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April 2007

The 830th Meeting of The Mineralogical Society of Southern California

Argentina Borate Tour

by

Joe Siefke

Friday, April 13, 2007, at 7:30 p.m.

Geology Department, E-Building, Room 220

Pasadena City College

1570 E. Colorado Blvd., Pasadena

Featuring:

- Goodsprings District Mining**
 - Upcoming field trip to San Andrea Fault**
 - Pictures of Iceland**
 - Satin Sheen Opal**
-

April Meeting: An Argentina Borate Tour

Joe Siefke will be the featured speaker for the April, 13, 2007, meeting. Joe has recently dazzled MSSC members with inyoite from Argentina, and he has promised us “An Argentina Borate Tour.” The altiplano region of the Andes of South America, particularly that portion in northwestern Argentina, has been an important source of borates for more than a century. Calcium borate deposits are widespread in a zone stretching N-S for more than 1000 km. Some spring-fed salars currently host ulexite deposition. Ulexite, colemanite, and hydroboracite are common ore minerals. A notable exception is the Pliocene Tincalayu borax deposit at the salar del Hombre Muerto. The remote mining is done at near 4000 m. above sea level. Borax South America, a unit of Rio Tinto Minerals, mines borax at Tincalayu and calcium borates from the vicinity of Sijes. The minerals are processed in a plant at Campo Quijano, at the east toe of the Andes, southwest of Salta.

Sparse vegetation and problem soils pose special challenges in efforts to perform mine reclamation in the region. Joe visited several mine sites in 2003 & 2004 to examine perennial plants and soils for the purpose of crafting reclamation solutions. His presentation will include views of the charming city of Salta, travel to the borate mining region, mine sites, wildlife, and an inyoite collecting experience at Monte Azul.

Joe was introduced to (hooked on?) minerals and collecting by joining the Dana Club at PCC in 1963. With inspiration from Harry Lawrence he chose geology as a career path. Short exploration hitches in Nevada, the Yukon Territory, and Sonora, Mexico fueled his mineral and mining interests. He is a 1967 graduate of CSULA. In 1970 he began what became a 37 year adventure as mine geologist, etc., with U. S. Borax. Joe & Sandy make their home at Apple Valley.

Minutes of the February 23, 2007, Meeting

The 828th meeting of the Mineralogical Society of Southern California was held on Friday, February 23, 2007, at Pasadena City College. Vice President Janet Gordon brought the meeting to order at 7:30 p.m.



She then introduced the speakers of the evening, Dr. Mary L. Johnson and Mark Parisi, who gave a presentation entitled: “Adventures in Iceland and Greenland.” Dr. Johnson, a former President of the MSSC and Manager of Research and Development at the GIA, is now the owner of a natural history consulting firm. Mr. Parisi, who graduated from Caltech in Electronic Engineering, is the Senior Director of Technology at Qualcomm in San Diego.

Dr. Johnson described the history, geology, climate, customs and populations of Iceland and Greenland, incorporating many slides into her discussion. Of particular interest is the fact that Iceland is a country of “young rocks” (ten thousand years old). Many of the rocks are columnar basalt and rhyolite.

Dr. Johnson revealed that Greenland is even less densely populated than Iceland (approximately 55,000 people compared to Iceland’s 300,000). She also described and showed photographs of unusual formations resulting from volcanic activity affected by thick ice sheet covers.

The many photographs illustrated the rather harsh conditions under which the respective populations live (although many can tap into their own hydrothermal sources), and attempts to brighten homes and buildings with brilliant and varied paint colors.

The difficulty in traveling around the islands, and the inventive land and water vehicles utilized to do so, were additionally described.



Janet Gordon announced that the speaker for the March meeting would be Laura Baker, who will give a talk on colored quartz, and that a presentation on borite minerals will be given in April. She also announced that she would lead a field trip to the Palmdale-Wrightwood segment of the San Andreas Fault on the Saturday in May following the May MSSC meeting. Dr. Gordon further related that the Fallbrook Club desired that the annual MSSC picnic be held in Fallbrook, with that club’s members attending. MSSC meeting attendees were receptive to the proposal. Walt Margerum stated that the Micromount Symposium and the

related field trip were very successful.

During the meeting, Fred Elsnau was elected to the MSSC Board of Directors.

At show and tell, Fred Elsnau displayed an unidentified mineral that exhibited unique fluorescent effects under different lighting conditions. Ed Imlay brought a specimen of a newly named mineral “hubite.” Geoff Caplette exhibited a specimen of petrified palm containing chalcedony, quartz crystals and opal.

The door prize was won by Geoff Caplette.

The meeting was brought to a close at 9:00 p.m. by Janet Gordon.

--Respectfully submitted by Pat and Geoff Caplette

Minutes of the March 9, 2007, Meeting

The 829th meeting of the Mineralogical Society of Southern California was held on Friday, March 9, 2007, at Pasadena City College. President Ilia Lyles brought the meeting to order at 7:30 p.m.

Vice President Janet Gordon then introduced the speaker of the evening, Laura Baker, who gave a presentation entitled: "Colors of Quartz, a New Greenish Variety." Ms. Baker, who is currently a graduate student in the Division of Geological and Planetary Sciences at Caltech, has a Bachelor of Science degree in geology and a master's degree in geochemistry. She is currently developing a computational model that will provide for a better understanding of geophysical and geochemical observables, and studying rare green quartz found at an amethyst mine in Ontario, Canada.

Ms. Baker first described a greenish variety of quartz found in an amethyst deposit at Thunder Bay, Ontario, Canada. There was much interest in discovering the reasons for such coloration. Generally, amethyst turns green when it is exposed to temperatures in the 300 C to 600 C range. However, an investigation at the site did not provide any evidence for basalt flows or heating above 150 C.

Samples were taken to the laboratory by Ms. Baker and her colleagues for experimentation and optical spectroscopy studies. She stated that such procedures revealed trace metals, iron and aluminum (which can absorb different wavelengths of light). Also present at Thunder Bay was a source of ionizing radiation (granite) which also affects coloration. Finally, Ms. Baker noted that water was found in the samples as fluid inclusions. Color has been consistently correlated with the speciation of hydrous components.

At show and tell, Richard Horstmeyer displayed a sample of green quartz (most likely heat-treated) and Shou-Lin Lee brought red quartz from Mozambique.

It was announced that Jim and Laura Lloyd would like to trade minerals with other MSSC members, and would appreciate assistance in identifying certain specimens in their collection.

The door prize was again won by Geoff Caplette.

The meeting was brought to a close at 8:30 p.m. by Ilia Lyles.

--Respectfully submitted by Pat and Geoff Caplette

April 15 MSSC Board Meeting

The MSSC Board will meet at 2:00 p.m. on Sunday, April 15, 2007, at the home of Janet and Paul Gordon. All members are welcome to attend, and board members need to be there to plan future Society events. Please contact Janet if you need instructions for finding their home.

San Andreas Fault Field Trip

Come join MSSC and Fallbrook Gem and Mineral Society members on a day of exploring the San Andreas fault from Palmdale to Wrightwood. Beginning with the famous Avenue S and Highway 14 road cut, we will explore how the fault controls the southern California landscape. Examine how it disrupts the normal flow of surface and ground water and creates springs, off-set streams, sag ponds, and other lakes. Examine evidence of the great 1857 earthquake and learn how the prehistoric average recurrence interval for large quakes in this area has been determined to be about 160 years. Visit the scenic Devil's Punchbowl for a view of the complexities of the plate boundary. See first hand how living on the fault impacts the city of Wrightwood. Collect large specimens of actinolite and sparkly hexagonal graphite micros as souvenirs of the day's outing.

The trip will be led by Dr. Janet Gordon, Professor Emeritus of Geology, Pasadena City College. Over the years she has introduced hundreds of students to the San Andreas fault and its role as a plate boundary.

Reservations are required by May 5!

It is important to keep the number of vehicles on this trip to a minimum, so reservations and car-pooling are essential. It is expected that all who wish to attend can be accommodated, but the trip may fill. To make reservations please contact Janet Gordon with the following information: 1. Names of all persons in your party. 2. Who you plan to car-pool with or if you can carry additional passengers. 3. Contact phone numbers and e-mail address. Janet can be reached at 626-441-6715 or at jggordon@pacbell.net.

When: Saturday, May 12, 2007. Meet between 8:00 and 8:45 in the Pasadena City College Geology Dept., Building E, room 210 to fill out release forms, pick up field guides (including driving instructions), and organize car pools. The mineral museum will be open during this time. The trip will depart from PCC promptly at 9:00 and head for Palmdale. The trip will end in Wrightwood about 5:00 p.m.

Driving instructions to and marked campus maps for PCC are on the MSSC web page: www.mineralsocal.org. Click on the "meetings" link.

Logistics: Be prepared for hot to cool weather. Bring a picnic lunch, plenty of water, hat, sunscreen plus a rock hammer, safety glasses, and hand lens. Please have enough fuel in all vehicles to make it to Wrightwood. MSSC will have a supply of \$5 Forest Service Adventure Passes for purchase and use as needed. Expect to walk a few hundred yards now and then for the best view of the geology.

Mark your Calendar

MSSC are invited to annual picnic by Fallbrook Gem & Mineral Society.

The picnic to be held on Saturday, August 18, 10:00 AM, potluck at 12:30 followed by tailgate style sale. More information will be announced in the future issue.

The Goodsprings District

Part III Mines

by Walt Margerum

History of Mining

The first mine in the district was the Potosi discovered by the Mormons in 1856. A small amount of lead was shipped to Salt Lake City, but it contained too much zinc, and the effort was abandoned. In 1882 the Yellow Pine district was formed. The major mines were the Yellow Pine, Keystone, Boss, and Doubleup. By 1892 the U.S. (part of the Alice group), Empire, Golden Chariot, My, Commercial, South Side and Hoosier were added to the list. From 1893 to 1898 most interest was in gold, mainly from the Keystone, Boss, and Clementina. The Anchor, Sultan, Hilo, Ninety-Nine, Azurite, Bullion, Bill Nye, Bybee, Prairie Flower, Accident, and Red Cloud were also active during this period. The completion of the railroad from Los Angeles to Salt Lake City in 1905 reduced freight costs spurred production, and the narrow gauge line from Jean to Goodsprings completed in 1905 further reduced freight costs. The finding of platinum at the Boss in 1914 resulted in a burst of interest, until the values proved to be small. The town of Platina appeared near the Boss Mine, and disappeared almost as fast as it appeared. As could be expected WWI caused an increase in production, which as expected subsided after the war. There was a small boom during the 1924 to 1928 period driven by the roaring twenties economy, followed by a bust due to the depression. WWII again caused an increase in production, which was sustained by the post war Strategic Stockpile Program. When this was terminated in 1957 the district went idle, and remains so today. The production figures for the district from 1857 through 1962 are: gold 90,508 oz.; silver 2,102,325 oz; Copper 4,926,377 lb.; lead 94,125,809 lb.; zinc 217,846,867 lb.; Platinum 506 oz; palladium 762 oz; cobalt 11,055 lb.; Vanadium 8,248 lb. The value of all the ores is listed at \$31,660,221.

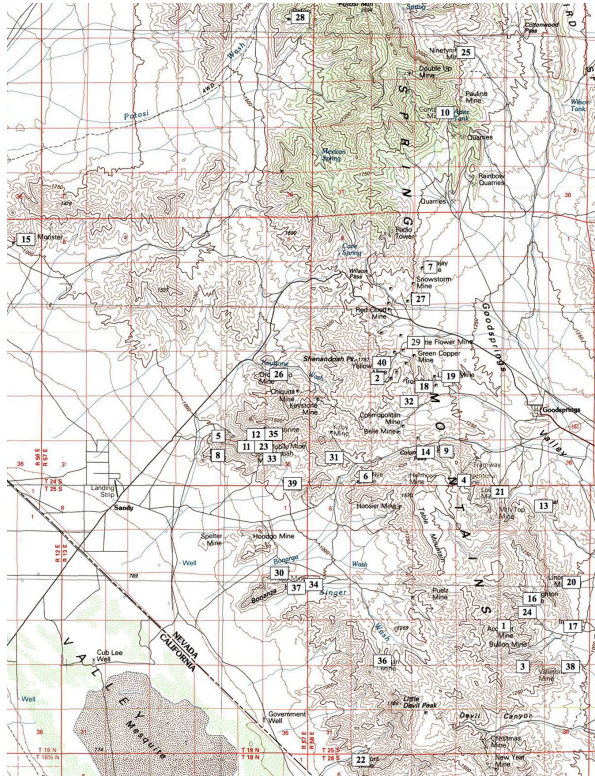
Table II Mines of Interest

1	Accident	14	Fredrickson	27	Pilgrim
2	Alice	15	Green Monster	28	Potosi
3	Anchor	16	Houghton	29	Prairie Flower

4	Argentina	17	Ireland	30	Root
5	Azurite	18	Iron Gold	31	Rose
6	Bill Nye	19	Lavina	32	Ruth
7	Bluejay	20	Lincoln	33	Shenandoah
8	Boss	21	Lookout	34	Singer
9	Columbia	22	Milford	35	Smithsonite
10	Contact	23	Mobile	36	Sultan
11	Copper Chief	24	Monte Cristo	37	Tiffin
12	Copperside	25	Ninety-Nine	38	Valentine
13	Crystal Pass	26	Oro Amigo	39	Whale
				40	Yellow Pine

The Mines

While there is no master plan for visiting the mines, we are trying to visit those of mineralogical interest first. While doing this other mines in the vicinity are surveyed. I doubt if we will ever visit them all, as there are more than 104 mines and prospects in the district. Table II provides a list of the major mines from both a production basis and collectors interest. The mines listed in bold have been visited on our trips. The numbers in the Table correspond to the numbers on the map, Figure 2.



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Figure 2 Mine Locations

References

- Hewett, D. F. (1931) "Geology and Ore Deposits of the Goodsprings Quadrangle, Nevada"; United States Geological Survey Professional Paper 162, pp. 172
- Knopf, Adolph (1915) "A Gold-Platinum-Palladium Lode in Southern Nevada"; United States Geological Survey Bulletin 620-A, pp. 18
- Longwell, C. R. et al (1965) "Geology and Mineral Deposits of Clark County, Nevada"; Nevada Bureau of Mines Bulletin 62, pp. 218
- Margerum, Walter (2006) "Mines and Minerals of the Southwest"; digital database

Show and Tell:

Subject: Satin Sheen Opal from Utah



By Shou-Lin Lee

The iridescent bubbly inclusion in this stone caught my eyes when I was at Palomar show early this month. After the vendor told me that it is a satin sheen opal from Utha, I just have to have it. First of all, I don't have opal from Utah, and this is really different. What can I say, I am a hopeless opalcoholic. From the side, one can observe that the top layers are clear with white crisscross, and the bottom is beige color. The layer which gives the bubbly appearance is very thin and resembles the film of soap bubbles. On close up,

one can see that unlike soap bubble the bubble layer consists of many tiny angular shapes which reflect rainbow colors.

As I proudly showing off my new find to Fred Elsnau, Fred told me that he knew this as bubble opal or bacon opal because the rough resemble a piece of bacon especially those which had layers of red. According to Fred, he got his at southern Utah near Zion National Park.

Anyone who has the rough of this opal please sent me a picture of the rough.

About Show and Tell

Part of the fun of collecting is being able to show and tell. In this new section called **Show and Tell**, I hope to generate some dialogue among all members, especially those who are unable to attend the monthly meetings.

Any member who is interested in showing the world his or her collection, new find, geological formation should e-mail me one or more photos (yes, I need photos!) and a brief description or narrative about the photo(s). Please limit the subject matter to geology, mineralogy and related subject matters.

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Correction to March issue: Page 12 line 9 Sidstrom Award should be Lisdstrom Award. My apology.

2007 Calendar of Events

March 31 - April 1 Torrance, South Bay Lapidary Mineral Society Ken Miller Recreation Center 3341 Torrance Blvd. Hours: Sat. 10 - 5; Sun. 10 - 4 Leslie Neff: (310) 318-2170 Website: www.palosverdes.com/sblap

April 14 - 15, Mariposa, Mariposa Gem & Mineral Club Mariposa County Fairgrounds Hours: 10 - 5 both days Peggy Ronning (209) 742-7625 Email: mineralmuseum@sti.net

April 14 - 15, San Jose, Santa Clara Valley Gem & Mineral Society Santa Clara County Fairgrounds 334 Tully Road Hours: 10 - 5 both days Marc Mullaney (408) 691-1584 Email: geologistm@aol.com Website: www.scvgms.org

April 21, Carlsbad, Fifth Annual Sinkankas Symposium on Jade, by San Diego Mineral & Gem Society and Gemological Institute of America. Pre-registration required. \$60 for early bird, \$75 after April 1. Limited to 125. Registration form is not required with the check but due to popular demand, contact Anne Schafer at (858) 586-1637 or for available seat first.

April 28 - 29, Santa Cruz, Santa Cruz Mineral & Gem Society Civic Auditorium at Corner of Center & Church Streets Hours: 10 - 5 both days

