

Bulletin of the Mineralogical Society of Southern California

Volume 80 Number 10

October 2009

The 858th Meeting of The Mineralogical Society of Southern California

Gem Deposits in Tanzania and Kenya

By

Brendan Laurs

Friday, October 9, 2009 at 7:30 p.m.

Geology Department, E-Building, Room 220

Pasadena City College

1570 E. Colorado Blvd., Pasadena

Featuring:

- A wedding and a field trip, you are invited**
 - Plumbophyllite: a new mineral from San Bernardino County**
 - Mineral Locality Symposium**
 - Update on red labradorite/andesine**
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Minutes of the September 11, 2009 Meeting

The 857th meeting of The Mineralogical Society of Southern California was held on Friday, September 11, 2009, at Pasadena City College, Pasadena, CA. President Geoffrey Caplette brought the meeting to order at 7:40 p.m.

Vice President Bruce Carter then introduced the speaker of the evening, Dr. Janet Gordon, who gave a presentation entitled: "A Tour of Morocco Spiced with Minerals and Geology." Dr. Gordon, who taught physical geology, mineralogy, petrology and related subjects for 16 years at Pasadena City College, has a BA from Occidental College, a MS from California State University, and a

PhD from the University of Southern California. She has traveled extensively, and has generously shared her experiences and knowledge with MSSC members over the years.

Dr. Gordon stated that Morocco has approximately the same population size and area as California. During her recent two-week trip, she visited a number of cities, including Fez, Marrakech, Casablanca, Rabat and Meknes, as well as desert areas. Thanks to numerous, excellent pictures taken by Paul Gordon, members could view the country's distinctive architecture, tetragonal minarets, intricate mosaic work and outstanding tile and pottery craftwork. Visits to shops where "fossils meet art" were also described.

Dr. Gordon discussed the geologic history of Morocco, and described the conditions at Bou Azzer, where cobalt minerals are found. Morocco is also known for erythrite, vanadinite, azurite and anglesite, among other minerals. She related that Morocco's mineral industry accounts for approximately 35% of Morocco's foreign trade, with phosphates for fertilizer being the principal mineral product.

Various aspects of life in Morocco, including dress mores, the status of women, and contrasts between the lifestyles of the generations, were also covered.

Vice President Carter requested that members submit speaker suggestions to him via email. Ahni Armstrong stated that any members who were interested in attending dinners, prior to the monthly meetings, should provide her with their respective email addresses.

President Caplette brought the meeting to a close at 8:50 p.m.

Respectfully submitted, Pat Caplette, Secretary

Pacific Micromount Conference

By Robert Housley

Since we no longer have the "Pasadena Show," the Pacific Micromount Conference (PMC) has become the big MSSC event of the year, and it is time for everyone to start making plans to attend the 45th annual PMC, January 29 and 30, 2010 at the San Bernardino County Museum in Redlands. We begin with a pot luck dinner on Friday evening followed by a talk on "What's New in Mineral" by member Sugar White.

On Saturday we have the main program including talks by Paul Adams on "The Minerals of La Paz County Arizona" and by Joe Marty on "New Mineral Finds in the Southwest." In the afternoon we will also have both silent and verbal auctions, as well as a well stocked club sales table and a bountiful give away table. In the evening we will have a catered dinner followed by contributed talks. Even if you are not yet interested in microminerals this is a great opportunity to talk minerals with knowledgeable people in a pleasant atmosphere. Generally people come from all around the county. It is one place you can still have a great time for a very modest cost.

Registration forms will be in the December Bulletin. If you will be unable to come, but would like to make a contribution to the auctions you can give your material to Bob Housley.

Plumbophyllite,

**a new species
from the Blue
Bell claims near
Baker, San
Bernardino
County,
California**

*Members of our society
recently published an article in
American Mineralogist about a
newly described mineral from
San Bernardino County
entitled:*

by
 Anthony R. Kampf, George R. Rossman,
 and
 Robert M. Housley



Sprays of pale-colored plumbophyllite crystals and a diagram of the crystal morphology

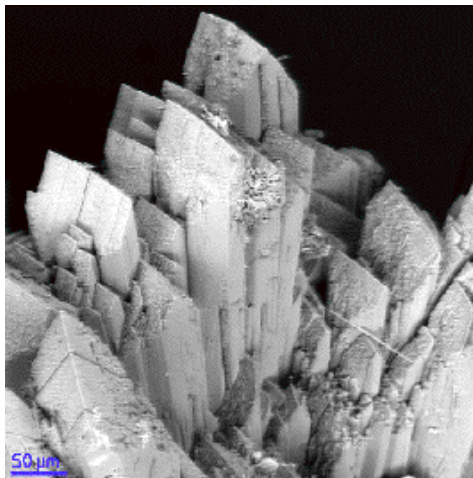
The new mineral has been named plumbophyllite, in recognition of both its chemistry (a lead mineral), $Pb_2Si_4O_{10} \cdot H_2O$, and its structure (a layer silicate). The orthorhombic mineral occurs as colorless to pale blue prismatic crystals to 3 mm with wedge-shaped terminations at the Blue Bell claims, about 11 km west of Baker, San Bernardino County, California.

It is found in narrow veins in a highly siliceous hornfels in association with cerussite, chrysocolla, fluorite, goethite, gypsum, mimetite, opal, plumbotsumite, quartz, sepiolite and wulfenite. The mineral has a white streak and vitreous luster. The Mohs hardness is about 5 and there is one perfect cleavage on $\{100\}$. The measured density is 3.96 g/cm³ which compares favorably the density calculated from the chemical formula and unit cell parameters (3.94 g/cm³).



Some crystals of plumbophyllite are blue because of copper substitution.

The chemical composition was determined by electron microprobe analysis that showed that the species contained PbO 60.25, CuO 0.23, SiO₂ 36.22 wt.% and by C-H-N analysis that provided H₂O 3.29 wt.% for an excellent total of 99.99 wt.%. Powder IR spectroscopy confirmed the presence of molecules of water. Raman spectra were also obtained which allow future identifications on grains as small as 1 or 2 micrometers in width.

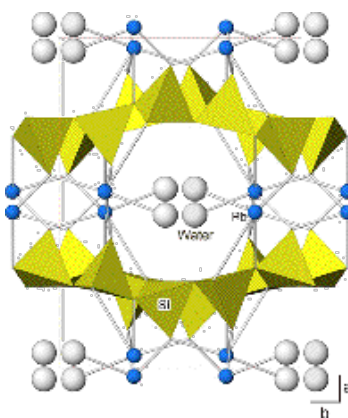


SEM image of a cluster of plumbophyllite crystals

The optical properties were measured using yellow (589 nm) light. It is biaxial (+) with refractive indices $\alpha = 1.674$, $\beta = 1.684$, and $\gamma = 1.708$. $2V$ is $66^\circ q$ and there is strong red > violet dispersion.

The strongest powder X-ray diffraction lines are $[d]$: 7.88, 6.63, 4.90, 3.623, 3.166, 2.938, 2.555, and 2.243. The full X-ray data showed that the mineral has space group $Pbcn$ and that the unit-cell parameters are $a = 13.208$, $b = 9.783$, $c = 8.654$ Å. The relationship between the unit cell axes and the optical orientation is $X = b$, $Y = c$, $Z = a$.

The atomic structure was also determined. It consists of undulating sheets of silicate tetrahedra between which are located Pb atoms and channels containing H₂O (and lone-pairs of electrons from the Pb²⁺). The silicate sheets can be described as consisting of zigzag pyroxene-like (SiO₃)_n chains joined laterally into sheets with the unshared tetrahedral apices in successive chains pointed alternately up and down, a configuration also found in pentagonite.



The atomic structure of plumbophyllite looking down the c-axis. Oxygen atoms occur at each vertex of the yellow silicon tetrahedra.

Full details of the structure and spectroscopy of plumbophyllite can be found in Kampf et al. (2009), *American Mineralogist*, vol. 94, pages 1198-1204.

A Wedding and a Field Trip

You are Invited

When: November 7, 2009 10:00 a.m.

Where: wedding at Afton Canyon Group Campground and mineral collection at Cady Mountains.

Dress code: suitable for field collecting.

California Federation of Mineralogical Society (CFMS) Field Trip South co-chair, Adam Dean invites you to his wedding with Teresa Felix on November 7, 2009 10:00 a.m. at Afton Canyon Group Campground. After the wedding there will be a potluck luncheon. All participants should bring food of some kind. No gifts; however, there will be a money tree at the wedding.

The field trip will start at Noon, led by the newly wed, Mr. and Mrs. Dean and Field Trip co-chair, Shep Koss to “a favorite location, a little-known area with many kinds of rocks in float (agates, jaspers, and even a wonderful plume agate).

Directions to Afton Canyon campground

From the north (Las Vegas): South on I-15. Exit on Afton Canyon. Road.; turn left. Cross over the freeway overpass. Follow the dirt road 2.5 miles to the top of a rise. The group campground is about 0.5 mile from the regular campground.

From the south (Barstow): North on I-15. Exit on Afton Canyon. Road.; turn right. Follow the dirt road 2.5 miles to the top of a rise. The group campground is about 0.5 mile from the regular campground.

GPS: enter your destination as Dunn, California.

From the freeway to the campground there is a good dirt road, with no need for four-wheeled drive, but four wheeled drive will be necessary to the collecting site. If you lack four wheeled drive, come to the campground and join a collecting carpool!

Questions: call Adam Dean, CFMS Field Trip Southern co-chair at (909) 489-4899 or email at theagatehunter@verizon.net

Mineral Locality Symposium

Minerals from the Mantle with

Saturday Field Trip

Sponsored by: Friends of Mineralogy (Southern California Chapter) & Copper Mountain Community College (CMC)

When: Symposium on Saturday October 24, and field trip to Dish Hill on Sunday October 25, 2009

Where: Copper Mountain Community College, 6162 Rotary Way, Joshua Tree, CA 92252

Fee: Donation: \$5.00 for lectures & field trip on Saturday Donation, \$5.00, Sunday Field Trip

Topics: “The Stratiform Copper Deposits and Mineralogy of the Katanga Province, Democratic Republic of the Congo,” “Minerals from the Mantle: Mojave outcrops offer data about mantle composition,” “Minerals from the Mantle: Ruby Mountain,” and “Minerals from the Mantle: Dish Hill.”

Field trip location: Dish Hill. This is a location for earth mantle rocks brought up in the lava, and can yield nice augite crystals.

How to get to CMC: Take Interstate 10 Past Whitewater to Highway 62, then northeast approximately 35 miles on Hwy 62 to the Town of Joshua Tree. East of Joshua Tree on Highway 62 is Sunfair Road. Continue two miles to Rotary Way, Turn North (Left). Turn left at 6162 Rotary Way, which intersects with the Highway 62 and is about seven minutes east of the town of Joshua Tree. Follow the signs to: Room CMC 5, Phase 1 (*upper level*)

Questions: CMC Tel: 760.366.3791 x0266 for Bruce Bridenbecker or Cell contact if lost: 714.293.0156 for Jennifer Rohl.

Update on Red Labradorite/Andesine

By Shou-Lin Lee

In the March 2009 MSSC monthly program entitled "Oregon Sunstone and the Great Chinese Red Andesine Controversy," Dr. George Rossman presented his research findings on sunstones/labradorite from various localities. According to Dr. Rossman, the chemical composition of the so-called Chinese labradorite is different from that of Oregon or Mexico. However, the so called red andesine from China he studied was heat treated. Meanwhile, a report in the Winter 2008 issue of Gem and Gemology by Dr. Ahmadjan Abduriyim of the Gemmological Association of All Japan laboratory reported that the Tibetan locality does produce natural red andesine. Some of these red andesines were given to Dr. Rossman for analysis. According to Dr. Rossman, based on $40\text{Ar}/36\text{Ar}$ ratios and other geochemical analyses these so called natural red andesines were identical to the Cu-diffused material from Mongolia. This finding raises the question of the authenticity of the Tibetan mine.

Recently, the Gemological Institute of America (GIA) held a special seminar on August 21 to review the most recent research results, share views and discuss future research directions. The presentations included: A Mine Trip to Tibet and Inner Mongolia: Gemological Study of Andesine Feldspar by Dr. Ahmadjan Abduriyim of the Gemmological Association of All Japan (GAJ) Laboratory, Tokyo, Japan, The Red Feldspar Project: Interim Report by Dr. George Rossman of California Institute of Technology, Pasadena, California, Copper Diffusion in Plagioclase by Dr. John Emmett and Troy Douthit, of Crystal Chemistry, Brush Prairie, Washington, Observations on Identification of Treated Feldspar by Shane McClure, of GIA Laboratory, Carlsbad, California, and Observation on Effects of Heating and Copper Diffusion in Feldspar by Dr. Kamolwan Thirangoon, of GIA Laboratory, Bangkok. All the reports can be access through GIA website: <http://www.gia.edu/research-resources/news-from-research>

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2009 Calendar of Events

October 3-4 2009, Fallbrook, Fallbrook Gem & Mineral Society Fallbrook Gem & Mineral Museum 123 W. Alvarado Street
Hours: 10 - 4 both days

October 3-4 2009, Oroville, Feather river Lapidary & Mineral Club Oroville Municipal Auditorium 1200 Myers St. Hours: 10 - 5 both days

October 10-11 2009, Grass Valley, Nevada County Gem & Mineral Society "Earth's Treasurers" Nevada County Fairgrounds 11228 McCourtney Road Hours: 10-5 both days

October 10-11 2009, Trona, Searles Lake Gem & Mineral Society Searles Gem & Mineral Show Building 13337 Mian Street
Hours: Sat. 7:30-5; Sun. 7:30-4

October 17 2009, Woodland Hills, Woodland Hills Rockchippers First United Methodist Church 22700 Shemman Way, West Hills
Hours: Sat. 10-5

October 17-18 2009, Anderson, CA Shasta Gem & Mineral Society Shasta District Fairgrounds Near Redding off hwy 273 Hours: Sat. 10-5, Sun. 10-4

October 17-18 2009, Lakeside, El Cajon Valley Gem & Mineral Society Lakeside Rodeo Grounds 12684 Mapleview Ave. Hours: 10-5 daily

October 17-18 2009, Placerville, El Dorado County Mineral & Gem Society El Dorado County Fairgrounds 100 Placerville Drive Hours: 10-5 daily

October 17-18 2009, Santa Rosa, Santa Rosa Gem & Mineral Society Santa Rosa Veterans Building 1351 Maple Ave. (Opposite Fairgrounds) Hours: Sat. 10-6; Sun. 10-5

October 17-18 2009, Whittier, Whittier Gem & Mineral Society Whittier Community Center 7630 Washington Avenue Hours: Sat. 10-5 both days

October 24-25 2009, Los Altos, Peninsula Gem & Mineral Society Los Altos Civic Center Youth Center One San Antonio Road Hours: 10-5 daily

MSSC Advertisement Policy

Mineral-related ads have always been acceptable in the bulletin. The following is the price per month:

Business card size	\$5	1/3 page	\$10
1/2 page	\$20	Full page	\$35

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 email to the editor at shoulin.lee@yahoo.com and the payment should be sent to the MSSC Treasurer at 14728 Nanry St., Whittier, CA 90604-1850. The Bulletin editor reserves the right to decline requests for space if material submitted is judged to be inappropriate.