



Bulletin of the Mineralogical Society of Southern California

Volume 88 Number 6 - June, 2015

The 922nd meeting of the Mineralogical Society of Southern California

With Knowledge Comes Appreciation

June 12th, 2015 at 7:30 P.M.

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

***Program: The Fight To Save Our State Rock:
#CASerpentine and How We Won***

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Remember: If you change your email or street address, you must let the MSSC Editor and Membership Chair know or we cannot guarantee receipt of future Bulletins

About the Program: The Fight To Save Our State Rock:

#CASerpentine and How We Won, Presented by Justin Zzyzx

Justin Zzyzx will tell us all about Serpentine, the state rock of California and the attempt to have it removed from that honor by a group of anti-asbestos advocates, a few politicians and a pile of lawyers.

Find out about the hashtag that made the front page of the New York Times and how art, geology, botany and the will of the people came together to keep Serpentine as our state stone!

Justin has been active in minerals for over a decade, he formerly owned and operated The-Vug.com and published 16 issues of The-Vug.com Quarterly Magazine. Justin continues to publish the Mindat.org Show Special, all while minding his pistachio trees at the bottom of Lake Manix outside of Barstow California. Justin Zzyzx has spoken at the Rochester Symposium, as the featured speaker at EAFMS' Wildacres Retreat and just finished assembling and performing at the first "Mindat.org Lecture Series" in Edison New Jersey. You can find Justin Zzyzx at FortySevenPress@gmail.com.

From the Editor: Linda Elsnau

Here we are at the middle of 2015...already! Where does the time go? It feels like the older I get, the faster time flies! Is this true for you too? As our time speeds by, let's not forget to take the time to enjoy life's little pleasures, a lovely sunset, a child's smile, a loved one's caress, or the beauty nature provides us via a beautiful mineral specimen. Enjoying a mineral specimen is enhanced by learning all you can about it. What elements make up this mineral? What is the crystal habit of this mineral, does it have more than one external form? Where did it come from? What about this particular specimen draws my interest: sparkle, color, unique form, or an interesting origin? The more you know, the more you can enjoy this hobby. Thus, the motto you see within the MSSC bulletins: **"With knowledge comes appreciation!"**

MEANDERINGS FROM THE PRESIDENT by Ann Meister

The earthquakes in Nepal – a 7.8 on April 25 with an aftershock of 7.3 on May 12 – are a reminder that now is a good time to review earthquake preparedness. Though we have not experienced an earthquake of that intensity recently, the San Andreas Fault can break with a magnitude 7+ (perhaps even an 8) and there are other faults that can wreak havoc on our urban areas. At the May MSSC meeting, I displayed some of the brochures that I collected at the Earthquake Town Hall which I wrote about last month. One handout from the Los Angeles County Office of Emergency Management was a spiral-bound workbook titled *Emergency Survival Guide*. It is for families to use to prepare for a disaster, not just an earthquake, but also floods, landslides, fires (urban or wild), civil unrest, terrorism, hazardous materials release, and other catastrophes. It has various lists starting with the Four Steps to Preparedness: 1. Have a plan; 2. Keep Supplies; 3. Stay informed; 4. Get involved. The list of essential actions for developing a family emergency plan includes learning about the threats in your area, identifying meeting places, selecting an out of state contact, preparing emergency packs which include extra medications and supplies for your pets as well as the human family members, and much more. It includes grid pages to help you draw the escape routes from your house and neighborhood. This is an excellent resource. For additional information on the topics covered in the Guide or to download additional copies, go to the website www.espfocus.org.

To show us that earthquakes are an important source for finding out about the earth's interior, on May 13 the Google Doodle honored Inge Lehmann (1888-1993) on her 127th birthday. The doodle showed the earth split into two hemispheres with a glowing inner core. I had never heard of Lehmann, so intrigued by the doodle, I clicked to get more information. Inge Lehmann was a Danish seismologist and geophysicist who in 1936 discovered that the Earth has a solid inner core inside a molten outer core. This required careful measurement and analysis of seismic waves from earthquakes. Prior to her analysis, scientists believed Earth's core to be a single molten sphere. She also discovered a seismic discontinuity which lies at depths between 190 and 250 km and was named the Lehmann discontinuity.

I'm rather sure that sea ice is not a mineral, however if that topic is of interest, come to the Von Kármán Lecture on June 18 at JPL at the von Kármán Auditorium or June 19 at PCC at the Vosloh Forum. Starts at 7pm.

MSSC Board Members: Don't forget the meeting on June 7, at 1 pm at Bruce Carter's home. Any MSSC member is also invited but please RSVP so we know how many people to expect. See you there...

MINUTES of the May 15, 2015 Meeting

The 921st Membership Meeting of the Mineralogical Society of Southern California (MSSC) was held Friday, May 15, 2015 at Pasadena City College's Geology Department. The meeting was called to order at 7:30 p.m. by President Ann Meister.

Regular Business

- President Ann Meister welcomed all members and guests including former member Ken Schelegel;
- A **Motion** to approve the Membership Minutes of April 10, 2015 as published in the Bulletin of May 2015 was made by George Rossman and seconded by Rudy Lopez. Motion was approved by unanimous vote of the membership.
- Deadline to submit items for the Bulletin is Friday, May 22, 2015;
- Next Board Meeting will be Sunday, June 7, 2015 at 1pm at the Carter residence. All are welcome to attend. The Agenda will be forthcoming and among the topics will be the tables and chairs we are getting for the San Bernardino County Museum, where the Pacific Micromount Conference is held annually.
- The first Nature Festival at Natural History Museum of Los Angeles will be held on June 27 and 28, 2015. Rudy Lopez, Program Chair, is organizing MSSC's participation for the event. Rudy reports we will have an 8' table for MSSC outreach and has received 8 tickets for volunteers. Ticket includes free entry and parking. Contact him if you would like to participate.
- American Opal Society is having their event in November. They are giving colleges and universities tables but we're not sure if they are doing the same for clubs.
- Rudy reports on possible field trip to UCLA Meteor Museum on a Sunday in June that we chose. We pay for parking. However, after discussion, it was determined that this field trip may have to be postponed since June 7th is the Board Meeting and June 28th is the Nature Festival (6/21 is Father's Day).

Announcements

- August 9, 2015 is our picnic – watch the Bulletin for further information;
- This weekend is the Zinn Gem and Mineral Show in Santa Ana. Geoff Caplette is a dealer in room 172;
- Glendora show will be June 6 and 7, 2015;
- Culver City show is the end of June;
- Federation show in Lodi, CA June 12 through June 14, 2015;
- Ann Meister attended the Seismology lecture at the Convention Center in April and brought literature for our perusal including an emergency planning booklet from C.E.R.T, Community Emergency Response Team (an all risk, all hazard training);
- *PCC Celebrates* is in preparation right now, outside. The event celebrates students and donors. MSSC was not included on the donor list. MSSC donates \$500 annually. The event includes a 3-D film, with full audio, projected against the broad side of the Geology building. [Note: During our speaker segment, the audio was very loud and the school was asked to suspend their audio/video checks so the members could receive full benefit of the club's presentation. The school complied.]
- Report on the Sinkankas Symposium: George Rossman was a presenter and Eloise Gaillou (former mineral curator at L A Natural History Museum) was also a presenter;

Show and Tell

- Dan Krawitz brought in some coins he acquired that survived the largest fire in California, the Cedar fire (October 2003, San Diego County). Someone had a coin collection, during the fire, the coins began to fuse, a roll of silver dimes, stacks of other coins;

- George Rossman reports there are now 5,000 known minerals on Earth as of last week. [Note: Both *Rossmannite*, of the tourmaline family and *Housleyite*, a tellurite, are named after MSSC members George Rossman and Bob Housely, respectively.]

Program

Ann turned the meeting over to Program Chair Rudy Lopez. First, thank you to George Rossman for getting the information on our speaker (tentative) for our July meeting. The presentation will be on the La Brea Tar Pits.

Rudy introduced our speaker Gabriel Mosesson. Mr. Mosesson's presentation is on "Ethiopian Wello Opals".

Wello is a region in Ethiopia, Africa, where opals are mined. Workers use carved wooden picks or rudimentary tools such as hammer and chisel to extract rough opal from exposed seams along flanks of canyons. The mining is primitive and no shoring is used.

During his presentation, Mr. Mosesson explained: samples (rough and polished), nature of opals, grading Ethiopian opals and cutting Wello opals.

Opals have Body Tone color, which run from transparent to dark black and are referred to as crystal opals. The Fire color opals include microscopic spheres perfectly aligned. Patterns include harlequin, a honeycomb cell type, and pinfire, a "confetti" pattern revealed by color diffraction. There are bands, ribbon fire and puzzled patterns in transparent, semi-transparent and clear opal.

Mr. Mosesson continued his presentation by explaining there are other notable opals found in Brazil, Australia, Mexico as well as other African regions (the Afar Region, for example).

Opals drink up moisture, but opals that dry out over 3 or 4 years will display their color. If the opal is milky and not completely dry, the color will be not clear and the opal will probably remain milky. Other treatment includes opals presented for sale in water. The water may enhance some color but once you take it home, it may not display the color you thought you bought. Some opals are "smoked" to show a darker color, desired by some. Since opals are very porous, some are dyed. These may display uneven color or spots of a certain dye. Opals are a perfect gem for faceting or cutting (i.e., beading) or sanding. The opal must be studied to determine the direction of the color and its pattern and, the opal must be dry to cut.

To assess an opal, size is taken into account. Large pieces of opal may, however show fractures or cracks. Intense fire colors are also desirable as are harlequin patterns. Opal is primarily a visual stone and connection is subjective, even emotional.

We thank Mr. Mosesson for his presentation of Wello opals. The samples he brought in were stunning. Again, thank you.

Door Prize drawing was won by Emilio

Adjournment was called at 9:12 p.m.

Respectfully submitted, Angie Guzman, MSSC Secretary.

Apologies in advance for any misspellings in this Minutes/aag

List of Upcoming MSSC Events : Mark your Calender!

Event	Date	Comments / Scheduled Program (if known)
Meeting Dates:	July 10, 2015	Forestry Service: Monument Program
	September 11, 2015	Fred & Linda Elsna: "Bones of the Thunder Lizard"
	October 9, 2015	Tony & Sandie Fender: 50 Unusual things in the Mojave Desert/ Mount St. Helens
Annual Picnic	August 9, 2015	At Bruce & Kathy Carter's home
Board Meeting	June 7, 2015	Board Meeting at Bruce Carter's house
Annual Banquet	January 9, 2016	At The Oak Tree Room, CoCo's Restaurant, Arcadia

Note: Dates and programs shown above are subject to change. Check your bulletins to confirm final information each month.

L.A. Urban Nature Fest: Rudy Lopez: MSSC Programs/Education Coordinator

We Need Your Help!

The Natural History Museum of Los Angeles County is excited to announce that we are preparing for our 1st Annual LA Urban Nature Fest to be held on June 27th & 28th, 2015. Over the weekend the Natural History Museum will present a brand new, two-day Nature Festival celebrating L.A.'s impressive biodiversity.

We are reaching out to some of our closest partnership organizations and would like to invite you to join our LA Nature Fest for both days by hosting an informational or activity table in our exhibit halls and gardens

WHEN: June 27 and 28, 2015 Time: 9:30am to 5:00pm

Location: Throughout the Museum

Price: Free with paid admission (I have 8 free passes for the members that work the table. Free admission and free parking).

Mark your calendars: On June 27 and 28, 2015 the Natural History Museum presents a brand new, two-day Nature Festival. Explore NHM's research and collections with our scientists, participate in citizen science projects, and dig into the Nature Gardens with family friendly activities.

We invite you to celebrate urban nature with our scientists and partnering organizations here at the Natural History Museum during this two-day festival.

Coyotes cross Sunset Boulevard. Lizards scale manzanitas. P-22, Los Angeles' resident mountain lion explores Griffith Park. Vaux's swifts take cover in downtown chimneys. Western gulls steal your beach picnic. Squirrels are doing summersaults in your front yard. ...L.A. is a surprising biodiversity hotspot – and it's time to celebrate our urban nature!

MSSC will have a table at this event.

I will talk at the next meeting on what we can show about our organization. We need help during the two day event to sit at the table and talk about our group.

If you can attend and help at the table on any time during the two days, please contact Rudy Lopez: rclopez002@verizon.net

Ringwoodite - The True Story

Editor's note: this is the second article on this new mineral, hopefully clearing up any confusing facts as reported originally by the media

By Dr. Bill Cordua, Emeritus professor of geology, U. of Wisconsin – River Falls

Recent headlines about the first finding of the rare mineral ringwoodite in earth rocks contained references to "vast oceans" and "sunless subterranean seas" revealed by a "water-rich gem" in a "satanic hell diamond". Lurid stuff, and very misleading. It is an exciting find to geologists, but to understand why, we need to back away from the inaccurate hype and do a little basic geology.

First, what is ringwoodite? It is a polymorph of the more familiar mineral olivine. The gem variety of olivine is peridot, so that's the gem link. Both olivine and ringwoodite have the same chemicals in them – $(\text{Mg}, \text{Fe}^{2+})_2(\text{SiO}_4)$. The atoms in them are arranged internally differently, making them officially different minerals. Ringwoodite was first synthesized in the lab, and was thought to form at great depths in the earth where, hypothetically, temperature and pressures would allow it, and not olivine, to form. It was first found naturally in meteorites that were from the interiors of smashed up asteroids that fortuitously found their way to earth. It was named for a famous Australian geologist known for his studies of the earth's mantle. Synthesized

ringwoodite is pretty. It can be deep blue, red or other colors depending in what impurities are there. If found in large enough pieces there is no doubt it would be gemmy. The pieces found in meteorites are microscopic, so their use as a gem is limited unless you like really tiny pieces of jewelry. And it wouldn't be accurate to call it "peridot" because it isn't olivine. This provides an opportunity for someone to create a really glitzy name for the gem ringwoodite.

This recent find of the first terrestrial ringwoodite was announced in the March 14, 2014 issue of the journal Nature. The mineral occurs as a small (60 micrometer) impurity in a diamond brought up in a Brazilian kimberlite pipe. Diamonds form in the earth's mantle and are carried up as "passengers" by magmas that come from deep in the earth. These magmas are the geologists' cheapest "deep earth probes" – they bring up samples of rocks from depths far below any we've ever drilled to. Such rocks are great windows into what things are like down there, so are good places to look for minerals like ringwoodite.

Since diamonds are pure carbon, and ringwoodite is $(\text{Mg}, \text{Fe}^{2+})_2(\text{SiO}_4)$, a key question is: where's the water? It turns out that ringwoodite's structure is open enough to include loosely bonded OH^- and H^+ ions as impurities. If you shake the mineral, water does not come out. If you heat it or push it closer to the surface, it may partly melt to produce a magma that has a bit of water in it. In other words, the raw ingredients that can be made into water exist down there as molecules scattered at the atomic scale in the structure of ringwoodite and other minerals (such as another olivine polymorph called wadsleyite - don't ask). Estimates are that these "water" ingredients may make up about 1 weight percent of the rocks.

Okay, where is this "sunless subterranean sea"? Ringwoodite should be pretty common in parts of the mantle, particularly between 520 and 660 kilometers down in an interesting region called "the transition zone". This is a lot of area. Even if ringwoodite is not particularly common, there is potentially a lot of water if it could all be extracted from it and put in one place. In fact, such a volume of water could exceed what we have at the surface. But, remember, this "water" is locked up as ions in billions of tiny mineral grains. So no big open cavities with sloshing seas and plesiosaurs, a la Jules Verne. Sorry.

Why is this find so important to geologists? The mantle is poorly known, but is crucial in understanding earth processes. The minerals occurring at different depths give insight into all kinds of deep earth phenomena such as "hot spot" magma generation, convection, plate movement and earthquakes. The presence of even 1% "hydrous" materials affect significantly how these rocks melt and otherwise behave, so geologists now have a firmer understanding of how to model these processes for our planet. Also our surface oceans are proposed to have come from magmas "degassing" from inside the earth, perhaps 4 billion years or so ago. It's unlikely this process was 100% efficient, so it's good to be able to support this theory by confirming that the materials that could have made this happen are still there, deep down.

Finally I think those folks who think deep earth minerals are "satanic" ought to get rid of all that nasty diamond jewelry before it does them harm. I personally volunteer to take the Hope Diamond off the Smithsonian's hands.

Note: This first appeared in the Midwest Federation Newsletter, May, 2014 and is here as it appeared in Mindat.org at <http://www.mindat.org/article.php/2198/Ringwoodite+-+the+true+story>

Some Sad News: This from Pat & Geoff Caplette, Sad to report that Keith Krzyweic who gave two talks to MSSC this year died after hitting his head in his front yard last week. We all enjoyed his enthusiasm for the fossils he found in the West Covina hills. He was 56.

His funeral is this Saturday at Custer Christianson Mortuary, 124 S. Citrus Avenue, Covina, CA. The viewing is from 2-6 PM, and the service will be from 3:30-4:30 PM." I'm sure he will be missed by all of the local clubs for his programs and other hobby related activities he shared...

Featured Mineral: Jeremejevite

Formula: $\text{Al}_6(\text{BO}_3)_5(\text{F}, \text{OH})_3$

Crystal System: Hexagonal

Color: Colorless, light yellow brown, aquamarine blue; colorless in transmitted light

Hardness: 7

Name: After Pavel Vladimirovitch Jeremejev (1830-1899), Russian mineralogist and engineer



irocks.com photo

Jeremejevite :

$\text{Al}_6(\text{BO}_3)_5(\text{F}, \text{OH})_3$

Locality: Erongo
5 cm x 1.4 cm x 0.8 cm
This crystal is quite blue



irocks.com photo

Jeremejevite :

$\text{Al}_6(\text{BO}_3)_5(\text{F}, \text{OH})_3$

Locality: Pantahole Mine,
Loi-sau mountain, Mogok
Township, Pyin-Oo-Lwin
District, Mandalay Division,
Burma
2.8 cm x 0.8 cm x 0.6 cm
This crystal is pale yellow



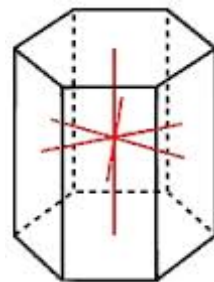
irocks.com photo

Jeremejevite : $\text{Al}_6(\text{BO}_3)_5(\text{F}, \text{OH})_3$

Locality: Erongo Mountain,
Erongo Region, Namibia
4 cm x 0.8 cm x 0.5 cm

This cluster is colorless to very
pale yellow

Hexagonal: 4 axes, three of which
are equal in length, intersect the center
axes on the same plane at 90
degrees and are 120 degrees from
each other. . Hexa = Six



With Knowledge Comes Appreciation!

Ride Share Listing

Can You Provide A Ride?

Would You Like Company On The Drive To Meetings?

We have heard from several of our members that they would like to ride-share with someone to the meetings. We will list the names, general location and either a phone number or an email address of anyone who would like to connect for a ride-share. If you would like to catch a ride or would like company for the trip, let me know at msscbulletin@earthlink.net and I'll put the information in this section of the bulletin. After that, any final arrangements made are up to you. Also, If you make a connection that works for you, let me know so that I can remove your information from the bulletin. The Editor

Looking for	Who	Where	Contact at
A ride	Richard Stamberg	North Orange County, near Cal State Fullerton	
A ride	Catherine Govaller	San Bernardino, CA	

A Special Treat

Eugene Reynolds went to the Tucson Show this last February. He took pictures of some of the displays at the Convention Center and sent them along for all of us that stayed home to enjoy! No captions, just pictures for your enjoyment. Thanks Gene!





The winning case, for the Ed Mcdole & Paul Desautel Trophys

WEST COAST GEM & MINERAL SHOW

NOV. 13 - 15, 2015

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Calcite on Amethyst - Antiguas, Uruguay
Photo by Jeff Scoville

MSSC Advertisement Policy:			
Mineral-related ads are allowable in the MSSC bulletin. Below is the price per month			
	Business Card	\$5.00	
	1/3 page	\$10.00	
	1/2 page	\$20.00	
	Full Page	\$35.00	
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 mailed to the editor at bulletin@mineralsocal.org and the payment should be sent to the MSSC Treasurer 1855 Idlewood Road, Glendale, CA 91202			

Calendar of Events:

Only local area shows are listed here. Other CFMS Club shows can be found at: <http://www.cfmsinc.org/>

JUNE 2015

June 6 - 7: GLENDORA, CA

Glendora Gems & Mineral Society
Goddard Middle School
857 East Sierra Madre
Hours: Sat. 10 - 5; Sun 10 - 4

June 12 - 14: LODI, CA

CFMS 2015 SHOW & CONVENTION

June 12 - 14 *"Rocks & Vines"*
LODI GRAPE FESTIVAL & HARVEST
GROUNDS
413 East Lockeford Street
Lodi, California
Hours: Friday & Saturday 10-5; Sunday 10-4
[See more information](#)

June 27 - 28: CULVER CITY, CA

Culver City Rock & Mineral Club
Veterans Memorial Auditorium
4117 Overland Blvd (@ Culver Blvd, near the
405 & 10 Freeways)
Hours: Sat 10 - 6; Sun 10 - 5
Website: www.culvercityrocks.org

JULY 2015

No programs listed for July



2015 MSSC Officers:

OFFICERS		
President	Ann Meister	president@mineralsocal.org
Vice President	George Rossman	vicepresident@mineralsocal.org
Secretary	Angie Guzman	secretary@mineralsocal.org
Treasurer	Jim Kusely	treasurer@mineralsocal.org
CFMS Director	Jo Anna Ritchey	
Past President	Geoffrey Caplette	
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2013--2014	Bruce Carter	
2013--2014	Bob Housley	
2013--2014	Leslie Ogg	
2014-2015	Pat Caplette	
2014-2015	Pat Stevens	
COMMITTEE CHAIRS		
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Hospitality	Laura Davis	
Membership	Cheryl Lopez	membership@mineralsocal.org
Micro Mount Conf. Chairman	Al Wilkins	
Program and Education	Rudy Lopez	programs@mineralsocal.org
Publicity	Linda Elsnau	bulletin@mineralsocal.org
Webmaster	Leslie Ogg	webmaster@mineralsocal.org

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 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 Micro mount 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. Bulletins are delivered by email, there is an additional annual \$20.00 fee if you prefer paper bulletins mailed to your address. The Society's contact information:

Mineralogical Society of Southern California

1855 Idlewood Rd.,

Glendale, CA 91202-1053

E-mail: treasurer@mineralsocal.org

Website: www.mineralsocal.org **The Mineralogical Society of California, Inc.**

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MSSC Bulletin Editor
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Glendale, CA 91214-
2415

To:



**With Knowledge Comes
Appreciation**

**Your MSSC
Bulletin Is
Here!**