



# PICK & PACK

THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

**JULY/AUGUST 2004**

**Volume 44 Number 6**

## 2004 Mineral Show a Big Success

*CSMS Show moves to new venue*



*The move to Phil Long Expo created a spacious show with 27,000 square feet of exhibit space.*

The 2004 Pikes Peak Gem and Mineral Show took place June 19-20, Father's Day weekend, fitting the show theme, *Rockhounding, A Family Affair*. Attendance at this year's show nearly doubled last year's (see page 5 for statistics on this year's attendance), following the switch in location to the Phil Long Expo Center.

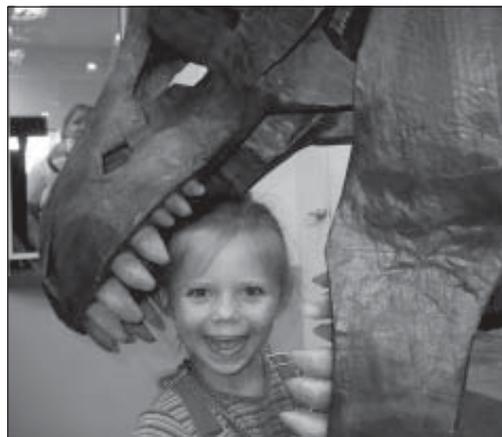
The larger venue allowed for many new features at the show, the largest of which was Mr. Bones, the 14-foot tall, 300-foot long, animated T-Rex skeleton. Mr. Bones and his friends took turns roaming the exhibit hall, delighting young and old patrons alike.

More floor space allowed the club to welcome back the ever-popular Gold Panners. Their panning troughs were a big hit, as was the large children's area the club provided.

Another newcomer to the show was Dia-

mond Pacific Equipment, demonstrating and selling equipment and supplies.

See *Show* on page 3



*Annaliese Bronner was one of many who were thrilled by Mr. Bones. Photo: Tessa Bronner*

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 monthly to assist and promote the above.

<b>Bob Landgraf</b>	<i>President</i>
<b>Drew Malin</b>	<i>Vice President</i>
<b>Sidney Benda</b>	<i>Secretary</i>
<b>James Bushnell</b>	<i>Treasurer</i>
<b>Lorrie Hutchinson</b>	<i>Membership Secretary</i>
<b>Ethan Bronner</b>	<i>Managing Editor</i>
<b>Louis Severini</b>	<i>Member at Large</i>
<b>John White</b>	<i>Member at Large</i>
<b>Kay Thompson</b>	<i>Past President</i>
<b>Manny Sanchez</b>	<i>Show Chairman</i>
<b>Roger Pittman</b>	<i>Field Trip Director</i>

### *Proud Members of:*

**American Federation of Mineralogical Societies (AFMS)**

**Rocky Mt. Federation of Mineralogical Societies (RMFMS)**

**Colorado Federation of Mineralogical Societies (CFMS)**

**Colorado Springs Mineralogical Society**  
*Founded in 1936*



**Lazard Cahn**  
*Honorary President*



*Our Staff...*

**Ethan A. Bronner** *Managing Editor*  
**Cindy Bronner** *Assistant Editor*

**Robert & Naoko Murphy** *Mailers*

**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 E-mail it. Format does not matter. All submissions are welcomed.

**DEADLINE** for items to be included in the next month's issue is the fourth Friday of every month. To submit an item, please use the following:

**Photos:**  
 For hardcopy photos, mail to the address below or bring them to the General Assembly Meeting. All photos remain the property of the submitter. All photos will be returned. Electronic photos should be submitted at resolutions above 200 dpi in TIFF or PICT format.

**Articles:**  
 Mail, E-mail, or fax to the address and numbers below. ALL FORMATS ARE WELCOMED.

**E-mail:**  
 CSMSpickANDpack@msn.com

**Address:**  
 1025 East Boulder Street  
 Colorado Springs, CO 80903

**Phone & Fax:**  
 (719) 448-9949  
 For faxes no precalls are required.

The PICK & PACK is published ten (10) times per year. 270 issues printed, 200-250 mailed per month.

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PRESIDENT'S CORNER

**Thanks for a Great Show!**

*Robert Landgraf*



A big thank you to all of our volunteers who helped make the 40th Annual Pikes Peak Gem and Mineral Show a great event. We had more attendees in the first day than we have had in a normal

two-day show. Somehow our TV advertising reached attendees up and down the front range from Loveland to Trinidad and as far east as Burlington. Mr. Bones and the Gem Mine were wonderful hits with the kids. We still are putting together the results and hope to have them tallied for the next general meeting.

Those of you who entered cases should think about also entering in the Denver Gem and Mineral Show. The Denver Show is Sept. 17, 18, 19, 2004. A contact for an exhibit application is:

Donna Hughston  
 2157 S. Cole Ct.  
 Lakewood, CO 80228  
 dhughston@awwarf.org  
 (303) 347-6117

Also, don't forget the Contin-Tail at Buena Vista. The Contin-Tail is at the Fairgrounds Aug. 13, 14, 15, 2004 with free camping. The annual Lake George Show will be Aug. 20, 21, 22, 2004. See sidebar on page nine for more details about these shows

**Frauds, Scams, and Poor Business Decisions...**

*July's General Assembly*

Ed Raines, a well-known geologist and mining historian, will present the July program. Ed's special program will be "Frauds, Scams, and Poor Business Decisions of the Front Range Mining Industry." Ed will go through a number of cases; all are somewhat humorous, and a few are hilarious. This is one program not to be missed.

**July 2004 General Assembly**  
 Thursday, July 15, 2004, 7:30

Colorado Springs Senior Center  
 1514 North Hancock Blvd, C/S, CO.

*July's refreshments courtesy:*  
**Fossil Study Group**

**A Few Club Issues**

**Club Awards:** In an effort to bring the Founder's Trophy up to date, we are looking for people who have won the award between 1987 and 2003.

Please let Jack and Kaye Thompson know what year you won the trophy and the category in which your case was entered. Send this information to the Thompsons at 1830 Mesita Court, Colorado Springs, CO 80906.

**CSMS Library Books:** If you have had a CSMS Library book for a long time, please contact our Librarian, Mary O'Donnell, and let her know that you have it. Please include the title and author.  
**689-7209, MOD4185@compuserve.com**

**Reminder:** There is not a General Assembly Meeting in August, nor is the Pick and Pack published.

## Minutes...

June 17, 2004

Bob Landgraf called the meeting to order at 7:40 p.m.

Minutes from previous general meeting were accepted.

**Treasurer's Report:** N/A

**Satellite Groups:** Camera, crystal, faceting, fossil, lapidary, micromount and jewelry group leaders announced dates, meeting locations and program for next month.

### Show Report:

- The floorplan of the show was finalized and presented at the meeting.
- Display case setup is scheduled on Friday, June 18 between 2 - 9 pm or Saturday before 10 am.
- Participating CSMS members are going to wear name tags labeled 'Exhibitor', 'Supervisor' or 'Member'. Members not exhibiting or volunteering at the show are required to pay admission fee.
- More volunteers are needed for all show activities.

### Field Trips:

- Roger Pittman reported on trip to the Marble Quarry on Memorial Day weekend.
- Moyra Lyne is going to lead trip to Calumet Mine.
- Tarryall is planned as a destination of July field trip.

### Old Business:

- Please return all overdue library books.

### New Business:

- The CSMS board meeting will be held at Drew's workplace on July 7.

## Show Continued from page 1

More vendors were able to participate, as well. This year 31 vendors rented 41 booths to display their wares ranging from beads, cut stones and jewelry to fossils, crystals and lapidary rough, and everything in between. For more details, see page 5.

Many club members provided display

cases. Highlights include Jack Null's fossil display, Ray and Eloise Berry's crystals, Jack and Kaye Thompson's feldspar, Glacier Peak's brilliantly colored amazonite, Lorrie Hutchinson's educational case about the uses of feldspar, and Roger Pittman's great club display about rockhounding in Colorado. Competitive case winners are listed on page 3.

Many of the club's satellite groups provided demonstrations, including micromounting and lapidary. Drew's case of matching the rough with the polished was challenging and fun. And the silent auction proved to be a great hit again.

A huge thank you goes out to everyone  
*Continued on next page*



Jack and Kaye Thompson's **Best of Show Theme** case: *Feldspar*. Photo: CSMS

## Display case winners

We would like to thank everyone who entered a case in this year's show. Either competitive or not, the display cases help the visitors to our show understand what the mission of our organization is: *To promote and disseminate knowledge of the earth sciences, especially as they relate to mineralogy, lapidary, and fossils.*

Congratulations to the winners in the competitive case category this year.

**1st Place Mineral Case and Founders Trophy:** Ray & Eloise Berry

**Education Case - 2nd & 3rd Place:** Lorrie Hutchinson

**Best of Show Theme Trophy:** *Feldspar* - Jack and Kaye Thompson

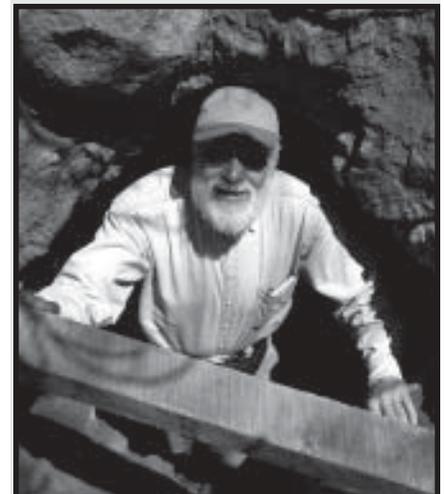
**Best Field Collection Specimen:** *Mosasaur Vertebrae Fossils* - Jack Null

## VIP Events

Bill and Cora Bill Kappel were this year's honored guests. They are the coauthors of the newly released book, **Rockhounding, Colorado**.

After a week that involved two field trips and VIP treatment, Bill stated that he has never been treated as well as he had by CSMS.

We would like to thank Ray Berry for leading a fieldtrip for Bill and Cora to his claim, and Rich Fretterd for leading a tour of his Godsend Claim and Holy Moses Vug.



Bill Kappel climbing out of the Holy Moses Vug. Photo: CSMS

# Field Trips

Currently there is only one field trip planned (see Sidebar page 9). Other than that, Roger Pittman, our fieldtrip director, says he is ready and willing to go wherever members would like.

Roger is asking for members to contact him with their desired locations and he will arrange them. Since most of our members are new and unfamiliar with what is available, a list of previous years' field trips has been provided below. However, the choices are not limited to these.

If anyone wants to suggest a field trip, contact Roger at 683-2603 or Email at roger\_pittman@tmc.com.

Watch your Email for Anouncements. If you do not have Email and would like to be contacted for dates and times, give Roger a call.

**Gold Camp Road, Eureka Tunnel:** This is an area of Colorado Springs that not only is rich with a variety of minerals, but is rich with local history. Minerals: Zircon, Quartz Crystals, Amzonite, and rare minerals.

**Crystal Creek - Lake George:** This is by far one of the richest areas of the Pikes Peak Batholith. Minerals: Quartz Crystals, Amzonite. A four wheel drive vehical is required

**Godsend Claim:** This is Rich Fretterd's world famous claim and the home of the Holy Moses Vug, the source of what is believed to be Colorado's largest crystals ever found. Through the great generosity of Rich, the CSMS is able to have a field trip to his claim. Minerals: Quartz Crystals, Amzonite. A four wheel drive vehicle is required

**Tarryall:** This area is about 90 minutes west of Colorado Springs. It has long been an area for finding many grades of Topaz.

**Fountain Creek:** This is a great area for all ages. Through glacial deposits, an abundance of minerals can be found along the creek's edge. By walking with your eyes peeled towards the ground. many specimens can be located. This is a great source for lapidary rough. Minerals: Agate, Petrified Wood, Quartz Crystals.

**Hartsel:** This area is mostly private now, but some CSMS member may have a connection. Minerals: Blue Barite.

**Devil's Head:** This is a popular site. On last year's Pebble Pups trip, they found large smoky quartz crystals.

who stepped up to help make this show a success. It couldn't happen without the efforts of a great many people. Special thanks go to Bob Landgraf, club president; Drew Malin and Manny Sanchez, show co-chairs; Linda Laverly, Ruth Cook, Don Brey, Kaye Thompson, Jim Bushnell, Kristine and Art Harris, Ilona Vogt, Roger



Jack Thompson giving his presentation, *The Prospector* Photo: CSMS



John Harrington assisting guest at the CSMS Hospitality Booth. Photo: CSMS

Pittman, and Montaine Bronner.

The CSMS board has declared the 2004 show a success. We reached many of our goals. These include reaching more people, setting the ground work for next year's show and increasing the number of vendors. Ninety percent of our vendors said they were happy and would like to return next year.

Remember, next year we will host the Rocky Mountain Federation show, which will run for three days, rather than two. Mark your calendars, plan your display cases and remember to give a little of your time to make that show an even bigger success.

Admissions Results Pikes Peak Gem and Mineral Show June 19 & 20, 2004																																																							
	Adults with No Coupons	Adults with Coupons	Children 12 - 19 year old	Children 12 - 19 year old	Total for Period	Total for day																																																	
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Data gathered and charted by Arthur and Kristine Harris

# Vendors Donations for Door Prizes

Linda Laverly

The Colorado Springs Mineralogical Society would like to thank our vendors for their generous donations to the door prize drawings at the **40<sup>th</sup> Annual Pikes Peak Gem and Mineral Show** on June 19 & 20. Thanks to their wonderful contributions, many attendees were able to select from a wide range of very nice gifts on display in our Vendor Donation Showcase. Due to such a generous response by our vendors, the 2005 show committee may have to consider using one of the club's rare 8 foot cases to house next year's 2005 Vendor Donation Showcase!!!

Many of our vendors also donated items to the silent auction. Thanks to their gen-

erosity and support, our club will benefit from their donations.

The vendors were given a survey to complete by the end of the show. Most were returned on Sunday afternoon during the show. Some vendors have mailed them back. There are a few we are still waiting for. The majority of our vendors indicated a very positive experience at this year's show. Overall, the new location at the Phil Long Expo Center was the most exciting change over 2003. Once all the surveys are in, this information will be discussed at the next general CSMS club meeting.

Thanks! 

- 1) **Krystals:** Mineral specimen, Barite & Pyrite
- 2) **Sira Ras Creations:** Earrings, rose quartz, faceted quartz & pearls in sterling silver
- 3) **Bad Boys of Cripple Creek:** Pendant, Cripple Creek turquoise in sterling silver
- 4) **Costigan's Minerals West:** Mineral specimen, calcite, fluorescent orange
- 5) **Colorado Nuggets:** Mineral specimen, gold, Lake County, Leadville, CO
- 6) **Colorado Nuggets:** Mineral specimen, gold, Lake County, Leadville, CO
- 7) **Butterflies By God:** Fossil Specimen, Ammonite, Morocco, Medelt Cretaceous
- 8) **MyerGems:** Pendant & necklace, Pink Cz in sterling silver
- 9) **Rich Fretterd, Godsend Claim:** Mineral specimen, large smoky quartz, Godsend Claim, Teller County, CO
- 10) **XTAL:** Necklace, sterling silver
- 11) **GEOdyssey:** Mineral specimen, smoky quartz & microcline
- 12) **Wright's Gems:** Pendant, hematite in gold wire wrap
- 13) **D & J Gems:** Earrings, faceted peridot, Chaffee County, CO
- 14) **Impactika:** Book, *Collection of Meteorites*
- 15) **Orca Gems:** Cabachon, Koroit Opal, Queensland, Australia
- 16) **Sharon's Beaded Jewelry & Minerals:** Necklace, porcupine quills & seed beads
- 17) **Terrestrial Treasures:** Fossil Specimen, beech leaf
- 18) **John E. Garson Gems & Minerals:** Faceted gemstone, tanzanite
- 19) **Artes:** Mineral specimen, quartz crystal
- 20) **Artes:** Mineral specimen, quartz crystal
- 21) **Lazzi:** Mineral specimen, spectrolite of Finland
- 22) **Morgan Trinkets:** Earrings, Montana agate
- 23) **Wades Wood & Rocks:** Dugway geode carving of a lizard
- 24) **Carved Opal and Obsidian:** Pendant, agate druzy with faceted moonstone accent in sterling silver
- 25) **Laughing Willow Creations:** Mineral specimen, kyanite, Minas Gerias, Brazil
- 26) **Hermetic Minerals:** Fossil specimen, Ammonite, Ammolite, Bearpaw Formation, Cretaceous, Alberta, Canada
- 27) **Carroll Originals:** Gift certificate
- 28) **Carroll Originals:** Gift certificate
- 29) **Extinctions:** Carved bird
- 30) **Silver Works:** Necklace, sodalite in sterling silver
- 31) **Bill Arson:** Mineral specimen, Herkimer diamond in matrix
- 32) **Dan's Used Rocks:** Mineral specimen, fluorite, Goang Dong, China
- 33) **Dan's Used Rocks:** Mineral & fossil specimen, calcite on Mercenaria Permanga Clam, Pliocene/Pleistocene, Okeechove County, Florida
- 34) **Dan's Used Rocks:** Fossil specimen, Knightia fish, Eocene, Green River Formation, Lincoln County, Wyoming
- 35) **Dan's Used Rocks:** Mineral specimen, pyrite, Navajun Logrono, Spain
- 36) **Dan's Used Rocks:** Mineral specimen, calcite on pyrite, Guanajuato, Mexico
- 37) **Glacier Peak Art, Gems, and Minerals:** Mineral specimen, amazonite & smoky quartz, Teller County, CO
- 38) **Glacier Peak Art, Gems, and Minerals:** Mineral specimen, wulfenite, Chihuahua, Mexico
- 39) **Glacier Peak Art, Gems, and Minerals:** Quartz crystal-shaped candle
- 40) **Saathoff Enterprises:** Mineral specimen, ocean jasper, Madagascar
- 41) **Saathoff Enterprises:** Handmade glass beads

## Gold Camp Road Update

The U.S. Forest Service is looking at several options concerning the closed portion of Gold Camp Road. The 8.5-mile section and historic railroad tunnel closed in 1988 when the tunnel became structurally unsafe.

A workshop will be held by the Forest Service August 7 from 9 a.m. to 3 p.m. to consider the options. The meeting will be held at Cheyenne Mountain High School, 1200 Cresta Road. Contact Frank Landis, 719-477-4203, for more information.

Here are the six ideas currently under consideration.

**Concept A – No Action**

**Concept B – Stabilize Tunnel #3 with Minimal Changes**

**Concept C – Partially Open Road to Motorized Use**

**Concept D – Open Road to Motorized Use with One-way Traffic Pattern**

**Concept E – Fully Open Road to Motorized and Non-motorized Use**

**Concept F – Fully Open Road to Motorized Use with Additional Trail Development**

Additional information may be obtained from the Forest Service's website: [http://www.fs.fed.us/r2/psicc/projects/gold\\_camp/news.shtml](http://www.fs.fed.us/r2/psicc/projects/gold_camp/news.shtml) Click on the link for News Letter #3.

Written comments may also be submitted by mail, fax, or e-mail. Please submit your comments by August 17, 2004.

By mail: Greystone Environmental Consultants, Inc.  
Gold Camp Road Project  
Attention: Lucy Bambrey  
5231 South Quebec Street  
Greenwood Village, Colorado 80111

By fax: (303) 721-9298  
Gold Camp Road Project  
Attention: Lucy Bambrey

Comments submitted by e-mail may be sent to:  
[goldcamproad@greystone.us](mailto:goldcamproad@greystone.us)

Editor's Note: This area is a valuable collecting site with a rich history dating back to early mineralogists. All members are encouraged to attend the workshop. If you are unable to attend, please send them your written comments.

## Oxalic Acid: Safety Data

*Below is an extremely condensed version of Material Safety Data Sheet (MSDS). Oxalic Acid is a toxic chemical and should be treated with respect. If you plan on using it, please read an entire MSDS. If you need a copy Email me at CSMSpickANDpack@msn.*

**Appearance & Odor:** White powder, no odor

**Routes of Exposure & Effects**

**Skin:** Dusts or slurry may cause irritation or redness

**Eye:** Dusts can cause irritation to the eyes and/or corneal damage

**Ingestion:** Swallowing dusts may irritate the mouth, throat and mucous membranes

**Inhalation:** Breathing dusts may irritate or burn the nose and throat and cause coughing and chest discomfort

**Acute & Chronic Overexposure Effects**

**Acute:** Irritation or burns to the eyes, skin, and mucous membranes; ingestion can be fatal

**Chronic:** Existing respiratory tract irritations

### EMERGENCY & FIRST AID PROCEDURES:

**EYES:** Immediately flush eyes with copious amounts of water to remove all dust particles. Seek medical attention.

**SKIN:** Wash with soap & water. If irritation persists seek medical attention.

**INHALED:** Relocate to fresh air. If irritation persists seek medical attention.

**INGESTION: DO NOT INDUCE VOMITING!** Drink 1 or 2 glasses of water. If spontaneous vomiting is inevitable, prevent aspiration by keeping the victim's head below knees. Seek immediate medical attention

**Respiratory Protection:** If conditions generate dust, wear a NIOSH approved high-efficiency respirator appropriate for mists, dusts, and particulates

**Eye Protection:** Wear safety goggles or face shield with safety glasses.

**Gloves:** Wear rubber or nitrile gloves.

## Mineral Cleaning for Amateurs

John Betts

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**M**any specimens collected in the field do not look like the ones that dealers are selling. Most collectors become discouraged or frustrated. These articles will give a few simple techniques to clean the pieces you collect.

### Oxalic Acid

Anything that has the word "acid" sounds ominous. But oxalic acid is easy to find, use and the safest for the home. In fact it is found in many vegetables including spinach. It is used to dissolve the iron oxide (brown) stain on all minerals. Specimens collected at Phoenixville, Ellenville, Case Quarry, NH smoky quartz and many others clean up beautifully with oxalic acid. Zeolites do not respond as well, so you should test beforehand on small specimens to see how they react.

To make this as simple as possible I will give a step by step guide to its use. Do not take any shortcuts or make substitutions.

Purchase a one pound box of Oxalic Acid (OA) powder at your local hardware store in the paint department or at a paint store. It is used as wood bleach and will be labeled as such. The most common brand is Rainbow.

Fill a plastic one gallon container 3/4 full with **distilled** water. Pour in the OA crystals and stir for five minutes. Be careful not to inhale any powder when adding the crystals. Once the OA is dissolved top off the container to a full gallon. Label the container and put out of reach of children or pets.

When you are ready to use it place your specimens in a plastic container and add enough OA solution to cover. Set aside for several days.

After the iron color has disappeared then you can remove the specimens (with gloves on) and wash under running water for three hours. Then soak in clean water for a day changing the water as often as possible.

Heat speeds up the reaction, as does agitation. If you have a hot plate and can set up outdoors or in an area with good ventilation then repeat step 4 but heat the solution to bath water hot (110° f.). Never boil! You will find that an hour in hot solution will usually do the trick. Best of all is an ultrasonic cleaner with built in heater. Sometimes only 30 minutes is

necessary. But you should not put the OA directly into the stainless steel basin. Make a double boiler type of arrangement by partially filling the ultrasonic cleaner basin with water. Then place your specimens and OA solution in a plastic container or heavy duty plastic bag that is suspended in the water.

You can reuse the solution over and over. As it dissolves more and more iron it will get darker often taking on a green color. After it gets really dark I would discard it and mix a new batch.

Safety is important. OA solution is highly toxic. It can be absorbed through the skin and builds up in your organs cumulatively. Same goes for the fumes, which is why you never boil the solution and always have proper ventilation when using the heated solution. Be careful not to spill the solution on porcelain and keep away from food preparation surfaces.

In spite of the fuss, this is the best all-around method of cleaning minerals. I keep a large five-gallon bucket with tight fitting lid filled and ready. I drop specimens in as I collect them. It always works and the large volume does not exhaust quickly. Mastering this technique will provide an important tool in your mineral cleaning and preparation arsenal. Good luck!

*This is the first installment of several. The next installments includes Muric Acid and Mechanical Methods.*

*This article and others can be found at Mr. Bett's web site: <http://www.johnbetts-fineminerals.com>*

### Editor's Notes

Oxalic Acid can be purchased locally at Ackley's Rock Shop. A one pound bag sells for about \$3.

Many CSMS members have long used crock pots at the heating method. The crock pot has a low setting that keeps the Oxalic Acid at the optimal temperature of 90 degrees celcius.

Used crockpots can often be purchased at reasonable prices at garage sales and secondhand stores. Eventually, the acid makes its way through micro-cracks in the crock and attacks the heating elements.

I'm sure I don't have to say it, but I will. Never reuse your crockpot for food after using it for cleaning minerals. 

## Hornbek

### *A geomorphic process - breaking down the rock*

Steven Wade Veatch

**G**eology and geomorphology are both components of complex Earth systems that produce Colorado's spectacular landscapes. Geomorphology is the study of surface landforms on the earth and how they are influenced by: 1) process, 2) structure, and 3) time. One geomorphic process, a persistent freeze-thaw cycle, continues to seasonally act (time) on exposed rock known as Wall Mountain Tuff (structure or local geology). This seasonal freeze-thaw cycle is breaking apart the Wall Mountain Tuff that forms some of the hills and ridges near the Hornbek homestead site (part of the Florissant Fossil Beds National Monument).

Rocks and minerals exposed at the surface are subjected to weathering, a process of disintegration and decomposition from physical and chemical action—generally a slow process. Mechanical weathering simply breaks up rock by physical processes without any changes in chemical or mineral composition of the original rock. Chemical weathering, on the other hand, decomposes rocks by surface processes that actually change the chemical composition of the original rock.

Most substances expand when heated and contract when cooled. Water is an exception, it expands as it gets colder, and when water transforms to ice (0°C), it expands about 9 percent—the driving force behind the kind of mechanical weathering known as frost wedging, frost action, or freeze-thaw. This type of mechanical weathering process is basically expansion with little contraction. Here is how it works: Frost wedging requires a supply of water and many alternations of freezing and thawing. During the day warmer temperatures and sunlight melt snow, allowing water to seep into cracks and crevices in the rock. During the night, when the water turns to ice, the expansion of the ice causes wedging of the rock. Repeated freezing and thawing cycles will result in the shattering of the affected rock. Over time rocks subjected to this diurnal cycle will be reduced to a layer of angular rubble. This type of mechanical weathering at the Hornbek site may have intensified during the last Ice Age when colder, wetter environments prevailed and frost action dominated the Florissant landscape. At that time climatic conditions generated a range of temperatures that produced an intense

freeze-thaw episode over longer seasons, creating a large volume of frost-shattered rocks. Today small fields of weathered angular rock fragments form mobile layers of loose rocks on slopes—the result of gravity erosion.

Locally, the Wall Mountain Tuff—a 36.7-million-year-old extrusive rock—forms the angular rock fragments within the Monument (McIntosh and Chapin, 1994). The Wall Mountain Tuff contains small cracks and crevices produced by the cooling of the once molten rock.

In past winters, just as it does today, water entered these cracks during the day and expanded as it turned to ice at night, exerting great pressure against the sides of the cracks—up to 30,000 lbs/in<sup>2</sup> (2,100 kg/cm<sup>2</sup>), enough to crush granite (Brace et al. 1972). The process starts again as the ice melts and water seeps deeper into the expanded cracks and other fractures—then during the next cycle of freezing stress is applied further down each crack. The freeze-thaw cycle continues until a piece of the rock breaks away. The size of the rock fragments formed in this fashion are based on lithology, permeability, pore size, freezing intensity, and water content (Lautridou, 1988). There may be a small degree of capillarity within the pore spaces which help water rise within the rock. The mechanical weathering process of frost wedging creates more surface area that is attacked by other weathering (including chemical) and erosional agents.

Field observations were used to study the frost-shattered rocks near the Hornbek homestead. Elevation of these features is variable, ranging from 8,280 feet to 8,523 feet.

The frost-shattered rocks share a common southwestern exposure, forming a scree. The non-northern aspect produces many alternations of diurnal freezing and thawing in the winter. There is sufficient solar radiation to warm the rocks and thaw the ice during the day. At night, when the temperatures drop and ice returns, the rocks are broken into fragments.

A number of archaeological remains have been found in the area, mainly lithics (stone tools). Many of the lithics were fashioned from Wall Mountain Tuff, the same rock subjected to frost shattering that formed steep taluses. 

## Dinosaur Center Opens in Woodland Park

Rocky Mountain Dinosaur Resource Center (RMDRC) in Woodland Park, Colorado has opened. The museum displays unique and spectacular dinosaurs, including the world's only juvenile *T. rex* on display, flying and marine reptiles, huge carnivorous fish and much more. The center boasts a working laboratory on display, as well.

The center is owned by Triebold Paleontology, Inc., a commercial company that makes and sells casts of dinosaur and other fossils.

RMDRC is open seven days a week, except for a few holidays. Their address is 201 S. Fairview St., Woodland Park. Look for the palm trees on the main street through Woodland Park. Call 719-686-1820 for hours or check out their website: [www.rmdrc.com](http://www.rmdrc.com).

## References for Hornbek

- Brace, W.F., Silver, E., Hadley, H. and Goetze, C. 1972. Cracks and pores: A closer Look. *Science*, v. 178 p. 162-164.
- Lautridou, J. P. 1988. Recent advances in cryogenic weathering. In Clark, M.J. (ed.), *Advances in Periglacial Geomorphology*. Chichester, Wiley, p. 33-47.
- McIntosh, W.C., and Chapin, C.E., 1994. <sup>40</sup>Ar/<sup>39</sup>Ar geochronology of ignimbrites in the Thirtynine Mile volcanic field, Colorado. In: Evanoff, E., *Guidebook for the field trip: late Paleogene geology and paleoenvironments of central Colorado*. Unpublished guidebook for the 1994 Rocky Mountain Section of the Geological Society of America. p. 23-26.

**20-22 August - Fri, Sat, Sun**

Lake George, CO: Show; Along U.S. 24 (38 Miles west of Colorado Springs). No set hours. Free admission and parking; contact Ruth Cook 632-9686.

**28-29 Aug - Sat, Sun**

**Crestone, COLORADO:** Show; High Country Trader; White Eagle Inn & Conference Center; Sat. 9-5, Sun 9-5; free admission; gem and mineral dealers, free seminars, indoor and outdoor vendors, rocks, gems, minerals, crystals, stone massage, Colorado specimens, rough and cut stones, carvings, spheres, fountains, jewelry, gifts, lapidary, faceting, prospecting equipment, books, maps, lectures, slide show, exhibits; contact High Country Trader, P.O. Box 5172, Buena Vista, CO 81211, (800) 707-3707 or (719) 395-3884; e-mail: hctrader@chaffee.net.

**4-6 Sept - Sat, Sun**

**SILVER CITY, NEW MEXICO:** 21st annual show; Grant County Gem & Mineral Society; Silver City Recreation Center, 1016 N. Silver St.; Sat. 10-5, Sun. 10-5, Mon. 10-5; free admission; more than 40 dealers, 80 tables, rocks, minerals, gems, beads, jewelry, equipment, books; contact Jim Lett, Grant County Gem & Mineral Society, 2213 Ponderosa St., Silver City, NM 88061, (505) 538-3216; e-mail: jameslett@zianet.com

**17-19 Sept - Fri - Sun**

**DENVER, COLORADO:** Annual show, "Denver Gem and mineral Show," Denver Merchandise Mart-Expo Hall, 451 East 58th Ave. (I-25 & Exit 215), in conjunction with the Colorado Fossil Expo in the adjacent Plaza Annex. Friday, 9 am - 6 pm; Saturday, 10 am - 6 pm; Sunday, 10 am - 5 pm. Admission: Adults, \$5; Seniors & Teens, \$3; Children under 13 free with an adult. www.denvermineralshow.com

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**The New Member's  
Essential Guide to  
Prospecting  
Guide to Prospecting  
July 17, 2003  
The Essential Guide to Prosepcting**



In this class new members will learn where to look for gold and other minerals, find out how to own mineral land through the claim process, and review the basic tools and equipment you will need in the field. Participants will discover various gold recovery methods and practice the basics of gold panning. The class includes an introduction to geology, rocks, minerals, gems, and instruction in basic prospecting techniques. This class is expected to fill quickly, so register early! This is a joint class between the Colorado Springs Mineralogical Society and the Gold Prospectors of Colorado.

- Time:** 10:00 a.m. to 12:45 p.m.  
**Place:** Western Museum of Mining and Industry (1025 North Gate Road, Colorado Springs).  
**Fee:** There is no fee for members of CSMS or GPC. Bring a sack lunch to enjoy after the class for more discussion of prospecting, mining, minerals, and adventure. A special tour of the museum is included.  
**Register:** Call the Western Museum of Mining and Industry at 719-488-0880 to register today. The class is limited to 25 participants.

**Board Meeting:** 1st Wednesday @ 7:00  
**Bob Landgraf: 687-3195**

We're trying a new venue. 405 East Colorado - parking in back.

**Camera Club:** 4th Tuesday @ 7:15  
1514 North Hancock, C/S  
**Roger Pittman: 683-2603**

Camera Club meets on the 4th Tuesday of each month at 7:15 P.M. At our June meeting Pat Pittman won the competition of pictures taken at a National Park with a slide of Mt. Rushmore. The competition subject for July 27 is *Tame Flowers*.

The competition subject for August 24th is *Trains*.

**Crystal Study Group:** 2nd Friday @ 7:30  
1514 North Hancock, C/S  
**Kerry Burroughs: 634-4576**

The Crystal Group has suspended their monthly meetings until Septemeber. Announcements for fieldtrips will be E-mailed directly to members so check your E-mail for the next trip.

**Faceting Group:** 4th Monday @ 7:00  
**Dave Wilson: 635-7891**

The meeting place for July or August has not been decided. Dave will be contacting members. If you need more information please contact Dave at the above number

**Micromounts:** 2nd Tuesday @ 7:00  
1514 North Hancock, C/S  
**Phil McCollum acc@frii.comm**  
**Moyra Lyne: 442-2673**

**Fossil Study Group:** 4th Thursday @7:30  
**John Harrington: 599-0989**

Our July meeting will be at Sharon Farrell's on the 22nd at 7:30, 7255 Shawnee Place in Cimarron Hills.

**Lapidary Group:** 1st Saturday @ 10:00  
3085 Rhapsody Drive, C/S  
**Drew Malin: 531-7594**

This month's Lapidary Club meeting will be moved from the first weekend of July to the 2nd weekend. Same time, 12 noon to 4 pm. If any members still want to buy a Genie at dealer wholesale price, I bought two extra at the show. Contact Drew at [advanceone@adelphia.net](mailto:advanceone@adelphia.net)

**Jewelry Group:** 3rd Saturday @ Noon-4:00  
6608 Gambol Quail Drive East, C/S  
**Rick Copeland: 594-6293**

The Jewelry subgroup will meet at Rick Copeland's house, 6608 Gambol Quail Dr E, on Saturday, July 17, from noon to 4:00. Workshop on bezel fusing, decorating bezel settings, and removing firescale.

August's meeting will be Saturday, August 21. Site TBD.

**Field Trip:** July 31 @ 9:00 AM  
Meet at the Ranger Office in Lake George

Rich Fretterd will be leading a field trip to a new area outside of Lake George where amzonite is abundant. Bring your usual digging tools. A four-wheel drive vehicle is required.

President	Robert Landgraf	687-3195	RMLWP74@aol.com
Vice President	Drew Malin	531-7594	advanceone@adelphia.com
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Past President	Kaye Thompson	636-2978	
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Fossil Group	John Harrington	599-0989	harrington1@mindspring.com
Lapidary Group	Drew Malin	531-7594	advanceone@adelphia.com
Micromount	Phil McCollum		acc@frii.com
Jewelry	Rick Copeland	332-7915	rick.copeland@covad.net

## Events

- 7 **July - Wednesday, 7:00**  
Board Meeting
- 10 **July - Saturday, Noon**  
Lapidary Group
- 13 **July - Tuesday, 7:00**  
Micromounts Group
- 15 **July - Thursday, 7:30**  
General Assembly
- 17 **July - Saturday, Noon**  
Jewelry Group
- 22 **July - Thursday, 7:30**  
Fossil Group
- 26 **July - Monday, 7:00**  
Faceting Group
- 27 **July - Tuesday, 7:15**  
Camera Group
- 31 **July - Saturday, 9:00 AM**  
Field Trip: *See to the left*

*August is a month of hiatus for many CSMS events. Please check with your Subgroup leader to see if they are meeting in August.*

### 9-11 July - Fri, Sat & Sun

**DURANGO, COLORADO:**  
Show; Four Corners Gem & Mineral Club; La Plata County Fairgrounds, 2500 Main Ave.; Fri. 11-6, Sat. 10-6, Sun. 10-5; free admission; contact Bill Birza, (970) 247-8980.

### 12-15 Aug -Thu, Fri, Sat, Sun

**Buena Vista, COLORADO:**  
21st annual show, "Continental Show" Colorado Federation of Gem & Mineral Societies; Rodeo Grounds; Thu. 9-5, Fri. 9-5, Sat. 9-5, Sun. 9-5; a gathering of rockhounds, 200,000+ square feet of rocks, minerals, jewelry and beads; contact Carolyn Tunncliff, (303) 709-4212; e-mail: [ctunncliff@msn.com](mailto:ctunncliff@msn.com); Web site: [www.coloradorocks.org](http://www.coloradorocks.org).

See sidebar on page 8 for more shows.

Ethan A. Bronner, Editor



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## Joining the Colorado Springs Mineralogical Society (CSMS)

General Assembly meetings are the third (3rd) Thursday of each month, except August, 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 Study Group, Lapidary Group, Jewelry Group. For details of Satellite Group meetings, see page 9.

Yearly Dues include the 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 and Industry*, a year of learning and enjoyment, plus a lifetime of memories. Individuals - \$15.00    Family - \$25.00    Juniors - \$2.00

If you are interested in joining the 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 website: [www.csms.us](http://www.csms.us)