Bulletin of the Mineralogical Society of Southern California

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The 795th Meeting of The Mineralogical Society of Southern California

Special Meeting at the Natural History Museum

Wednesday evening, May 5, featuring:

"A Passion for Minerals: Defining Moments in the Life of a Mineral Fanatic"

by Bill Larson

RSVP is requested. Details inside!

Inside this bulletin:

May Meeting: A Passion for Minerals!

MSSC members will enjoy a mineral enthusiast's night on Wednesday, May 5, at the Natural History Museum of Los Angeles County. We will join members of the Gem and Mineral Council for their annual meeting beginning 7:00 p.m. with beverages and desserts in the Museum Foyer and an open house in the Hall of Gems and Minerals. This will be followed at 8:00 p.m. by a meeting in the African

Mammal Hall which will feature a talk by Bill Larson titled: *A Passion for Minerals -- Defining Moments in the Life of a Mineral Fanatic.*

Please RSVP by May 3 to Jean Brandt by phone (213) 763-3326 or email -- jbrandt@nhm.org if you are planning to attend so that there will be ample refreshments for all.

Directions: The Natural History Museum is at 900 Exposition Boulevard, Los Angeles. Enter the west parking lot from Menlo Avenue and proceed to the Main Entrance (north side) of the museum

Bill Larson is the ultimate mineral enthusiast. Listening to him tell a collecting tale is the mineralogical equivalent of a religious experience. Bill has agreed to give us an inside look into the heart and soul of a mineral fanatic. He'll tell us about his early days in collecting, about some of the people who helped shape his collection obsession (John Sinkankas, Peter Bancroft, Paul Desautels, Dave Wilber, Josie Scripps, and others), and about his most exciting experiences (discovery of the Blue Cap pocket, developing the Himalaya miner, mining boleite at Boleo, surviving the Urals, and traipsing around Burma).

April Meeting Reminder

Don't forget the special Friday, April 30, 2004 meeting at 7:30 with "Tourmaline -- News from the Tourmaline Group" by Andreas Ertl at Pasadena City College, E-building, room 220.

The Darwin Tungsten Area
Part II: Mines and Mineralogy

by Walt Margerum

Over the years I have been to most of the mines in the Darwin tungsten area and have collected many of the minerals listed in the literature. The primary sources for the mineral listings are Hall and McKevett (1958 and 1962), Murdoch and Webb (1966), and Stolburg (1984). In addition I have collected and identified, with the able assistance of Bob Housley, several minerals not previously described from some of the mines. The minerals I have collected are <u>underlined</u> or in **bold** if they were not previously reported.

Alameda

The Alameda (UTM NAD27 11 S 4013942 N 448153 E) was originally a copper prospect in the early 1900's. During WWII it was prospected for scheelite. The main shaft is 103 feet deep with a 25 foot stope at the bottom. Production was small. The chrysocolla is mostly stains in cracks, and the scheelite is small blebs in the gangue.

Alameda Mineralogy	
Chrysocolla	Scheelite

Chipmunk

The Chipmunk or Chipmonk (UTM NAD27 11 S 4013293 N 448549 E) is located near the Durham at the bottom of a canyon. The workings consist of a 115 long adit and several open cuts. The only mineral listed is sparse scheelite. I have not visited this claim, and list it only because it is in the area.

Custer

The Custer (UTM NAD27 11 S 4014194 N 448481 E), the only mine operated primarily for lead-silver, is developed by an inclined shaft of 400 feet with three drifts and a winze at the 400-foot level. An adit has been driven from the canyon toward the shaft. All the minerals collected came from the extensive dump.

Custer Mineralogy		
Andradite	Aurichalcite	Calcite
Cerussite	Fluorite	Galena
Hematite	Goethite	Jarosite
Malachite	Pyrite	Scheelite
Siderite	Tetradymite(?)	**Titanite**
Tremolite		

Galena can be found scattered about the dump. Like most found in the Darwin district, it is massive. Small well-formed cerussite crystals can be found in the “limonite”. Knopf (1914) reported that many tons of coarsely crystalline pink and green fluorite were found on the dump. All I have been able to find is massive fluorite most of which is iron stained. There may be crystalline material there, but it is deeply buried by mining subsequent to 1914. Calcite occurs as large rhombohedral cleavage pieces that contain pyrite. Most of the pyrite has been altered to goethite. Copper mineralization is sparse, but small amounts of malachite and aurichalcite can be found. Some of the more interesting minerals are associated with calcite-covered andradite. By etching away the calcite, I have several specimens that have tremolite (probably after orthoclase) on very sharp and pretty andradite. The tremolite is small, but visible to the naked eye. Associated with the tremolite are titanite and crystalline hematite. Both of these are very small micros. One of the sulfide specimens analyzed by Bob Housley contained 10-micrometer grains of Bi telluride which might be tetradymite.

Durham-Fernando

The Durham consists of an inclined shaft 250 feet deep with 4 levels totaling 100 feet of crosscuts and drifts. At the 100-foot level it connects with the Fernando. A glory hole extends to the surface. The Fernando had two phases of mining. The first was for lead-silver in the early 1900's, and the second was for scheelite in the 1940's and 1950's. The early workings are 500 feet north of the Tungsten portal and consist of an inclined shaft 125 feet deep. The tungsten workings consist of three adits with 1850 feet of drifts.

Durham – Fernando Mineralogy		
Andradite	Anglesite*	Bismutite
Bismuthinite	**Bismuth**	Cerussite*
Fluorite	Galena*	**Kettnerite**
Orthoclase	Scheelite	Vesuvianite

The bismuth minerals are of most interest at these mines. They can be found both on the dump and in the Fernando mine. The primary bismuth mineral was the sulfide bismuthinite, which was reported to occur as fibrous bundles of crystals to two inches. Most has either been completely or partially altered to the carbonate bismutite. some occurring as pseudomorphs of the sulfide. Most is mainly porcelaneous replacements. Native bismuth occurs as blackish masses after bismuthinite. A small amount of kettnerite was found just inside the Fernando mine. The scheelite and fluorite were also found inside the mine. To date I have not explored the Durham.

Giroux

The Giroux (UTM NAD27 11 S 4013544 N 447677 E) is also known as the Rio Tinto, or Jeroo. It consists of a 200 foot vertical shaft. Most of the mining occurred prior to 1908. No production data are available for the mine, but the size of the dump does not indicate that it was extensive. Very little mineralization is visible, but sparse chalcopyrite, chrysocolla, goethite, malachite, and pyrite can be found on the dump.

Giroux Mineralogy		
Chalcopyrite	Chrysocolla	Cuprite
Goethite	Gold	Malachite
Pyrite		

Hayward

The Hayward (UTM NAD27 11 S 4014284 N 448430 E) is located directly across the canyon from the Custer, and may have been at one time part of the Custer. This may account for the reports of scheelite from the Custer. It consists of an open

pit dug into the side of the canyon, a 50-foot vertical shaft, and an adit. The only minerals reported are scheelite and some secondary copper mineralization. Little or no mineralization is visible, and access to the adit is blocked by the vertical shaft.

Kingman

The Kingman was explored by two 200-foot adits and an open pit. Very little or no production was reported.

Kingman Mineralogy		
Aurichalcite (?) Cuprite	Chrysocolla Gold	Chalcopyrite Malachite

The only minerals found were chrysocolla, and malachite. The malachite is very sparse, but is nicely crystallized as radiating sprays. It is the only reason to go to the mine.

Lucky Lucy

One of the more interesting prospects in the area is the Lucky Lucy (UTM NAD27 11 S 4014204 N 448432 E). This small pit has yielded some very interesting copper sulfate minerals. All the minerals are available on the dump, but will require careful examination as most are micros. There have been some very rare sulfosalts reported from the mine by

Dunning et al (2000), but I personally believe they were man-ported there. I base my conclusion on the fact that all the sulfosalts contain lead, and no other lead mineralization occurs at the prospect. A more likely source for them would be the Custer which is only 100 meters distant and is connected to the Lucky Lucy by a trail.

Lucky Lucy Mineralogy		
Andradite Chalcopyrite Pyrite Sphalerite	Aurichalcite Chrysocolla Rosasite **Tremolite**	Brochantite Hemimorphite Serpierite

Andradite occurs in the country rock, but one specimen I found has some small 1 mm orange crystals that appear to be of a later origin. The aurichalcite is bright blue to whitish in color and occurs in seams. It is quite pretty. Brochantite occurs both as blocky crystals and as fibrous radiating crystals to 2 mm. In the four trips to the Lucky Lucy I have found two specimens of serpierite. It occurs as blue radiating crystals to 2 mm. Hemimorphite occurs as crystals to 5 mm, some of which are altering to chrysocolla. The rosasite occurs as globular fibrous masses. A small

amount of asbestos tremolite with chrysocolla was found. The only sulfide minerals found were sphalerite and pyrite. No primary or secondary lead minerals were found.

St. Charles

The St. Charles (UTM NAD27 11 S 4014342 N 448255 E) was developed by a 140 foot inclined shaft and 4 adits. High grade scheelite was found in the inclined shaft. Only low grade scheelite was found in the adits. Pemberton reported galenobismutite from this mine, and a specimen containing friedrichite, gustavite, and metacinnabar was reported by Dunning et al (2000) from the dump. All that I have found at the St. Charles is low-grade scheelite.

St. Charles Mineralogy		
Friedrichite Metacinnabar	Galenobismutite Scheelite	Gustavite

Toga

The Toga (UTM NAD27 11 S 4013757 N 448152 E). consists of a glory hole, several adits, some of which reach the surface. Small scheelite pieces can be found on the surface at night using short-wave UV. The only minerals listed for the mine are scheelite and endelite, an aluminum silicate.

Miscellaneous Mines and Prospects

There are many small mines and prospects scattered through out the area. Most contain only chrysocolla and low-grade scheelite. The area on the geologic map designated “hornfels with undifferentiated tactite” has small micros of epidote with titanite, orthoclase and andradite crystals.

Two cm spray of bismutite after bismuthinite, Frenando mine.

Rosasite, Lucky Lucy mine.

Tremolite on andradite. Specimen is 8 cm long Custer Mine

Conclusion

The three mines with the most interesting mineralogy are the Custer, Lucky Lucy, and the Durham-Fernando. They alone are worth a trip to the area. I have explored most of the area and intend to complete my explorations this spring. If plans go according to expectations I will be in the area in mid May. Companionship is always welcomed.

References

Dunning, Gail E., Moëlo Yves, Roberts, Andrew C., Cooper, Joseph F. (2000) "Ag-Cu-Pb-Si Sulfosalts New to the Darwin Mining District, Inyo County, California;" Mineral News, Volume 19, Number 9, September 2000, p 1, 6-9,

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Quadrangle Inyo County, California;" California Division of Mines, Special Report 51, 73 p.

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Knopf, Adolph (1914) "The Darwin Lead-Silver Mining District California;" United States Geological Survey Bulletin 580-A, 19 p.

Murdoch, Joseph, and Webb, Robert W. (1966) "Minerals of California, Centennial Volume (1866-1966);" California Division of Mines and Geology Bulletin 189, 559 p

Pemberton, H. Earl (1983) "Minerals of California;" Van Nostrand Reinhold Company, p. 137.

Stolburg, C. S. (1984) "The Mines and Minerals of Darwin, California;" The Mineralogical Record, Volume 15, Number One, p 5-18.

U. S. Bureau of Mines (1995) "Mineral Availability System / Minerals Industry Location System CD-ROM", The United States Bureau of Mines Special Publication 12-95.

2004 Calendar of Events

May 1-2, Anaheim, CA, Searchers Gem & Mineral Society, 48th Annual Gem, Mineral, and Jewelry Show, Brookhurst Community Center, 2271 W. Crescent Ave., Hours: Sat 10 - 5 Sun. 10 - 4:30, Karen Fox (714) 832-3580 / the_rox_fox@yahoo.com

May 1-2, Bakersfield, CA, Kern County Mineral Society, "People are nuggets too," Kern County Fairgrounds, Ming Ave. & P Street, Hours: 10 - 5 both days, 589-3834 .

May 1-2, Bishop, CA, Eastern Sierra Gem & Mineral Club, Tri County Fairgrounds, Sierra Street & Fair Drive, Hours: Sat. 9 - 5; Sun. 10 - 4, Jeff Lines (760) 935-4576 / rockmun@hotmail.com. May 8-9, Reno, NV, Reno Gem & Mineral Society, Reno Livestock Events Center, Exhibit Hall @ 1350 N. Wells Avenue, Hours: Sat. 10 - 5; Sun. 10 - 4 , Jennifer Rhodes (775) 356-8820.

May 14-16, West Coast Gem & Mineral Show ~ Spring. Holiday Inn -- Costa Mesa, Bristol Plaza, 3131 S. Bristol St, Costa Mesa. Hours: Fri. & Sat 10-7, Sun. 10-5. Martin Zinn Expositions, LLC, Fax (303) 674-2384, mz0955@aol.com, www.mzexpos.com.

May 15-16, Conejo, CA, Conejo Gem & Mineral Club, Borchard Park Community Center, 190 Reino Road, Hours: Sat. 9 - 5; Sun. 10 -5, Don Pomerenke (805)

492-4276.

May 15-16, Yucaipa, CA, Yucaipa Valley Gem & Mineral Society, Yucaipa Community Center, 34900 Oak Glen Rd., Hours: 10 – 5 both days, Lee Peterson (909) 794-0731 / resØ9ayd@verizon.net.

May 22-23, Escondido, CA, Palomar Gem & Mineral Club Annual Show, Escondido Army National Guard Armory, 304 Park Avenue, Escondido. Hours: 9-5 Sat. & Sun. Anne Heffner (760) 735-8067 / annieheffner@hotmail.com

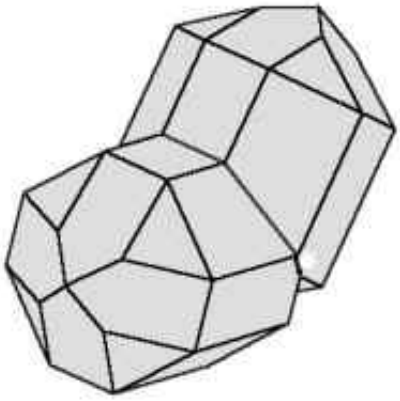
May 28-30, Mariposa, CA, **CFMS** and Mariposa Gem & Mineral Club, Mariposa County Fairgrounds, One hour from Yosemite National Park, California State Mining and Mineral Museum, P.O. Box 1192, Mariposa, CA 95338, (209) 742-7625 / mineralmuseum@sti.net Fax (209) 966-3597

June 5-6, Glendora Gems Gem and Mineral Show, Goddard Middle School, 859 E. Sierra Madre, Glendora, Hours: Sat. 10-5, Sun. 10-4. Mark Thompson (626) 335-3814.

June 19-20, Cayucos, CA, San Luis Obispo Gem & MIneral Club, Cayucos Veteran's Hall, 10 Cayucos Drive. Hours: 9 - 5 both days. Robert G. Hurless (805) 772-7160.

June 19-20, La Habra, CA, North Orange County Gem & Mineral Society, Jubilee of Gems Show, La Habra Community Center, 101 W. La Habra Blvd. Hours: Sat 10-5 Sun 10-4. (626) 330-8974 / warthen@earthlink.net

October 16-17, Southern California Rock and Gem Show, Long Beach Convention Center, presented by the Mineralogical Society of Southern California. Justin Butt minwreck@hotmail.com.



Cassiterite twin