

**THE 776th MEETING
OF
THE MINERALOGICAL SOCIETY
OF SOUTHERN CALIFORNIA**

**7:30 p.m., Friday October 11, 2002
Building E, Room 220
Pasadena City College
Pasadena, California**

**Featuring a Talk by
Garth Bricker**

on

**The Stewart and other mines in
Northern San Diego County**

OCTOBER PROGRAM

Our October speaker, Garth Bricker, will give a slide show and talk on the Stewart and other mines in the area of Northern San Diego County.



HEY!
Are YOU ready
for our
BIG SHOW?

VOLUNTEERS NEEDED

Maybe you are ready
for the show but the show will not
go on without your help.

Volunteers are needed.
This show is run by the MSSC,
for the MSSC.

Volunteers are needed for setup on Thursday (Dec 5)
and Friday (Dec 6), during the show (Dec 7 & 8),
as well as during teardown Sunday night.

Contact:
Dave Smith, 818-908-3071, dave_topaz@yahoo.com
Carolyn Seitz, msscshow2002@mindspring.com

Original "Hey!" artwork for 1966 show by Bob Brewer

Colorado Diamond Report

by Janet Gordon

A fine selection of Colorado diamonds from the Kelsey Lake deposit was on display at the Denver show. Those of us who attended the "Gemstone Deposits of Colorado and the Rocky Mountains Region" symposium and field trips especially enjoyed this because we had just learned about Colorado diamonds first hand. Our thanks for this high quality experience goes to the Colorado Chapter of Friends of Mineralogy, the Colorado School of Mines, the Denver Museum of Nature and Science, and the U. S. Geological Survey.

Howard Coppersmith of Great Western Diamond Company introduced us to the Colorado-Wyoming State Line diamond district with his talk, and additional reading materials (below) provided background information. Kimberlite, the distinctive rock in which the diamonds occur, is igneous rock derived from deep within the mantle.

It typically erupts quickly to the surface in "pipes" and brings up samples of various rock types it penetrates. If conditions are right unaltered diamonds will be part of the entrained debris. At the State Line district, the kimberlite pipes are of Devonian age, and they intrude Proterozoic granite and gneiss.

In 1965, M. E. McCallum identified the first kimberlite in the district, and others were found there soon thereafter. In 1975, a geology graduate student "accidentally" found the first publicly identified diamond. The diamond was in a mantle peridotite nodule brought up by the kimberlite. The Kelsey Lake kimberlites were discovered in 1987, and they are the only commercially viable deposits in the district.

Production at the Kelsey Lake Diamond Mine began in 1996. Although small by world standards, it is the only producing diamond mine in the United States.

Symposium participants visited either the Kelsey mine or the nearby Sloan kimberlite as guests of the respective mine owners. The group at the Kelsey mine focused in the processing plant in which the kimberlite is crushed and the diamonds are separated out. The processing is in a water-based slurry so that the waste degrades into an environmentally benign product. The diamonds recovered are primarily white with secondary browns and little boart. The two largest gems to date are 28.2 and 28.3 carats. Larger stones are anticipated on the basis of broken fragments that have been recovered. The smaller diamonds tend to be tetra hexahedrons, whereas the larger stones are octahedrons.

The Sloan kimberlite group began with an introduction to the suite of minerals that are indicators of diamonds. Diamond indicator minerals include ilmenite, pyrope garnet, and chrome diopside of specific compositions. The ilmenite and garnet are durable and get washed down streams away from the kimberlite. Diamond prospectors sample stream sands in search of these minerals and use maps of their concentrations to help locate diamond-bearing kimberlites. Chrome diopside is less durable, and when it is found in the soil, the kimberlite is directly underneath or very close by. These minerals are more dense than most common minerals and rocks, so they can be separated gravitationally. At the Sloan processing plant, remains of a pile of heavy mineral concentrates were scoured for conspicuous emerald-green crystals of chrome diopside, dark metallic ilmenite cleavage fragments, and dark-brown to red pyrope crystals.

After this introduction, the group assiduously collected kimberlite samples with hope of finding diamond-bearing nodules and lesser treasures. Abundant fresh chunks of kimberlite remaining from the economic exploration of the Sloan pipes were scattered around the property and also used as road gravel. Although the concentration of diamonds in the Sloan pipes is too low to be economic, the kimberlite makes particularly good collecting for rocks of this sort. Nodules of mantle rocks and accompanying megacrysts are especially well preserved. Fresh nodules of peridotites containing various combinations of olivine, enstatite, pyrope garnet, and chrome diopside were fairly abundant. Large single crystals of chrome diopside 3 to 4 cm long were found, as were thumb-sized fresh crystals of enstatite. The large single pyrope garnets tended to be dark in color, although some of the smaller ones were bright red. A lucky few found nodules of bright

green pyroxene mixed with red garnets.

Such well-preserved minerals are absent in many kimberlites because these fluid-rich magmas tend to react with the mantle minerals and turn them in to serpentine or chlorite. In fact, many of the gemmy minerals from the Sloan kimberlites had rinds of serpentine or other alterations. In comparison, the nodules from the nearby Kelsey kimberlites were typically complete serpentine pseudomorphs.

As always, there were the "you should have been here when ..." stories. On the Sloan property there is a tunnel into the kimberlite that has been covered and "reclaimed." Reportedly, pristine mantle nodules the size of basket balls are exposed in the tunnel. Alas, none of these are scattered around because diamonds are mostly found in such nodules, and they were sent to the processing plant.

In his talk on the Great Diamond Hoax of 1872, Dan Hausel explained that the faked diamond deposit was actually located near today's Colorado-Wyoming State Line kimberlite belt. The scam was prompted by the discovery of diamonds in South Africa, and three con men succeeded in duping several prominent financiers, former civil war generals, a U. S. senator, two presidential candidates, Tiffany gem appraisers, and a prominent California mining geologist. The perpetrators purchased more than 10 pounds of rough diamonds and 50 pounds of rubies, sapphires, and garnet to use as "salt." Clarence King and his Fortieth Parallel Survey detected geological inconsistencies and blew the whistle on the scam, but not until it was large enough to cause serious financial repercussions nationwide. Salted diamonds have been recovered by recent visitors to the hoax site, and ironically, natural diamond indicator minerals occur in the immediate vicinity. Little did Clarence King (who later became director of the USGS) know that a hundred years later there would be a real diamond mine near the fortieth parallel!

Reference Materials

Coppersmith, H. G. , 2002, Geology and Discovery of the Kelsey Lake Diamond Mine, Colorado in Gemstone Deposits of Colorado and the Rocky Mountain Region Program and Abstracts, p. 17.

Hausel, W. D., and Stahl, S., 2002, The 1872 Diamond Hoax in Gemstone Deposits of Colorado and the Rocky Mountain Region Program and Abstracts, p. 53-54.

McCallum, M. E., 1991, The Sloan 1 and 2 kimberlite complex near the southern boundary of the state line district of the Colorado-Wyoming kimberlite province: Wyoming Geological Association, Forty-Second Field Conference Guidebook, p. 229-250.

Thompson, T. B., ed., 1996, Diamonds to Gold: I. State line kimberlite district, Colorado and II. Cresson Mine, Cripple Creek district, Colorado: Society of Economic Geologists Guidebook Series, v. 26, 84 p.

New Fallbrook Museum

The Fallbrook Gem & Mineral Society will be having an open house at the new museum at 123 W. Alvarado St. right in the middle of town on the 20th of Oct. There will be dealers, sign up to be a tailgater, gold panning, food, world class fluorescent display, closed street in front of the museum, free admission and plenty of parking right across the street. Pete Bancroft and Erv Brown will display their minerals. We have a mineral museum at our first address of 260 Rocky Crest Rd. about 7 or 8 blocks away which will eventually move to the new museum.

CALENDAR OF EVENTS

OCTOBER

5-6 Vista, CA Vista Gem & Mineral Society
Brenge Terrace Community Recreation Center
1200 Vale Terrace
Hours: 10 - 5 both days
Mary Anne Mital (760) 758-4599

11-13 Costa Mesa, CA West Coast Gem and Mineral Show
Holiday Inn, 3131 Bristol St.
Hours; Fri-Sat 10AM to 7PM, Sun 10AM to 5PM
See Ad in this Bulletin (bottom of page)

12-13 Trona, CA Searles Lake Gem and Mineral Society
Gem and Mineral Building, 13337 Main Street
Hours: Sat 8-5 Sun 8-4
Bonnie Fairchild (760) 372-5356
web <http://www1.iwvisp.com/tronagemclub/tronagemclub.html>

19-20 El Cajon, CA El Cajon Gem & Mineral Society
El Cajon Valley Masonic Hall Association, 695 Ballantyne
Hours: 10-5 both days
Mikki Santens (619) 440-3201

19 Canoga Park CA Woodland Hills Rock Chippers
Canoga Park Community Center, 7248 Owensmouth Avenue
Hours: 10-5
Thalia Goldsworthy - WWROCKShow@aol.com

19-20 Whittier CA Whittier Gem & Mineral Society
Rocks In Our Back Yard - The 53rd show
7630 Washington Ave. (Corner of Mar Vista and Washington Ave.)
Hours: 10-5 both days
Jay Valle (626) 934-9764

20 Fallbrook, CA Fallbrook Gem & Mineral Society
Fall Festival of Gems
Fallbrook Mineral Museum, 123 W. Alvarado Street
Hours: 10-4
Karen Dawes & Mary Fong/Walker
(760) 728-1130
E-mail: fgms@att.net

26-27 Fallbrook, CA Southern California Chapter of Friends of Mineralogy; October meeting, and Field trip to Cryo Genie mine. Fallbrook Mineral Museum, 123 W. Alvarado Street Contact; Bob Reynolds bob.reynolds@lsa-assoc.com



World famous natural history gallery!!

- Mineral & gold specimens
- Rare & Exotic Fossils
- Jewelry (fine & funky)
- Unusual Seashells & Corals
- Unique one of a kind gifts
- Books (new and rare)
- Display stands

KRISTALLE, est. 1971
Wayne and Dona Leicht
875 North Pacific Coast Highway
Laguna Beach, California 92651-1415
(949) 494-7695; FAX (949) 494-0402
e-mail: leicht@kristalle.com - <http://www.kristalle.com>
Visit our booth at most major mineral shows!

Tuesday-Saturday: 10-5; Sunday: 12-5 or by appointment-FREE PARKING!!

WEST COAST - FALL GEM & MINERAL SHOW

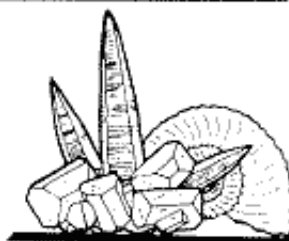
Holiday Inn • Bristol Plaza • 3131 S. Bristol St.

COSTA MESA, CA

OCT. 11 - 12 - 13, 2002

Show Hours: Friday & Saturday - 10 AM to 7 PM
Sunday - 10 AM to 5 PM

- Minerals • Fossils • Gemstones •
- Jewelry • Meteorites • Beads •
- **FREE ADMISSION** •
- **WHOLESALE & RETAIL** •
- *80 Great Dealers From All Over The World* •



2002 DEALERS ARE:

Antero Minerals & Jewelry
Atard & Petrov
Avant Oasis
Barlow's
Bolsa Group, Inc.
Burton's Gems & Opals, Inc.
Card Minerals
Chinese Minerals & Fossils
Clam Shell, The
Cristalina Brazil
Douglass Minerals
Eli's Gems Plus
Farr's Gems & Minerals
Footbills Boxes
Freedom Valley Gems
Gemini Minerals
Geoprite Minerals
Gil De Moura Brazilian Gems
Global Treasures
Gocherour's Minerals
Graeber & Hines
Holguin Mexican Minerals
Ishaq & Brothers
Jewel Tunnel Imports
King Mike Mining Co.
Kristalle
Laser Diamond Products
Lehigh Minerals
M.K. Gems & Minerals
McCullough Fossils

Midwest Minerals
Minec
Miner's Lunchbox
Mineral Decor - India
Mineral of The Month Club
Mineral Search
Minerun Enterprises
Olson, Donald K., & Associates
Paleo-Facts
Pehnee, Theodore, Imports
Rock Monster
Rocks of Ages
Samstone, Inc.
Schewalter, Todd, Fossils Plus
Seibel Minerals
Skoublov, Gene - Russia
Southern California Gem Industries
Southwest Meteorite Lab.
Stone Flower Co. - Russia
Strong Rock, The
Su's Creations
Sunnywood Collection, The
Superb Minerals (India) Pvt., Ltd.
Taj Company
Tian Tao Art Center
Top-Gem Minerals
UK Mining Ventures
Usman Imports
Vasconcelos - Brazil
Vista Gems

Wendy's Minerals
Wolfe, Tom, Minerals
Yakbont - Russia
Yosemite Rocks & Gifts
Zeolites India

So Easy to Find . . .

Less than a mile from John Wayne Airport!
Take the Bristol Street exit (south) from I-405
South on Bristol from the South Coast Plaza Shopping Center



Martin Zinn Expositions, L.L.C., PO Box 999 • Evergreen, CO 80437-0999 • Fax (303) 674-2584
E-mail: mze995@ix.netcom • website: <http://mzexpas.com>