
Bay Area Mineralogists November 2016

Meeting: Wednesday, November 9, 2016; 7 pm
USGS, 345 Middlefield Road, Menlo Park
Building 3, 2nd Floor, Rm 3-237

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The Bay Area Mineralogists meet monthly during the school year, on the 2nd Wednesday, at the U.S. Geological Survey in Menlo Park, on the second floor of Building 3, where the campus map says "Rambo Auditorium." (<http://online.wr.usgs.gov/calendar/map.html>) The front doors will be locked so you'll have to come up the exterior stairs on the Middlefield Road side of the building. Parking is free.

November Program

Origin of Precious Metal Deposits That Produce World-Class Collectible Specimens of Native Gold and Native Silver

Dr. David Mustart, Professor of Geology, SFSU

World-class specimens of native gold and native silver are found at only a handful of sites worldwide and from only a few ore deposit types. At these sites, a combination of critical geologic conditions has converged to produce masterpieces such as 'The Dragon' with exquisite forms such as dendrites, leaves, wires, herringbones, hopped octahedra and arborescent sprays. Dr. Mustart will explore why such sites are so rare, explaining both the

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unique combination of geologic processes that must occur and the few times in the Earth's evolution when events impacting the continent led to the formation of these remarkable deposits.



*The Dragon
[Gold] 18cm,
Colorado
Quartz Mine,
CA*

David Mustart received his B.Sc. in Geology at the University of British Columbia (1965) and his Ph.D. in Experimental Petrology on the origin of pegmatites at Stanford (1972). Dr. Mustart worked in precious metal mining districts in the Yukon and Northwest Territories, and for the past 45 years has taught courses in geochemistry, mineralogy and ore deposits at San Francisco State. His research is focused on hydrothermal processes of mineral deposition, and he was the first to identify and

characterize hydrothermal pipes associated with pegmatites in epizonal silicic plutons. To date, he has documented over 700 pipes in the U.S., Canada and South Africa.



*Wire Silver
15cm
Kongsberg
Norway*

David set his sights on geology at age 6, when he recognized his passion for collecting minerals in British Columbia. He has developed his current teaching and research collection by concentrating on mineral associations from major ore deposits, both through leading trips to active mines in the Western U.S. and by acquiring specimens from sites world-wide. Through his collecting, he has focused his current research on connecting the habits of Native Metals with the conditions under which they crystallized.

BAM & MinRec "Collections in California" Issue

Don Windeler, BAM President

As most of you are aware, the Mineralogical Record will be publishing a "Mineral Collections of California" supplement in 2017. BAM is planning to have a section of photos from participating members, one per

participant. I have worked through some scenarios and figure the cost would be about \$150-180/person, depending on how many pages and participants we have. We're encouraging participants to submit something they collected personally, but this is not a requirement – please choose something that you feel represents you.

I will be organizing the club submission and would like to hear from those of you who are interested in participating (don.windeler@rms.com). Taking part in the BAM chapter does not exclude you from purchasing a separate pictorial of your own, but organizing that is your own responsibility. If you want to take part, here's what you'll need to provide by the deadline:

- A high-resolution, professional photo of your specimen
- Description of same
- Payment of the shared page charges, specific amount TBD

Ron Wolf has generously agreed to provide free photography for those who don't already have access to the same. He can handle thumbnails (~1") and up, but is not currently set up for photomicrography. We'll discuss details at the November meeting.

My target to have all content compiled for submission is mid-February; the MinRec's final deadline is April 1, 2017, but I'll have to be more aggressive than that for reasons of my work schedule. Let me know if you have questions or are interested.

News of Members

Chuck's bypass surgery went quite well and he is now at home recuperating. Visitors are welcome but please call first.

John Sulzbach's article *Brazil Revisited (2015)* is currently running in The Mineral News. Part 1

was published in the September issue, Part 2 in October, and more is to come in future issues.

Crystal Gazers / BAM Christmas Party

The annual Crystal Gazers Christmas Party will be on Saturday, Dec 3, 2016, and BAM members are welcome to attend, as usual. The doors open at 5 p.m.; bring a potluck dish to share and mineral or related item(s) for the silent auction. The party will be held at the Frazier's condo complex community room, as usual, at 555 Pierce Street, Albany CA. Go to the parking entrance, tell them you are visiting the Fraziers and they will let you in. To ensure that you are on the entry list, RSVP to Steve Smith at 510-526-1877, or ssmith.contractor@tsocorp.com.

Carpooling is highly encouraged due to limited parking on site and in the vicinity. If you drive past an empty parking spot on the street nearby, back up and grab it and walk from there.

It has also been confirmed that the usual mini-show will take place earlier that day (Dec 3) at Hyatt House Hotel in Emeryville. A half dozen or more of your favorite mineral dealers will be selling specimens, and possibly pouring wine...

Free Day at CA Academy of Science

Just a reminder that admission to the California Academy of Science is free to anyone on Sunday December 11, providing a good opportunity to view their new mineral display. As you might imagine, the museum recommends that you arrive early on these popular days.

Digital Inspection Microscope

By Michael Cox

Ted Hadley and Michael Cox recently visited the offices of Keyence in Campbell, CA to look at their VHX-5000 digital inspection microscope. Although the cost if the scope is

over \$70K and not in reach without a fat grant or endowment, Mike had heard about the VHX-5000 and invited Ted to see what the latest in photonics has to offer. The Keyence website <http://www.keyence.com/usa.jsp> provides information about the company, the history of their products, and technical specifications.

Late September, 2016, Ted and Mike met salesman Chris DeRenzi at the Keyence sales office in Campbell, CA. Their purpose was to examine some microminerals using the VHX-5000 and compare its ease-of-use and capabilities to the authors' conventional photomicrography gear. Mike uses a 1984 Leitz Orthoplan polarizing research microscope equipped with an Ultropak center-illuminated objective system, and a Sony AR7 full-frame digital camera. Ted uses a modified microscope stand and bellows assembly he built himself. The stand, from an Olympus microscope, is equipped with a Canon EOS T3i digital camera and Nikon plan apochromatic microscope objectives.

Chris had the VHX-5000 set up in a demonstration room and ready to go. The scope is about the same size as Ted and Mike's existing gear, but also has a computer and LCD in a separate enclosure. Figure 1 is a picture of what was demonstrated:



For complete system specifications, refer to the on-line information at URL:

<http://www.keyence.com/ss/products/microscope/vhx5000/spec/>.

The specification link includes links to downloadable system catalogs for the microscope and accessories.

It took about three minutes for Ted and Mike to be so wowed with the VHX-5000 that they are seeking a lab with one of these scopes that might be willing to do mineral photomicrography.

Compared to conventional photomicrography set-ups using image stacking, the VHX-5000 is a jet next to a prop-plane. The VHX-5000 delivers what it advertises, "instantly observe any object entirely in focus." To this we would add, and adjust observation magnification, light source and quality, depth of field, and 3D qualities in seconds, as well as observe at any angle from near horizontal to 90 degrees top-dead-center, and take measurements and make topological profiles too. In a matter of seconds the scope produced digital image files that were fully in-focus, sharp, and color-accurate. Price is the main barrier, but for anyone working professionally in microscopy, the scope is definitely worth a look.

NOVA 3-Part Series in November



"Treasures of Earth: Gems, Metals, and Power" is a 3-part series that will take us on a journey deep inside Earth to uncover the mysteries of

how these treasures were created, and to explore how they have allowed humankind to progress and build our great civilizations. But even as that quest continues, we are discovering that some of our treasures may soon run out or have unintended consequences that bring new perils. Can our ancient treasures reveal new secrets that will help us solve the problems we face today? [Source: PBS web site]

The programs are scheduled as follows:

Nov 2 – Treasures of the Earth: Gems

Nov 9 – Treasures of the Earth: Metals

Nov 16 – Treasures of the Earth: Power

Check with your local PBS stations for times.

Upcoming Shows

November 5-6, Concord CA

Contra Costa Mineral & Gem Society

Centre Concord, 5298 Clayton Road

Hours: 10-5 daily

http://ccmgs.org/gem_show/

November 19-20, Livermore CA

Livermore Valley Lithophiles "Lithorama"

The Barn, 3131 Pacific Ave, off S Livermore Ave

Hours: Sat 10-5; Sun 10-4

www.lithophiles.org

November 19-20, Santa Cruz CA

Santa Cruz Mineral & Gem Society

5th Annual Holiday Show & Sale

Live Oak Grange, 1900 17th Avenue

Hours: 10-5 daily

<http://scrockngem.org/shows/index.html>

PACIFIC NORTHWEST FRIENDS OF MINERALOGY CONFERENCE, October 14-16

Several of us (Dan Evanich, Rick Kennedy, Barb Matz) attended this conference, which featured talks on the renowned copper districts at Bisbee AZ, Keweenaw Peninsula MI, and Butte MT. Rick was selling, Barb solicited a new BAM member (Linda Smith – welcome!), and Dan put in two excellent displays:



Dan's Butte MT display



And his display of Bisbee specimens