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April 2006

The 818th Meeting of The Mineralogical Society of Southern California

**"Recent Finds from the Majuba Hill and Willard Mines,
Pershing Co., Nevada"**

by Paul Adams

Friday, April 14, 2006, at 7:30 p.m.

**Geology Department, E-Building, Room 220
Pasadena City College
1570 E. Colorado Blvd., Pasadena**

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April Meeting to Feature Arsenate and Phosphate Minerals of Nevada

At the Friday, April 14, 2006, meeting, Paul Adams will present "Recent finds from the Majuba Hill and Willard mines, Pershing County, Nevada." The Majuba Hill mine was a small copper and tin producer that was located in the early 1900's. It has been inactive for many years but is well known to mineral collectors for it's interesting suite of copper-arsenate minerals. It is most well know for fine specimens of olivenite, clinoclase and chalcophyllite, but it is also the type locality of parnauite and goudeyite. The Willard was a large open pit gold mine that was

deactivated in the late 1980's. In one small area of silicated black shale occurs a suite of well-crystallized phosphate minerals. Outstanding specimens of wavellite and fluellite have been produced along with rarities such as minyulite and native selenium crystals.

Paul Adams is the past president of the Southern California Micro-Mineralogists and an avid field collector who has visited many mineral and fossil locations throughout North America. His education includes a master's degree in geology from the University of Southern California.

MSSC Board to Meet in April

The Board of Directors will hold its next quarterly meeting at the home of President Ilia Lyles on Sunday, April 23 at 2 p.m. All MSSC members are welcome to attend these meetings.

Minutes of the March 10, 2006 Meeting

The 817th meeting of the Mineralogical Society of Southern California was held on Friday, March 10, 2006. President Ilia Lyles brought the meeting to order at 7:35 p.m. Vice President James Kusely introduced the speaker of the evening, Dr. Robert Anderson of JPL, who gave a presentation entitled: "Two Years of Science Results from the Robotic Exploration of Mars."

Dr. Anderson initially described the components and physical characteristics of the two Mars Exploration Rovers, the Spirit and its twin, the Opportunity, including the solar power systems, robotic arms, spectrometers and rock abrasion tools. He stated that for almost two years the Rovers have been exploring Mars to determine its geological history and past history of water. Sedimentary rocks were examined, and evaporative materials discovered, indicating the presence of water on the Martian surface in the past. Dr. Anderson concluded his presentation by describing some of the practical considerations involved in undertaking a project the size of the Mars mission.

Walt Margerum passed out ballots regarding the proposed merger of the Southern California Micro-Mineralogists into the MSSC. He also announced that all spaces for the U.S. Borax field trip were filled.

At show and tell, Herman displayed some of the beautiful wulfenite crystals and other specimens he obtained through very hard work at the Rowley Mine field trip. Fred Elsnau won the door prize.

Jim Kusely announced that Paul Adams, President of the SCMM, would be the speaker at the next meeting. The meeting came to a close at 8:55 p.m.

Respectfully submitted,
Pat and Geoff Caplette

Welcome to the MSSC

by Walt Margerum

I would like to welcome all the Southern California Micro-Mineralogists (SCMM) to the MSSC. By now all active members of the SCMM should have received their MSSC membership cards. If you have not, please contact me. In the welcoming letter that came with your card I asked for your input on integrating the SCMM into the MSSC, and for volunteers to chair the Pacific Micromount Conference. I reiterate that request here, and extend it to all the MSSC membership.

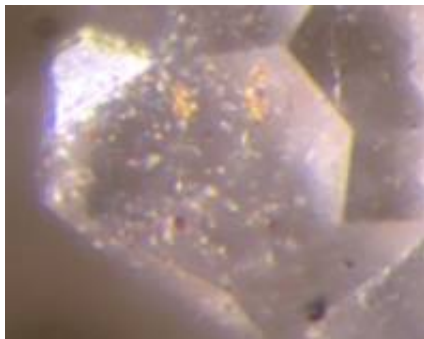
The Bagdad Chase Mine

by Walt Margerum

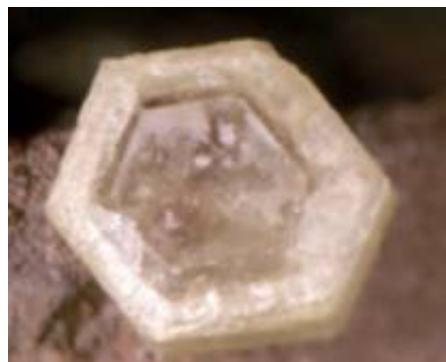
I first became interested in the Bagdad Chase mine when I visited it in January 2003 on a survey trip conducted by Bob Housley. Since most gold mines are uninteresting mineralogically, and the literature listed only gold and copper primarily as chrysocolla, I did not expect to find much. I was pleasantly surprised with what we found. Since then the Southern California Micro-Mineralogists have hosted two field trips to the location. The mine is in San Bernardino County (T6N R8E Section 8 SBM), and is south of Ludlow. Access is by a deteriorating dirt road.

Like many mines the Bagdad-Chase has had several owners and has been operated intermittently throughout its existence. Wright et. al. in 1953 describes the mine as follows: *The Bagdad Chase mine, the principal single source of gold and copper in San Bernardino County, since 1904 has yielded more than 6 million dollars worth of gold, or over half of the total recorded gold production of the county since 1880. From 1904 to 1910 the mine was operated by the Bagdad-Chase Mining Company, which treated 150,000 tons of ore at its mill in Barstow, using the cyanide process and recovered gold only. The total value of gold recovered was \$4,500,000.³⁷ During the following 6 years, when the mine was operated by the Pacific Mines corporation, 120,000 tons of copper-gold ore was shipped to a smelter Clarkdale, Arizona. This output had an average grade of 1.82 percent copper, 0.35 ounces of gold and 1.5 ounces of silver per ton. The d'Aix syndicate, operating for 12 months during 1938-39, produced 850 tons ore averaging \$9.80 per ton in gold. The Bagdad Chase has been operated almost continuously since 1940 by lessees; the present operator has been on the property since 1943. As a point of historical interest, the town of Stedman (or Steadman) was once named Rochester. The mines in that district, including the Bagdad Chase, were served by a railroad, known as the Ludlow and Southern, which ran 7 1/2 miles from Ludlow to Rochester. It was constructed between 1899 and 1901 and operated until the mid-1920's. The ore occurs in a fault breccia zone between a quartz monzonite footwall and a rhyolite hanging wall. The breccia contains fragments of both these rocks in a siliceous matrix which carries gold and oxidized copper minerals, principally chrysocolla. The mineralized breccia zone strikes east, dips gently north,*

ranges in width from 8 to 20 feet, and is several hundred feet long. North-striking faults have displaced the zone as much as 240 feet. The deposit has been mined from 3 principal shafts, in triangular arrangement and a few hundred feet apart.



Gold on Mimetite, Bagdad Chase mine.
Joe Marty photo



Mimetite, Bagdad-Chase mine.
Joe Marty photo

In about 1978 open pit operations were started, and they are the most obvious signs of mining seen today. The last operator was the United States Oil & Mineral Corporation who operated the mine under lease. The last recorded operations occurred in 1993 when the lease was terminated by court order. An interesting description of the history of the mine by Delmar G. Ross with pictures can be found on the Tonopah & Tidewater web site.



Joe Marty working the pocket, Bagdad Chase Mine. Don Howard photo

Of the three trips taken to the Bagdad Chase the last one in January 2006 was the most productive. This was primarily due to the efforts of Joe Marty, a new MSSC member from Salt Lake City, Utah. While the rest of us were content to prospect the piles of material on the floor of the pit he was scouring the walls looking for in situ material. He came across a small fracture zone which after much work yielded

the best material found to date. When given the scent of a mineral Joe can be a human bulldozer. All of the minerals in the table with the exception of the chalcopyrite have been found on one of our three trips to the mine. Most are micros, but some rise to the status of thumbnails. Most of the wulfenite is colorless which makes it unusual. The hedyphane can only be differentiated from the mimetite by analysis, and some of the mimetite has an unusual habit. It consists of a columnar form surrounded by a tabular form. It has variously been described as a UFO or Saturn form. I want to thank Bob Housley for his usual help in identifying the minerals. Without him most of the minerals in my as well as other collections would be mislabeled or labeled unknown.

Minerals of the Bagdad Chase Mine

Barite Ba SO ₄	Calcite Ca CO ₃	Cerussite Pb CO ₃	Chalcopyrite Cu Fe S ₂
Chrysocolla (Cu, Al) ₂ H ₂ Si ₂ O ₅ (OH) ₄ · n H ₂ O	Conichalcite Ca Cu (AsO ₄) (OH)	Duftite Pb ₃ (Zn, Cu) ₃ (TeO ₆) (AsO ₄)(OH) ₃	Galena Pb S
Goethite Fe O (OH)	Gold Au	Hedyphane Pb ₃ Ca ₂ (AsO ₄) ₃ Cl	Hematite Fe ₂ O ₃
Malachite Cu ₂ (CO ₃) (OH)	Mimetite Pb ₅ (AsO ₄) ₃ Cl	Perite Pb BiO ₂ Cl	Wulfenite Pb MoO ₄



Cerussite from the Bagdad Chase mine. Joe Marty photo

References

Ross, Delmar G.: 2001; "The Bagdad Chase Mine" on The Tidewater & Tonopah web site: http://www.ttrr.org/ls_text/lspb_002.html

Wright, Lauren A., Stewart, Richard M., Gay, Thomas E. Jr., and Hazenbush, George C.: 1953; "Mines and Mineral Resources of San Bernardino County, California", in California Journal of Mines and Geology, Volume 49, Numbers 1 and 2; pps. 71-72.

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Boron Collecting Success

MSSC members met at the US Borax Visitors Center at 9:00 AM on Saturday March 25, 2006 for the much anticipated return field trip to the Boron pit. After a short introduction by Joe Siefke we boarded the bus for the first stop, the basalt pile we collected on last trip. Our goal was to collect zeolites. While the finds were not spectacular several nice specimens were collected, including datolite spheres found by Paul Favia. Joe Siefke gave Iliia a very nice spray of ulexite crystals with calcite he found on the pile. We then broke for lunch, and decided to see what we could find in the pit. We stopped at several places in the pit collecting both borates and basalt minerals. A preliminary list of the collected minerals includes ulexite, borax, kernite, realgar, natrolite, analcime, datolite, pyrite, and calcite. I am sure that when everyone examines their specimens more minerals will be discovered.



Joe Siefke gives fellow MSSC members a briefing at the Boron Visitors Center before the collecting began. Herman Ruvalcaba photo.



Collectors, delivered to the basalt dump by the company bus, search for zeolites and other minerals in basalt cavities. Herman Ruvalcaba photo.



Datolite spheres collected by Paul Favia from the basalt dump on the Boron Field trip.
Steve Knox photo.



Collecting ulexite in the pit at Boron. Steve Knox photo.



Freshly exposed ulexite, Boron pit. Steve Knox photo.



Drilling rigs in the pit at Boron. Steve Knox photo.

All participants wish to thank U. S. Borax for allowing us to hold this trip, and Joe Siefke for being our leader and driver. Also, thanks to Walt Margerum for organizing the trip.

Walt Margerum, Steve Knox, & Herman Ruvalcaba contributed to this report.

2006 Calendar of Events

April 1-2, San Jose, Santa Clara Valley Gem & Mineral Society, Santa Clara County Fairgrounds, 344 Tully Road, Hours: 10-5 both days. Marc Mullaney (408) 971-

6651.

April 8, Sinkankas Symposium, "Phenomenal Stones" San Diego Mineral & Gem Society and Gemological Institute of America, GIA Campus, Carlsbad, Preregistration required. Anne Schafer at (858) 586-1637 or annes@san.rr.com.

April 15-16, Mariposa, Mariposa Gem & Minerals Society, Mariposa County Fairgrounds, Peggy Ronning (209) 742-7625, mineralmuseum@sti.net.

April 21-22, Desert Symposium, Theme: Dinosaur Track Ways, Desert Studies Center, Zzyzx, California. Contact William Presch., 714-278 2215 or wpresch@fullerton.edu.

April 22-23, Lancaster, Antelope Valley Gem & Mineral Club, Antelope Valley Fairgrounds, 2551 West Avenue H, Hours: 9-5 both days. Pamela Birge (661) 264-3502, birgep@att.net, www.geocities.com/av_gem.

April 29-30, Santa Cruz, Santa Cruz Mineral & Gem Society, Corner of Center & Church Streets, Hours 10-5 both days, Sallee Brumbaugh (831)336-5662.

May 6-7, Bakersfield, Kern Co. Mineral Society "Art in Stone" Kern Co. Fairgrounds, 1142 S. P. St., Hours 10-5 both days. Buster Ordiway (661) 563-8310, CaOrdPAT2aol.com.

May 6-7, Lone Pine, Lone Pine Gem & Mineral Society, Eastern Sierra Gem & Mineral Show, Tri County Fairgrounds, Hours: Sat. 9-5, Sun. 10-4, Francis Pedneau (760) 876-4319, franceem@qnet.com.

May 13-14, Reno, Reno Gem & Mineral Society, "Jackpot of Gems" Reno Livestock Events Center, Exhibit Hall 1350 N. Wells Ave., Hours: Sat, 10-5, Sun. 10-4. John Peterson, j+p@powernet.net.

May 20-21, Newbury Park, Conejo Gem & Mineral Club, Borchard Park Community Center, 190 Reino Rd., Hours: Sat. 9-5, Sun. 10-4:30. Sal Scarpato (818) 707-9972m salscarpato@sbcglobal.net.

May 20-21, Yucaipa, Yucaipa Valley Gem & Mineral Society, Yucaipa Community Center, 34900 Oak Glen Rd., Hours: Sat. 9-5, Sun. 10-4. William Jochimsen (909) 790-1475. Bjm2285@aol.com.

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