

Bulletin of the Mineralogical Society of Southern California

Volume 76 Number 11

November 2006

The 825th Meeting of The Mineralogical Society of Southern California

**"Geology, Mining and Fluorescent Minerals at the White Knob
Limestone Quarry, Lucerne Valley, CA"**

by Howard Brown

**Friday, November 17, 2006, at 7:30 p.m.
(Yes, on the 3rd Friday this month!)**

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

Inside this bulletin:

- Minerals at the White Knob Limestone Quarry
 - Field trip to White Knob Limestone Quarry
 - Minutes of the October 13, 2006 Meeting
 - Minutes of the October Board Meeting
 - Open House at Jewel Tunnel Imports
 - Why Attend the Pacific Micromount Conference?
 - Basic Concepts about Ore Deposits, Part 3
 - 75th Anniversary of the MSSC Bulletin
 - Calendar of Events
-

Minerals at the White Knob Limestone Quarry

The November 17, 2006, meeting will feature a talk by Howard Brown titled "Geology, Mining and Fluorescent Minerals at the White Knob Limestone Quarry, Lucerne Valley, California." Mr. Brown is Senior Geologist for Omya (California) Inc. His talk will emphasize the fluorescent minerals at the quarry and give geological background in preparation for the field trip on November 18. He also intends to show a short video about the mining company.

Howard is a graduate of California State University Northridge. He has 30 years of mining industry experience in positions of responsibility, and has been with Omya since 1979. He has been involved in over 120 mineral evaluation projects in North America from British Columbia to southern Mexico and has played an important role in the discovery, delineation, engineering, permitting and mining of 10 mines in the United States. Howard currently is responsible for exploration, evaluation, permitting, mine planning, ore production and reclamation at six Omya limestone quarry operations in California, Arizona, and Washington. He has authored more than 24 published papers and abstracts on a variety of geological topics for various professional societies and technical journals and is considered a leading expert on limestone deposits. He is a member of numerous professional societies.

Although an avid rock and mineral collector for many years, during the last few years Howard has become interested in fluorescent minerals which occur at the Omya White Knob limestone quarry in Lucerne Valley.

Field Trip, November 18, 2006 to the White Knob Limestone Quarry, Lucerne Valley

The field trip is to the Omya California Inc., White Knob Quarry in Lucerne Valley. Omya dates back to 1884, in Switzerland. The company produces high-purity calcium carbonate from mining operations distributed worldwide.

The Lucerne Valley processing plant began operations in 1958 and was acquired by Omya in 1976. High purity calcium carbonate in commercial quantities is not a common mineral, and the Lucerne Valley and Amboy deposits are among the most important producing mines in the United States. At the plant the raw ore is processed for use in industrial products such as paint, paper, plastics and grouts. Food and pharmaceutical grade ore is utilized in food products such as breakfast cereal, frozen waffles, cookies, chewing gum and pharmaceutical products including toothpaste, calcium dietary supplements, and buffering agent in aspirin and antacids.

The White Knob Quarry orebody is a sharply folded deposit of Paleozoic age limestone (calcium carbonate), which has been metamorphosed into high purity, high brightness calcite marble. In simplistic terms, it was deposited as a relatively pure limestone, then remaining impurities were squeezed out during tectonic and metamorphic events during Mesozoic time.

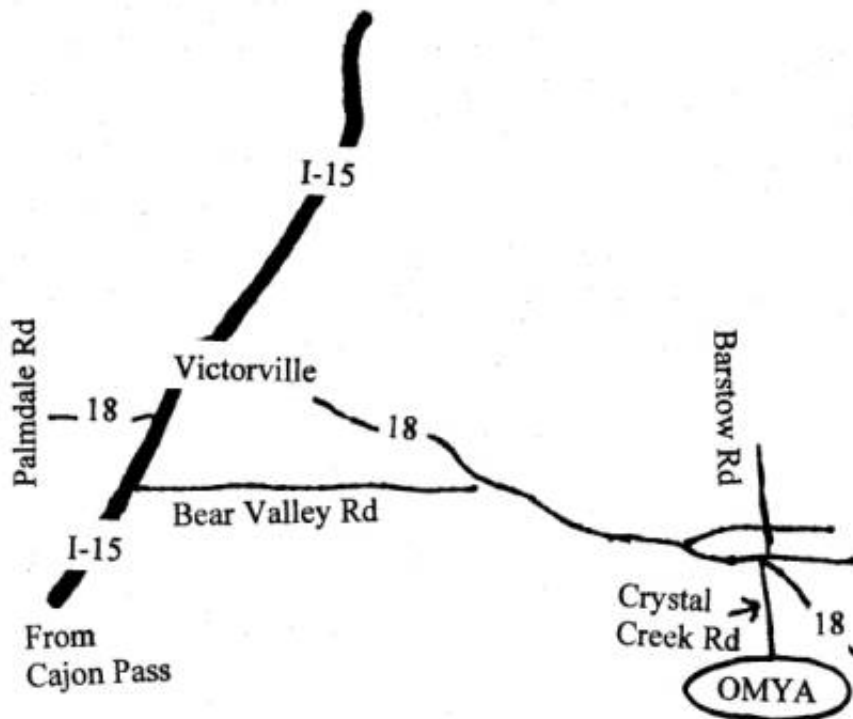
From the mineralogist's standpoint, the size and quality of the ore body is unusual. Zones of massive sulfide minerals have formed adjacent to some intrusive dike contacts. Layers of impure marble contain a variety of interesting contact metamorphic minerals, including piemontite, garnets, vesuvianite, diopside, wollastonite and others. The minerals in some parts of the quarry are highly fluorescent, and some of the metamorphic minerals and granitic dikes display brilliant day glow orange, yellow, magenta purple, green, and blue colors (brighter by far than most active calcite, and the color variety rivals the famed Franklin New Jersey material although not in overall mineralogical variety).

The visit to the active quarry operation will include opportunities to collect very coarse grained calcite rhombs, a variety of contact metamorphic and sulfide minerals and fluorescent minerals.

Instructions for participants:

Please let Jim Imai know if you are going on the trip one week in advance so that Omya can plan for the proper size group. Meet at 10 a.m. on Saturday, November 18, in the parking lot of the Omya administration building at the plant. There will be a company sign in sheet there. The trip begins with a discussion in the conference room of what to expect and rules to observe prior to heading up to the quarry. Rest rooms will be available. Participants should wear appropriate clothing, and hard hats and eye protection will be required. Omya can provide hard hats and eye protection for those who do not have them. Do not bring small children (under age 5). Participants should bring lunch and beverages. Late November weather could range from sunny and cool to windy and cold. Come well prepared.

See the map below for location information. Crystal Creek Road essentially ends at the Omya plant; the parking lot is very near the entrance. ***Note: Caltrans is doing serious reconstruction on I-15 in the Cajon Pass area; check their website to see if an alternate route is advisable.***



Minutes of the October 13, 2006 Meeting

The 824th meeting of the Mineralogical Society of Southern California was held on Friday, October 13, 2006, at Pasadena City College. President Ilia Lyles brought the meeting to order at 7:30 p.m. She then introduced the speaker of the evening, Rock Currier, who gave a presentation entitled: "Seeking Prehnite, Epidote and Garnet in Mali."

Mr. Currier, a board member of the MSSC, popular speaker, and world traveler, has been the proprietor of Jewel Tunnel Imports, a wholesale mineral business, for many years.

During his presentation, Mr. Currier not only described the minerals of the Kayes region of Mali, but also discussed, and illustrated with photographs, the geography, customs, and living conditions of the area. Beautiful green garnet, epidote and prehnite specimens from Mali were also exhibited. Of particular interest were descriptions of the unorthodox tooling and processing methods used by the local people.

Next, it was moved that Janet Gordon, Leslie Ogg and Geoffrey Caplette be approved as new board members. The motion was seconded and approved by acclamation.

Ms. Judy King, of Cal State Dominguez, then thanked the MSSC for the many specimens she received for her earth sciences teaching projects.

Gene Reynolds announced that the 42nd Pacific Micromount Conference would be held January 26-28, 2007 at the San Bernardino County Museum. He encouraged MSSC members to bring good, properly identified materials to give away during the conference.

Also, Mr. Jim Imai announced that a field trip to the White Knob Limestone Quarry was scheduled for Saturday, November 18, 2006.

Finally, members were reminded that prompt remittance of 2007 dues would be appreciated. The door prize was won by Gus Meister. The meeting was brought to a close by President Lyles at 8:45 p.m.

Respectfully submitted,
Pat and Geoff Caplette

Minutes of the October Board Meeting

The October 2006 Board Meeting of the Mineralogical Society of Southern California was held at Pasadena City College on October 13, 2006, immediately following the regular monthly meeting. President Ilia Lyles brought the meeting to order at 8:45 p.m. In attendance were the following MSSC members: Ilia Lyles, Jo Anna Richey, Rock Currier, Janet Gordon, James Imai, Robert Housely, and Geoff and Pat Caplette.

Principal Topics:

2007 Show

It was suggested that the conducting of a 2007 show might not be advisable as much work still needs to be done for the upcoming Pacific Micromount Conference, and a 2007 show chairperson has not been identified. Further, some members believe that field trips and open houses could be more effective in generating revenue and attracting new members than the holding of annual shows at this time.

Pacific Micromount Conference

Dr. Robert Housely agreed to be the speaker chairman for the conference. Members proposed a number of candidate speakers, including Dawn Minette, Joe Siefke, Bob Reynolds and Tony Kampf. It was further suggested that Julie Steele be contacted to present a program of remembrances of Juanita Curtis.

January Board Meeting Locality

The January Board Meeting will be held at the home of Ilia Lyles in Simi Valley, CA., on the afternoon of January 21.

Current Finances

It was moved, seconded and approved that \$200.00 be allotted for the payment of speaker-related costs for the annual banquet in January, 2007. The SCMM/MSSC merger has been accomplished; the financial assets have been transferred to the MSSC. Walt Margerum has sent money to Pasadena City College for the Van Amringe Scholarship Fund, and he will mail a check to Janet Gordon for bulletin expenses.

Respectfully submitted,
Pat and Geoff Caplette

**An invitation for the
Mineralogical Society of Southern California
to attend an open house at
Jewel Tunnel Imports**

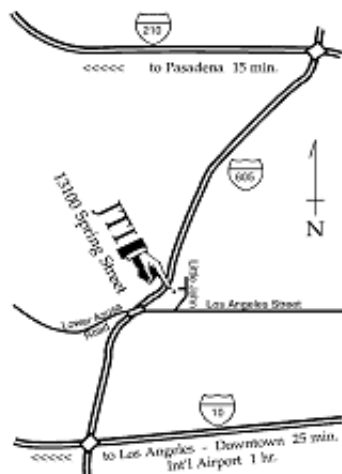
**Saturday, December 9, 2006, 10 AM to 4 PM
13100 Spring St., Baldwin Park, CA 91706
626-814-2257**

**Map available at jeweltunnel.com
Refreshments will be served.**

Jewel Tunnel Imports is a leading wholesale distributor of mineral specimens, crystals, fossils, tumbled stones and many different kinds of lapidary items like balls, eggs, jewelry etc. made from different minerals. We have a warehouse in excess of 10,000 sq. feet full of mineral related natural history items, perhaps the largest of its kind in the United States.

Historically Jewel Tunnel Imports has had limited open house parties for mineralogically and geologically oriented groups such as the students and faculty of various university geology departments and members of certain gem and mineral societies. These open houses, by invitation only, on a few weekends just preceding Christmas, offer a chance for individuals belonging to these groups to buy minerals and crystals at wholesale prices and to learn something about the wholesale gem and mineral business.

The owner of Jewel Tunnel (Rock Currier) is also interested in learning about new sources of mineral specimens and has been known to buy and trade such items. He is a micromounter and always interesting in trading for good micromount material not represented in his collection.



Why Attend the Pacific Micromount Conference?

Plan on coming to the Pacific Micromount Conference for a great weekend of learning about and enjoying minerals even if you've never looked at a mineral through a microscope! There is something for everyone at this informal and sociable event.

Conference FAQ's:

1. *Who is welcome at the conference? What if I've never made a micromount?*

Anyone interested in minerals is welcome. There are probably as many ways to make a micromount as there are micromounters. It's a hobby, not a set in concrete way to preserve a micro-specimen. The "official" definition of a micromount is that the specimen requires magnification to be identified and that the specimen be permanently mounted.

2. *Is it important to bring your own microscope?* If an attendee has access to a microscope, it is definitely a good idea to bring it, however, there are many participants with scopes, and they are more than willing to share with a newcomer.

3. *Will there be anything interesting to buy?* There is always a sales table of specimens for \$1.00. Also, a verbal auction with a photo (slide) to go with the specimens auctioned and a silent auction of donated specimens are part of the festivities.

4. *Will there be someone who can help identify minerals that I bring?* Show anyone your unknown, and if they know or have a "guess" they'll tell you. There is no official "identifier," but the collective expertise of the regular and willing attendees is impressive.

5. **Who can I contact if I have more questions?** Walt Margerum (wmargerum@earthlink.net, 310-324-1976) will be glad to answer questions. He would also be delighted to receive your advance registration for the conference. A yellow registration form is inserted in this bulletin for your convenience.

Basic Concepts about Ore Deposits (That Every Mineral Collector Should Know) Part 3

by Janet Gordon

The previous two issues discussed magmatic and hydrothermal ore deposits, the first 2 categories in our list of five. This installment will take a brief look at sedimentary ore deposits, placer deposits, and residual deposits. The final installment in the next issue will discuss the secondary processes by which many deposits are further enriched.

3. Sedimentary ore deposits:

Sedimentary ores refer to ores that are produced by sedimentary processes, but not to those that have been introduced into sedimentary rocks. Industrial materials such as limestone and pure sandstone (for glass making) are rather mundane sedimentary products, but when sedimentary rocks produced by precipitation of chemicals from solutions are considered, things get more interesting mineralogically.

The evaporation of seawater has produced huge sequences of halite and gypsum plus more rare minerals such as sylvite, caranallite, kainite, polyhalite, and kieserite, to list a few of the more than 100 different minerals that occur in bedded evaporite sequences. Because these rocks do not survive when exposed to surface weathering processes, they appear to be rather rare, but in actuality major salt and gypsum deposits underlie vast portions of most continental areas, including much of southern New Mexico and west Texas.

Southern California mineral collectors are familiar with the evaporite minerals that precipitated and in some cases are still forming in the playa lakes of the Basin and Range Province of the western USA. Searles Lake is famous for its hanksite, pink halite, trona, and borax formed by the evaporation of lake brines. Epsomite, mirabilite, thenardite, bloedite, gaylussite, and glauberite are found in other "dry" lake deposits. The concentration of borate minerals at Boron is a variation on this theme.

Sedimentary iron ores have had huge economic importance in the USA and elsewhere. For example, the "iron ranges" of northern Minnesota and Michigan consist of Precambrian banded iron formation. The bands in these rocks are thin alternating layers of red chert and iron oxide precipitated in an ancient marine

environment in equilibrium with the oxygen-poor atmosphere of a much younger earth.

More recent sedimentary iron deposits known as ironstones also exist. Iron minerals such as hematite, goethite, and chamosite make up the bulk of ironstones, such as the Silurian-age Clinton Formation in the Appalachians. These rocks often exhibit an oolitic texture (think fish roe), and their formation is related to tropical weathering of iron-rich rocks that contribute iron-rich detritus to near-shore marine environments that lack other sedimentary input.

4. Placer deposits:

Placer deposits are concentrations of minerals that are resistant to weathering and have relatively high specific gravities so that they can be mechanically concentrated by flowing water. One typically thinks of placer deposits as forming in streams, but waves do a good job of sorting minerals, too.

It was placer gold in rivers that started the California gold rush of 1849. "Fossil" placers such as the Witwatersrand gold deposits of South Africa can be important, also. Platinum is sometimes recovered from placers where ultramafic rocks have weathered. Corundum, garnet, and diamond all concentrate in placers. Southeast Asia has produced countless rubies and sapphires from stream placers, and the beaches of Namibia have yielded many placer diamonds. Tin is also recovered from placer deposits. In Malaysia, cassiterite (tin oxide) weathers out of local granites and is recovered from local streams and beaches.

The next time you're by a stream take a gold pan or plastic plate and pan some of the sand to concentrate the heavy minerals. Typically the majority of the grains will be black (ilmenite or magnetite), but check for gemmy red garnets, green epidote, and those other minerals that keep prospectors dreaming.

5. Residual deposits:

This is perhaps the most prosaic category of deposits, but if you drink anything from an aluminum can, this one's for you. Residual deposits are the products of extreme weathering of soils that destroys the common rock-forming minerals entirely and leaves behind clays and other aluminum-rich minerals. The ultimate product is bauxite, the only natural material from which aluminum is extracted economically. In the unusual case that the weathering rock happens to be a peridotite, the residue can contain nickel in economic abundance. The important nickel laterite deposits of New Caledonia were formed in this manner, and a typical ore mineral is the bright green garnierite.

Look for the concluding installment of this series in next month's issue.

The Mineralogical Society of Southern California

**Proudly Presents the 42nd Pacific Micromount
Conference**

January 26-28, 2007 at the

San Bernardino County Museum

**2024 Orange Tree Lane, Redlands, CA
(Exit north on California St. from I-10)**

FRIDAY, JANUARY 26, 2007

3:00-6:00 PM REGISTRATION, greeting friends and microscope time.

6:00-7:00 Famous POTLUCK BUFFET Dinner.

7:00-10:00 PM "What's new in Minerals" by Sugar White

SHORT CONTRIBUTED TALKS AND MEMBER SLIDES.

SATURDAY, JANUARY 27, 2007

8:00-9:00 AM DOORS OPEN, REGISTRATION.

Setting up scopes, filling "Give-away" and

"Sales" Tables, and greeting friends.

10:00 AM WELCOME, Introductions and Special Announcements.

10:15 AM "Speaker to be announced",

**NOON LUNCH. Subway sandwiches (pre-selected). Served at Museum.
(No cost)**

**1:30 PM VERBAL AUCTION, followed by silent auction of member
donated materials.**

3:00-4:00 PM SHORT CONTRIBUTED TALKS.

6:00 PM BUFFET DINNER. Served at Museum.

7:30-10:00 PM "Speaker to be announced"

SHORT CONTRIBUTED TALKS AND MEMBER SLIDES.

SUNDAY JANUARY 28, 2007

FIELD TRIP: To be announced at the Conference.

9:00 – Noon Microscope time at the Museum.

Registration Fee is \$10.00 before Conference, \$15.00 at door.

More information will be in the December & January Bulletins

Save these meeting dates!

The MSSC Annual Banquet will be held on Saturday evening, January 20, 2007. Also, our February meeting will be on Friday, the 23rd to accommodate the Tucson Show and holidays at PCC. The following months will be back on the second Tuesday of the month (March 9, April 13, May 11, and June 8).

75th Anniversary of the MSSC Bulletin!

Seventy-five years ago this month, the Bulletin of the Mineralogical Society of Southern California made its first appearance. Edwin Van Amringe was the publication's initial editor whose "aim for this little paper [was] to be entertaining as well as instructive." A reproduction of Volume 1, Number 1, (November, 1931) of the MSSC Bulletin has been inserted in this issue. As you enjoy reading it, consider ways that you can contribute to the Society and its Bulletin so that many more anniversaries can be celebrated.

2006 Calendar of Events

November 4-5 Lancaster, Palmdale Gem & Mineral Club, "Rock n Gem Roundup," Antelope Valley Fairgrounds, 2551 West Ave. H, Hours 9-5 both days, Susan Walblom 661-943-1861.

November 4-5 Ridgecrest, Indian Wells Gem & Minerals Society, Desert Empire Fairgrounds, Call (760) 375-8000 for RV parking, 520 S. Richmond Rd., Hours: 9-5 both days, John De Rosa (760) 375-7905.

November 4-5, San Diego, San Diego Mineral & Gem Society, Al Bhar Shrine

Center (behind Hampton Inn) 5440 Kearny Mesa Rd., Hours: St. 9:30-5, Sun. 10-4.

November 10-12, Costa Mesa, West Coast Gem & Mineral Show, Holiday Inn, 3131 S, Bristol St., Hours: Fri & Sat. 10-6, Sun. 10-5. www.mzexpos.com.

November 11-12 Anaheim, American Opal Society, Clarion Hotel Anaheim Resort, 616 Convention Way, Hours: Sat. 10-6, Sun. 10-5, website: opalsociety.org, Jim Lambert (714) 891-7171, jlamb777@yahoo.com.

November 11-12, Yuba City, Sutter Buttes Gem & Mineral "Festival of Gems & Minerals," Yuba Sutter Fairgrounds (Franklin Hall) 442 Franklin Ave., Hours: 9-4 both days, Cliff Swenson (530) 272-3752.

November 18-19, Livermore, Livermore Valley Lithophiles, The Barn @3131 Pacific Ave., Hours: Sat. 10-6, Sun. 10-5. Joyce & Dick Friesen (925) 447-8223, friesenjoyce@ixinetcom.net.

November 18-19, Oxnard, Oxnard Gem & Mineral Society, Oxnard Performing Arts Center, 800 Hobson Way, Hours: Sat. 9-5, Sun. 9-4, Norb Kinser (805) 644-6450, www.ogms.net.

November 25-26, Victorville, Victor Valley Gem & Mineral Club, San Bernardino County Fairgrounds, 14800 7th St., Hours: Sat. 9-5, Sun. 9-4, Joe Kosik (760) 241-0894.

December 2-3 Orangevale, American River Gem & Mineral Society, Orangevale Grange, 5805 Walnut Ave. near Madison Ave. Hours: 10-5 both days. Evelyn Tipton (96) 372-3452, ektipton@charter.net.

Start your Holiday Shopping Here!!

WEST COAST GEM & MINERAL SHOW

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



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