

The Mineralogical Cabinet

Volume 6, No. 1, May 2021

The Newsletter for the Friends of the New Mexico Bureau of Geology and Mineral Resources—Mineral Museum

From the Director's Desk

Greetings Friends,

I hope this newsletter finds our friends well, vaccinated, and starting to get out and about (with proper precautions of course). The museum has reopened as Socorro County turned “turquoise” (the state’s lowest level of restrictions) and the university covid task force has given its blessing. It has been a little over a whole year and the lifting of some restrictions is welcome, although sometimes it feels a bit odd. Regardless, we’re excited to welcome you back to the museum when you get the chance (Be sure to bring your mask and be prepared to join our contact tracing registry!).

As we illustrated in the last newsletter, new displays abound in the museum and a whole new year of acquisitions are backlogged for display. Despite the restrictions from the pandemic, our mineral donations stayed on a pace that is indistinguishable from a normal year—thank you donors! Kelsey’s Curator’s Corner will highlight a few of the spectacular additions, especially one from long time alum, Bill Marble, whose parents donated to our museum prior to my arrival and he decided to continue the family tradition! In addition to the displays, many of those chores that “wait until we have time to do them” have finally gotten done! Cleaning out storage, reorganizing the reserve collection, and other such jobs has been admirably spearheaded by Kelsey. We have also met our goal for funding the additional UV display lights that we hope to install this summer. Now we will have to come up with another goal...any suggestions?

We have decided to leave the guest exhibits that were already up during covid to stay on display until after this symposium. This gives a proper time for our visitors to appreciate the displays. We have been cycling new acquisitions, albeit a little slower than usual, and incorporating more of the new material into the displays so be ready to see a lot of new stuff.

Finally, I am pleased to announce we are going forward with a symposium this year that will be in-person, rules permitting of course. I have already reserved the Macey Center and have been contacting potential speakers. In addition, Ginger McLemore has already arranged for a collecting trip for the Friday before the symposium at Copper Flat, near Hillsboro. So looking forward to seeing all of our friends again!

Salud,

Virgil W. Lueth

Director's Choice

Stibnite (Sb₂S₃) is one of my favorite minerals. It catches my eye at every show and every museum. So much so that I have a hard time passing up a good specimen for sale or even sending one to the sales case. It was one of the first minerals that I really felt I needed to own (when I had a collection) and since domestic collecting is limited, one I had to buy. There is something about those long prismatic, sometimes bent, crystals or those wonderful sprays of metallic needles. I like the bright silvery color that also seems to tarnish to a pleasing gunmetal blue metallic look. They are showy without a doubt. Not only that, it is composed of antimony, one of the “semimetals” along with arsenic and bismuth (favorite elements!). The fact they are “hybrid” elements allows them to bond in many different ways and produce the profusion of chemically and physically complicated minerals that include a large family called sulfosalts. I liked stibnite so much that part of my Ph.D. dissertation studied its chemical variation in the vein deposits at Julcani, Peru.

The other thing I like about stibnite is that as one mineral it is often also another. Because it has solid solution with bismuthinite (Bi_2S_3), the result is both minerals manifest as one specimen. Bismuthinite cannot compete with stibnite for collectability. It tends to be more rare, significantly smaller, and prone for forming needles instead of long prisms (although it can but much more subdued). In the laboratory you can synthesize the complete solid solution, but curiously, that complete solid solution is rarely seen in nature. In addition, when found, bismuthinite often contains a significant amount of antimony in contrast to stibnite which only rarely contains bismuth in natural specimens. From my dissertation study, the amount of antimony seems to vary as the mineralizing fluids move along their pathway, becoming more antimonian away from the source of the fluids. At some point, about when you reach a 50/50 amount of bismuth to antimony, the solid solution “disappears”, replaced by a plethora of sulfosalts (often forming a “silver bonanza” in the vein). When stibnite reappears, farther down the flow path, it is devoid of bismuth and there is typically very little silver in the ore.

Curator's Corner

Hello Friends,

The days of a quiet, dark museum are now behind us. Spring is here—with more visitors, higher wind speeds, and seasonal allergies coming on strong! We've been able to set up a couple more displays, filling out all of the Waddell cases. We are also stoked about some pretty stellar acquisitions from generous donors.

COVID vaccines were distributed with high efficiency here in New Mexico. The museum staff (A whopping two of us!) are proud to report that we are fully vaccinated, which creates a sense of relief. We still have a cap on museum visitor capacity and NMT students workers are in short supply, which means Bureau staff members are performing student worker tasks (manning the sales case, being present at all times for inquiries). We look forward to the day students may return to work, so we can get back to our bigger tasks at hand.

New Displays

I took some notes from the famous Roberto Eveletti (which is Italian for Bob Eveleth), and installed three shelves of various mining tools and memorabilia. The top shelf shows the progression from candlesticks to electric cap lamps, the middle shelf highlights tools and a stellar mini-collection of blasting cap tins (Thanks to Jack Purson!), and the base includes items related to miners and logistics.

A Grant County Fluorite display was inspired by Bob Eveleth's acquisition of a worker badge from the short-lived Gila Fluorspar Mill. The badge belonged to Wiley



Stibnite (Museum No. 17068) from the vault. Shikoku, Japan, 5 cm tall. Gift of Elizabeth Hobbs in memory of Peggy Gross.

van Hecke, office manager at the mill, which was operated by International Minerals & Chemical Co. under contract from the US Gov't Metals Reserve Co. through August 1944. This exhibit combines not only the history of the mill, but also exquisite Grant County fluorite specimens, artifacts, lapidary, and a little section dedicated to fluorite education.

The 'Radiation Station' showcases Geiger counters through time! Three shelves include heavy, clunky radiation detectors from the 1940s to plastic pocket dosimeters of the post-Chernobyl era. Educational signs on how a Geiger counter works are also included in this non-mineral exhibit.



The entire mining artifacts display—three shelves at full capacity!



These caps are a stark reminder that children commonly worked in mines, especially in coal mines of the eastern US, before child labor laws were established in the 1930s.



The second shelf is dedicated to the history Gila Fluorspar Mill and war-time mineral production.



Candlestick holders and an assortment of lamps (oil wick, safety, carbide, etc!).



The bottom shelf of the Grant County fluorite exhibit is quite colorful.



Fluorite concentrates (metallurgical, ceramic, & acid grade) and a fluorite artifact (ornament?) found near the Gila River in 1951.

New Acquisitions

Overall, 2020 was not the year for record number of mineral donations. However, after checking the catalog, we added over 480 new minerals to the collection! We have decided to share photos of some of our fantastic mineral donations by museum supporters Bill Marble, Joan Massagué and David Stoudt.



Photo of the whole display, with older models on the bottom shelves and the youngest on the top shelves, just like sedimentary layers (don't hold that against the sedimentologist!).

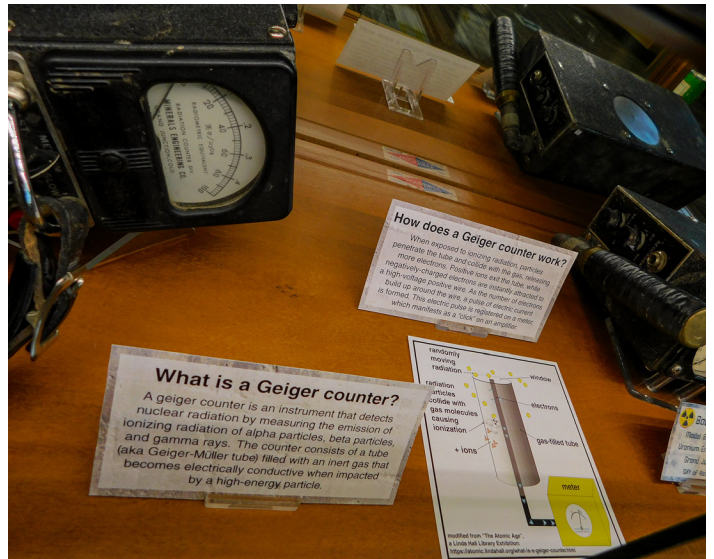


A Russian pocket dosimeter and instruction manual, ca. 1990.

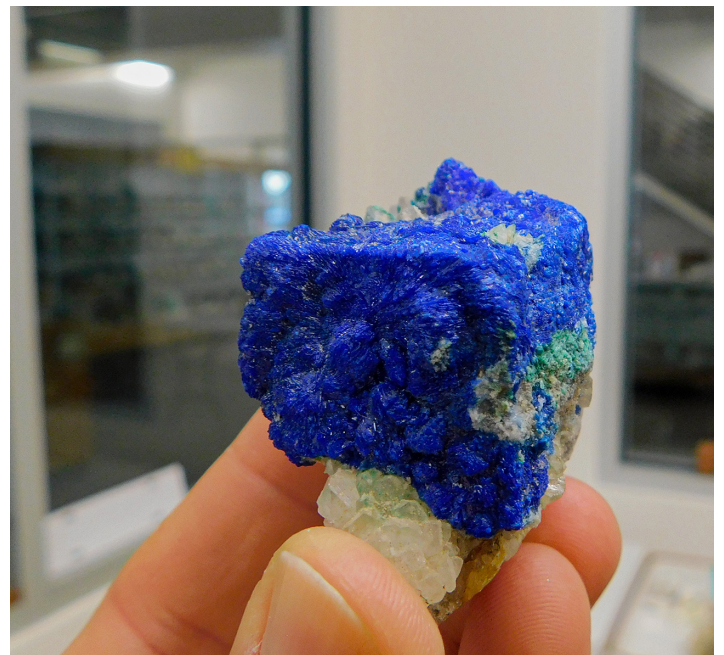
Collections Work

With the mining artifacts collection back on track, the next collection eligible for a makeover was gemstones and lapidary. Since December 2020, we've added over 110 new pieces to the gemstone/lapidary collection. Many of these stones and lapidary materials were donated by Al &

Betty Tlush, right before the big museum move of 2015. We pushed hard to get all of the lapidary and gemstone exhibits done before Symposium that year, and in doing so, didn't have time to catalog items put out on display! It was a relatively easy task with the museum closed, as there was no need to clean up the mess of paper, glue, and labels left in front of the cases. I'm happy to report the revamp should be completely finished in the next month or so!



Geiger counters: What are they, and how do they work? A little education is never a bad thing.



Linarite on galena, Blanchard Mine, Hansonburg District, Socorro Co., New Mexico. Gift of Bill Marble. This piece was self-collected by Bill while a student and New Mexico Tech.

Outreach News

Geoheritage article

The New Mexico Bureau of Geology and Mineral Resources has been sharing Bureau news with the public for over three years now. News articles highlighting various subjects, including: grants and awards, geologic and hydrologic work in the state, collaborative projects, publications news, and Mineral Museum updates, can be found on this site: <https://geoinfo.nmt.edu/news/home.cfm>

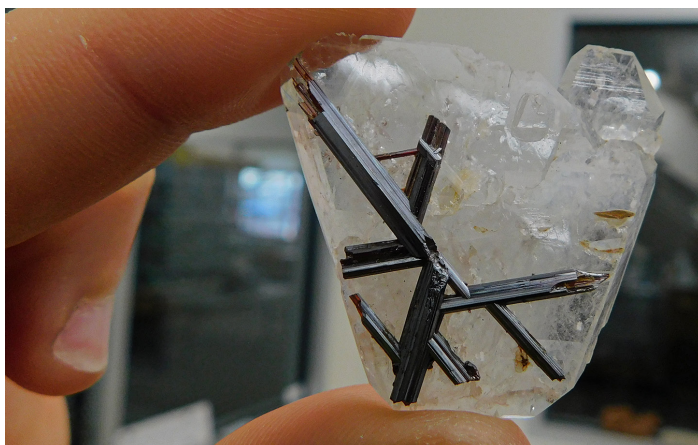
Recently Kristin Pearthree, a research scientist at the Bureau, published a nice piece on the Mineral Museum as a geoheritage site. Here are some excerpts from the article: "Geoheritage, an abbreviation of the words geologic heritage, is the practice of recognizing and conserving unique geologic locations with significant scientific, cultural, aesthetic, educational, and economic value. These special locations weave together geologic history and human history." The Mineral Museum "contains one of the finest collections of mineral specimens in the world. The samples, whose histories span both time and space, embody the diversity of the mineral world as well as the legacy of mineral collecting." Interested in reading more? Please visit this site: <https://geoinfo.nmt.edu/news/home.cfm?ID=470>



Fluorite, calcite, & barite, Cave-in-Rock, Hardin Co., Illinois. Gift of Bill Marble.



A gemmy pink vāryryenite, Shengus, Roundu District, Gilgit-Baltistan, Pakistan. Gift of Joan Massagué.



Rutile on quartz, Hiddenite, Alexander Co., North Carolina. Gift of Bill Marble.



Chrysocolla ps. Azurite, Ray Mine, Pinal Co., Arizona. Gift of Bill Marble.



Ludlamite, Huanuni Mine, Dalence Province, Oruro, Bolivia. Gift of Joan Massagué.



Topaz with muscovite, Alabashka Pegmatite Field, Sverdlovsk Oblast, Russia. Gift of Joan Massagué.



Schorl, epidote, & quartz, Picuris pegmatite, Picuris District, Taos Co., New Mexico. 18.5 x 11 x 13 cm, Gift of David Stoudt & Susan Hoffman.



Beryl var. Aquamarine, Sunnyside Mine, Petaca District, Rio Arriba Co., New Mexico. 13 x 8.5 x 8.2 cm, Gift of David Stoudt & Susan Hoffman.



Fluorite on fluorapatite, Panasqueira Mines, Castelo Branco, Portugal. Gift of Joan Massagué.

Explora Virtual STEM Night

The Bureau's own Outreach Manager, Cynthia Connolly, and Museum Director, Virgil Lueth, were featured guests on a virtual science night hosted by Explora in December. The zoom gathering was attended by K-12 kids, parents, and educators with a curiosity about minerals. Video footage includes a segment on how to grow crystals at home, what causes crystals to form, and how they eventually fit into one of the seven crystal systems.

NM Science Olympiad State Tournament

The state Science Olympiad tournament was held in a virtual format this year, leaving some event supervisors scrambling to figure out how to create an online testing approach. It wasn't very difficult to create the fossils virtual test, because much of the format was the same. The most challenging aspects were taking decent photographs for fossil identification and stating crystal clear questions. Overall, 34 teams competed in the event, with Centennial High School (Las Cruces) taking first place in the high school division, and Sarracino Middle School (Socorro) coming in first in the middle school division.



A sample test question for the Fossils Event! Identify the phylum of this fossil: Identify the phylum of this fossil.

A) Pteridophyta, B) Ginkgophyta, C) Sphenophyta, D) Pinophyta, E) Pteridospermatophyta, F) septastrea

If you chose D) Pinophyta, you were correct!



Virgil discusses the crystal lattice, unit cell, and crystal systems using various materials (styrofoam spheres, 3D paper models).



Behold Cynthia's crystal growing setup, complete with a few finished products!



Cynthia and Virgil pose with their manmade and natural mineral specimens.



Cynthia and Virgil pose with their manmade and natural mineral specimens.

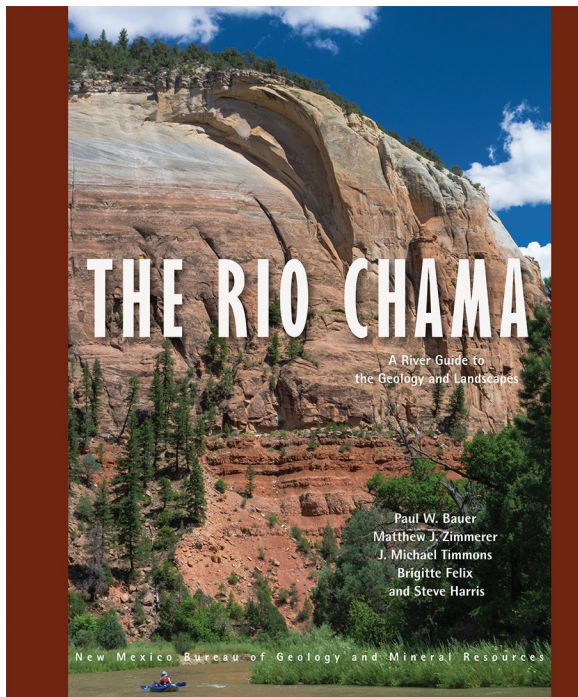
Bureau Periodicals

Free New Mexico geoscience publications, get em' while you can! A new issue of Earth Matters and NM Geology are available for free download from this website: <https://geoinfo.nmt.edu/publications/periodicals/home.cfm>

Publication Store News

Upcoming Publication

The Rio Chama: A River Guide to the Geology and Landscapes



The 135-mile Rio Chama of northern New Mexico is a major tributary of the Rio Grande. From its alpine headwaters at the Continental Divide of the glaciated San Juan Mountains in southern Colorado, this hidden gem flows across the Colorado Plateau in a spectacular canyon cut into Mesozoic sedimentary rocks, in places up to 1,500 feet deep. Towering, vibrant, sandstone cliffs, heavily wooded side canyons, superb camping, and a diversity of historical sites offer an outstanding wild river backdrop for the boater, angler, hiker, or camper.

This book contains detailed river maps of the seven sections of the Rio Chama, plus its three resplendent reservoirs, from the Colorado headwaters to its confluence with the Rio Grande near Española. The Chama Canyon section, below El Vado Dam and through the Chama Canyon Wilderness, is one of the finest, multi-day, whitewater trips in the Southwest. The Rio Chama will be printed in early 2021.

The Publications Store is now highlighting *The Geology of Southern New Mexico's Parks, Monuments, and Public Lands*, the second of two volumes focused on the state's

diverse and interesting geology. Written by geoscientists for the interested public, this guidebook includes nearly 400 full-color photos, geologic maps, and illustrations on geologically important portions of southern New Mexico. If you are interested in a new geology guide for the spectacular scenery of southern New Mexico, please visit this site: <https://geoinfo.nmt.edu/publications/guides/nmparks/southern/>

For updates and photos on what's happening at the museum, I try to post weekly/bi-weekly on our Facebook page:

www.facebook.com/NMBGmineralmuseum

The New Mexico Bureau of Geology ALSO has a Facebook page! Please check it out at this address: www.facebook.com/NMBGMR

—Kelsey McNamara

2021 Museum Show Calendar

Sept. 14-16 Denver Gem & Mineral Show?
Nov. 12-14 41st Ann. NM Mineral Symposium

“Friendly Reminder”

Annual Dues for the Friends of the Museum expire on the weekend of the Mineral Symposium.

You can pay dues on site or remit payment to:
NMT - Mineral Museum Gift Fund
and send it to:

NMBGMR Mineral Museum
Friends of the Mineral Museum
801 Leroy Place
Socorro, NM 87801

You can use a credit card too, contact:
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