

**THE 770th MEETING
OF
THE MINERALOGICAL SOCIETY
OF SOUTHERN CALIFORNIA**

7:30 p.m., Friday March 8, 2002

**Building E, Room 220
Pasadena City College
Pasadena, California**

Featuring a Talk by

Susan Bartz and Gene Fritsche

on

**THE BLAST FROM THE PAST
Evidence from the K-T Boundary Ejecta Blanket
in Belize and Mexico**

MARCH PROGRAM

The hypothesis by Alvarez and others (1980) that the end of the Cretaceous Period was marked by an asteroid or comet impact on the Earth led to expeditions by the Planetary Society to study proposed impact deposits in Belize and Mexico. The expedition in 1995 was attended by Gene Fritsche and the one in 2001 by Susan Bartz. Twenty-four sites have now been found in Belize and Mexico where ejecta deposits from the impact can be studied. At all the sites there is an unconformity between the underlying eroded, weathered, and slightly deformed Cretaceous dolostone of the Barton Creek Formation and the ejecta material which is called the Albion Formation, so a true K-T boundary is not present. Fossils collected in the underlying rocks are Upper, but not uppermost, Cretaceous. The impact event seems to have precipitated the K/T mass extinction by causing a global climate change. The mechanism by which this climate change occurred is still unclear, but indications from the lithology of the target rocks and from blast modeling point to vaporized sulfate rocks as a possible cause.

SUSAN BARTZ grew up in the woods of Pennsylvania where most of the rocks are covered. Some of her earliest memories are playing among the rocks in the brook behind her house. Her father, who was a physicist and amateur astronomer, introduced her to the wonders of the skies seen through his telescopes. She went to college in Pittsburgh, PA, and grad school at Rochester Institute of Technology, got married to a handsome submarine officer, then spent the next 25 years as a wife and mom. When she came to California in 1970, she fell in love with the magnificent western landforms and began hiking and backpacking. This kindled her interest in rocks, so she enrolled at Santa Barbara City College to find out what she was hiking over, and ended up with a degree in Geology. She has worked as a sculptor, welfare worker, structural & mechanical drafter, and currently owns a small business with her husband, making research instruments.

GENE FRITSCH was born in Los Angeles to parents who were school teachers. He spent his summer vacations either at a cabin in the Sierras or camping throughout the United States and Canada. His interest in the outdoors was further kindled by his active participation in the Boy Scouts, both as a Scout and later as a Scout Leader. He received both my A.B. and Ph.D. degrees in Geology from UCLA. He has known my wonderful wife, Sue, since before they were teenagers. They were married after his first year in Graduate School, and she supported his graduate studies with her job as a teacher. In addition to geology and scouting, his third love is music. He played the trumpet and French horn in many bands and orchestras during his education years and most recently he sing sin a barbershop quartet.

He is now retired after serving for 37 years as Professor of Geology at CSUN. He has received Distinguished Teaching Awards from both CSUN and the Pacific Section, AAPG. Research throughout his career has been mostly on the Miocene paleogeography of southern California. His most active professional affiliation has been with the Pacific Section, SEPM, where he served as Secretary, President, Editor, and Field Trip Leader on several field trips. He has received from the Pacific Section, SEPM, an Honorary Membership, a Leadership Award, and a Lifetime Achievement Award.

BLANCHARD MINE TRIP

The Blanchard mine field trip will be held on the May 11-12 weekend. Last years trip was a huge success; this years will be better. So plan to be there! There will be more details in the April Bulletin.

COLLECTOR'S NOTES

The Red Hill Mine

Bob Housley

Several times during the last ten years or so when I have been looking through CDMG Bulletin 189 or Minerals of California by Pemberton trying to locate new places to explore for minerals close to home I have come across entries for barite and metacinnabar at the Red Hill Mine in Orange County. Then always when I checked the maps I found that the indicated location was right in a residential section of Tustin less than 10 miles from Disneyland. This led me to expect that the mine workings had by now been obliterated or at best were totally inaccessible so, until now, I never pursued the location further.

My interest was recently reawakened by an inquiry to MSSC from a serious geologist for any information we might have about the mine. I first went to the references for the information listed in the above books. In CDMG Report 35 "Quicksilver Resources of California" I read that the mine was opened by F. B. Browning in 1927 and was a steady small mercury producer through 1929. There was then a little activity during 1932-33 and again in 1939. I also checked with Dorothy Etensohn and learned that the LCMNH has specimens of barite and metacinnabar from the location.

I recalled that Ken Gochenhour lived in the Tustin area and contacted him to see what he knew. He remembered playing in the mine workings as a kid and being able to collect enough native mercury out of cracks in the rocks to put in jars and take to school to amaze his friends. He also remembered that about twenty years ago a kid was killed in the mine and that most of the workings were cemented up shortly after. He said that now the whole area is surrounded with a chain link fence and locked gates.

Still it did not sound very promising for rock collecting, but I decided to make a general inquiry on LA-Rocks, and that produced some additional important information. Michael Rauschkolb called my attention to a more recent publication CDMG Open File Report 89-8 "Mineral Resources of Orange County". That report gives a modern discussion of the geology and mineralogy of the deposit as follows:

"Discontinuous mercury-bearing barite veinlets in sandstone of the Topanga Formation. Most of the veinlets are apparently a few inches wide, trend generally east, and dip southward in strata that strike about N. 10 degrees E. and dip gently northwestward. Most of these cropped out on the west slope of Red Hill. The veins in the main opencut/stope strike N. 80 degrees E. and dip steeply southeast. Ore minerals were reported to include metacinnabar and minor cinnabar in a gangue of coarsely crystalline barite. Much of the country rock in the mine area is hydrothermally altered along numerous fractures and minor faults."

This report also gives a street address for the area and says that all shafts and the 300 foot adit were sealed at the time of a visit in 1976. It says that a 30 foot adit and a 50 foot adit stoped to the surface were still open.

Thinking back on what Ken had told me I realized that considerable controversy had surrounded the development of the area around the hill, and that suggested that Orange County might have some interesting public records. That is indeed the

case. I have not looked at much of the material, but believe the upshot is that the County now owns the hill itself while they allowed the area around it to be developed for fine homes.

I did come across one very interesting document, which is a short history of the hill written by James Sleeper in 1975. At that time he was the historian for the Irvine Ranch Company, whose property the hill had been on. He reports as follows:

“The earliest allusion to Red Hill’s potential occurs in Harvey Rice’s Letters from the Pacific Shore (1869). In describing the San Joaquin (Irvine) Ranch, he states that ‘mines of coal and quicksilver have recently been discovered’.

As to actual mining the initial attempt seems to have been in 1884... Until 1893 all attempts were direct operations of the Ranch itself. The earliest name applied was the ‘Rattlesnake Hill Mercury Mine’. In the year or two after 1890 the Ranch Company drove a tunnel 400 feet long and another 30 feet long and sank a 30 foot shaft. ...

Between 1896 and 1898 the property was leased by Thomas ‘Shorty’ Harris who worked the mine with a crew from the Santa Clara Coal Mines. This effort resulted in several shafts 70 feet deep.

The first stock promotion of the mine took place in 1899 when a ten year lease was taken out by two Santa Ana men, E. J. Kimball and J. A. Turner. In the course of the next six months they sank two shafts, one to 80 feet and another to 30 feet. Reports indicate that eight men were employed around the clock and that 50 tons of ore had been extracted. Literature boomed the mines assays as reputedly worth \$250-\$600 per ton. ... However soon the Ranch Company had trouble collecting the \$200 annual lease fee. ...

On February 2, 1907 ...Red Hill was sold to Felton P. Browning.

During World War I, when mercury was at a premium, the mine was worked again by A. W. Sheets under a lease from Browning. ...

In 1927 the mine was revived by a miner named McWaters who leased the property from Browning and recovered 120 flasks of mercury (then selling for \$120 per flask). McWaters method was to distill ore from previous tailings in a wood burning retort. ...

Based on all this it appears that most of the actual mining must have taken place by the end of World War I and we will never know much about how good the early ore was or how much mercury was produced in total. In early Reports of the State Mineralogist I did pick up a couple of other tidbits. Samples of the ore were sent to Dana prior to 1890 for mineral identification. In 1908 mineral analyst Groth reported finding chunks of pure metacinnabar more than 1 centimeter in diameter in a specimen sent to him for analysis.

Armed with all this background I recently decided to go down and have a look. There is currently easy access to the site from La Colima just south of Ranchview. The hill is an oasis of coastal sage and colorful rock outcrops in an upscale residential neighborhood. It teems with wildlife. At first sight there is no hint of the earlier mining activity. There are no big foundations or significant dumps and entrances are hidden by brush. However the most accessible working right behind one of the homes can be easily spotted by the fence largely surrounding it.

It is a place that has been stoped to the surface and has what appears to be a retort dumped into it. Nonetheless it was not difficult to climb down about 15 feet into a room that opened onto workings going off in several directions, apparently following the narrow branching barite veins. One was an adit entering from just above the back yard and one went down to a deeper levels. The floor was covered with trash and big cobwebs hung from the ceiling. It looked like I was the first person there in a long time. I looked around for about an hour and took samples from two of the barite veins. Everything was covered with red clay and iron oxyhydroxides so I could not tell much about what I had.

I then came out and proceeded upward and eastward along the hill. I saw two places where stopes to the surface had been sealed with reinforced concrete. I then found an open adit about 60 feet in length that encountered two barite veins near the entrance and took samples from them. Adding to the geological observations I noticed that the rock has been highly fractured, even brecciated in places, subsequent to the vein filling. I also suspect that the original main entrances and dumps were on the lower part of the hill that has now been developed, accounting for the minimal external evidence of mining now seen.

When I got the samples I had collected home and washed them up I found that all the barite was still severely coated with yellow microcrystalline jarosite and the black and red iron oxyhydroxides. Some of the barite might have made attractive specimens otherwise.

I was disappointed at first not to be able to recognize any mercury minerals under the binocular microscope. Nonetheless I took some of the black iron oxides to look at in the SEM. I found that in cavities they contained well formed crystals of metacinnabar to about 20 micrometers and 5 micrometers blades of a so far unidentified iron/mercury mineral. Not too surprisingly the iron oxyhydroxides themselves carry several percent of arsenic. I still do not know how to spot these minerals without the SEM.

In looking again, more carefully, at the material under the binocular microscope, in samples from one location, I found brown blades penetrating clear barite and the space between barites. In the SEM these turned out to be made up of fine grained iron antimonate. They are pseudomorphs, probably after stibnite. I also learned that metacinnabar crystals to about 100 micrometers are fairly commonly included in barite.

It thus seems that even this very old mine in a largely developed neighborhood may

still be of some mineralogical interest. I expect that before long I will want to go back and explore it more thoroughly and sample more extensively.

FIELD TRIP CHAIR

Walt Margerum

If you read the Committee Chair section at the end of the Bulletin you will see that I have recently volunteered to be the Field Trip Chair. It will take me some time to get organized, but I will give you some ideas about how I intend to begin.

If you go through past Bulletins you will notice that the number of field trips has decreased over the years, and that they have tended to become more formal. Last year we had only two trips; a formal trip to the Blanchard mine, and an informal one to Crystal Ridge. This is a sad record for an organization that has a major goal of "...the study and collecting of mineral specimens." Therefore my first task will be to increase the number of Field Trips. Due to the realities of present day collecting it will be difficult to increase the number of formal trips beyond three or four a year. We have one scheduled to the Blanchard mine in May, and a tentative one to Topaz Mountain in September. There are several other formal trips in the talking stage. I will announce them as soon as they become more than suggestions.

Informal trips are the most promising way to increase the number of trips. In order to do this I need your help. First I need suggestions on where you want to go, second I need suggestions on the best method of disseminating the field trip information, thirdly I need an idea of how many of you are interested in going on trips. Finally I need volunteers to lead the trips. My job is Field Trip Chair, not ubiquitous field trip leader.

Recently Bob Housley and I have gone on several exploratory trips to the Darwin and Barstow areas; some of which have been reported in the Bulletin. I have researched several other exploratory trip locations, and I know there are many of you that have areas you want to explore. These trips can be fun and sometimes are very rewarding. This is a promising area for increasing the number of trips, and can lead to formal trips if anything interesting is found. I need your input on locations.

The Bulletin is a good place to announce formal trips, but not the ideal place for informal trip announcements. The reason is logistics. In order to get into the Bulletin a trip must be planned at least a month ahead of time; two would be better. I have thought about using e-mail, but a search through the membership roster shows that only about half of you have provided e-mail addresses. Using standard mail would be expensive, about \$45 per mailing. I need suggestions on how to disseminate information.

Not all members are active collectors, so providing field trip information to them would be an exercise in increasing junk mail. This is not my goal. Therefore I need

you to let me know if you are interested in going on trips.

Lastly I need volunteers to lead trips.

IN MEMORIAM

by **Bill Moller**

With the passing of Jim Minette the mineral collecting hobby has lost one of its most active, capable and knowledgeable members. Few among the hobby enjoyed equal prominence along with the admiration of fellow collectors. It is infrequent that such an exceptional mineral collection as he and his wife Dawn assembled ever is created. It is equally infrequent that such a fine, decent guy is encountered.

Born in Mason City, Iowa, James Wellman Minette grew up in Clear Lake, a community in that State. He arrived ~ on the twentieth of January, 1936, and departed this life the twenty sixth of January, 2002.

Jim's interest in mineralogy was awakened when he enrolled in the Colorado School of Mines to study mining engineering. This fascination was stimulated by jobs in various mining camps during summer vacations. Also it was during his college days that he met Dawn Hayford, who subsequently became Mrs. Minette. In the days to follow, Mike, David and Garth came to share in the Minette unique family life.

Jim was hired by the U.S. Borax and Chemical Co. in 1959, and the family moved to Boron, California. It was there that Jim not only showed his ability as both an engineer and administrator, but his unique capacity as a mineral collector. His efforts also made it possible for the amateur collector to gain admittance to the famous open pit, and for a special few to enjoy collecting at numerous "off limits" sites in the desert.

His sons also shared in their father's activities and collecting adventures. Even though active in the mineral world, Jim provided leadership in his sons' Boy Scout troop.

Jim ventured offshore on two occasions in search of specimens. His initial excursion took him to Zambia, and in a later New Zealand adventure, he returned with examples of a curious combination of sulfur impregnating carbonized wood. Another fascinating aspect of the collection that Jim and Dawn built was the devotion of one portion to specimens of a certain size and of superior quality. This is the renown "thumb nail" collection, each specimen of which will fit in a one inch cube, and is a superb example of the mineral. Equally well known is the display of clusters of azurite crystals which can be arranged in attractive patterns.

Indicative of the high regard in which Jim and Dawn's mineral collection is held is the receipt of an invitation to exhibit their entire collection as a "one man" display at the East Coast Gem, Mineral and Fossil Show scheduled for West Springfield, Mass. next August. All mineral displays at the Show will come from the Minette collection. It is the intention of the family to fulfill this commitment as a memorial to Jim.

Jim is gone, but his influence will long be felt among those who benefited from his contributions. We must admit to a concern, though. He left his rock hammer behind!

If you would like to make a contribution to the memory of Jim Minette, the family requests you make it to the:

David Minette Scholarship Fund
Boron High School
Boron, California 93516.

This fund was established when Jim and Dawn's son, David, died a few years ago. Dawn has requested that memorial contributions be sent to that fund.

CALENDAR OF EVENTS

The Bowers Museum of Cultural Art is holding a series of lectures, and films on "Gem's The Art and Nature of Precious Stones" **through May 12, 2002**. There will be a display of gemstones including the world's largest cut gemstone; 500,000 carats! The Lecturers will include John Sinkankas, Dr. John, Koivula, Dr. Peter Keller, Dr. Jeff Postand John Marshall. The Museum is located at 2002 North Main St., Santa Ana CA. Phone (714) 567-3600 or visit their web site at www.bowers.org for more information.

MARCH

1-10 El Centro, **Imperial Valley Gem & Mineral Society**
Imperial Valley Expo & Fair
Hours: Mon. through Thurs. 4-10; Fri. through Sun. 10-10

2-3 Arcadia, **Monrovia Rockhounds, Inc.**
The Arboretum of Los Angeles County, Ayres Hall
301 N. Baldwin Ave., Arcadia, CA 91007
Hours: 9-4:30 both days
Show Chairman: Jo Anna Ritchey (636) 359-1624 / j.ritchey@verizon.net

2-3 Ventura, **Ventura Gem and Mineral Society**
Seaside Park (Ventura Co. Fairgrounds)
10 West Harbor Blvd. ; Hours: Sat 9-5 Sun 9-4
Jim Brace-Thompson (805) 659-3577/ jbraceth@juno.com

Web Site: <http://www.vgms.org/>

16-17 Hawthorne, **Northrop Grumman Gem & Mineral Club**
 12329 Crenshaw Blvd. (Gate 16)
 Hours: Sat 10-6 Sun 10-5; contact Jimmy Lapham
 E-mail: Lapham@earthlink.net

15, 16, 17 Stoddard Well, **Victor Valley Gem & Mineral Club**
 E-mail for directions or call
 Hours: unscheduled all days
 (760) 243-2330
 Nick (760) 246-7117 (8:00 a.m. to 9:00 a.m.)
 E-mail: gbeall5084@aol.com

23-24 Boron, **Mojave Mineralogical Society, Inc.**
 Boron High School Multipurpose Room, Prospect Street
 Hours: Sat 9-5 Sun 9-4 ; contact David Eyre (760) 762-6575

23-24 La Habra, **North Orange County Gem and Mineral Society**
 La Habra Clubhouse, 200 W. Greenwood
 Hours: Sat 10-5 Sun 10-4
 Don & Jane Livezey (714) 524-6280 / jdlive27@aol.com

23 - 24 Torrance, **South Bay Lapidary & Mineral Society**
 Ken Miller Recreation Center, 3341 Torrance Blvd.
 Hours: Sat 10 - 6 Sun 10 - 5
 Doris Turney (310) 322-2556

APRIL

6-7 Haciends Heights, **Puente Hills Gem & Mineral Club, Inc.**
 Magic In Rocks ; Steinmetz Park , 1545 Stimson Avenue
 Hours: 10 - 5 both days
 Bob Hess (562) 696-2270

6-7 San Diego, **San Diego Mineral & Gem Society**
 Al Bahr Shine Center, 5440 Kearny Mesa Rd.
 Hours: Sat 9:30 - 5 Sun 10-4
 Anne Schafer (858) 586-1637
 E-mail: annes@san.rr.com
 Web Site: <http://www.sdmg.org>

27-28 Lancaster, **Antelope Valley Gem and Mineral Club**
 Gem and Mineral Show; Antelope Valley Fairgrounds
 155 East Avenue
 Hours: 9-5 both days
 Olan Flick (661) 943-3882

<p>P</p> <p><small>PEDERSEN</small></p>	<p>M</p> <p><small>MARCH</small></p>	<p>M</p> <p><small>MAY</small></p>	<p>M</p> <p><small>MAY</small></p>
<p>R. E. PEDERSEN 3901 N. Calle Entrada Tucson, AZ 85749 (520) 760-0333</p>		<p>UNDERGROUND EQUIPMENT Wheat mine lights, chargers, batteries, parts MSA mine lights, chargers, batteries, parts Hard hats, belts, knee pads, etc.</p>	



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