSINESS**
  SHOW REPORT
  - YAM OUT OF TOWN
  - ANNE STILL WAITING FOR ALL INCOMING EXPENSES
  - REQUEST FOR CHAIRPERSON- NO VOLUNTEERS
- **DOOR PRIZES**
- **ADJOURNMENT APX 9:20 PM**

Nov. 12-13, New Mexico Mineral Symposium, sponsored by the New Mexico Tech Mineralogical Museum, Socorro, New Mexico. See http://geoinfo.nmt.edu/museum/minsymp/home.cfm and http://geoinfo.nmt.edu/publications/fieldguides/rockhound/home.html Wed., Nov. 16, 7 p.m. at Denver Museum of Nature and Science, How to Clone a Mammoth, Is it possible? Acclaimed DNA researcher Beth Shapiro will take you behind the headlines and explain the difficulties involved in cloning a mammoth from frozen DNA samples. She'll also share other compelling stories from her studies, such as how mosquitoes can possibly live in the arctic, how she figured out the flightless dodo bird is related to the pigeon, and why Jurassic Park couldn't work. Shapiro is a member of the Museum's Snowmastodon Project Science Team and a National Geographic Emerging Explorer. Ricketson Auditorium, $12 member, $15 nonmember; see http://www.dmns.org/learn/adults/after-hours.

Fri., Nov. 18, for educators, Colorado Science Conference for Professional Development; sponsored by CAST (Colorado Association of Science Teachers) and affiliated organizations, and held at the Denver Merchandise Mart Expo Hall, 58th Ave. at I-25. Featured presentation this year will be by Dr. Phil Plait, author of ?Bad Astronomy?. 8 a.m. ? 3:45 p.m., followed by a reception with annual awards presentations, and with three optional post conference workshops on Saturday, Nov. 19, including a tour of Dinosaur Ridge. For full information see http://www.coloradocast.org/professionaldevelopment.php?page=overview

Sat., Nov. 19, Littleton Gem and Mineral Club Annual Silent Auction, 12 noon ? 5 p.m. at Columbine Hills Church, 9700 Old Coal Mine Avenue, Littleton. ?Set-up will begin at 11:30 a.m. with the auction beginning at 12:00 p.m. Non-members are asked to not bring more than 12 specimens to sell. The club retains twenty (20) percent of the selling price. The verbal auction and a short business meeting will start at 12:30 p.m. There will be minerals, gems, jewelry, fossils, books and much more available for bidding at the silent auction. Food and drinks will be provided by the club and its members. For more information please email info@littletongemandmineralclub.com or call (303) 840-1177.?

Mon., Nov. 28, The Denver Mining Club is an informal group that meets every Monday, 11:30-1:00 at the Country Buffet, 8100 W. Crestline Ave. (SE corner at Wadsworth), Littleton. There is no charge to attend but purchase of a buffet lunch is required at the restaurant. Visitors are always welcome! The program for Nov. 28 sounds particularly interesting: ?Exploration for Gold in the Precambrian of Egypt: Where Did the Pharaohs? Treasures Come From??, by Dr. Larry James. For a list of their upcoming talks see http://www.denverminingclub.org/ or email Dick Beach,rabeach.66@alum.mines.edu, to be put on their monthly email list.

Fri., Dec. 2, CSM - SEG Student Chapter Mini-Symposium on Rare Earth Element Geology, 10:00 AM - 2:45 PM; Ben Parker Student Center, Ballroom A, spot for the Mini-Symposium on Rare Earth Element Geology by contacting Wesley Hall (whall@mines.edu). Seating will be limited, so please RSVP today.?

Fri.-Sat.-Sun., Dec. 9-11, Flatirons Mineral Club Show, Boulder County Fairgrounds, Main Exhibits Building, at Hover Road & Nelson Road, Longmont, CO; 10-6 Fri., 9-5 Sat., 10-5 Sun.; for full info see http://bcn.boulder.co.us/community/fmc/fmcshow.htm .

**********

Peter J. Modreski
U.S. Geological Survey, Denver, Colorado
Public Relations and Educational Outreach
tel. 303-202-4766, fax 303-202-4742
email pmodreski@usgs.gov
SCIENCE FOR A CHANGING WORLD
http://www.usgs.gov http://ask.usgs.gov

# Looking for Clifford & his friends in Palmer Park Pictures

Do you see Clifford and his friends?

Clifford, the big red dog

Ellie's Turkey

Julie's Turkey

Camel with one hump

Girls at the Dawson Arkose layer.

Jack on the Turtle

Jane's Duck

**SEPT 2011**

PICK&PACK

***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

Pick & Pack Editors
PO Box 2
Colorado Springs, CO 80901

*The PICK&PACK is published at least ten (10) times per year; 350 -375 copies e-mailed/mailed per month (no issues in January or August).*



*Take care: Sharon & Ann*

*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.*

# Classifieds

**CSMS**

**T-Shirts, Badges, and Pins**

are available for sale. See Store Keeper, Ann Proctor.

**Hurry! Hurry!! Hurry!!**

**Have You Picked Up Your**

**Membership Award Pin(s)?**

If you celebrated a CSMS anniversary in 2007, 2008, 2009, or 2010, your year pin award is available from the Storekeeper, Ann Proctor.

More advertisements please!!

**Colorado Springs Mineralogical Society**, Post Office Box 2, Colorado Springs, CO 80901
**www.csms.us**

# APPLICATION FOR MEMBERSHIP

1. All memberships run from **January 1 to December 31**.
2. Any person or corporation joining the CSMS as a new member after June 30th shall pay half of the yearly rate. Corporate Membership grants up to five (5) Individual Memberships. Any person or corporation joining as a new member after October 1st receives membership for November and December plus the following year beginning January 1. The partial year membership shall not apply toward the 25 year Lifetime Membership.
3. Anyone who has previously been a member MUST pay the full rate each year REGARDLESS of the time of the year they pay their dues.
4. Members who have paid their dues for 25 years will be awarded a Lifetime Membership on their 26th year. Lifetime Members receive all of the CSMS benefits and no longer have to pay the annual dues. Individual Memberships provided by Corporate Membership are excluded from Lifetime Status.
5. Corporate membership grants up to 5 individual memberships and one Yearly (10 issues) 3.5 x 2" advertisement in the CSMS Pick & Pack.
6. Members in good standing receive the following benefits: 10 electronic issues of the CSMS *Pick&Pack* newsletter, right to participate in all field trips (additional fees may be required on some field trips and members are responsible for all transportation to and from), participation in one or all Satellite Groups (some groups may request additional fees to help cover resource costs), free admission to the Western Museum of Mining and Industry, a year of learning and enjoyment, plus a lifetime of memories.

LAST _____ FIRST _____ MIDDLE _____

SPOUSE _____

STREET _____ CITY _____

STATE _____ ZIP _____ EMAIL* _____

PHONE _____ CELL _____

HAVE YOU PREVIOUSLY BEEN A MEMBER OF CSMS NO ☐ YES ☐ WHEN _____

YOU ARE PAYING FOR THE YEAR _____

Each year the Colorado Springs Mineralogical Society publishes a Membership Directory. *The directory is distributed **ONLY** to CSMS members.*

Your dues MUST accompany this application ☐ Check if you do NOT want your name & address included

* Will and can you receive the newsletter via email? YES ☐ NO ☐

| | All Members Before Jan 31 | All Members **After Jan 31** | New Members Only: After June 30 | New Members Only: Oct 1 – Jan 31 |
|---|---|---|---|---|
| ☐ Junior Membership (12 –17 years old and parent is not a member) | ☐ $10.00 | ☐ $15.00 | ☐ $ 7.50 | ☐ $10.00 |
| ☐ Individual Membership (18 and over) | ☐ $25.00 | ☐ $30.00 | ☐ $15.00 | ☐ $25.00 |
| ☐ Family Membership (parents & dependents under 18) | ☐ $35.00 | ☐ $40.00 | ☐ $20.00 | ☐ $35.00 |
| ☐ Corporate Membership (entitles up to five (5) Individual Memberships) | ☐ $95.00 | ☐ $100.00 | ☐ $50.00 | ☐ $95.00 |

## YOUR INTERESTS *Please check ALL that apply*

| | | |
|---|---|---|
| CRYSTALS ☐ | MICROMOUNTS ☐ | PROJECTS ☐ |
| FOSSILS ☐ | FACETING ☐ | YOUTH ACTIVITES ☐ |
| LAPIDARY ☐ | SILVERSMITHING ☐ | OTHER ☐ |
| JEWELRY ☐ | PHOTOGRAPHY ☐ | |
| METEORS ☐ | FLUORESCENTS ☐ | |

Sometimes knowing where our members are employed or retired from helps us when we are looking for special information or guidance in our activities. This information will not be published or accessible except by the CSMS Board of Directors:

## VOLUNTEER CAPABILITIES *Clubs are made up of volunteers!*

| | | |
|---|---|---|
| ARTIST ☐ | CLUB OFFICER ☐ | EDITOR ☐ |
| MAILING ☐ | LOCAL SHOWS ☐ | WRITING ☐ |
| PROGRAMS ☐ | FIELD TRIPS ☐ | LIBRARY ☐ |
| PUBLICITY ☐ | WEB SITE ☐ | REFRESHMENTS ☐ |

List any other things you may be willing to do:

***I hereby agree to abide by the Constitution and By-Laws of the Colorado Springs Mineralogical Society.***
CSMS Constitution and By-Laws are available at our website: www.csms.us

_____ _____
Signature of Primary Applicant Application Date

Mail this form and your payment to:

Colorado Springs Mineralogical Society
PO Box 2
Colorado Springs, CO 80901

Postage Here

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

Time Value
Do Not De-
lay

# 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 30.

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

Individuals—$30 Family—$40 Juniors—$15 Corporate—$100 Application is on page 33 and at csms.us