



October 2005

Los Angeles Basin Geological Society Newsletter

**October Meeting: Donald L. Fife, President, Right Star Minerals
Tustin, CA**

Will speak on

The West's Largest Calcium Carbonate Producer: Lucerne Valley Limestone Province, Southern California

Speaker Synopsis / Abstract

The Lucerne Valley Limestone Province contains enormous reserves of cement-grade and high-brightness, high-grade calcite limestone. The Province lies in the California Transverse Ranges of Southern California within the Los Angeles market region, the second largest economic region in the United States. The Province extends for about 40 kilometers along the north slope of the San Bernardino Mountains overlooking the Mojave Desert. About 5% (12-thousand hectares) of the San Bernardino Mountains is underlain by Paleozoic carbonate rocks. This carbonate stratigraphic section averages about 1,500 meters thick with white high-grade calcite limestone units ranging from 15 to 30 meters thick.

Mineral Materials Company, a subsidiary of A.S. Vinnell, pioneered white pigment filler-extender limestone mining in 1947 with Kennedy Materials Company of Los Angeles. Mineral Materials limestone operations were purchased by Kaiser Steel for steel flux at their Fontana, California steel mill in about 1950. Kaiser Steel operated metallurgical limestone quarries in Arctic and Marble Canyons and Kaiser's Permanente Cement quarried limestone from Cushenbury Canyon from the 1950's through the 1980's. Mitsubishi purchased Kaiser Cement from Hanson Trust in the mid-1980's.

Currently three operators, Omya (formerly Pluess Stauffer), Specialty Minerals (formerly Pfizer), and Mitsubishi Cement are exploiting the western portion of the Province. Along the north-facing slope of the San Bernardino Mountains much of the original high-grade ore has been lost through erosion into a series of northward dipping alluvial fans. Most of the eastern portion of the Province for several kilometers has not eroded away along a highland area known as "Lone Valley" (or the Smart Ranch Limestone Deposit). Right Star Minerals recently received approval to proceed with underground mining of the principal high-grade, white calcite limestone ore body similar to that being mined by Omya, Specialty Minerals, and Mitsubishi Cement in the western portion of the Province.

On the order of 2-million tons of high brightness calcite limestone and 6-million tons of cement-grade limestone per year are mined by these operations. The value-added wealth to the regional economy by this Province is estimated to be greater than a billion dollars a year. The principal markets for white pigment fillers and extenders are caulking compounds, dry-wall textures, fiberglass, fire-resistant roofing, flooring, food additives, paint, paper, plastics, pottery, putty, PVC pipe, stucco, tooth paste, white ink, and wire coatings. Chemical uses include acid neutralization, pharmaceuticals, glass, and air and water purification. Omya and Specialty Minerals are currently the principal producers of ground calcium carbonate (GCC). Mitsubishi produces by-product GCC at their cement operation in Cushenbury Canyon. The Lucerne Valley Limestone Province products are shipped more than 3000 km east to Chicago and 3000 km southwest to Hawaii. During the past 30 years the calcium carbonate market's growth rate for high-grade limestone has ranged from 5 to 15% per year.

*Don Fife is an engineering and economic geologist in California. He earned a B.S. in Paleontology and Stratigraphy and an M.S. in Geology at San Diego State University (SDSU). Don's Masters Thesis, *Geology of the Bahia Santa Rosalia 30-minute Quadrangle*, is on the Pacific Slope of Baja California. His thesis was published as part of GSA Memoir 140, *Reconnaissance Geology of Baja California* (Gastil et al, 1975).*

Don served from 1981 to 1989 as the Secretary of the Interior's Advisor for Geology, Energy, and Minerals for the 25-million acre California Desert Conservation Area. His experience includes 14 years with the California Department of Water Resources and California Department of Conservation (CDMG). Don joined Converse Consultants in 1978 as a Senior Engineering and Mining Geologist. He edited and compiled two major Southern California geology volumes for the South Coast Geological Society: *Geology and Mineral Wealth of the California Desert*, (Fife and Brown, 1980) and *Geology and Mineral Wealth of the California Transverse Ranges*, (Fife and Minch, 1982).

Don Fife grew up in the Mojave Desert helping his father in the family well drilling, excavating and mining business. A family friend gave his family a gold mine along a contact scarn between granite and limestone. The tiny, gold vein was overlain by

millions of tons of “worthless” white limestone (marble), which they blasted into the canyon below in order to expose the gold. The overburden rendered the gold mine economically unfeasible.

Don’s father got a contract to haul limestone from a new quarry in nearby Cushenbury Canyon, near the present site of Mitsubishi’s quarry and cement plant. This limestone was neither as white nor as pure as the limestone they had blasting into the canyon as waste. They realized the white limestone waste blasted into the canyon was far more valuable than the gold. They expanded their claim into the *White Ridge* 160-acre mining claim. This was patented and sold to Kaiser Steel in 1958 for steel flux reserves.

While at SDSU, Don’s undergraduate thesis was *Geology of the White Ridge and White Knob Limestone Deposits*. In 1983 Don received a mineral patent on the 200-acre extension of the *White Ridge Claim*, known as the *White Knob Claim*. This required an 8½-year battle with more than 20 Forest Service and BLM mineral examiners.

Both the *White Ridge* and *White Knob* claims were landlocked. Pfizer Chemical, Inc. had a virtual monopoly of white, high-grade limestone in Southern California. These companies, along with environmental groups, blocked access to these high-grade limestone deposits.

In the mid 1980’s, Don was a consultant appraising the mineral assets in the pending bankruptcy of the Kaiser Steel Mill. As a result, the Steelworkers Union acquired the *White Ridge* deposit for their vision insurance fund. Omya, the world’s largest producer of white pigment limestone, was brought in as the operator. This former gold mine is now the second largest producer of white high-grade limestone in the western United States.

Time & Place

Time:

Thursday, October 27, 2005

Typical Meeting Agenda

Lunch Served: 11:30 AM to 12:00PM

Announcements: 11:50 AM to 12:15 PM

Guest Speaker: 12:15 PM to 12:45 PM

Place:

The Grand at Willow Street Conference Center located at 4101 East Willow Street, Long Beach, CA. (562-426-0555). Take Lakewood Boulevard south from the San Diego Freeway (405), turn west onto Willow Street and turn right onto Grand Avenue at the sign for the Center. Park free in the garage structure.

Cost

Cost:

Lunch and Speaker: \$20.00 with reservations

\$25.00 without reservations

Student: \$ 5.00 (Lunch and Speaker)

Meeting Reservations:

Make your reservations using our web site at www.labgs.org, emailing iaburto@breitburn.com or calling Ivan Aburto at (213) 225-5900 ext. 234.

Reservations must be made prior to Tuesday before the meeting.

LABGS Future Meetings

Lunch meetings are held at *The Grand at Willow Street Conference Center*. Lunch starts at 11:30 AM

2005 Speaker Schedule

November 17, 2005 - The speaker will be **George Copenhagen** speaking on the *"History and Geology of the San Diego and Arizona Eastern Railway."* **Note the day of the month change to accommodate Thanksgiving.**

There will be no meeting in December.

January 26, 2005 - The speaker will be **Boris Zaprianoff** speaking on *"The Dead Sea and Noah's Flood: Recent Sub-sea Archeological Discoveries."*

Future speakers include **Bob Davis** – *"Outcrop and Subsurface Dipmeter examples."*

If you have a speaker suggestion please mention it to a Board member.

The exact titles for these talks may change. See the Newsletter for the most current info

Announcements / Information

2005 Student Recognition Awards

The Los Angeles Basin Geological Society offers two annual scholarship awards as a form of encouragement and recognition to those College students who show dedication and passion to the field of Geoscience. It is our goal to help future geoscientists on in their pursuits. Both of these awards consist of a Brunton Compass and a wall certificate.

The LABGS Brunton Award

The LABGS Brunton Award is given to a qualified undergraduate student attending a four-year LA Basin College or University currently pursuing a baccalaureate degree in Geology or the Earth Sciences. The Society is currently looking for qualified applicants for the 2006 award.

SELECTION PROCESS

The above award winner was selected from candidates nominated by a faculty member. The winner was selected based on the following criteria:

- Grade point average in earth science classes.
- An enthusiastic or special recommendation from the college advisor, department chair, or mentor professor

Your Name Here!

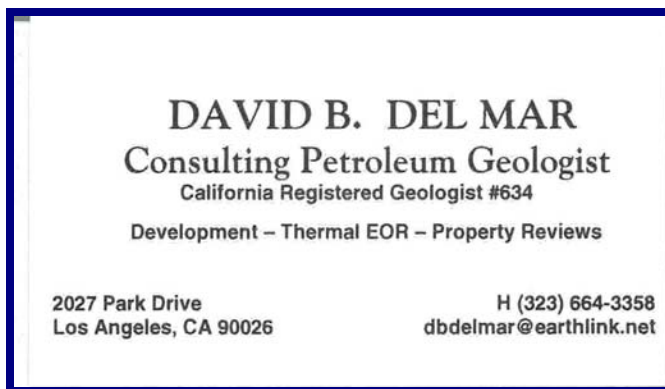
Advertising in newsletters is available!

Advertising rates for a business card size ad is \$60 for 6 issues. These fees help offset our publishing costs. If interested please contact a Board member.

LABGS Publication List

1. Guidebook from the 2004 LABGS Field Trip Examining the Catalina Schist and the Palos Verdes Peninsula. **\$20.** The book is 179 pages and printed in color. There is enough detail to allow you to recreate the trip on your own.
2. Neotectonics and Coastal Instability, Orange and Northern San Diego Counties, California - CD VERSION from the *2000 PSAAPG and WRSPE Field Trip Guidebook.* **\$28.**

For Information regarding these publications, contact Ivan Aburto – His email is accessible from our web site at www.labgs.org



SEPM FALL 2005 FIELD TRIP: Sedimentology and Facies Architecture of Channelized Slope Systems: Eocene Ardath and Scripps Formations and Miocene Capistrano Formation, Southern California

Mark your calendars for the PS-SEPM Fall Field Trip scheduled for October 29 – 30, 2005...

The Pacific Section SEPM fall field trip will focus on the architecture, lithology, and distribution of facies within two different deep-water systems exposed at two localities in southern California. Both systems were deposited in continental slope environments. Middle Eocene strata in the Ardath and Scripps Formations near La Jolla, California were deposited in an upper slope environment within a relatively larger submarine canyon. In contrast, Miocene strata in the Capistrano Formation at San Clemente, California were deposited near the distal edge of a lower slope environment within a complex of relatively smaller channels. Channel sedimentation in both deep-water systems display a well-developed hierarchy of architectural units consisting of channel stories, channels, channel complexes, and channel complex sets. Lithofacies within these slope systems range from gravelly coarse-grained turbidites to muddy, low-concentration turbidites.

The trip will be led by Kirt M. Campion and Anthony R. Sprague from Exxon-Mobil Upstream Research Company and Morgan D. Sullivan from California State University, Chico.

LABGS T-Shirts ON SALE

The LABGS sells T-Shirts to generate additional funds to help support our scholarship and field trip activities. The shirt displays the LABGS logo on the Back with the words "LA Rocks" on the Front. The Price for shirts are \$15.00 and available at our luncheon meetings or by contacting Ivan Aburto (see contact list in this newsletter). Sizes are limited to Medium, Large, and Extra Large. **Buy one at the October Meeting!**

Renew Your Annual Dues

The Pacific Section AAPG and LABGS operate on a fiscal year from July 1 to June 30. If you are a current member, you will receive a PSAAPG membership renewal notice this month in the mail. Please note, when you renew you are renewing for both LABGS and PSAAPG (for one low price of \$12).

If you haven't done so, take this opportunity to send in a check and update your mailing information. New directories will be printed in spring of 2005 and will be included in your dues for the next fiscal year (the directory is one of the key benefits of joining the LABGS through PSAAPG).

Not a Member you say!!! Join and get on the LABGS Membership / Mailing List

Become a member of the LABGS and enjoy the benefits of membership. Our goal is to provide a value added service to the geologic community of the LA area at a reasonable cost. If you join the LABGS you also become a member of the PSAAPG and vice versa. The purpose of this is to reduce waste and duplicated effort. Check out the membership form for a list of the dual membership benefits. Membership is our primary source of income so I urge you all to join or renew. **To join or renew**, fill out the attached membership form and mail it in to PSAAPG or better yet bring it to the next meeting. This will ensure you are on our lists and the only way you can request a hard copy through the mail. The use of E-mail is our preferred method of distribution so please make sure we have your address

WE'LL BE THERE



Epoch is one of the energy industry's leading suppliers of wellsite data gathering systems. Our drilling instrumentation products, well-site reporting software and mud logging services are industry leaders, and myWells.com allows you to access that information anytime, anywhere. That means you can make more timely decisions that deliver efficiency and economy. If real time, accurate wellsite information is important to you, call Epoch. We'll be there.

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President's Note

This newsletter is going to press before the Coastal Geology group goes through the Ventura area on a field trip this weekend. I understand that they will have two full buses. The number of attendees remind of those early-80's field trips which had 150-200 people enjoying the outcrops and the companionship of our fellow earth adventurers.

It is on a sad note that I mention the passing this last month of two individuals whose work and lives touched all of us. Tor Nilsen and Bud Reid gave so much to our understanding of California geology and the importance of it to the planet we call home, Earth.

Thank you Tor and Bud,

Jon

Contact Us – The LABGS Board

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dickbrowngeo@adelphia.net

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szigan@eri-us.com

OUR WEB SITE ADDRESS IS:

www.labgs.org



Los Angeles Basin Geological Society Membership Form

Join the LABGS and become a member of the Pacific Section AAPG all for one low price of \$12.00 per year - 2 West Coast Geoscience Organizations for the price of one



Membership Benefits

- LABGS Membership
- Monthly Luncheon Meetings with Strong Technical Programs
- Pacific Section AAPG Membership
- Pacific Section AAPG Bi-Monthly Newsletter
- Discounts for PSAAPG Bookstore Publications
- Bi-Annual West Coast Geoscience Directory - *next edition 6/03*
- Networking and Social Opportunities with Fellow Geoscientists

Current Annual LABGS/PSAAPG Dues

1 Year Option = \$12.00	\$ _____
3 Year Option = \$36.00	\$ _____

Extended E-Mail Announcement List Fees

To receive meeting notices from SJGS and CGS

1 Year Option = \$12.00	\$ _____
3 Year Option = \$36.00	\$ _____

PSAAPG Foundation Contributions

B. Hacker Publication Fund	\$ _____
Martin Van Couvering Fund	\$ _____
Dibble Map Foundation	\$ _____
California Well Sample Repository	\$ _____
John Kilkenny Scholarship Fund	\$ _____
PSAAPG Foundation Trust Fund	\$ _____

TOTAL PAYMENT

Total Amount Enclosed	\$ _____
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Essential Member Information

Last Name	_____
First Name	_____
Middle Initial	_____
E-Mail Address	_____
Mail Address	_____
<i>Res or Bus ?</i>	_____

Additional Directory Information

Employer	_____
Position / Title	_____
Bus Phone #	_____
Res Phone #	_____
Fax Phone #	_____
Spouse's Name	_____
Education	<i>Highest Degree</i> _____ <i>Year</i> _____
School	_____

Signature _____

Annual membership is handled through PSAAPG and runs from July 1, through June 30. If you are already a current member of PSAAPG and you selected LABGS affiliation you are already a member of the LABGS.

**Please Make Checks out to PSAAPG and mail along with member form to:
PSAAPG P.O. Box 1072, Bakersfield, CA 93302**