Bulletin of the Mineralogical Society of Southern California

Volume 75 Number 7 **July 2005**

The 809th Meeting of The Mineralogical Society of Southern California

"Painite: the world's rarest gemstone and formerly one of the rarest minerals on Earth"

by Dr. George Rossman

Friday, July 8, 2005, at 7:30 p.m.

Geology Department, E-Building, Room 220
Pasadena City College
1570 E. Colorado Blvd., Pasadena

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Dr. Rossman Presents Tales of Painite for July

The July 8, 7:30 p.m. meeting will feature Dr. George Rossman of the Geological and Planetary Sciences Department at Caltech speaking on “Painite: the world's rarest gemstone and formerly one of the rarest minerals on Earth.” Only a few months ago, painite was one of the rarest minerals that occurred on Earth. It is still the rarest gemstone. Found only in Myanmar, it has recently become more available and even available on-line. The presentation will tell the story of the mineral, where it comes from, how it has been studied, and some extraordinary asking prices for specimens.

In 2002, the speaker discovered that painite occurs at a locality previously unknown to produce the species. He bought nearly 30% of the world’s supply of painite know at that time (two crystals) and, with his collaborators, has conducted extensive studies on the mineral that led to a prediction of the geological environment in which it should have formed.

Due, in part, to these studies, a serious hunt began for the source. Very recently, the outcome of that hunt has been successful.

Dr. Rossman is always a popular speaker with his fellow MSSC members. As a mineralogy professor at Caltech, his impressive academic credentials include receipt of the Mineralogical Society of America’s Dana Medal. He is an expert on color in minerals and water in normally anhydrous minerals. His infectious love of mineral science is matched by his ability to communicate to an audience of any background and to tell a good story.

MSSC July Board Meeting

There will be a brief meeting of the MSSC Board of Directors immediately following the conclusion of the regular July meeting. All members are welcome to stay and attend.

Display Cases for Sale - $100.00 each

These are the same sturdy, birch wood veneer cases we use at the MSSC show and used by many competitors for Federation competition. Made by Pony Case Co. The cases are used but in good condition. New they sell for about $300.

Disassembled they are easy to manage and bolt together in a few minutes. Inside dimensions: 46" long, 22" high, and 20" deep.

Contact: Bill Besse (wbesse@altrionet.com, 626.359.4488) or Walt Margerum (wmargerum@earthlink.net, 310.324.1976).

Minutes of the June Meeting

The 808th meeting of the Mineralogical Society of Southern California was held on Friday, June 10th in the Geology Department at Pasadena City College. Vice President James Kusley brought the meeting to order at 7:35 pm. The speaker for the evening was Dr. Bob Housley. Bob gave a lovely tour of the various mines found throughout San Bernardino, Inyo and Clark counties as well as the exotic and rare minerals found there. Pictures of micro-scale minerals discovered by our speaker as well as specimens found by others were shown during the presentation. Truly rare finds as well as new discoveries highlighted this engaging talk.

At the conclusion of the presentation there was a brief show and tell period given by a few of the members. The meeting came to a close at 9:00 pm.

Respectfully submitted by Ilia C. Lyles, Secretary

*Save the date for the MSSC August Picnic!

The picnic will be held on Sunday afternoon, August 21, 2005, at the Arcadia Woman's Club. Justin Butt will show us pictures of his mineral collecting adventures in Africa. Watch for more details in the next bulletin. A great time is planned!

Showcasing "Minerals of the Southwest"

By Steve Knox

In keeping with the 2005 show theme of "Minerals of the Southwest," the July through October bulletins will feature articles showcasing minerals of the southwest….California, Arizona, New Mexico, Colorado, Utah, and Nevada. In

particular, field collected minerals will be the focus. As is often the case now, many well known mines have been closed or exhausted of their former mineral riches. Because one of the goals of a club is self-collecting, areas still accessible to the average collector with the possibility of a finding a good specimen are featured. This is by no means a comprehensive report, but rather a snapshot of a couple of locales per state of what can still be found and has been found in the past decade. Most of the locations and minerals discussed here should be well represented in our show's display cases. The survey starts with Colorado.

Colorado

Colorado is widely know for its fantastic pegmatites containing quartz, feldspar, fluorite, topaz, aquamarine, phenakite, garnet, amazonite, and the list continues. Out of Colorado Springs, in the Pike's Peak Batholith, is an area known as Sentinel Rock. Nearby is Specimen Rock. Both are noticeable granite protrusions, which can be seen distinctly from town. Within the general area are numerous pegmatites containing pockets or cavities ranging from an inch across to six or more feet. They're known for a variety of minerals with smoky quartz, feldspar, and fluorite being most common. In addition, there is the chance of finding amazonite, topaz, zircon, phenakite, and hematite. A unique mineral occurrence to this area is the hematite after siderite, a pseudomorph. Some rhombehedral crystals are now simply brown goethite, but others have been completely replaced by hematite. It is still possible to find a pocket on a weekend trip here.

One of Colorado's premiere sites, and possibly most extreme mineral collecting challenge to the field collector, is Mount Antero. Antero is revered for its aquamarine, the

Specimen Rock, Pike's Peak Batholith, Colorado

Colorado smoky quartz collected in April 2005. Specimen is approximately 10 cm across.

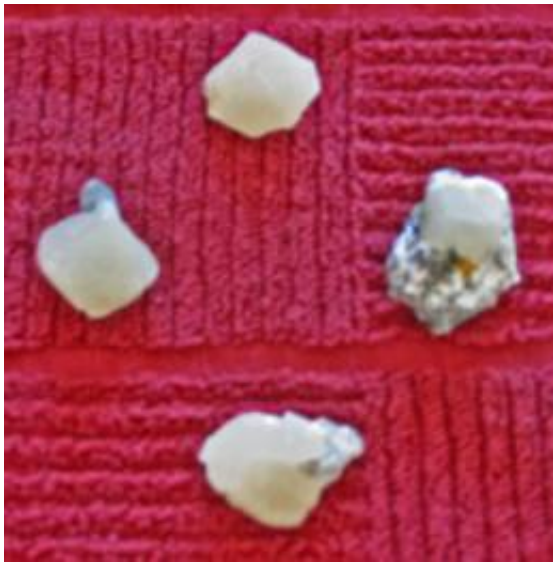
Below: Summit of Mt. Antero, Colorado

Colorado state gemstone. It boasts some the best phenakite in the world, varying from white to a warm amber in color. Smoky quartz and feldspar are more common, and fluorite appears frequently, although it's rare to find a complete octahedron. Aside from the minerals, what makes this area so challenging is the location. Centered near the town of Buena Vista, Mt. Antero rises to over 14,000'. The road to the collecting areas is difficult, requires four wheel drive, and is not for the faint of heart, especially those not accustomed to high altitude collecting and heights. The collecting begins at about 13,000' and extends to near the summit. The air is thin, weather is unpredictable, and lightning can be a constant threat. Keep in mind that as a collector, you are the perfect lightning rod, standing on a talus slope with nothing higher than you, and carrying an assortment of metal tools. Consequently, anything found on the mountain is usually treasured.

Four-wheel drive vehicles parked at "The Island" at 13,000 ft, Mt. Antero.

Mountain Goats on Mt. Antero.

Mt. Antero pockets containing smoky quartz and feldspar.

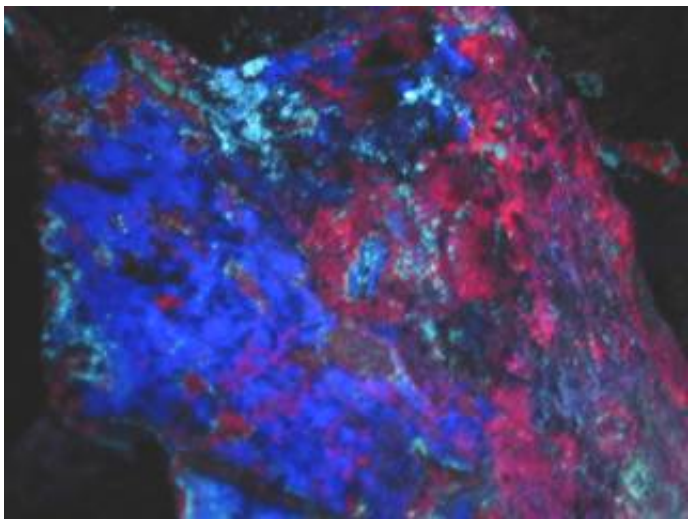


Phenakite and purple fluorite, Mt. Antero, Colorado. Collected in August 2003.

Arizona

Minerals of Arizona are most commonly thought of in terms of the great copper deposits and silver/lead mines. Bisbee, the Red Cloud, and Morenci are a few districts or mines most people know. Last fall, the MSSC conducted a field trip to the Purple Passion Mine, which falls into the category of one of the lead/silver mines. Minerals collected by members included yellow wulfenite (crystals over 1 cm on an edge), cerrusite, acicular wulfenite needles, purple fluorite, and fluorescents.

Yellow wulfenite collected from the Purple Passion mine, Arizona in October 2004.



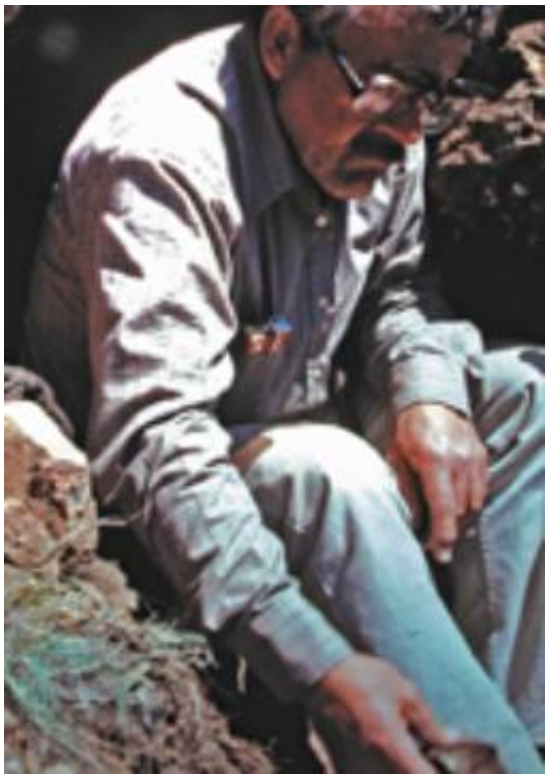
Fluorescent minerals collected at the Purple Passion mine, Arizona in October 2004

Uncleaned amethyst as found in the pocket at Diamond Point, Arizona in April 1999. Specimen is approximately 9 cm tall.

Although not as well-known for quartz as for wulfenite, Arizona does have some unique occurrences. Diamond Point was a recently worked area having doubly terminated quartz, some with amethyst. Another location that has produced unique crystals is the Washington Camp/Duquesne area east of Nogales. It's most noted for its Japan Law twins, looking sometimes like rabbit ears, but single points and points with hematite rosettes are known. There have been some excellent amethyst crystal pockets as well. Such crystals are usually etched or frosted, but others have a polished luster. The crystals generally grew initially as small clear quartz crystals up to an inch, but some exceed six inches. Several growth patterns or generations are present. With some pockets, a small clear crystal formed, but then an outer skin of milky quartz grew next. After this generation, some crystals grew amethyst forming scepters or parallel growths on the original or second generation crystals. Even the amethyst appears to have more than one generation. Rare crystals have fluid inclusions and pyrite. The pockets typically contain only quartz, however, some crude feldspar sometimes forms, and on rare occasions rutile is present. The rutile is usually found as small reddish blebs or fillings in the quartz or feldspar. Infrequently, though, needles of reticulated rutile can form plates several inches across.

All the specimens portrayed in this article were self-collected by Steve Knox, who also provided the photographs.

A Passing: Charles E. Freed



Charlie Freed collecting minerals
at the J. C. Holmes claim,
Santa Cruz Co., AZ, in the mid 1980's.

Who in the MSSC did not know Charlie? Very few, he would not have it any other way. As a Past President of the Society or even when he wasn't, Charlie would talk to anyone about anything and share a joke or story. He also spent a lot of time working for the society in many positions. He told me of being asked to be Field Trip Chairman after being on the West Coast for only a short time, but was told somebody would give him all the info he needed…and he did it. That was Charlie. For many years, Charlie and his then wife (now Joy Alaidarous) hosted a greatly appreciated Saturday night dinner in their home for dealers in our annual show.

My friend and collecting partner of almost 30 years started our association at a wedding if you would believe. His new wife, Joy, and I went on a collecting trip soon after to Saline Valley. The trips went on for many years thereafter. The trips wandered across most of the western states and once to Peru.

Below is an excerpt from his LA Times Obituary:

Charles E. Freed, 74 passed away on June 9, 2005 of a sudden illness. He was born on October 20, 1930 and raised in Baltimore, Maryland. He was the son of the late William H. and Mary V. Freed. He proudly served in the US Army. He was a past president of the Mineralogical Society of Southern California. He is survived by his brother, William H. Freed, Jr. of Hagerstown, MD and four daughters: Wendy

Chesshire, Kerry Gibson, Lesley Shuey of Annapolis, MD and Courtney Truntich of Roanoke, VA.

I expected to have a friend and partner-in-crime for many more years, but “you can’t always get what you want,” as the song goes.

I will try to share some ‘Charlie’ stories in the future and hope some others will as well. Another member remembers well how Charlie liked to recount that Paul Desautels (former Smithsonian mineral curator) had been his college chemistry professor. Also, when Charlie was the reigning king of Palos Verdes barite collecting, he professed that he had determined the exact times at which the sheriff patrolled Palos Verdes Drive, so that he would never be caught in his favorite hole in the highway median.

I miss him already,

Bill Besse

BY POPULAR DEMAND!
The Meister Trimmer is available again.
Contact Ann Meister
Email: meister_ann@hotmail.com
Phone: 626-794-3482

How to Tell Your Adit from a Hole in the Ground

by Walt Margerum

If you are like me you come across mining terms all the time and sometimes you wonder what they mean. I have therefore compiled a short list of terms with their meanings to assist and edify everyone.

1. **Adit-** An almost horizontal tunnel from the surface to where you hope the ore is. Sometimes the adit is dug primarily for haulage of the ore from the vein to the outside so it can more easily be put on the dump. In this case it is called a haulage adit.

2. **Decline-** A tunnel dug at too steep an angle to easily walk. When you are at the bottom it is called a X%^&$ incline.

3. **Drift**- A horizontal or nearly horizontal tunnel that usually does not intersect the surface, but hopefully follows the ore. If it intersects the vein it is called a cross drift. If it passes through the vein it is called a X%^&$ drift.

4. **Dump**- The large pile of useless rock you spent many hours removing from

the mine to get to the ore. Quite often everything from the mine.

5. **Foot Wall-** The lower wall of the vein. The one you try to stand on that is usually steep enough so that you slide down it to the vein.

6. **Head Wall-** The upper wall of the vein. The one you bang your head on.

7. **Mine**- A usually valueless hole in the ground into which otherwise intelligent individuals are willing to spend all of their money.

8. **Ore-** The material removed from the mine that is sold in a vain attempt to make a profit.

9. **Raise-** A vertical or almost vertical shaft dug after you discover the vein is above the location of your tunnel.

10. **Shaft-** A vertical or almost vertical hole dug from the surface either along the vein or to where you hope the vein can be found. It is used to extract the ore until you decide it is easier to dig an adit for that purpose. This decision is usually made long after common sense dictates that is how you should have done it in the first place.

11. **Stope-** A large hole dug to extract the ore. If the ore falls on your head as you remove it it is called an overhead stope. If you have to bend over to dig the ore it is called a back ache.

12. **Tunnel-** A drift or adit. The term is usually used when you get lost and do not either intersect the surface or the ore.

13. **Vein-** The body of rock that contains mostly gangue, and a small amount of ore.

14. **Winze-** A hole dug to intersect the ore after you discover the vein is below the level of your tunnel.

I hope you will find these definitions useful.

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The following is reprinted with permission from the June 2005 issue of ***Elements***

New Minerals: Help or Hindrance?

The Commission on New Minerals and Mineral Names (CNMMN) was established at nearly the same time as the IMA [International Mineralogical Association], in1959, for the purpose of controlling the introduction of new minerals

and minerals names and of rationalizing mineral nomenclatures. In the 45 years of its existence, the CNMMN has not been idle, judging from the list of 4000 or so minerals and mineral names on which the CNMMN has officially taken a decision on their approval, discreditation, and/or redefinition (available on the CNMMN website: www.geo.vu.nl/~ima-cnmmn). On this website one can also consult the procedures and guidelines for proposing new minerals and mineral names, and nomenclature reports published by the CNMMN.

On average about 80 new minerals are proposed each year, and about 60 of these are approved. Some persons consider the work on new natural phases as wasted time. Who indeed cares about these tiny and exotic grains? Why should one spend precious lab and personnel resources on the umpteenth arsenate, phosphate, or sulfate in some forsaken oxidation zone of an unimportant, abandoned ore deposit? Of course, a new substance has to be characterized first before it becomes clear whether it is an “exotic butterfly” or an important technical substance. The conclusive answer to these questions and considerations was given by one of my predecessors as CNMMN chairman, Akira Kato, at the start of the Paris 1980 IGC [International Geological Congress] session on new minerals: “once upon a time, feldspar was a new mineral!”

It so happens that in 2004 the CNMMN received not one, not two, but three proposals for new minerals in the feldspar group. Two of these have been approved: The hexagonal potassium feldspar kokchetavite and the not-yet-published tetragonal polymorph of albite. In both cases, these submicroscopic grains of new minerals have given important information on the genetic history of the rocks in which they were found. In the same year, the CNMMN also received proposals for new minerals in other common rock-forming mineral groups: five amphiboles, three micas, and even a new polymorph of quartz, named seifertite. Taking great pains on the full characterization of new minerals is obviously not always a waste of time, but a real help.

However, not only scientific aspects of these phases are important; appearances also count, especially for the large body of amateur mineralogists and mineral collectors. Some new minerals are a feast for the eyes, as you can see from the accompanying photographs of the Sb-Mo oxide biehlite (99-019) and a not-yet-published Na-Cu carbonate (2004-036). [Now published as juangodoyite.] The ultimate in this category is of course the recent discovery in Madagascar of the whitish-pink to raspberry-red pezzottaite, a caesium mineral related to the beryl group. Gem-quality specimens of this new mineral (2003-022) have changes hands for six-figure prices!

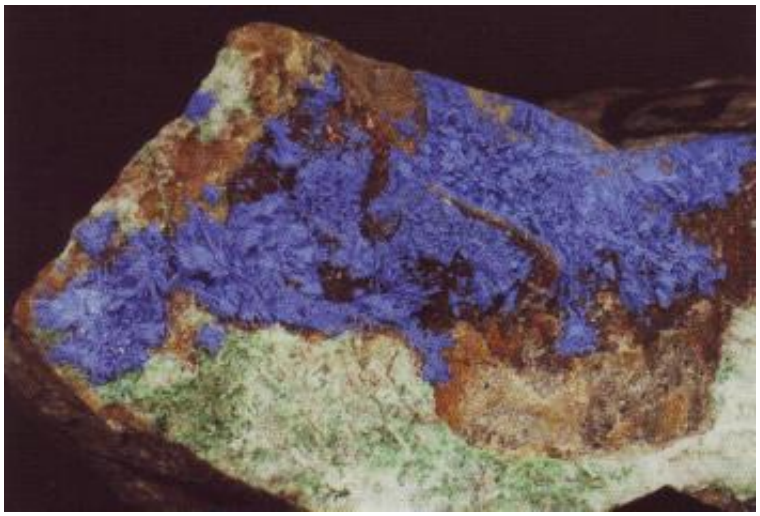
The path of the CNMMN is not always strewn with roses. There is regular, heavy criticism on current mineral nomenclature, for example, by John S. White under the title “The Nomenclature Debacle” in the May-June 2004 issue of *Rocks and Minerals*, and by Ralph Kretz in the October 2004 issue of the newsletter of the Mineralogical Association of Canada. I have even been threatened with a global e-mail campaign because the CNMMN does not give unique names for minerals. Just one example: the mineral name ‘apatite’ does not exist any more – we have

nowadays hydroxylapatite, fluorapatite, and chlorapatite, and also (unjustly) carbonate-fluorapatite and carbonate-hydroxylapatite. How can one give the correct name to an obvious apatite specimen without an analysis of some kind? This problem could have been solved easily by using (optional) suffixes, as has been done successfully in the zeolite and labuntsovite groups.

We all know, or course, that mineralogical nomenclature is far from ideal. There are indeed too many inconsistencies that have arisen before and after the arrival of the CNMMN in 1959. The CNMMN has a so-called 50% rule for nomenclature in (binary) solid solutions, but at the same time there are major mineral gropus in which the current nomenclature is not in accordance with this rule (e.g., amphiboles, pyroxenes, pyrochlores, alunites). The CNMMN is continuously working on nomenclature problems, usually with subcommittees responsible for specific mineral groups or problems. A very peculiar problem, a real hindrance, is caused by the fact that more than 2300 natural phases, possible new minerals but perhaps meanwhile better described elsewhere, have been published without a name. The Subcommittee on Unnamed Minerals (they call themselves SCUM) is taking care of these orphaned objects.

Certainly, for quite some time to come, the CNMMN will not be without things to do!

Ernst A.J. Burke
CNMMN Chairman
Earnt.burke@falw.vu.nl



Two recent new minerals described by a team from the Mineralogical Museum of the University of Hamburg (Jochen Schlüter, senior author). Top: biehlite from Tsumeb, Namibia, width = 15 mm; bottom 2004-036 [now officially juangodoyite] from Mina Santa Rosa, Iquique, Chile, width = 28 mm. Photographs by K.-C. Lyncker, used with permission. Specimens from the collection of Mineralogical Museum of Hamburg.

Mineral Mystery

By Ilia C. Lyles

My name is common to all,
And I have the ability to enthrall,
I am on a short list,
Of minerals that occur in mica schist,
You often dream of my reddish colors,
But I am known by many others,
It's no trick,
I am definitely isotropic,
It is indeed a treat,

**That I am created with intense heat,
My hardness ranges up to 7.5,
And in the gem industry I continue to thrive,
Now I might seem persuasive,
But I can also be used as an abrasive,
So please pronounce my name...
in that I may claim my fame.**

[Can you recognize a garnet when you meet it?]

New Mineral Book on Greenland

The Mineralogical Association of Canada has recently published *Mineral Species First Described from Greenland* as their Special Publication 8. In a way it is a follow-up of *Mineral Species Discovered in Canada and Species Named after Canadians* (2003), as geologically Greenland can be viewed as an extension of Canada. The authors, Ole V. Peterson and Ole Johnsen, begin the book with an introductory chapter describing the historical development of mineralogical investigations in Greenland. This includes accounts of the famous Ilimaussaq alkaline complex, Ivigtut cryolite deposit, and Narssarssuk pegmatite. In addition to being a fine reference work, a gallery of 34 photogenic minerals is included to delight collectors. The cryolite specimen that graces the cover would catch the eye of any mineral enthusiast.

The book may be ordered from the MAC web site www.mineralassociation.ca, where reviews by multiple readers are posted.

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2005 Calendar of Events

June 26-27, Culver City, Culver City Rock and Mineral Club, Theme is Turquoise, Culver City Veterans Memorial Complex, 4117 Overland Ave., Culver City, Hours: Sat. 10-6, Sun. 10-5, Bradford Smith brad@greenheart.com.

August 5-7, Nipomo, Orcutt Mineral Society, St. Joseph's Church, 298 S. Thompson Ave., Hours: 9-5 daily. Lucky Virgin (805) 929-4525, lvirgin@impulse.net.

August, 6-7, San Francisco, San Francisco Gem and Mineral Society, San Francisco Co. Fair Building, 9th Ave and Lincoln Way, Hours: Sat. 10-6, Sun. 10-5. Ellen Nott (415)564-4230, ellen_nott@yahoo.com.

August 21, **MSSC Annual Picnic**, Sunday afternoon. Save the date. Details to be announced soon.

September 2-5, Fort Bragg, Mendocino Coast Gem & Mineral Society, Town Hall at Main & Laurel, Hours: Fri.-Sun. 10-6, Mon. 10-4, Don McDonnell (707) 964-3116, 643 N. McPherson, Fort Bragg, CA 95437

Sept. 10-11, **Symposium in Agate and Other Forms of Cryptocrystalline Quartz**, Colorado School of Mines, Golden, CO. Details: Peter Modreski, U. S. Geological Survey, phone 303-202-4766, pmodreski@usgs.gov.

Sept. 14-18, **Colorado Mineral and Fossil Show**, Holiday Inn—Denver Central, Denver, CO, Martin Zinn Expositions, www.mzexpos.com.

September 17-18, Jackson, Fossils For Fun Society, 5th Annual Tailgate Gemboree, Kennedy Mine in Jackson, CA, Hours both days: 9-5, Dan Brown (209) 296-6466, danbrown@volcano.net.

September 17-18, Redwood City, Sequoia Gem and Mineral Society, Community Activity Building, 1400 Roosevelt Ave., Hours: 10-5 both days. Carol Corden/Preston Bingham co-chairs: Carol (650) 776-5990 ccordon@earthlink.net; Preston (650) 368-6351.

September 23-25 San Bernardino, Orange Belt Mineralogical Society – Tailgate, Western Regional Little League Park, 6706 Little League Drive, Hours: Fri., Sat. 9-6, Sun. 9-4, Mike Woolery (909) 882-6806, rockpick98@aol.com.

September 24-25, Downey, Delvers Gem and Mineral Society, Downer Women's Club, 9813 Paramont Blvd., Hours: Sat. 10-6, Sun. 10-4, Earl Liston (562) 865-1348 ejliston5@juno.com.

September 24-25, Fallbrook, Fallbrook Gem and Mineral Society, Fallbrook Gem and Mineral Museum, 123 W. Alvarado St, Hours 10-4, FGMS Board (760) 728-1130, FGMS@tfb.com.

October 8-9 Lakeside, El Cajon Valley Gem and Mineral, Lakeside Rodeo Grounds, Hwy. 67 & Maple St., Hours: 10-5 both days, Peggy Bowery (619)561-1823, Docsgirl9@aol.com.

October 8-9, Trona, Searles Lake Gem & Mineral Society, 13337 Main St., Hours: Sat. 7:30-5, Sun. 7:30-4, Bonnie Fairchild (760) 372-5356 jbfairchild@verizon.net.

Oct. 15-16, Long Beach, **The Southern California Gem and Mineral Show,** Long Beach Convention Center, presented by the Mineralogical Society of Southern California. Hours: Sat. & Sun 10-5, www.MineralSoCal.org.

Display Forms for The Southern California Gem and Mineral Show

Now is the time to fill out and submit your display form and plan your mineral exhibit for our show. They're here for you, tucked inside this bulletin. Don't procrastinate on this one! Make a commitment now. October will be here before you know it. Ken Rabbe, our display chair, is lining up a great collection of exhibits and yours has a place among them.

Did you remove the form with great intensions only to misplace it? Want to pass one along to a friend? Just visit the MSSC web page and download another. Remember, it's YOUR SHOW.