BALMAT

THE MINERALOGICAL RECORD

January–February 2025 • Volume 56 • Number 1 • $30

The
Mineralogical Record

The International Magazine for Mineral Collectors

VOLUME 56 • NUMBER 1 JANUARY–FEBRUARY 2025

COVER: Calcite, 28 cm, from the Empire State #4 mine, Balmat, New York. Fine Minerals International specimen; James Elliot photo.

Articles

Featured Collection Pages

Subscription (U.S. only): $95/one year
Subscription (outside the U.S.): $145/one year
Digital Subscription (anywhere): $54/one year or add on to paper for $24/one year
Boxed subscription (U.S. only): $145/one year,
(Canada) $231/one year, (outside U.S. other than Canada) $325/one year
Subscription (Libraries, companies and institutions): $250/one year
Subscribe at www.MineralogicalRecord.com

The BALMAT ZINC MINES

St. Lawrence County, New York

Jamison K. Brizendine
20999 West Byron Road
Shaker Heights, Ohio 44122
brizeja@earlham.edu
Jbrizendine@mrexcavator.com

Christopher J. Stefano
The Mineralogical Record
6354 North Camino Los Mochis
Tucson, Arizona 85718
cjstefanoxls@gmail.com

The zinc mines of the Balmat district in upstate New York have been active for over 100 years, occasionally producing major finds of world-class sphalerite, calcite, magnetite and other minerals. Each major discovery has captured the attention of a new generation of mineral collectors, many of whom had not previously been acquainted with this classic American district. Recent discoveries have yielded some of the best specimens ever found in the district, including new, world-class anhydrite.

INTRODUCTION

The Balmat District is a rarity: a 100+ year-old mining district in the eastern United States that is still producing ore and specimens today. Although most of the high-grade zinc deposits at Balmat are found at significant depth, they are still profitable to mine, and new orebodies are still occasionally being discovered. Pierrepont, which is 28 miles from Balmat, is located outside of the Balmat district, but has a similar host rock geology and mineralogy.

Because of the depth of the deposits and their metamorphic nature, open crystal pockets are relatively rare. Nevertheless, occasional vugs have produced world-class examples of calcite, sphalerite, magnetite and anhydrite. A new string of discoveries over the last couple of years has been unusually prolific, bringing this classic American district back into the limelight.

LOCATION

The hamlet of Balmat is located approximately 5 km from the southwestern border of St. Lawrence County, New York, in the northeastern corner of the state. The modern-day St. Lawrence County, named for the St. Lawrence River, was created in 1802 from parts of Clinton, Herkimer and Montgomery counties. Jay Lininger (1998), cofounder of the journal *Matrix*, accurately described St. Lawrence County as "a location that isn't for people who desire an easy life. It is a rugged, spartan area, lightly populated and dominated by harsh extremes in weather and topography." Life in the "North Country," a popular term for St. Lawrence, is mainly based on farming, although prior to the closure of the many talc and zinc mines, many of the county's residents were miners. In recent times, tourists to St. Lawrence County have enjoyed boating, fishing, camping and hiking during the relatively cool summers, but try to avoid the county during the brutally cold and dark winters.

HISTORY

The hamlet of Balmat was first settled by Parisian immigrant John D. Balmat (1785–1862), who was related to the Duchess of Oldenburg through his mother's side of the family and was considered to be of higher status than the local "commoners." During the French Revolution the Balmat family had attracted the disfavor, then the ire, of Robespierre, forcing John along with his mother and his brother Peter to flee Paris to the safety of America to avoid vengeance from the mobs (Wight, 1905; Anonymous, 1906).

In 1812, Balmat married Nancy Gooder, whose father was an officer under the Marquis de Lafayette. This patriot was present at most of the major battles of the American Revolution, including the Battle of Brandywine, where he was injured, and the Battle of Yorktown, where the British army surrendered (Wight, 1905; Anonymous, 1907). Balmat's family was quite large: eight boys and six girls. Wight (1905), in his memoir, remarked that although he was practically a next-door neighbor, he never heard any of Balmat's children "indulge in profane language" (a remarkable feat!).

Figure 20. **Anhydrite, 8.5 cm, from the Empire State #4 mine. Robert Rosenblatt and Erynn Norris collection; László Kupi photo.**

Figure 21. **Anhydrite with calcite, 6 cm, from the Empire State #4 mine. Neal Luppescu collection and photo.**

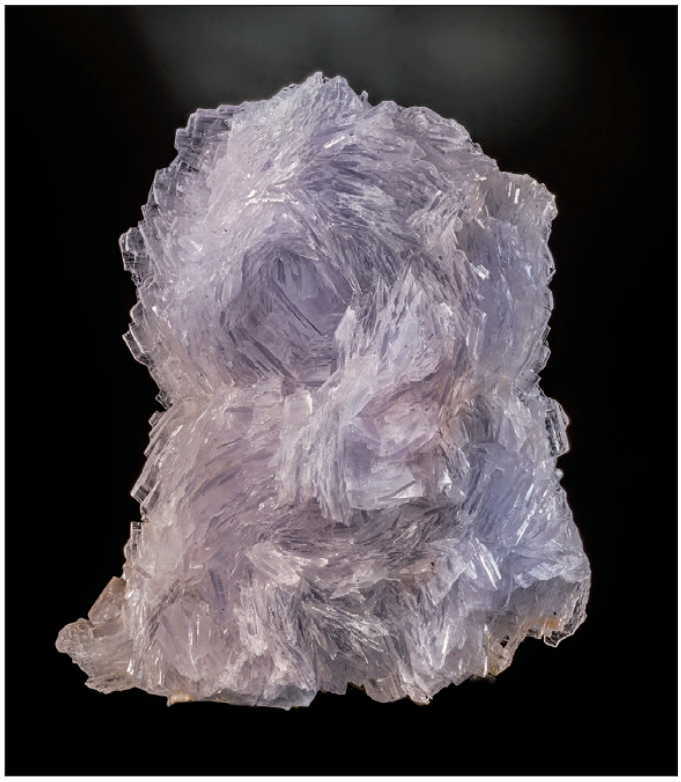


Figure 22. **Anhydrite, 11.5 cm, from the Empire State #4 mine. Rocko Minerals specimen; Kevin Downey photo.**

Figure 34. **calcite, 13.1 cm, from the Empire State #4 mine. Rocko Minerals specimen; László Kupi photo.**

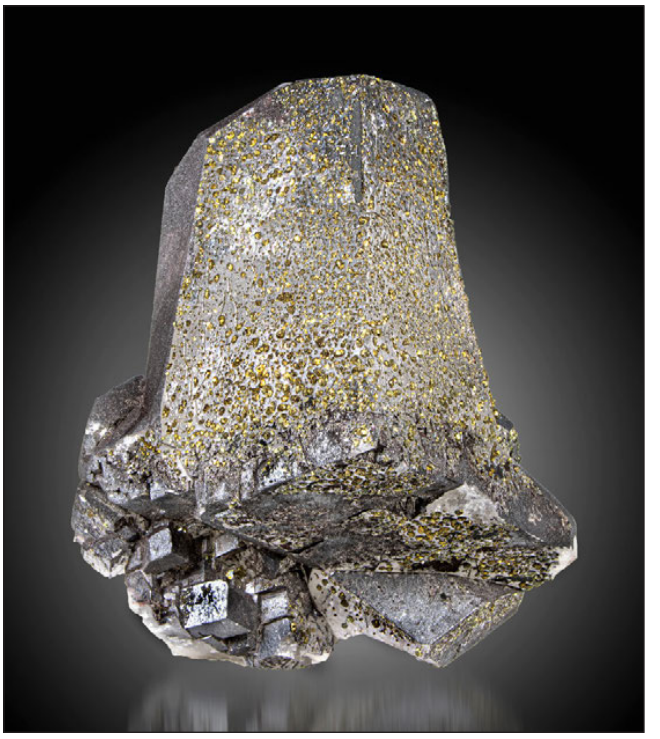


Figure 35. **Calcite with chalcopyrite, 9.5 cm, from the St. Joe #3 mine. Ex Schuyler Alverson collection. New York State Museum specimen; Chris Stefano photo.**

Figure 36. **Calcite, 11.2 cm, from the Empire State #4 mine. Steve Smale collection; Jeff Scovil photo.**

Figure 37. **Calcite, 9.5 cm, from the Empire State #4 mine. Mike Walter specimen; Kevin Dixon photo.**

Figure 50. **Calcite, 11 cm, from the 1000 level of the Hyatt mine. Ex Steven Chamberlain collection. New York State Museum collection; Chris Stefano photo.**

Figure 51. **Calcite, 25 cm, from the Empire State #4 mine. Green Mountain Minerals specimen; Jeff Scovil photo.**

Figure 52. **Calcite, 13 cm, from the 4051 pocket, Empire State #4 mine. Green Mountain Minerals specimen; Rudolph Van Dommele photo.**

Figure 53. **Calcite, 14.8 cm, from the 4051 pocket at the Empire State #4 mine. Green Mountain Minerals specimen; Rudolph Van Dommele photo.**

Figure 54. **Calcite, 16 cm, from the St. Joe #2 mine. Ex Peter Via collection. James Madison University specimen; Jeff Scovil photo.**

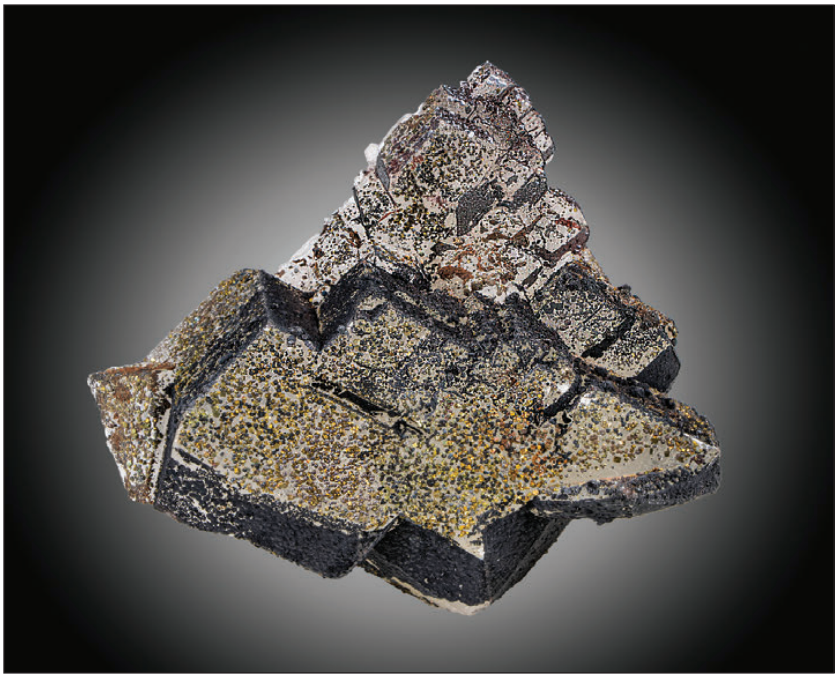


Figure 55. **Calcite, 6.7 cm, from the Balmat #3 mine. Ex Steven Chamberlain collection. New York State Museum collection; Chris Stefano photo.**

Figure 75. **Magnetite, 2 cm, from the ZCA #4 mine. Alex Venzke specimen; Jeff Scovil photo.**

Figure 76. **Magnetite, 4.2 cm, from the ZCA #4 mine. Ex John Johnson collection. New York State Museum specimen; Chris Stefano photo.**

Figure 77. **Magnetite, 2.7 cm, from the ZCA #4 mine. Fine Minerals International specimen; Joe Budd photo.**

Figure 78. **Magnetite, 6.5 cm, from the ZCA #4 mine. Ex John Johnson collection. New York State Museum specimen; Chris Stefano photo.**

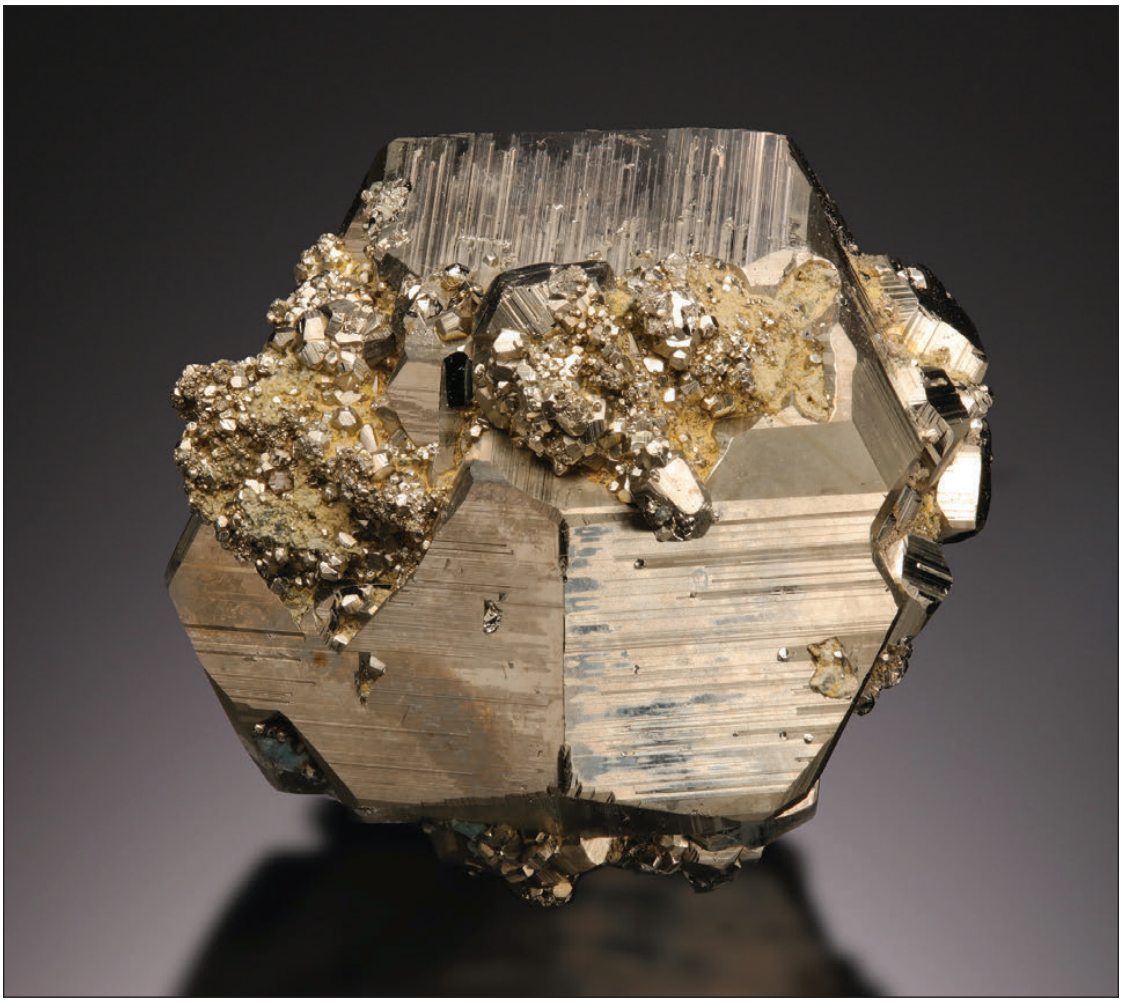


Figure 86. **Pyrite, 4 cm, from the Pierrepont mine. Green Mountain Minerals specimen; Rudolph Van Dommele photo.**

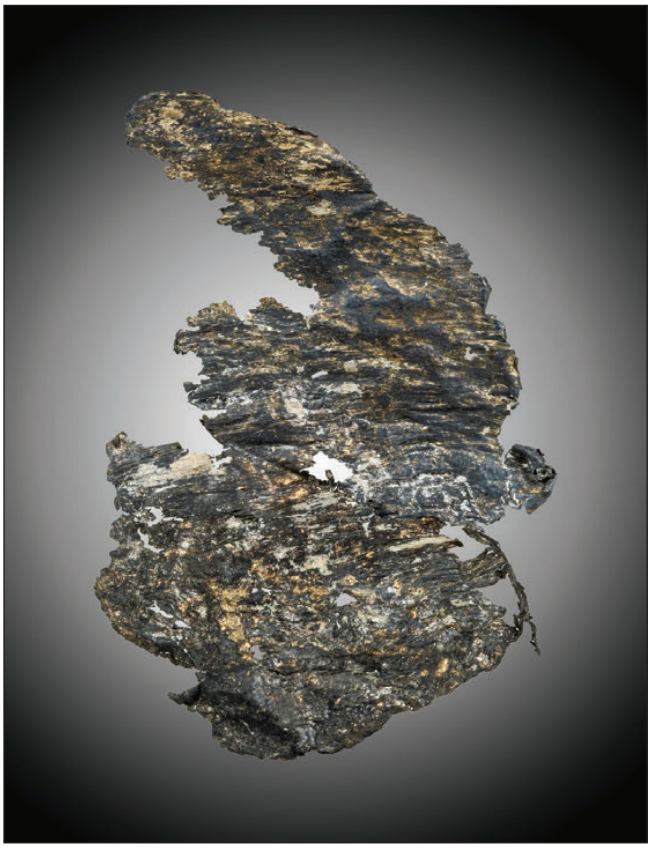


Figure 87. **Silver, 4.5 cm, from the ZCA #3 mine. Ex Steven Chamberlain collection. New York State Museum specimen; Chris Stefano photo.**

to large cabinet, satisfying local collectors and those who like to collect sulfide minerals.

Silver Ag

Although there are several reports of native silver finds at Balmat, only a single specimen (ex. Steven Chamberlain collection, now at the New York State Museum) is known to have survived (Chamberlain *et al*., 2018). This specimen is a 4.8-cm sheet of silver from the #3 mine collected in the 1950s by Perry Caswell (Chamberlain, 1998).

Sphalerite ZnS

Sphalerite is probably the ultimate collector's species at Balmat and is the primary ore species in all of the mines, occurring as massive black or brown aggregates. Sphalerite crystals are only found in vugs in the marbles and result from remobilization of zinc in the orebodies (Chamberlain *et al*., 2018). The sphalerite crystals tend to be lower in iron than sphalerite in the ore and show colors ranging from colorless to green to various shades of yellow and red and occasionally (high-iron) black. The yellow crystals are of particular interest to collectors, typically being highly lustrous and gemmy. Yellow sphalerite crystals have occurred in the #2, #3, #4, Pierrepont and Hyatt mines. Fine, equant to elongated spinel-law-twinned sphalerites of a brownish yellow color reaching 4.5 cm or more have been found in the #2 and Pierrepont mines (Chamberlain *et al*., 2018). Finds of attractive crystals and groups of crystals of sphalerite have been made fairly regularly, and even before the exciting new finds of 2021 to the present, many collectors owned fine sphalerite specimens from the Balmat mines.

Figure 96. **Sphalerite, 2.8 cm, from the Hyatt mine. New York State Museum specimen; Chris Stefano photo.**

Figure 97. **Sphalerite (spinel twin), 3 cm, from the Grange Orebody at the Pierrepont mine. Ex Steven Chamberlain collection. New York State Museum specimen; Chris Stefano photo.**

Figure 98. **Sphalerite, 2.6 cm, from the Balmat #3 mine. Ex Steven Chamberlain collection. New York State Museum specimen; Chris Stefano photo.**

Figure 108. **Sphalerite with quartz, 5.6 cm, from the Empire State #4 mine. Rocko Minerals specimen; Jeff Scovil photo.**

Figure 109. **Sphalerite, 2.7 cm, from the Empire State #4 mine. Spirifer Minerals specimen; Jeff Scovil photo.**

What's New in Minerals

in Denver's bracing, mile-high, early-autumnal weather. For serious mineral collectors the heart of the matter has come to be the Hard Rock Summit Show, run by Christoph Keilmann (who also runs the Munich Show in October), for it is at Hard Rock that a good number of the world's top mineral dealers, plus many others well worth looking in on, offer their wares. In 2022 and 2023, the Hard Rock Summit show was held in the Denver Convention Center, in the heart of downtown, but for 2024 it moved to a brand-new setting, namely the Westin Westminster Hotel, 10600 Westminster Boulevard, a commute of just 20 minutes or so on the freeways from the center of Denver. In 2024, the Westin Westminster also hosted the Denver Gem & Mineral Show, formerly held in the Convention Center's first floor: in the hotel this "club" show was reached via a short hallway off the main passageway enroute to the Hard Rock Summit show's big central hall.

Outside the looming hotel, all the while, a "tent village" held mineral, lapidary and fossil dealers, and getting from this outdoor space to the indoor ones was a matter merely of walking vigorously about while your car stayed put in the extensive free-parking lot. Inside again, on the sides of the mineral shows—indeed in a constant general buzz of activities on every side—there were features including 15 erudite lectures on mineralogical and related topics; an outdoor lunch buffet held every day by the Denver Gem &

Figure 1. **The Westin Westminster Hotel, the new venue for the Hard Rock Summit and Denver Gem & Minerals shows.**

Denver Show 2024 by Thomas P. Moore

[September 7 – September 15]

In September of each year, mineral collectors eager to shake off the long summer doldrums welcome the advent of the "Denver Show," the number-two mineral event (after Tucson) in the United States, which increasingly has become a (Tucson-style) convocation of many mineral, gem and fossil shows holding forth

Mineral Show; an "Artist's Corner" with beautiful works by three artists (see later); gold-panning and fossil-digging demonstrations for kids; a fluorescent-minerals room; and none other than the perennial Mr. Bones (Tim Seeber), who went prowling about, in his Tyrannosaur-skeleton getup, as he has done at every previous Denver Show that I can remember. The whole arrangement in and around the hotel, in short, was easy, convenient and welcoming. The bottoms of one's feet likely experienced a spoilsport hurt by the

Figure 11. **Calcite on galena, 9.4 cm, from the West Orebody, Sweetwater mine, Ellington, Reynolds County, Missouri. Persson Rare Minerals specimen; Christi Cramer photo.**

galena crystals. In a few of the specimens the calcite crystals perch lightly on nearly spherical crusts of galena; in one such example a couple of perfect, gem-yellow calcite crystals hide *inside* a half-open galena sphere. Phil prices the miniatures in mid-three figures, and they were going fast to admirers of the "golden" calcites of the Sweetwater and other rich lead mines in Missouri's Viburnum Trend.

Earlier show reports have highlighted the jumbo crystals of **barite** which have been emerging regularly (together with excellent calcite) from the underground Linwood limestone mine, Buffalo, Scott County, Iowa, and, happily, the barite bounty continues. At a stand in the long white tent that served as an annex to the Hard Rock Summit Show, Everett Harrington of *Minerals Plus* (jesus_everett@hotmail.com) had about 50 huge barite specimens, most of which were collected during the week of July 4, 2024—and because of that date, and because of the specimens' vivid fluorescence, Everett christened the pocket from which they came the "Light-It-Up Pocket." The barite crystals, to an awesome 40 cm long, are orthorhombic prisms with pairs of sloping faces along their sides and simple wedge terminations on their ends (in most cases on both ends), and even the most enormous of them are as sharp as you

Figure 12. **Barite, 15 cm, from the Linwood mine, Buffalo, Scott County, Iowa. Minerals Plus specimen; Christi Cramer photo.**

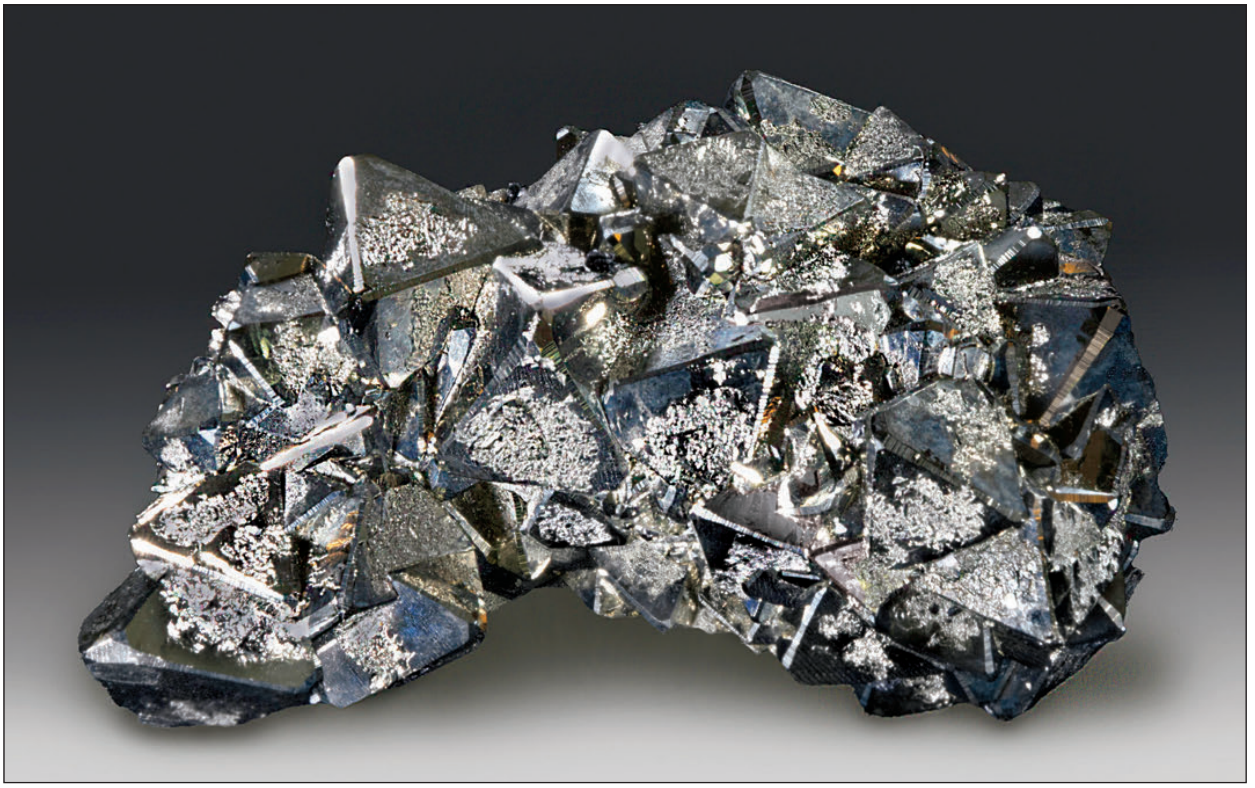


Figure 19. **Pyrite, 12 cm, from the Huanzala mine, Huallanca District, Ancash Department, Peru. Ausrox-Crystal Universe specimen; Christi Cramer photo.**

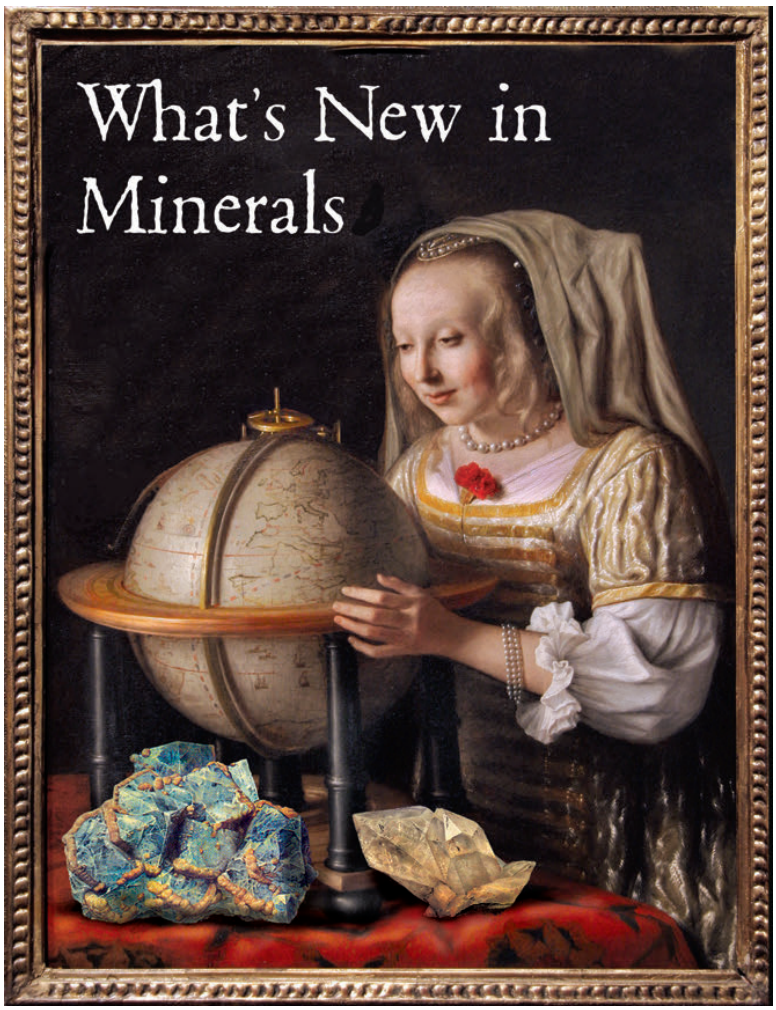
Figure 20. **Pyrite on quartz, 7.6 cm, from the Huanzala mine, Huallanca District, Ancash Department, Peru. Ausrox-Crystal Universe specimen; Christi Cramer photo.**

Figure 21. **Beryl, 7 cm, from Marambaia, Minas Gerais, Brazil. Marco Tironi specimen; Christi Cramer photo.**

Figure 26. **Hemimorphite, 10.5 cm, from Palabanda, M'Fouati District, Bouenza Department, Republic of Congo. Spirifer Minerals specimen; Christi Cramer photo.**

Figure 27. **Libethenite, 3.9 cm, from Gautala, Mindouli District, Pool Department, Republic of Congo. Spirifer Minerals specimen; Christi Cramer photo.**

Figure 28. **Poudretteite, 4.8 cm, from the Mogok Stone Tract, Mandalay Division, Myanmar (Burma). KARP specimen; Christi Cramer photo.**



Munich Show

by Thomas P. Moore

[October 23 – October 27]

Each late October, when I come to Munich to visit Europe's top mineral show, there is a particular moment when my arrival seems well and safely completed, my week's stay seems truly to have begun, and the scene before me is touched with a friendly, memorious sort of magic. Do you have such minor epiphanies too, when crossing the thresholds of sacred spaces? Maybe, if I try to describe what I mean, it will help inspire you to make your very first visit to *Mineralientage München* . . .

After taking the U-Bahn (subway) from the airport to the city center, I come up for the first time into the *Marienplatz*—the great gray cobblestoned plaza in the center of Munich which is just a short walk from where I always stay. Just emerged into the *Platz* from the racketing underground of the U-Bahn, I set down the obnoxious dead weight of my baggage simply to stand still and savor the baroque beauty which is all around me. The moment of stasis is laced with happiness and nostalgia, and it lasts half a minute or so, and then I find a table at one of the outdoor cafés and order a coffee or beer (it will be a *good* beer, as there are no other kinds here). Then, from the café table, with benign tolerance I watch the knots of tourists all gawking upwards and slantwise along the chill stone façade of the *Neues Rathaus*; I offer a *hallo* to the golden statue of Mary which looks down on all from atop her great pillar; with vague distaste I sense the avid commercial energies of the giant department stores around the *Platz* as they open up in midmorning. But the main apprehension is of a magical point of stillness, redeeming a day dulled by long-distance travel, and over the years the experience has grown to become my special, essential Munich Show *thing*.

However, here are some hard, happy, non-sentimental facts about *Mineralientage München*—"Munich Mineral Days"—by way of attesting that the show has almost fully recovered from the unfortunate interlude of the Covid pandemic that cancelled it altogether in 2020 and hobbled it somewhat in two or three subsequent years.

In 2024, just as usual, the show took place in several airplane-hangar-like halls in a sprawling group of such halls just beyond the end-of-the-line U-Bahn stop at *Messestadt Ost* ("Fairgrounds City East"). As usual, Tuesday and Wednesday were set-up days

Figure 3. **Brannerite, 5.5 cm, from the Villette quarry, Aime-La Plagne, Savoie, Auvergne-Rhône-Alpes, France. Caillaux specimen; Christi Cramer photo.**

Figure 4. **Gold on quartz, 9.5 cm, from Brusson, Aosta, Italy. Wittur Minerals specimen; Christi Cramer photo.**

Figure 5. **Plumbogummite, 7.9 cm, from La Manilia mine, Garletos, Badajoz, Extremadura, Spain. Jordi Fabre specimen; Mark Mauthner photo.**

and early 1990s (for an article about Oberdorf and its minerals, see the November–December 2018 *Mineralogical Record*). Word is that magnesite mining at the locality is now in abeyance, but at the Munich 2024 show a fine lot of "old" Oberdorf strontianites was on sale in the booth of Rudolf Watzl's *Saphira Minerals*. These 20 or so specimens, mostly collected during the 1960s and resident until recently in the Peter Pichler collection, are loose clusters of white to palest yellow, prismatic crystals of strontianite in lustrous, tightly intergrown sprays and fans—very attractive—in miniature to small-cabinet sizes. Rudolf asked 200 euros for the best of the miniatures, and up to 1,000 euros for some lovely small-cabinet pieces (remember: a euro is almost exactly equivalent to a dollar these days, and specimen prices will therefore be given in euros throughout this report). Rudolf's offering at Munich in 2024 may well have been one of the last-best chances for "modern" collectors to score an excellent strontianite from the champion locality for the species.

A 2023 find of nicely crystallized **brannerite** in the Villette quarry, Aime-La Plagne, Savoie, Auvergne-Rhône-Alpes, France was represented by five miniatures which were brought to Munich by Jean Jacques Abello of the French dealership *Caillaux* (jjabello@hotmail.fr); Abello said that these five were the best of some 20 pieces recovered. Brannerite is a complex oxide of uranium and rare-earth metals with calcium, iron and titanium; it is dull brown to black, slightly radioactive, rare in good crystals, and very seldom seen on the collector market. Abello's specimens are even mildly attractive, as they show sharp-edged, submetallic black, slightly skeletal-looking bladed crystals of brannerite to 4 cm embedded in massive white calcite. The best two of the miniatures are priced at 1,800 and 2,950 euros.

The second-best European locality for well-crystallized **gold** (second only to the ancient mines of Romania's "Golden Triangle") is the Alpine occurrence at Brusson, in the Aosta Valley of northern Italy, from which spectacular specimens showing lavish branching formations of gold in open quartz seams still occasionally trickle out. At the 2024 Munich Show, Janet and Peter Wittur of *Wittur Minerals* (wittur-minerals.de) had three fine cabinet-size pieces in which brilliant masses of microcrystallized gold form major coverages over snow-white quartz plates, these from an old Italian collection. The head-turning specimen pictured here is priced at 9,800 euros.

A final note from Europe comes courtesy of Jordi Fabre, who could not visit the 2024 Munich Show but instead sent his friend

Figure 23. **Ilmenite on smoky quartz, 4.6 cm, from Davib-Ost, Erongo Mountains, Namibia. Namibia Mineralien und Rohsteine specimen; Christi Cramer photo.**

Figure 24. **Proustite, 2.8 cm, from Schlema, Saxony, Germany. Evan Jones and Marc Miterman specimen; Christi Cramer photo.**

155 and 1,000 euros.

HQLP (High-Quality-Low-Price) Notes

Regular readers will already know the theme of this regular sub-report: collectors with limited budgets but also with deep mineralogical knowledge, keen eyes, and patience can find remarkable bargains at any big mineral show. And I will add a corollary this time: it is far healthier to feel proud of yourself for scoring bargains like that than to long hopelessly for world-beating specimens you can't afford, let alone to feel jealous envy of those who can. Mineral shows and their aftermaths, when you review what you have seen and acquired, should be *fun*.

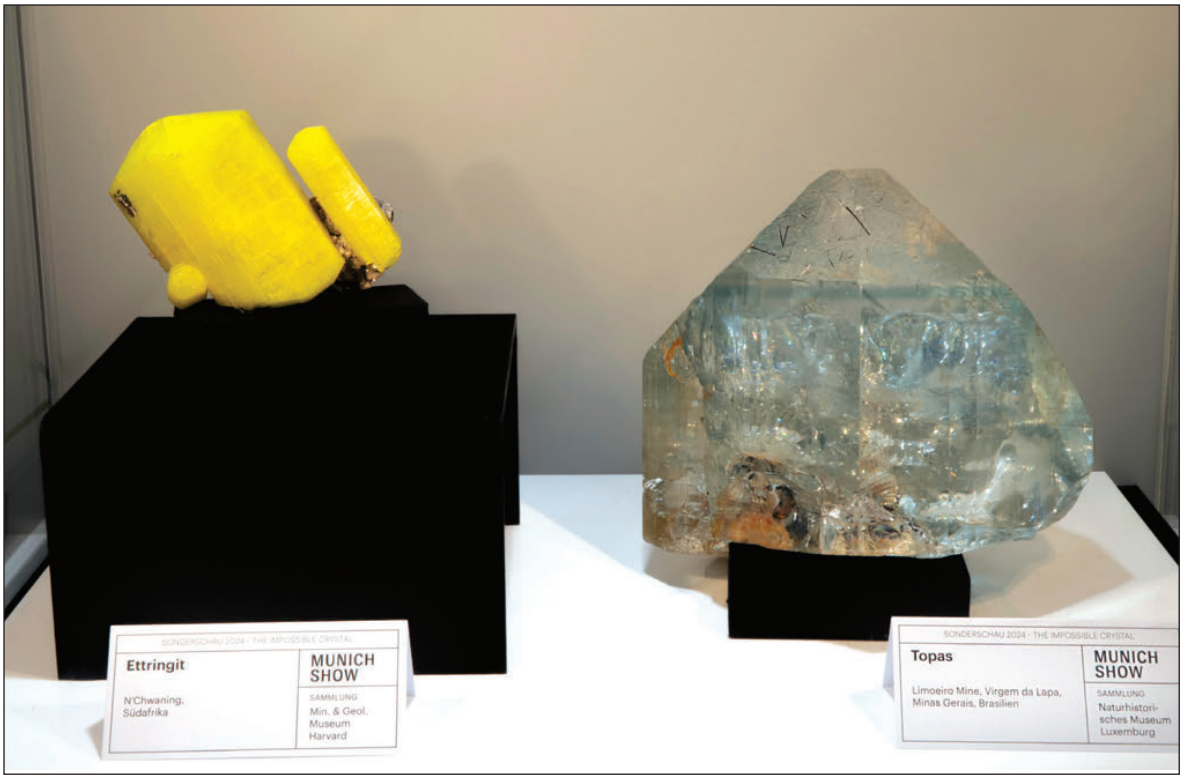


Figure 31. **Impossible Crystal exhibit of specimens from the Harvard University collection. Christi Cramer photo.**

Figure 32. **Impossible Crystal exhibit of specimens from the collections of Harvard University and Fabian Wildfang. Christi Cramer photo.**

Figure 33. **Impossible Crystal exhibit of specimens from the collections of Fabian Wildfang and Albert Russ. Christi Cramer photo.**

Publisher & Editor-in-Chief
Wendell E. Wilson

Associate Publisher & Circulation Director
Thomas M. Gressman
tom.gressman@minrec.org

Senior Editor
Thomas P. Moore

Editor
Christopher J. Stefano
6354 N Camino los Mochis,
Tucson, AZ 85718

Circulation Manager
Christi Cramer

Associate Editors
Malcolm Back
Bill Birch
Bruce Cairncross
Anthony R. Kampf

Founder
John Sampson White

Graphic Design
Wendell E. Wilson

Graphic Production
Christopher J. Stefano

Printing
Sheridan Pennsylvania

Editing Office
Wendell E. Wilson
Thomas P. Moore
4631 Paseo Tubutama
Tucson, AZ 85750
Tel: (520) 299-5274
minrecord@comcast.net

Subscriptions, Back Issues & Book Orders
Thomas M. Gressman
10694 Hiker Peak View #207
Colorado Springs, CO 80921
(520) 529-7281

Advertising Office
Thomas P. Moore
2709 E. Exeter Street
Tucson, AZ 85716
(520) 325-3625
tpmoore1@cox.net

Staff Photographer
Christi Cramer

Associate Photographer
Jeffrey A. Scovil

Associate Filmmaker
Bryan Swoboda
BlueCap Productions

Advertising Rates
are available online at
www.MineralogicalRecord.com
All advertising in
The Mineralogical Record must
be paid for before
the closing date.

Ad Closing Dates:
Jan-Feb issue: Oct. 15
Mar-April issue: Dec. 15
May-June issue: Feb. 15
July-Aug issue: Apr. 15
Sep-Oct issue: June 15
Nov-Dec issue: Aug. 15

Subscription (individuals, U.S. only): $95/one year
Digital Subscriptions (anywhere): $54/one year or add on to paper for $24/ one year
Boxed Subscription (individuals, U.S. only): $145/one year, (Canada) $231/one year,
(outside U.S. other than Canada) $325/one year
Subscription (individuals, outside the U.S.): $145/one year
Subscription (libraries, companies and institutions): $250/one year

Affiliated with the Friends of Mineralogy, an independent non-profit organization. See www.FriendsofMineralogy.org

THE MINERALOGICAL RECORD (ISSN 0026-4628) is published bimonthly at $95/year (U.S.) by Mineralogical Record, Inc., a 501c(3) non-profit scientific/educational organization, with business office at 10694 Hiker Peak View #207, Colorado Springs, CO 80921. Periodicals postage paid at Tucson, Arizona and additional mailing offices. Postmaster: Send address changes to the above address.

ADVERTISERS INDEX