Bay Area Mineralogists
September 2016

Meeting: Wednesday, Sept 14, 2016; 7 pm
USGS, 345 Middlefield Road, Menlo Park
Building 3, 2nd Floor, Rm 3-237

President: Don Windeler, don.windeler at rms.com
Editor: Barb Matz, matz.barb at gmail.com
BAM web site: www.baymin.org

In this Issue:

The Bay Area Mineralogists meet monthly during the school year, on the 2nd Wednesday. We meet 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. We'll be in the meeting room – unless we've decided to use the auditorium, directly across the hall.

September Program

BAM and the MR Supplement

By BAM members

Instead of a guest speaker, the September meeting will feature a round-table discussion by ... all of us!

BAM will be contributing a group entry to the upcoming special issue of the Mineralogical Record on "Mineral Collections in California." We took a group photo at the picnic – now it's time to think about the rest of the contribution. Please bring the one or two specimens you are (or would) consider having included in this special event, even if you're not sure yet whether you'll participate. We encourage personally-collected specimens, but this is not a requirement. Please note – this is not a selection process, but a chance for us all to see what we have in mind.

For those who are unfamiliar with this initiative, each BAM contributor will have one pictured specimen at a cost of $100-200 (depending on final count vs. page charges) and you will need a fairly professional image of same. We are looking into options to minimize the cost of photography.

If you are planning to have a spread in the issue on your own, feel free to bring multiple specimens, but please keep in mind that we will need to keep the time of the meeting reasonable.

BAM Picnic Report

We had a good turnout on a fine day for our annual summer picnic. Many thanks to our gracious hosts, Stan and Sue! Stan rented a large BBQ on wheels to make the task of grilling much more efficient, and he and Dan Evanich produced piles of hamburgers and hot dogs to go with the delicious side dishes and desserts. The giveaway table was also well populated, and most of that material was able to find a new home.

The silent auction included many fine specimens that induced a few bidding wars! One was the fine Elmwood calcite pictured below:

J Magnasco photo

We grossed over $2,400 from the auction, with more than $600 from dealer-donated items. In the end we netted about $2,000 toward our new website.

Hot and heavy silent auction action!
(John Magnasco photo)

THANK YOU for the Donations!

Besides the usual quality contributions from our members, we had a number of fine and generous donations from dealers within and outside our club:

Rob Lavinsky – The Arkenstone
Dana Slaughter
Si and Anne Frazier – Frazier's Minerals
Richard Shupe – Richard Shupe Minerals
Alfredo Petrov – Petrov Rare Minerals
Andy Seibel – Andy Seibel Minerals
Walter Kellogg – MW Minerals
Isaias Casanova – IC Minerals

After the picnic, we also received specimen donations from **Dan Weinrich** (look for these in a future auction!) and a check from **Marcus Origlieri**. Thank you again to all of our donors – we really appreciate your assistance on our web site project!

News of Members

Member John Sulzbach has had an article about his travels in Brazil accepted by The Mineral News! Look for it in the October issue.

A Visit to the Green Fire Mine, CCMA, California

By Herwig Pelckmans & David Lowe;
Photos by Delilah Sabba

One day in June 2016, six BAM members made a collecting trip to the Green Fire Mine. Here is a short trip report and some new data about this locality and its minerals.

First of all, this site was known on Mindat as "Greenfire Mine", but after Chuck questioned the spelling and David checked the old claim papers, we now know the correct name for the locality is "Green Fire Mine", so we had the Mindat page corrected.

After getting together in Hollister, we teamed up and drove to the hills. The weather was still nice, but clouds were rolling in, and in the distance we even saw some rain. The higher we got, the more the clouds were coming up, and by the time we arrived at the collecting site, we even got a few drops of rain.

The rugged trail to the Green Fire Mine.

The newbies were told the place was well known for garnets in all hues of yellow and green. Delilah got lucky soon after she got to the collecting area. On the other hand, when Herwig started looking, he could not even find any! First he thought his vision was still influenced by too much "Two Buck Chuck" from the night before, but when ST shouted he had a hard time finding any garnets, Herwig felt much better. Apparently sunshine is what really makes those garnet crystals sparkle!

The sun was indeed a great help, every time it shone through the clouds. All of us were able to collect rocks with andradite garnets up to 5 mm on and/or in them. They were frequently

associated with prismatic needles and/or laths of colorless to whitish diopside up to an inch long, most of the time sitting on a bed of small crystals of a chlorite group mineral (most likely clinochlore), on a matrix made up of serpentine minerals. Thin veins of an asbestiform mineral (most likely chrysotile) were easily recognizable on the outside of most rocks, due to the "cats eye effect" of all those crystals that had grown parallel in the veins; especially when the light hit the veins at the right angle. Both the dumps and the cliff yielded specimens that were taken home. And Chuck even found some ... garden rocks! ☺

One of the nice things about field collecting, is sharing your goodies with others. Peggy had brought a very tasty homemade fruit salad, Dellilah had juicy fresh grapes and bread sticks, Herwig provided some yummy Belgian cheese and chocolate, Chuck had canned peaches and the ever present Twinkies (as well as "the food of kings"), ST had us sample his "Trail mix" and David shared his gigantic Safeway sandwich with whoever wanted a piece. Considering all the food we brought and ate, it's a good thing the trip only lasted one day!

Chuck, Peggy, and Herwig enjoying their lunch.

One of the things that caught our eyes, were the parallel growth of some of the garnets. Normally garnets grow in a complete chaotic way, showing absolutely no preferential orientation. Here, however, every now and then the garnets had grown in rows on the matrix, one right after the other, forming strings of garnet on the matrix. On some specimens we found areas where the garnet crystals all had the exact same orientation. Herwig thinks this might be due to epitaxial growth of the garnets on the (already oriented) asbestos (chrysotile?) veins, but more research needs to be done in order to prove this.

Around 7 PM we called it a day, loaded up the trucks and left the area. Back in Hollister by dark, we were just in time to order some Mexican food before they closed for the day. We enjoyed our evening meal together, all around one table, talking more rocks while tackling our burritos. Everybody agreed it had been a nice day, with plenty of promising material that would hopefully trim and clean up nicely.

At home the next day, while studying some of the material through the scope, we saw that many of the garnets actually have diopside needles going all the way through them. Herwig also noticed small (up to 1 mm), somewhat rounded, black octahedrons on what looked like a greenish chrysocolla. The latter is most likely lizardite, whereas the former ... would not that be magnetite? We were able to isolate a crystal; it stuck to a needle and was influenced by a magnet (it made the crystal move around the needle), but it did not stick to the magnet! David thought it to be chromite, since it was not really magnetic (since it did not jump to the magnet). A slightly larger crystal was isolated and taken home by David to analyze. To give you an idea of what the material looked like, this photo on Mindat shows a very similar looking specimen: http://www.mindat.org/photo-483202.html

A few days later, David sent us the following email:

"It wasn't easy, but I was able to run an XRD test on the very small octahedral crystal that Herwig gave me. As I had assumed, it is chromite. This was a reasonable guess, because of the shape, slight magnetism, color, and serpentine matrix.

The XRD pattern was a good match to a natural sample in PDF reference pattern, "04-015-0371", which had the following composition: Mg0.4 Ti0.026 V0.008 Cr1.187 Mn0.01 Fe0.915 Ni0.004 Al0.45 O4. Elemental analysis was not done on our sample so it may not be the same, but the structure is very close. Other spinels and even the normal magnesiochromite reference patterns did not match well at all.

The reference for the natural chromite is: "Crystal chemistry and structural refinement of chromites from different chromitite layers and xenoliths of the Bushveld Complex". Lenaz D.,

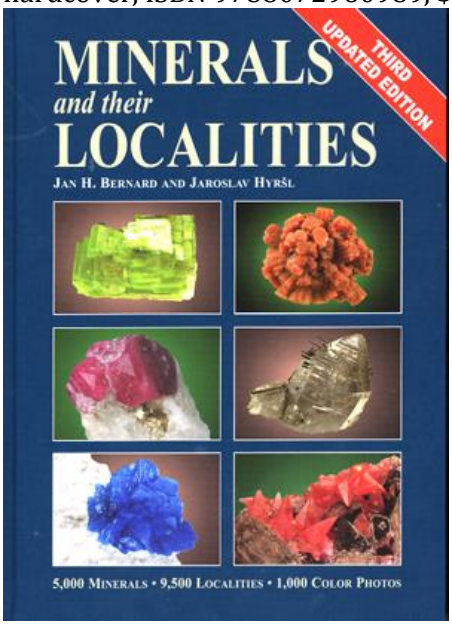
Braidotti R., Princivalle F., Garuti G., Zaccarini F., Eur. J. Mineral. 19, 599,609 (2007)."

Chromite had not been previously reported from this locality, so that was one more reason to write this article. According to Pemberton (1983), chromite is quite rare in California, since almost all so-called chromite is actually magnesiochromite (more Mg than Fe in the composition). So, even though the octahedrons are very small, we consider this to be an interesting find.

Minerals & Their Localities, 3rd Ed.

By Herwig Pelckmans

Minerals and their Localities, 3rd edition, 2015. Authors: Jan H. Bernard and Jaroslav Hyrsl. Granit Publishing House, Prague, Czech Republic, pp. 912, 1025 color photos, 170 x 240 mm, hardcover, ISBN 9788072960989, $150.



The first edition of this standard reference book appeared in 2004. Back then it was an instant hit, because it filled a gap in the mineralogical literature: a single, up to date book on all known minerals and their localities. This is THE book you will go back to time and time again, because it offers a condensed overview of almost all minerals known. For every mineral, many important properties are mentioned briefly, with special emphasis on the data that are of importance to mineral collectors. The most important classic AND more recent localities, the dimensions of the crystals found there, and the geological environment it occurs in are mentioned for most species; data you do not always find in other reference works.

Compared to the first edition, the looks of the book have not changed much. The descriptions are still quite compact, but that did not prevent the number of pages to increase from 808 to 912. It actually makes sense: about 830 new minerals have been described since 2004. The color code on the edges of the pages are still there and make it easy and fast to find a specific mineral. Also, important is that a lot of information has been added or updated for most of the "older" minerals, especially regarding new localities or other important data (Hyrsl, 2016, pers. comm.)

In this latest edition no less than 5,030 minerals, all valid species according to the latest IMA standards (situation of August 2015), have been included. Even though the paper used for this edition is slightly thinner than previous editions, the huge increase in minerals translates to a heavier book: 2.5kg for this edition, being about 200g heavier than the first version. The number of color photos on the other hand has slightly decreased: 1,025 in 2015 compared to 1,035 in 2004. The good thing is almost all pictures are new; only 5 photos of the first edition have not been replaced.

The dimensions of the photos (7.0 by 4.5 cm) and the book are still the same (17.0 by 24.0 cm). On the other hand, the number of localities mentioned in this third edition has increased considerably: from 8,500 to 9,500. This also means mineral collectors have been very active the last 11 years! :-)

The final good news: the price for this edition ($150) is almost equal to what it was when the first edition became available ($145 in 2004). Considering the number of pages has increased by 13%, and general costs have gone up as well since 2004, you're getting a better deal for such a high quality publication than ever before!

Herwig Pelckmans, San Mateo, July 2016.

References:

1st edition: http://rruff.info/doclib/cm/vol43/CM43_1435.pdf

3rd edition: www.granit-publishing.cz/en/minerals/mineralogy/minerals-and-their-localities-en-3edition

BAM at the SFGMS Show, August 2016 – *Photos by Jean Lee*

The BAM display. Many thanks to all who contributed specimens, and to Dan Evanich and David Lowe for putting it all together!

BAM members dispensing their vast knowledge at the Mineral & Gem ID table.