

# Bulletin of the Mineralogical Society of Southern California

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## The 820th Meeting of The Mineralogical Society of Southern California

**"Minerals of the Santa Monica Mountains"**

by Dr. Robert Housley

Friday, June 9, 2006, at 7:30 p.m.

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

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### Santa Monica Mountain Minerals for June

Dr. Bob Housley will present "Minerals of the Santa Monica Mountains" on Friday, June 9, 2006 at 7:30 p.m. Thanks in part to abundant Miocene volcanic activity, the Santa Monica Mountains have an interesting selection of minerals. An avid field collector, Bob has spent considerable time checking out Santa Monica Mountains mineral localities as well as helping other area collectors identify their finds. His facility with the scanning electron microscope (SEM) has provided detailed views of many of the zeolites and other minerals found there.

Dr. Housley has been a consistent contributor to the southern California mineral community by giving presentations at Southern California Friends of Mineralogy

symposia, participating in the Desert Symposium, posting mineral photographs on the web, and serving the MSSC in numerous offices including president. He received a Ph.D. in physics from the University of Washington in Seattle, has had a long career at Rockwell Scientific Laboratory and is affiliated with the Caltech Physics Department.

## **Minutes of the May 12, 2006 Meeting**

The 819th meeting of the Mineralogical Society of Southern California was held on Friday, May 12, 2006. President Ilia Lyles brought the meeting to order at 7:35 p.m.

She then introduced the speaker of the evening, Dr. George Rossman, a professor of mineralogy at Caltech, who gave a presentation entitled: "Optical Phenomenon in Minerals and Gems."

Dr. Rossman first described the alexandrite effect (changes in mineral color depending on the illumination source used, such as sunlight or incandescent lighting). He then discussed tenebrescence (color change after exposure to sunlight).

One of the highlights of Dr. Rossman's presentation was the cause of the star phenomenon in certain minerals. Employing his own ingenuity and the expensive and sophisticated equipment at Caltech, he was able to discover previously unknown fibers in rose quartz and hollow cavities in garnets from Idaho.

Dr. Rossman also discussed iridescence and diffraction, both interference phenomena. Through the use of electron microscopes, ultra-thin layers of different thicknesses were detectable in some substances, such as Glass Butte obsidian, while others, such as Tecopa opal, displayed miniscule spheres. Numerous impressive photographs illustrated the optical phenomenon described.

At show and tell, Shou-Lin Lee displayed catseye opalite from Tanzania and peacock obsidian. Geoff Caplette brought a blue-gray feldspar crystal he found in Riverside County.

Gus Meister won the door prize. There were no announcements.

Respectfully submitted,  
Pat and Geoff Caplette

## **Promoting Minerals and Mining in North Carolina**

**by Janet Gordon**

North Carolina has a special appreciation for its minerals and mining heritage and values the role mineral commodities play in the state economy. This is especially

evident in western North Carolina where partnerships between groups as diverse as mining companies, the National Park Service, the state parks, chambers of commerce, mineral societies, and schools are raising the public consciousness about minerals.



The Museum of North Carolina Minerals on the Blue Ridge Parkway near the town Spruce Pine has dynamic displays about local geology, mining, and minerals. Paul Gordon photo.



Visitors to the Museum of North Carolina Minerals find complete explanations of what minerals are and enjoy interactive boards with mineral facts. Paul Gordon Photo.



Ruby corundum is found in the high-grade metamorphic rocks of North Carolina. Crystal on the left is about 10 cm long. Museum of North Carolina Minerals specimens. Paul Gordon photo.



Pale-green beryl with quartz and muscovite from Alexander County on display at the Museum of North Carolina Minerals. Specimen is about 10 cm high. Paul Gordon photo.

While near-by states are busy removing earth science and evolution from their state curriculum, North Carolina recognizes that understanding earth science is key to helping solve environmental problems and providing the materials necessary to keep today's technology-dependent society functioning.

Two excellent museums are on the forefront of promoting minerals in the state. One is the Museum of North Carolina Minerals on the Blue Ridge Parkway near Spruce Pine, and the other is the Colburn Earth Science Museum in Asheville. Both are well worth a visit for their displays of local minerals and the presentation of geological concepts.

The Museum of North Carolina Minerals is at milepost 331 on the Blue Ridge Parkway, the strip of national park highway that connects Great Smokey Mountains National Park in NC with Shenandoah National Park in Virginia. This location is in the heart of North Carolina's pegmatite mining districts. The museum is open daily from 9 a.m. to 5 p.m. It began in 1956 as a joint project between the National Park Service and the North Carolina Department of Conservation and Development. In 2002, the museum was completely renovated with the help of the Blue Ridge Parkway Foundation, which continues to support it. A major focus of the million-dollar update was to support the North Carolina standards of learning in earth

sciences with a curriculum based program at the museum. Students from a five-county area actively use the museum, and it also makes a very attractive rest stop for tourists traveling along the parkway. Tour buses regularly include it in their stops.

New exhibits, which have interactive components, explain how geological processes formed the Appalachian Mountains, how mineral wealth is related to these processes, what minerals are, and how they have played and continue to play a role in the local and world economy.

No local museum would be complete without special emphasis on local minerals. These are displayed in mockups of pegmatite pockets and kyanite-bearing "rock" faces. There are also more conventional mineral displays. The area is justifiably proud of its gem production with emeralds, rubies, and amethyst on display.

This museum prospers because of devoted community support. The Mitchell County Chamber of Commerce has an office in the museum where visitors can pick up information about local attractions, including mine tours. The Chamber of Commerce also schedules special mine tours during the annual North Carolina Mineral and Gem Festival with local mining companies opening their properties to the public for collecting. The mineral and gem festival is held in the town of Spruce Pine. It grew from the efforts of a few local mineral collectors to an event with many local commercial sponsors including campgrounds, restaurants, and mining companies. Even the local state park system puts mining and minerals in a good light. One of the signboards interpreting the view from Mount Mitchell (the highest point in the USA east of the Mississippi River) explains that the white scars on the distant hillside are mines that are producing 98% of the world's ultra-high purity quartz that is necessary for the manufacture of silicon used in computers and electronic devices.

In nearby Asheville, mineral enthusiasts will find the Colburn Earth Science Museum. This up-to-date facility is located in the heart of Asheville's civic center. Its mission is to foster an appreciation of the Earth and its natural resources, and it emphasizes educational programs and exhibits geared toward all segments of the public. The scope of the Colburn's educational outreach activities is impressive and well-known among the locals. Mention that you are interested in minerals, and they will tell of a girl or boy that they know who is excited about participating in Colburn earth science activities that include summer camps and programs during the school year. The kids are especially enthusiastic about the museum's partnership with a local stone quarry where they can collect a variety of minerals and learn about mining. Some classes are specifically designed toward meeting the North Carolina educational competency goals for earth science.

Although much of the Colburn focuses on minerals and mining, other earth science subjects, including weather phenomena, are covered in additional displays.



Thulite, a pink variety of zoisite is common in the pegmatites of western North Carolina. Museum of North Carolina Minerals specimen. Paul Gordon photo.



A small portion of the mineral displays in the Colburn Earth Science Museum. The large specimen in the foreground is rose quartz from the Black Hills of South Dakota. The dinosaur skeleton is part of a temporary display in the process of being disassembled. Such supplementary displays are common and keep the kids coming back to see what is new. Paul Gordon photo.





Display in the Colburn Earth Science Museum explaining the crystallographic systems. Paul Gordon photo.

The main mineral displays are organized in a somewhat traditional manner. There is a large systematic collection of good to excellent quality specimens, displays that explain crystallography, a minerals of North Carolina section, and a special display on hiddenite and emeralds. A short "mine tunnel" that contains fluorescent minerals, and a cleverly designed, touchable "Gem Minerals of North Carolina" display liven up the place.

Non-local specimens of note include two sharp bloedite crystals from Searles Lake, California; an exceptionally large diamond in kimberlite matrix from South Africa; and a super-sized aquamarine crystal (about a meter in length) from Minas Gerais, Brazil.

North Carolina minerals on display included kyanite, torbernite, amethyst, garnets, muscovite, corundum, olivine, wavellite, emerald, aquamarine, galena, fluorite, zoisite, antigorite, quartz, laumontite, chalcophryite, and hiddenite.

The hiddenite display gave an interesting history of this mineral. In 1879, Thomas A. Edison sent William Hidden to North Carolina to look for possible sources of platinum to be used in phonograph needles. Hidden was a New York banker with a passion for minerals who met a fellow rockhound named John Stephenson in North



Carolina. Stephenson showed Hidden some interesting minerals from an Alexander County farm. Recognizing the possible value of the minerals, Hidden quit his job and acquired the mineral rights to the Warren Farm near Stony Point, NC. He raised capital, hired miners, and sent a number of newly found emeralds plus another green mineral to Dr. J. L. Smith for analysis. Smith determined that the other green mineral was a new variety of spodumene and named it hiddenite.

Coincidentally, Hidden was a good friend of George Kunz, the Tiffany jeweler, who created a domestic market not only for the rare and beautiful hiddenite, but also for the emeralds produced by the mine.

After this early episode of mining Burnham Standish Colburn retired from his banking job and moved to Asheville because of its proximity to North Carolina mineral localities. He later explained: "I wanted something to do to keep me out of mischief and it occurred to me that the collecting of minerals would be just the right hobby to take up." In 1926, Colburn obtained the lease for the hiddenite mine and got his brother to run it. Although good specimens were found and distributed to the Smithsonian Institution, the British Museum, and the University of North Carolina the venture was not profitable enough to last more than a couple of years. However, Colburn's mineral collection has a lasting legacy as the precursor to the present day museum.

More recently others have been successful at finding emeralds and hiddenite. In 1998 Jamie Hill, a serious collector found an 858-carat emerald in his backyard in Hiddenite. In 1979, Glen and Kathleen Bolick found a pocket that yielded 3,500 carats of emeralds, and in 1994 five hiddenite veins were discovered. According to the museum display, the Emerald Hollow Mine in Hiddenite is still open to collectors.

North Carolina is a great place for mineral collectors to visit. They are warmly welcomed, and there are still minerals to find in addition to two good mineral museums to visit.

### **Field Trip to the Cryo-Genie Mine**

Bob Housley is organizing a field trip to the Cryo-Genie Mine on Sunday, June 18,, 2006. This will be a fee dig at \$25 per person for an all day event complete with an optional mine tour. The mine is near Warner Springs in San Diego County. Before finalizing arrangements, Bob needs to assure the Dana Gochenhour that there are enough participants. As of this writing, about 10 MSSC members have expressed an interest in going. About 20 participants are needed to make the trip succeed. Please contact Bob Housley by June 10 if you are interested in going: e-mail [rhousley@its.caltech.edu](mailto:rhousley@its.caltech.edu) or phone 626-449-6454.

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## 2006 Calendar of Events

June 3-4, Glendora, Glendora Gem & Mineral Show, 859 E. Sierra Madre, Hours: Sta. 10-5, Sun. 10-4 Bonnie Bidwell 626-963-4638, YBidwell2@aol.com

June 3-4, La Habra, North Orange County Gem and Mineral Society, La Habra Community Center, 101 W. La Habra Blvd., Hours: 10-5 both days, Don Warthen (626-330-8974, warthen@earthlink.net.

June 9-11, Angels Camp, Calaveras Gem and Mineral Society, "Jump for the Gold" CFMS Gem and Mineral Show, Calaveras County Fairgrounds, Hours 10-5 daily.

July 1-2, Culver City, Culver City Rock and Mineral Club, Culver City Veteran's Memorial Complex Auditorium, 4117 Overland Ave., Hours: Sat. 10-6, Sun. 10-5, CulverCityRocks.org, Richard Shaffer 310-391-8429, maryellenandrick@aol.com.

August 4-6, Nipomo, Orcutt Mineral Society, "Earth's Treasures," St. Joseph's Church, 298 S. Thompson Ave., Hours: 10-5 daily, Wes Lingerfelt 805-929-3788.

August 5-8, San Francisco, San Francisco Gem and Mineral Society, San Francisco County Fair Building, Ninth Ave. and Lincoln Way, Hours: Sat. 10-6, Sun. 10-5, Ellen Nott 415-564-4230.

September 16-17, Paso Robles, Santa Lucia Rockhounds, Pioneer Park and Museum, 2010 Riverside Ave., Hours: 10-5 both days, Joyce Baird 805-462-9544. liljoysee@charter.net.

September 23-24, Carmel, Carmel Valley Gem and Mineral Society, Monterey Fairgrounds, 2004 Fairgrounds Road, Hours: Sat. 10-6, Sun. 10-5, Sky Paston 831-755-7741, sky@familystones.net, www.cvgms.org.

September 23-24, Downey, Delvers Gem and Mineral Society, Woman's Club of Downey, 9813 Paramount Blvd., Hours: Sat. 10-6, Sun. 10-4, Teresa Widdison

(562-867-1521, twiddison72@aol.com.

September 23-24, San Diego, San Diego Lapidary Society, Bernardo Winery, 13330  
Paseo Del Vernao Norto, Rancho Bernardo, Hours: 10-4 both days, Kim Hutsell  
619-294-3914 info@sandiegolapidarysociety.org.

***Costa Mesa, CA - Spring***  
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