**Bulletin of the Mineralogical Society Of Southern California**

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The 886th Meeting of the Mineralogical Society of Southern California
**Geology Department, E-Building, Room 220 Pasadena City College 1570 E Colorado Blvd., Pasadena**
**In this issue**:

*Program: Mineralogy of the Brown Monster and Reward Mines, Inyo Co., CA by Paul M. Adams*

The 886th Meeting of the Mineralogical Society of Southern California

***April 13, 2012 7:30 pm***



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**Program 4/13/2012: Mineralogy of the Brown Monster and Reward Mines, Inyo Co., CA**
**by Paul Adams**

The Brown Monster and Reward Mines are located about 15 miles north east of Lone Pine in Inyo County, CA. They were originally named the Eclipse and Hirsch mines, respectively. The Eclipse Mine was one of the first gold claims in the Owens Valley (1860). After the Indian wars in the 1860s it was acquired by an English mining venture in 1870 but they lost control of the property in 1877 as a result of non-payment to creditors. It was taken over by a local merchant but was never very profitable until the late 1890s when it was combined with the Hirsch Mine to form the Reward Consolidated Mines. During the early 1900s it was the site of a small town (Reward) with its own post office and school. Significant operations ceased in 1912. It was worked on a small scale from the 1930s-1950s. In the early 1980s new development was initiated but there was little to show for the effort.

The mines are located in metamorphosed limestones adjacent to quartz monzonite that forms the core of the Inyo Mountains. Gold was found scattered in moderately dipping quartz veins to 2 meters in thickness. Galena was found in the hanging wall of some of the quartz veins. Today the mines are reached by the Manzanar-Reward Road east of Route 395 and there are a number of mining structures present on the property that give the area a picturesque quality. In the late 1990s exploration of the underground workings revealed a suite of colorful secondary lead and copper minerals. At the Brown Monster mine microcrystalline specimens of mimetite, vanadinite, wulfenite, fornacite and austinite were found. More recently significant specimens of caledonite and linarite have been recovered. At the Reward Mine similar minerals are found with the addition of tsumebite, arsentsumebite, corkite, leadhillite and perite. Large plates of calcite crystals are relatively common at both

mines and at the Reward Mine large quartz crystals have also been found. The mineral occurrences have been described in The Mineral News and The Mineralogical Record.

Mr. Adams has MS and BS degrees in geology from the University of Southern California and SUNY Albany, respectively and is an avid mineral collector.

More information in the May 2011 MSSC Bulletin (reprinted Archives) *Minerals of the Reward Mine Or What's in a Name?* by Walt Margerum.

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**MEANDERINGS FROM THE PRESIDENT**

**by Ann Meister**

The MSSC Board of Directors met in March. Our primary agenda item was updating the Bylaws and Operating Rules of the Society. The last revision was in 1998. The Bylaws were missing some legal requirements and procedural descriptions. The Operating Rules needed to reflect how the Society is currently operating or more accurately, should be operating. We had a spirited discussion which did not cover everything necessary so more face-to-face, as well as email, discussions will follow before we submit the draft to you, the membership, for approval. I want to thank Bob Griffis for tackling this job; he did the research on these two important documents and provided us with outstanding draft documents as masters for editing. He also found an interesting reference about what should be in bylaws and what some of the problems are. One item in the list of "Common Problems" that I found interesting was "Board actions by email vote are not allowed." Hmmm... In this age of electronic communication, I guess face-to-face meetings are not yet old-fashioned.

Underlying the discussion, however, was a consensus of understanding that all the editing and correcting and updating is superfluous if we don't have enough active members to maintain a functioning and vigorous Society. Perhaps spending time on Bylaws and Operating Rules is not as important as doing "something" to increase membership and the participation of those who have paid dues. In my monthly column, I've made suggestions of activities we could undertake. I've asked for comments about our meetings, the night of the week, the venue, the format, the frequency. I've asked for people to step up and volunteer for positions that will become vacant at the end of this year. I have received no feed back. Nada, Zilch, None, Zero, Nothing. It makes it very difficult to try to lead a group of people when they do not respond to anything. Disagree, offer alternatives, argue, show some interest; just say something! In this case, silence is not golden.

At the Board meeting, we discussed finding replacements for those who wish to relinquish their office or directorship after serving MSSC for many years. I made the suggestion that those who wish to step down should find their own replacements and let the Nominating Committee (there is one?!) know who has agreed to serve. Many current MSSC members have previously held office or worked on committees. (I was President 30 years ago.) Since we have a limited number of members, we need to recycle you into an officer position or board membership or committee membership again. If we do not get the required officers and sufficient directors, the Society will be dissolved. It's as simple as that, though a sad state of affairs for a Society that is purportedly the "first mineral society west of the Mississippi" and has been active and successful since 1931. How can we update the Society to thrive in the 21st Century? Please volunteer. It makes life easier for all of us. Thank you for your participation.

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**Mineralogical Society of Southern California**

MINUTES of March 9, 2012

The 885th meeting of the Mineralogical Society of Southern California was held on Friday, March 9, 2012 at Pasadena City College, Pasadena, CA. President Ann Meister brought the meeting to order at 7:35pm

The following business and announcements were made:

1) Minutes of the February 17, 2012 meeting were moved, seconded and approved;
2) Board Meeting to be announced [March 18, 2012 at Vice President's home];
3) Announcement: CFMS Gold and Gem Show & Convention in Riverside is approaching. Check website for more information [July 13 – 15 at Riverside Municipal Auditorium];
4) Report: Monrovia Rockhounds Gem and Mineral Show March 3-4, 2012 at L A County Arboretum & Botanical Garden was apparent success;
5) Program: Bruce Carter provided introduction to Charles Carmona. Charles led an expedition of L.A. County Natural History Museum patrons to *Sri Lanka, Island of* Gems in 2006. The group was in search of the legendary gemstone mines that drew earlier explorers to such as Sinbad and Marco Polo. They visited several of the ancient and modern gem sources as well as historical and cultural sites throughout the Indian Ocean Island. A brief discussion followed;
6) Door prize drawing was won by Linda Elsnau;
7) Other Business: Bruce Carter announced that the Gene Autry Museum is looking for flint. If anyone has some to donate, please bring to the next meeting;

Adjourned 8:45pm
Refreshments.

Submitted by
Angie Guzman, Secretary

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**Minutes of the MSSC Board Meeting March 18, 2012**

President Ann Meister called the meeting to order at 1:11, PM. In attendance were Ann Meister, Bruce Carter, Jim Kusely, Jo Anna Ritchey, Fred and Linda Elsnau, Leslie Ogg and Bob Housley. As our Secretary, Angela Guzman, was unable to attend, Linda Elsnau agreed to take the minutes of the meeting.

The minutes of the Nov, 20, 2011 board meeting were read and approved as published in the December, 2011 Bulletin.

Bob Housley agreed to remain the Micro Conference Chairman (for now).

It was suggested that current position holders help find and recruit their replacements and make suggestions to the nomination committee when the need arises.

We are looking for MSSC's slide projector. Anne will check to see if Rock Currier still has it.

**Old Business:** A discussion was held on the status of Honorary members when they no longer show an interest in the club or club activities. Further research will be done on the issue and it was tabled until the next board meeting. The new Membership roster is still pending response from a few members about the information they wish to have published. It should be completed soon. The update of the website and the establishment of the PayPal account for the club are still in progress.

**New Business:** Several members found parking tickets on their cars after the last meeting at PCC. As we have an agreement with the school to use the parking lot without paying for the evening parking, Bruce Carter has collected the tickets and will remind the school about the arrangement.

The Board reviewed the existing fee schedule for advertising in the Bulletin and decided to publish the schedule in the Bulletin each month.

The Board spent most of their meeting time reviewing the proposed MSSC By-Laws/Operating Rules. After much discussion, it was agreed that this cannot be completed in one meeting and it was decided to have 1 hour meetings prior to the regular meetings whenever possible to work on this project. They will meet at PCC at 6:00 PM starting with the next scheduled regular meeting.

The meeting was adjourned at 4:12 PM

Submitted by Linda Elsnau

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**100 Questions in Mineral Sciences -**
**A Global Initiative to Identify Future Research Challenges**

***"We aim to identify 100 mineralogical questions that, if answered, would have the greatest impact on resolving current and future challenges in the Earth, planetary, environmental and material sciences."***

**About the Project** (excepts, see the whole article at http://homes.esc.cam.ac.uk/100questions)

Often the role of mineral sciences is either unvalued or unidentified. So what are the key scientific questions for mineralogists to address over the next 10 to 20 years and what is the best way to convince someone to give us the resources to pursue them?

This exercise seeks to identify 100 mineralogical questions which, if answered, would have the greatest impact on resolving the Earth, planetary, environmental and applied science challenges that we face over the coming decades. The challenges facing Earth scientists are relatively well defined (e.g. climate change, energy security, resource sustainability, environment protection, waste management, geological hazards, *etc*.). What is less well appreciated (by the funding bodies at least) is that many of these challenges have a key mineralogical component and that they require the unique knowledge, insight and expertise of mineral scientists in order to overcome them. These mineralogical challenges, especially the more applied ones, overlap with other disciplines such as materials research and the investigation of industrial minerals. In these areas the role that mineralogists do and can play is certainly under recognized. By identifying these issues explicitly, and framing them in terms of well defined, answerable scientific questions, we will significantly raise the profile of mineral sciences, emphasizing its importance not only to the funding agencies and policy makers, but to the public at large. This is a chance for the mineral-science community to define what it stands for, and restate its central importance within the wider scientific community.
Richard Harrison, Mineralogical Society of Great Britain & Ireland

**Guidelines for questions:**

1. The question must be answerable and it should be possible to create a realistic research design to help arrive at the answer, e.g. ask yourself whether your question would make a suitable title for a research proposal.

2. It should be possible to come up with a factual answer for your question and not depend on value judgments.

**Questions submitted so far** (Below are all the categories and a sampler of the questions in that category. Go to http://homes.esc.cam.ac.uk/100questions/Resultssofar for the complete list).

**Airborne Minerals/Dust**
Which are the most abundant airborne minerals, how do they react with other atmospheric constituents, and what are their health and other environmental effects?

**Biomineralogy and mineral/bio interactions**
What specific properties of the biological form of apatite make it so biologically successful in a nanocomposite with protein (collagen), as in bone?

**Climate**
How can we use the chemical composition of speleothems (cave deposits) at high-resolution to understand how seasonality changes as mean climate changes?

**Crystal growth**
Understanding at atomic or unit cell level how mineral crystals nucleate, grow or dissolve in earth scientific environment?

**Diamond**
Did carbonados originate in the Earth's mantle, at its surface, or through an extrasolar event, and when and how did it happen?

**Early Earth**
Was there really a drastic increase in the impact rate in the inner solar system around 3.8-4 billion years ago in form of a late heavy bombardment?

**Energy**
What material would be a cheap substitute for Si in solar cells?

**Environmental Mineralogy**
What are the mineralogical controls (grainsize, shape, crystallinity, surface structure and composition) determining the effective use of nanoparticle minerals (such as iron oxyhydroxides) in the selective removal of toxic elements such as arsenic from contaminated waters and how do they operate ?

**Extraterrestrial minerals**
When will it become economically viable to exploit the mineral resources of other planets and asteroids?

**Fluid-rock interactions**
What role do fluids and hydrous minerals have in controlling the frictional properties of subduction zone faults where great earthquakes occur or do not occur?

**Geochemistry**
What are the magnitude and distribution of redox gradients in the mantle?

**Geophysics**
What are the mineralogical controls on aseismic slip on fault planes?

**Global Element Cycles**
How does the deep carbon cycle operate?

**Health**
A question of great importance is how to treat asbestos so it can be used without the associated health risks?
What are the nano-minerals inhaled due to outdoor, indoor pollution and use of cosmetics, and their health effects.

**Industry**
How do clay minerals in nickel laterite cause shipping vessels to capsize during its transport?

**Kinetics of mineral processes**
Why are laboratory derived rates of growth for aluminosilicate minerals so many orders of magnitude greater than those inferred based on geologic constraints?

**Life**
What was role of minerals on the emergence of life on earth?

**Magnetism**
Are magnetic minerals involved in the magnetic sensing mechanisms of complex organisms (such as vertebrates), and if yes, how do they work?

**Metamorphism**
Why do minerals so often appear to replace each other volume-for-volume during metamorphism and diagenesis, regardless of chemical differences?

**Mineral Classification**
Can we devise a classification and a genetic system of mineral aggregates?
How can mineral species organization be reformalized such that it is accessible to a public without a high-school (or higher) level education in chemistry?
**Mineral Physics**
What are the thermal conductivity values for the deep mantle and outer core materials?
**Nanogeoscience**
Are there nano-effects present in nature and how do they influence the cycles of matter on Earth?
**Petrology**
What major and accessory mineral phases stable at high pressures and temperatures in the metasomatised upper mantle rocks effectively contribute to the genesis of partial melts with extreme geochemical signatures such as lamproites?
**Resources/Sustainability**
Are there sufficient rare earth mineral resources to meet the needs of our growing modern energy system?
**Sequestration**
How can you inhibit the alteration kinetics of rock-forming minerals during CO2 storage?
**Volcanology**
What are the conditions under which polymorphs of silica (especially cristobalite) form in volcanic conduits, and what is their fate once released to the environment?
**Waste Storage**
Is there a mineralogical solution to the safe, long term storage of high-level nuclear waste**?**
**Unclassified**
Why bother discussing mineralogy when it has been and will be replaced by courses described as fuzzy content courses entitled "earth materials?"
*Via web site http://homes.esc.cam.ac.uk/100questions This topic was suggested by Janet Gordon as something MSSC members might be interested in.*

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## Cleaning Micromounts

Most micromounts need to be cleaned at some point during their preparation for mounting. Dirt and other contaminants should be removed to enhance the aesthetic value of the specimen, and yet care must be taken to do this enhancement without damaging the specimen. Care must be taken to avoid removing a coating or encrustation which is itself is significant species and thus a major part of the overall specimen.

### Mechanical Cleaning Techniques

Mineral species are chemicals, and as such are vulnerable to attack by many of the chemicals used in the cleaning process. Some are affected by water, while others seem to be inert to the actions of almost anything we throw at them. Remember that the degree of reactivity may vary significantly among the various species of a single specimen, and therefore the fewer chemicals (and this includes water) which you have to apply to a specimen the better. Dry techniques are the safest way to start the cleaning process. Human breath is neither dry nor clean. It contains a great deal of moisture which can harm some species and can induce dust to adhere to the specimen. There are also substances in breath which can leave stains or scum on the surface of crystals.

- **Tapping**. Hold the specimen upside down and tap the reverse side of the specimen or the back of the hand or fingers holding the specimen. This will often knock loose material off the specimen.

- **Squeeze bulbs** are generally available through camera stores and are used for cleaning photographic equipment. Ear syringes are available in pharmacies and are also effective. They can deliver air as a gentle puff

or a relatively strong blast. Air blown straight onto the front surface of a specimen can force the dirt deeper into the cavities, while directing the flow parallel to that surface is more likely to remove the dirt. Using the squeeze bulb with the specimen upside down may enhance the cleaning, and if you are really dexterous tapping at the same time will help to loosen the dirt.

- **Pressurized air** is available in a variety of delivery systems. Some are 100% disposable while others have a disposable canister but a reusable nozzle The best ones are those developed for cleaning photographic or electronic/computer equipment. They can be used at low pressure if you are careful, but generally they deliver a very strong stream of air. This can be very effective for cleaning, but obviously is capable of removing some of the material which you are trying to clean, particularly acicular or loosely attached crystals. The systems available now are usually ozone friendly.

  Pressurized air can also be delivered by using a 25 gauge or smaller hypodermic needle attached to a syringe. This sharp end of the needle makes a very good pick for lifting out lint or digging out other unwanted materials.

- **Vacuum cleaner.** Creating airflow across the surface of a specimen by suction will often remove unwanted dirt with less damage than with positive pressure. Holding the specimen upside down and tapping it at the same time may facilitate the cleaning process. Practice using the vacuum cleaner on unwanted specimens or you may lose your prize specimen down the tube. If there is an exhaust port on the vacuum cleaner which allows the attachment of a hose, you may be able to use it as a source of positive pressure air as well.

- **Brush.** A tiny artist's paint brush (usually camel hair or red sable) which comes to a very fine point can be lightly dampened and used to pick off hairs or other tiny fragments. This will not work if the specimen is already wet. A toothbrush can be used on hard specimens.

- **Forceps, tweezers.** Very fine forceps such as those used for eye surgery or watch repair can be used to remove individual fibers or hairs.
  via Micromounters of New England, part of the *Cleaning Micros* article at http://www.micromountersofnewengland.org/articles.htm

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## Calendar of Events

**April 13 - 15: VISTA, CA** San Diego County Council of Gem & Mineral Societies, Antique Gas & Steam Engine Museum, 2040 N. Santa Fe Avenue Hours: 9 - 5 daily

**April 21 & 22: Indio, CA** The Shadow Mountain Gem & Mineral Society is having a Tailgate Show. Coachella Valley Wild Bird Center, 46500 Van Buren St., Indio, CA 92201 9-5 daily.

**April 21 - 22: THOUSAND OAKS, CA** Conejo Gem & Mineral Club, Borchard Park Community Center, 190 Reino Road (at Borchard Rd.), Hours: 10 - 5 daily

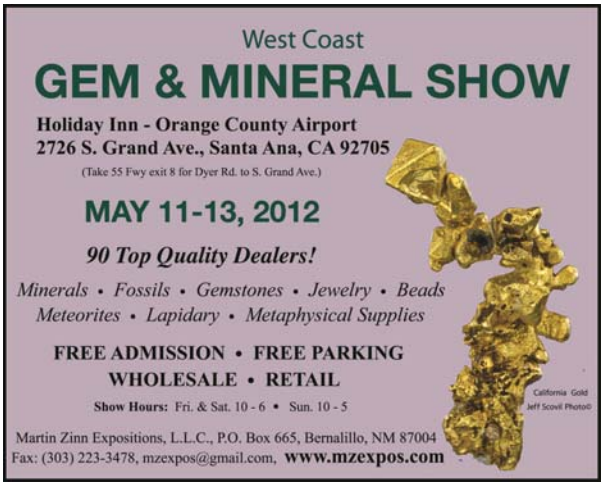
**April 28 - 29: LANCASTER, CA** Antelope Gem & Mineral Society, Lancaster High School, 44701 - 32nd Street West, Hours: 9 - 5 daily

**May 5 - 6: ANAHEIM, CA,** Searchers Gem & Mineral Society, Brookhurst Community Center, 2271 W. Crescent Avenue, Hours: Sat. 10 - 5; Sun 10 - 4:30

**May 11-13**: **SANTA ANA, CALIFORNIA**: Spring West Coast Gem & Mineral Show; Martin Zinn Expositions; Holiday Inn - Orange County Airport; 2726 S. Grand Ave.; Fri. 10-6, Sat. 10-6, Sun. 10-5; free admission

**June 30 - July 1: CULVER CITY, CA,** Culver City Rock & Mineral Club, Culver City Veterians Memorial Auditorium, 4117 Overland Avenue (Overland & Culver), Hours: Sat 10 - 6; Sun 10 - 5

**July 13-15, 2012 Riverside, CA 2012 CFMS Gold and Gem Show & Convention**., Municipal Auditorium, 3485 Mission Inn Avenue, Riverside, CA. 10:00-4:00 each day




**MSSC Advertisement Policy**

**Mineral-related ads have always been acceptable in the bulletin. Below is the price per month**

| | | | |
|---|---|---|---|
| **Business card size** | **$5** | **1/3 Page** | **$10** |
| **1/2 Page** | **$20** | **Full Page** | **$35** |

**In addition, any advertiser who purchases 12 months of space in advance will receive a discount of 12 months for the price of 10 months. The copy for the ads should be e-mailed to the editor at** bulletin@mineralsocal.org and the payment should be sent to the MSSC Treasurer at 1855 Idlewood Road, Glendale, CA 91202-1053. The Bulletin Editor reserves the right to decline requests for space if material submitted is judged to be inappropriate

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**OFFICERS**

| | | |
|---|---|---|
| Preside | Ann Meister | *president@mineralsocal.org* |
| Vice | Bruce Carter | *programs@mineralsocal.org* |
| Secretar | Angie | *secretary@mineralsocal.org* |
| Treasur | Jim Kusely | *treasurer@mineralsocal.org* |
| CFMS | Jo Anna | *bulletin@mineralsocal.org* |
| Past | Geoffrey Caplette | |

**DIRECTOR**

| | | |
|---|---|---|
| 2010- | Geoffrey Caplette | |
| 2010- | Leslie Ogg | webmaster@mineralsocal.org |
| 2010- | Linda | *publicity@mineralsocal.org* |
| 2010- | Fred Elsnau | |

**COMMITTEE CHAIRS**

| | |
|---|---|
| ***Facilities*** | **Vacant** |
| ***Publicity*** | Linda Elsnau (See Director) |
| ***Membership*** | Jim Kusely (See Treasurer) |
| ***Program and Education*** | Bruce Carter (See VP) |
| ***Show*** | **Vacant** |
| ***Webmaster*** | Leslie Ogg (see Director) |
| ***Bulletin Editor*** | Jo Anna Ritchey (See CFMS) |

**2012 PACIFIC MICROMOUNT CONFERENCE COMMITTEE**

| | |
|---|---|
| Chairman | Bob Housley |
| Speakers | Bob Housley |
| Pre-registration | Bob Housley |
| Electrical | Alan Wilkins |
| Sales Table | Garth Bricker |
| Give-away Table | Gene Reynolds |
| Food | Ann Meister, Sugar White |

## About the Mineralogical Society of Southern California

- Organized in 1931, the Mineralogical Society of Southern California, Inc. is the oldest mineralogical society in the western United States. The MSSC is a member of the California Federation of Mineralogical Societies, and is dedicated to the dissemination of general knowledge of the mineralogical and related earth sciences through the study and collecting of mineral specimens. The MSSC is a scientific non-profit organization that actively supports the geology department at Pasadena City College, Pasadena, California. Support is also given to the Los Angeles and San Bernardino County Museums of Natural History. The Bulletin of the Mineralogical Society of Southern California is the official publication of the Mineralogical Society of Southern California, Inc.

- The MSSC meetings are usually held the second Friday of each month, January, February and August excepted, at 7:30 p.m. in Building E, Room 220, Pasadena City College, 1570 E Colorado Boulevard, Pasadena, California. The annual Installation Banquet is held in January, and the annual Picnic and Swap Meeting is held in August Due to PCC holidays, meetings may vary. Check the Society website for details. The Society also sponsors the annual Pacific Micromount Symposium held at the San Bernardino County Natural History Museum during the last weekend of January.

- Annual Membership dues for the MSSC are $20.00 for an individual membership, $30.00 for a family membership.
- The Society's contact information: **Mineralogical Society of Southern California 1855 Idlewood Rd., Glendale, CA 91202-1053 E-mail: bgbrdpen@earthlink.net Web: http//:wwwmineralsocal.org The Mineralogical Society of California, Inc.**



- **DISCLAIMER: The Mineralogical Society of Southern California, Inc. is not responsible, cannot be held responsible or liable for any person's injuries, damages or loss of property at or traveling to or from any general meeting, board meeting, open house, field trip, annual show or any other MSSC event**