

Bulletin of the Mineralogical Society of Southern California

Volume 81 Number 1

January 2010

The 861st Meeting of The Mineralogical Society of Southern California

Inclusions: Mysteries of Mineral Genetics

By

John Koivula

Saturday, January 16, 2010 at 5:30 p.m.

Oak Tree Room

1150 East Colorado Blvd., Pasadena

Featuring:

- Claims seminar announcement**
 - A little hand held device called mini illuminated microscope**
 - Great finds at Jewel Tunnel Import**
 - Diamond wrongs**
-

January 16th Banquet!

*Come for an evening of festivities, food, and a talk on **Inclusions: Mysteries of Mineral Genetics** by John Koivula, Chief Gemologist of Gemological Institute of*

America. Bring your family and friends!

When: Saturday evening, January 16, 2010. Festivities begin at the 5:30 with a Social Hour and Silent Auction. Wine and beer will be available from a no host bar. Dinner at 6:30 will be followed immediately by the talk.

Reservations are required (see below)!

Where: The Oak Tree Room, 1150 East Colorado Blvd., Arcadia at the SE corner of Colorado Blvd. and Michillinda Ave., adjacent to Coco's Restaurant.

The Food: The meal will be a buffet featuring all five food groups such as meats, vegetables, salad bar, bread, dessert table, and dinner beverages.

Reservations are imperative! Make reservations **no later than Sunday, January 10th** by email or phone to Bruce Carter: bacarter1@mac.com or 626-303-8661.

The Cost: \$33.39 per person including tax and tip. Pay at the door by check or cash.

Submission deadline

Due to editor by the 20th of the month, unless the 20th is on the weekend, then the 18th is the due day. Email to shoulin.lee@yahoo.com

The Auction: This year we have many nice specimens from a generous donation. Bring your money for great buys to support our once-a-year fundraising event! This fun event is a great way to support your Society. Please contact Bruce Carter if you have questions or wish to make special arrangements for a donation.

The Speaker: Mr. Koivula is the co-author of the Photoatlas of Inclusions in Gemstones volume 1, 2, and 3 with the late renowned gemologist Dr. Eduard J. Gübelin. Many of Mr. Koivula's photomicrographs are more than pictures that documented the inner world of gem and mineral, they are also pictures of art. Some samples of his works can be found at the webside: www.microworldofgems.com.

The Program:

Inclusions: Mysteries of Mineral Genetics

By John Koivula

All of us can appreciate the outward perfection of a beautifully crystallized mineral specimen or a well polished gemstone. But these outer surfaces are only the exteriors, covering a complex internal, multilayered story. Like the covers of a book, the contents of minerals and gems, known as inclusions, often remain hidden unless we choose to explore below the surface. Somewhat like trees and their tree-rings, minerals and gems form as concentric, most often crystallized layers, recording the developmental details within each layer through changes in temperature, pressure, and chemistry. While some of these growth details are submicroscopic, and remain

hidden during microscopic observation, other features, such as minute foreign crystals and encapsulated fluids are there waiting to be discovered. In a very real sense inclusions and their developmental sequencing in their host gems and minerals are descriptions of mineralogical genetics.

Aside from their purely scientific applications, inclusions also serve to remind us of the role nature plays in creating rare and unusual minerals. Through micro-exploration of the beautiful and complex world of inclusions we gain a deeper appreciation of the connection between nature, geology, and the microworld.

Utilizing modern microscopic techniques and current technologies, this lecture explores the hard-to-reach world of inclusions by introducing a number of new inclusion discoveries and observations in a wide variety of minerals and related materials.



Hematite "chessmen" concretions along a phantom plane in quartz. The horizontal field of view is 10.50 mm. Photomicrograph by John Koivula.

Minutes of the December 11, 2009 Meeting

The 860th meeting of The Mineralogical Society of Southern California was held on Friday, December 11, 2009, at Pasadena City College, Pasadena, CA. President Geoffrey Caplette brought the meeting to order at 7:30 p.m.

Vice President Bruce Carter then introduced the speaker of the evening, Charles I. Carmona, who gave a presentation entitled: "Australia-Gems Down Under."

Mr. Carmona, a Graduate Gemologist and an Accredited Senior Appraiser, is President of Guild Laboratories, Inc. He is a very experienced field collector and has led trips to gem mining areas in Brazil, Thailand, Sri Lanka and Madagascar.

He initially provided a general discussion of the history and the mining districts of Australia,

and then described the principal gem areas in more detail.

The east coast area, where most of the population resides, is the location of the sapphire mines. Sapphires, which are found in iron-rich basalts, have been mined since the late 19th century.

Further, Australia supplies approximately 90% of the world's precious opal. Mr. Carmona's talk included descriptions of the white opal of the Coober Pedy mine, and the unique underground living quarters of its workers, and the Lightning Ridge black opals. He discussed the different types of opal patterns and colorations, synthetic opals, and assembled stones (doublets and triplets).

Australia is also the leading producer, by volume, not value, of diamonds. Most of the diamonds obtained are brown (a very few are pink). There has been a fairly aggressive marketing campaign to promote the brown diamonds as "cognac" or "chocolate" colored diamonds to increase their appeal.

Cultured pearls are grown in the north, tropical area of Australia. Almost 60% of the world's white south sea cultured pearls are grown in the warm waters of the area. The nacre of such pearls can reach 5mm in thickness.

Other gemstones found in Australia include chrysochryse, agates, apatites and emeralds.

Next year, Mr. Carmona is leading a field trip, sponsored by the Los Angeles County Natural History Gem and Mineral Council, to Ayres Rock, and the sapphire and opal areas of Australia. Included, among other events during the 12-days "on ground," will be a city tour of Sydney and a visit to a sheep ranch. Participants will fly in two twin-engine turboprops, each with a capacity of 15 passengers, to the widespread mining regions. Mr. Carmona has begun collecting names of interested parties.

Members who plan to attend to annual banquet on January 16, 2010, should contact Vice President Carter at (626) 303-8661, unless they have already signed the reservations list.

Bob Housley announced that the presentations at the upcoming Pacific Micro-Mount Conference would be of interest to many MSSC members, not just those involved in micro-mounting activities.

The door prize was won by Fred Elsnau.

The meeting was brought to a close at 9:00 p.m. by President Caplette.

Respectfully submitted, Pat Caplette, Secretary

--News from C. F. M. S.

Claims Seminar Announcement

Reprint from C.F.M.S. Newsletter XLVI #1, January 2010

By Dick Pankey

Mark your calendar NOW and plan to attend this next seminar in our series on claims. The purpose of the seminar is to encourage CFMS societies to file and share claims and to provide them with the information to do so. At the conclusion of our seminar in March of 2009, Gregg Wilkerson from the BLM recommended that filing and maintaining claims on our rockhounding sites is a good way to establish and preserve our right for access and use. Some CFMS societies already have claims and it is recommended that more societies do it, also.

Current legislative activity makes it imperative that we establish and file our claims now. The new "Hard Rock Mining and Reclamation Act" was introduced in the House and Senate last July. The proposed "Desert Conservation and Recreation Act," specifically the Mojave National Monument section, will eliminate collecting on many of our traditional collecting sites along and near old Route 66 and affect over 1.6 million acres. By acting now and establishing claims before these become law we can insure future access and our right to collect.

The agenda for this seminar will include:

- Why and who should file claims.
- The experiences of current CFMS societies that have claims.
- Liability and insurance issues.
- Use of claims to have and maintain access to rockhounding areas.
- What your society can do.
- How to stake a claim, establish and file a claim with the county and BLM.
- Claim Filing deadlines, Assessment Work, and Intent to Hold
- Where and how to get information about claims and claimed land.
- Answers to your questions.

This seminar will be hosted by the Mother Lode Mineral Society on Saturday, April 24, 2010 in Empire, CA, near Modesto. This is an all day seminar and lunch will be served. More details will be in the February CFMS Newsletter and an announcement flier with details and directions will be available on the CFMS Web Site - www.cfmsinc.org, in February. This seminar is for societies who have question about claims, for societies that want to have a claim, and for all rockhounds that are interested in claims.

Mark your calendar now for **Saturday, April 24, 2010**, watch for the announcement flier and plan to attend this important, timely and sure to be informative seminar.

-Dick

Don't Forget Our

Pacific Micromount Conference

On

January 29 and 30, 2010

And

The Field Trip on the following Sunday January 31

A Little Handheld Device Called: Mini Illuminated Microscope

By Shou-Lin Lee



In a recent trip to the Pasadena City College monthly swap meet (PCC swap meet) a little magnifying device caught my attention. The manufacturer called the little device “Mini Illuminated Microscope.” On the box it listed that the microscope has a 45x power, with two LED lights for lighting. It uses three LR927 batteries, which were included. It also comes with a carrying pouch.

The whole thing measures less than two inches, fitting in my palm nicely (see picture). I used the device to look at my finger tip and was impressed to see that tiny beads of sweat were clearly visible. Because it was so cute and because it cost less than ten dollars, I decided to give it a try.

The tube to the left is the magnifier. The tube to the right is the illuminator which holds three batteries and has two LED lights at the end to illuminate the object under observation. The diameter of the lens is about 8 millimeter. Although the manufacturer claimed that the device is 45x power, I found that the number to be exaggerated. By comparing the images under a 10x power loupe, under a 20x power loupe and under a stereo microscope with 40x magnification, I found that the magnified image observed under the device is closest to that under a 20x power loupe. However, because this device has a light to illuminate the object and the lens has a smaller diameter than the 20x power loupe I have, this mini microscope is actually easier to use than the 20x power loupe.

My Great Find at Jewel Tunnel Imports

By Shou-Lin Lee

This article is written for those who have never been to Jewel Tunnel Imports’ (JTI) open house, so they would know how much they missed.

Despite the numerous rock and mineral shows I have been to, every year I still find something interesting at JTI. Last year I was in my hyalite phase and had a very hard time to find some suitable pieces for my lapidary experiments. Then when I was at JTI, surrounded by boxes after boxes of mineral specimens, lined from floor to ceiling, a light bulb lighted up. I asked Mr. Currier if he had any hyalite. Sure! Mr. Currier told me that he had some non-fluorescent hyalite. I was a very satisfied customer that day.

This year I was not looking for anything in particular at JTI. As I was wandering between shelves after shelves of boxed specimens, I spotted some Brazilian agate slabs. That when I decided my mission of the day: find some iris agates. After sorting through about one hundred or so pieces of agate slabs, I settled with 13 pieces that I thought were either iris-agate-would-be or just nice to look at. After I got home and further inspected my find under a better lighting, I was pleasantly surprised that of the 13 pieces, five would have nice iris if I re-polished them. I felt like I hit the jack pot. Finding an iris agate from a pile of agate slabs always make me feel like hitting the jack pot.

Diamond Wrongs

by Dr. Bill Cordua, St. Croix Rockhounds

From: *St. Croix Rockhound's Leaverite News*, 5/08

(6th Place – AFMS Original Adult Articles Advanced)

Recently a student of mine, who had been looking for a gift for his girlfriend, asked me if Herkimer “diamonds” were particularly good diamonds. After explaining to him that Herkimer “diamonds” were really quartz, I began thinking about all the things rockhounds and jewelers call diamonds that are really diamond-wrongs. Sometimes this is an innocent practice (as in Herkimer “diamonds”), but it can be meant to mislead shoppers. In all cases it creates confusion and is sloppy nomenclature. Here are some of the diamond “wrongs” I have found online and what they REALLY are. Caveat emptor!

Herkimer diamonds are quartz crystals found in vugs in dolostone in central New York. They are often sharply terminated, water clear, and sparkly against the grey dolostone or black bitumen matrix, but they aren't diamonds. Little Falls “diamonds” and Middleville “diamonds” are synonyms, named after several towns in the collecting area – obfuscation taken to the second level of confusion.

Other clear quartz rock crystals that have been called diamonds are Alencon “diamonds,” Cape May “diamonds,” Hawaiian “diamonds,” Pecos “diamonds,” Herradura “diamonds,” Mexican “diamonds,” and on and on. I had heard of Cape May “diamonds” when I was a kid. They refer to rounded pebbles of clear to white quartz picked up along the beaches around Cape May, New Jersey. Their source was the crystalline rocks in the upper reaches of the Delaware River. River and wave transport have rounded and sculpted them, making them popular among east coast beachcombers. Pecos “diamonds” come from outcrops along the Pecos River in southeastern New

Mexico, not far from Roswell. They often have a unique orange color and are associated with cavities in gypsum-bearing limestone and dolostone. But, pretty as these are, they aren't diamonds.

Colorado "diamond" can refer to smoky quartz. Radium "diamond" is also smoky quartz. Since quartz can be made smoky artificially by exposure to radiation, some of these specimens may not only be misnamed but also faked.

Alaskan "diamond" is similarly a type of quartz rock crystal, unless you find Alaskan "black diamond," which is polished hematite. Yes, it sparkles, but iron oxide is hardly the same as pure carbon. The Russians taught the native Aleuts how to cut and polish this material, which was highly thought of enough to serve as royal gifts. These are beautiful enough in their own right that one wonders what was necessary to give it a gaudy name. In addition, there is a Nevada "black diamond," but that is obsidian, a volcanic glass. Of course there is a real black diamond – a bizarre form also called carbonado, which may be extraterrestrial in origin.

Matura "diamond" refers to colorless zircon, which is found in the gem gravels of Sri Lanka. Zircon does have an adamantine luster, so clear varieties tend to resemble diamonds in their brilliance. However, they do have inferior hardness and are zirconium silicate, not carbon. Be also aware the zircon is not the same as cubic zirconium, an artificial product often used as inexpensive diamond substitute.

Mogok "diamond," Saxon "diamond," Killiecrankie "diamond," Tasmania "diamond," and Flinder's "diamond" are white topaz. Killiecrankie is on Flinder's Island off Tasmania, so the last three terms refer to the same thing. These are topaz from granite that have been worn loose and turn up in beach gravels. Topaz is a hard, lustrous mineral to be sure, but these rank only an 8 on the Mohs scale – not 10 – and are not as rare. They also lack the brilliance of diamond's luster.

Here are some good online references about misleading mineral names:

<http://www.gemscape.com/html/misnomer.htm> and

http://www.jewelinfo4u.com/beware_of_misleading_gemstone_names_.aspx

2010 Arizona MINERAL & FOSSIL SHOW-TUCSON

JAN. 30 - FEB. 13 Show Hours: 10 - 6 daily

4 Easy to find Locations

- ★ Quality Inn - Benson Hwy. - I-10, Exit 262, Northeast corner of Benson Hwy at Park
- ★ InnSuites Hotel - Downtown - 475 N. Granada Ave., at St. Marys
- ★ Ramada Ltd. - Downtown - 663 N. Freeway, at St. Marys
- ★ Mineral & Fossil Marketplace - 1333 N. Oracle, at Drachman

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2010 Calendar of Events

January 1-February 28, Quartzsite, AZ. Various rock and mineral shows, for more information check Web site www.ci.quartzsite.az.us

January 1-31, Laughlin, NV. 9th Annual show; Cloud's Jamboree; Avi Resort & Casino, 10,000 Aja Macav Pkwy.; 7-6 each day; free admission; indoor and outdoor vendors; Web site: www.cloudsjamboree.com

January 8-10 2010 Mesa, AZ: 38th Annual Flag Gem and Mineral Show will be held Friday, January 8 to Sunday, January 10, 2010 from 9 am to 5 pm. by Arizona Mineral and Mining Museum Foundation at Mesa Community College, Dobson Rd. and U.S. Hwy. 60; Fri. 9-5, Sat. 9-5, Sun. 9-5; free admission.

January 15-17 2010 Globe, AZ 44th annual show; Gila County Gem & Mineral Society; Gila County Fairgrounds, U.S. Hwy. 60; Fri. 9-5, Sat. 9-5, Sun. 9-4; adults \$3, high school students with ID and children with parents free

January 16-17 2010, Exeter, CA Tule Gem & Mineral Society Exter Memorial Bldg. 420 N Kaweah (Hwy 65), Exter Hours: Sat. 10 - 5, Sun. 10-4

January 29-30, 2010, Redlands, CA The Mineralogical Society of Southern CA 45rd. Pacific Micromount Conference San Bernardino County Museum 2024 Orange Tree Lane

February 12-21, 2010, Indio, CA San Gorgonio Mineral & Gem Society Riverside County Fair & National Date Festival Gem amp;& Mineral Building Bldg #1 46-350 Arabia Street Hours: 10 am - 10 pm