THE MINERALOGICAL RECORD

MAY–JUNE 2009 • VOLUME 40 • NUMBER 3

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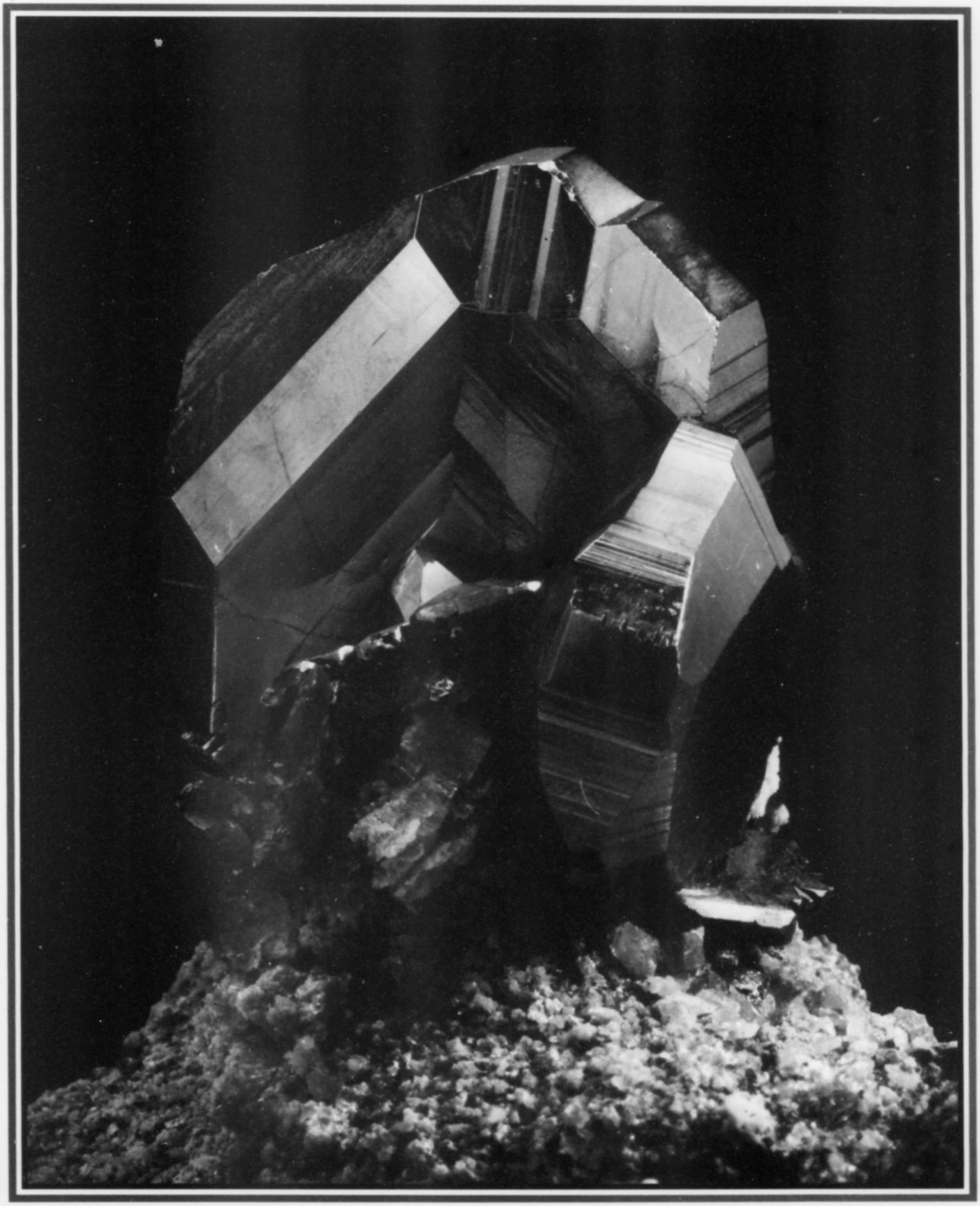

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The International Magazine for Mineral Collectors

VOLUME 40 • NUMBER 3 MAY–JUNE 2009

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Articles

Columns

COVER: BOURNONITE crystal cluster, 3 cm across, from the Machacamarca mine (Viboras Vein), near Colavi, Potosí Department, Bolivia. Rob Lavinsky (*The Arkenstone*) specimen, ex Kosnar collection; now in the Max and Jon Sigerman collection. Joe Budd photo.

THE MINERALOGICAL RECORD (ISSN 0026-4628) is published bi-monthly for $58 per year (U.S.) by Mineralogical Record, Inc., a 501c(3) non-profit organization, 7413 N. Mowry Place, Tucson, AZ 85741. Periodical postage paid at Tucson, Arizona and additional mailing offices. Postmaster: send address changes to the above address.

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Editorial

Some Thoughts on "Fairness" in Pricing

In the previous issue, Rocko Rosenblatt's Letter to the Editor dealt with the thorny concept of "fairness" in the pricing of mineral specimens. This is one of those interesting, deceptively deep questions in collecting that causes all sorts of reactions in readers, depending upon their personal philosophies. Editors are not immune to such stimuli. As for myself, I have mixed thoughts on the matter.

First of all, one needs to decide whether "fairness" should be an issue at all. The concept of fairness implies some kind of entitlement or rights on the part of the buyer. No one has a "right" (barring a court order) to someone else's property, or to be offered someone else's property at a price they find appealing. There are specimens in my own collection that I wouldn't sell for several times the current "fair market value"; but if offered enough above that figure I'd probably cave in and sell—every collector has his price. But would that be "unfair" of me? Certainly not. The same may well hold for dealers and their own favorite specimens.

The modern mineral market is one of the purest embodiments of unbridled capitalism on the planet. It's like the Wild West, with not a lot of hard and fast rules on anything. Standards are difficult to apply because every single specimen is different, and there are no extensive historical auction records to refer to as in the Art World. Naturally any kind of actual fraud is discouraged, such as fakery, false labeling, undisclosed repairs, etc. But it's still a buyer-beware world out there, and the collector needs to take the trouble to gain some savvy before spending serious money. We all wish that weren't the case, but we must face reality. That's why it is so important for collectors to build trust and good relationships with each other and with dealers, and to mentor the less experienced collectors.

Beyond that, though, there are times when literally no one knows what a particular specimen is currently worth. Changes in the economy, in the demographics of the collecting community, in the current fashions of collecting, in the competitiveness that can arise among factions of collectors, in the political problems in the Third World countries where many of today's finest specimens originate, all cause the ground to shift underneath us. When major changes take place in the market, the only way that dealers can determine what specimens are now worth is to *experiment*. That means marking specimens up or down by various increments and seeing if they sell.

In the last few years we have seen these experiments taking place at shows, and not just for the top specimens. We all know that just because a certain dealer has an Ojuela adamite priced at $3,500, that doesn't mean it's actually worth that much. You (and he) must wait to see if it actually sells at that price. And even then you can't be sure. Maybe the buyer was an aberration not representative of the overall market. Maybe he was a beginner with no knowledge of market values. Maybe he was the only person in the world who would have paid that much. And now that he has what he wants, no similar specimen will sell at that price to anyone else. In any case, the concept of fairness in pricing disappears when a "fair market value" cannot be determined, even by the experts. My favorite saying in this regard (attributable to long-time mineral dealer Larry Conklin) is that "if a specimen *ever* sells, it was underpriced." He's right: you can never *precisely* determine the absolute highest price that a particular specimen might sell for, so any approximation that yields a sale will necessarily be below that figure.

And what if the fairness-minded collector spots a "sleeper" (a specimen unknowingly underpriced significantly by the seller); should he feel obliged to offer the seller *more* than the price marked, in order to be fair himself? Or is fairness only the responsibility of the seller? Can we honestly claim that it is bad for the seller to take advantage of our ignorance, but it is fine for us to take advantage of his?

Sometimes when people feel unfairly treated by the prices they see on the specimens they want, it is the result of an influx of more affluent buyers. We worry that our favorite kinds of specimens will become fashionable among the moneyed elite, and consequently the prices for what we love will rise beyond our reach. It happens to everyone—there is always someone more affluent out there, no matter how well off you are. We should be happy that fine mineral specimens are being appreciated as much as they are these days, because that increase in the amount of money churning through the system fuels the search for more and better specimens. History clearly shows that more buyers and higher prices yield more specimens for all of us, in all price ranges.

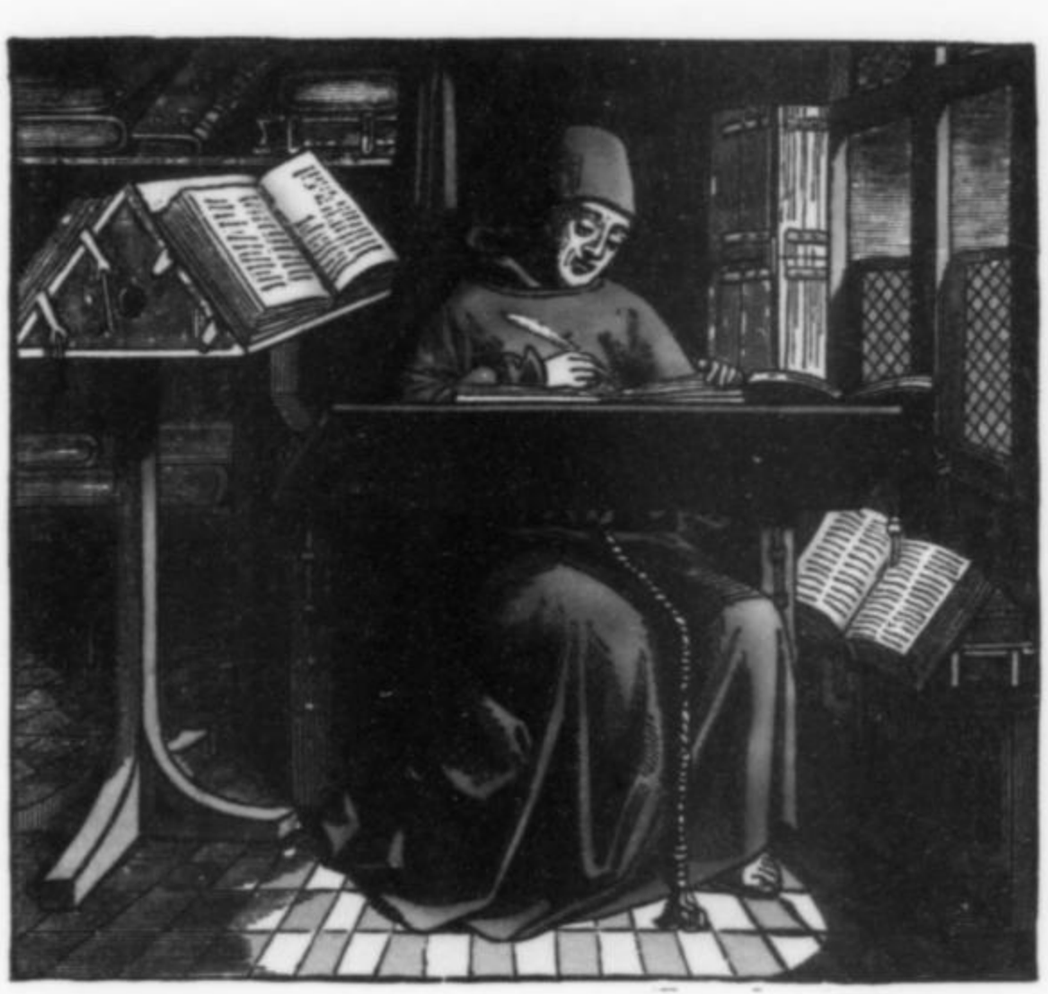
Perhaps what Rocko was driving at in his attempt to define "fairness" was to suggest that, in cases where an approximate fair market value *can* be determined by the most knowledgeable and experienced dealers, they be forthright in pricing their specimens along those lines rather than boosting the price in hopes of finding a sucker. I agree that would be nice. But here again, determining who took unfair advantage of whom can sometimes be difficult. I can recall a great many examples from the past where a collector with his own vision paid twice what anyone else would pay for certain specimens, and some years later was recognized as a genius when those same pieces skyrocketed in value. What one person regards as an unfair price, another might see as an opportunity.

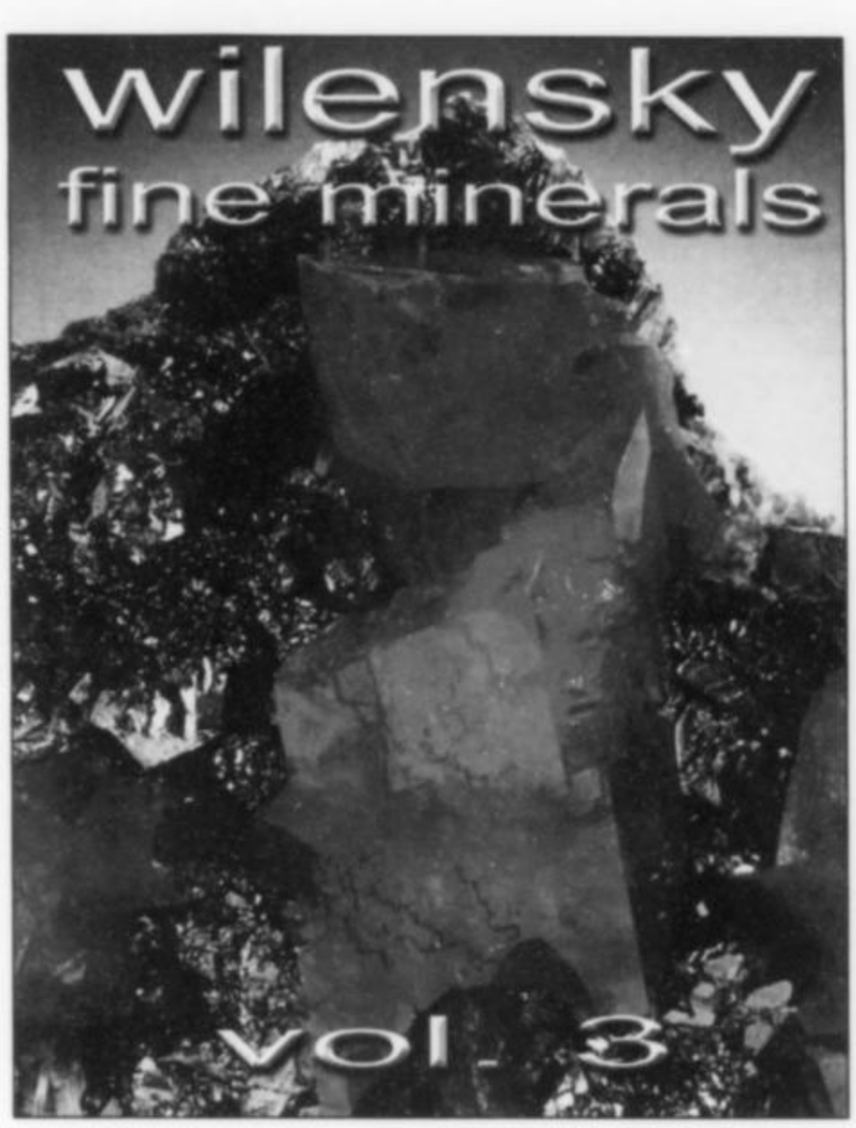
Here's another thought to consider. Have you noticed how difficult it is to find out what particular high-quality specimens have sold for? They may not have been put out on a shelf for all to see, with their price tags waving in the breeze. They were often sold with a high degree of confidentiality, one-on-one, seller-to-buyer. And when it comes to how much money actually changed hands, neither one is talking. Interestingly, for high-priced specimens it is in neither of their best interests to talk about it. The collector does not want other collectors to think he has allowed himself to be overcharged, or to be jealous of him for his deeper pockets, nor does he want other dealers to think he's a soft touch. The seller doesn't want anyone to know what he can get for such specimens, because that might make his suppliers raise their prices. The net result of this situation is that the dealer (who is involved in many more of these transactions) knows better what things are worth than any buyer—an awkward state of affairs, but understandable. Consequently, what appears to a collector to be overpriced might not be overpriced at all.

Another question which dealers (or anyone) must face in setting specimen prices is: how soon do they need to make the sale? That is to say, how many potential buyers will have to see a specimen at a certain price before one of them buys it? Specimens can be priced for a quick sale, or the seller can decide to be more patient in the hope of getting a higher price. The difference between patience and impatience can be significant, perhaps a factor of two or more. Which price along that scale is the "fair" one?

We can certainly aspire to "fairness" in our dealings with each other—it's a laudable goal that is good for the hobby and everyone in it. Thank you, Rocko, for making that important point. But let's keep in mind that there are many disrupting and confusing market influences when it comes to the pricing of specimens, and let us therefore not be too quick to conclude that a particular specimen is "unfairly" priced. Besides, as we all know, any good collection that has been building for enough years contains specimens that were underpriced ("sleepers") and specimens that were (at the time, at least) overpriced. So what? I've overpaid for a few myself, knowingly or unknowingly, and as long as they were pieces I've really loved, I've never regretted it. What makes us true collectors is that our passion guides us, and is the real source of our joy.

W.E.W.





Notes from the Editors

The Wilensky Supplement

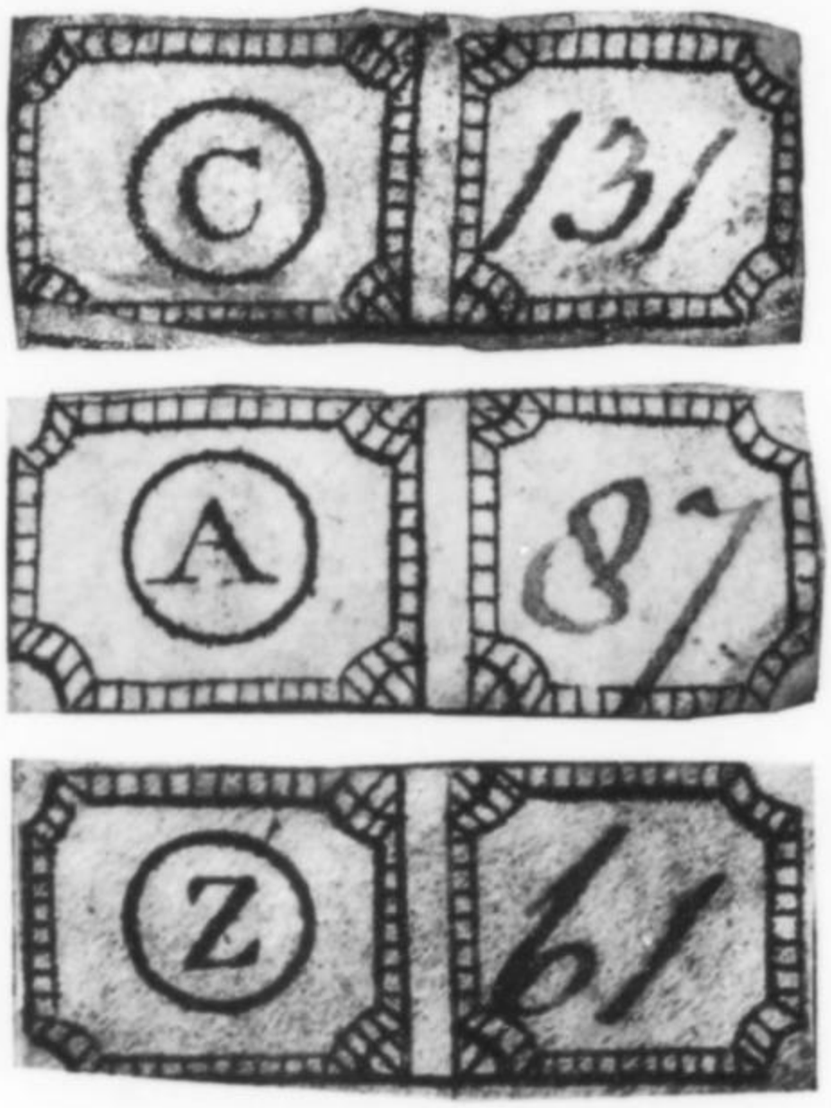
Stuart Wilensky, one of our advertisers and one of the most prominent dealers in ultrafine specimens, began publishing a series of beautiful hardcover picture books in 2005. These books, intended for private distribution, depict specimens which he has sold in the past, so none of the pictured items are currently for sale (by him, at least). A dealer's long-time reputation is based, to a large extent, on the specimens that have passed through his hands over the years, and Stuart decided that he wanted to preserve some record of that. Fortunately he is a decent photographer, and had recorded many of the specimens on film before selling them, so when the time came he was all set to self-publish the books.

Stuart issued the third volume in the series recently, and it is impressive indeed. In fact, it came out so well that I thought perhaps our readers might enjoy receiving a copy as a supplement. It's true that there is no accompanying text other than captions and Stuart's interesting introduction, so it's not a textbook of any kind, just a pleasurable aesthetic experience in the enjoyment of beautiful minerals that have by now disappeared into private collections around the world. (Don't worry—we do have other supplements in preparation that will be very useful and educational reference works, so if that is your preference, please stay tuned. We're working on it.)

At my suggestion, Stuart kindly agreed to have a special press run of softcover copies of his third volume prepared at his own expense to donate to our readers; a copy is included in your envelope with this issue. In case some readers (especially the book collectors) would also like to obtain his first two volumes in the series, he donated several boxes of each to the Mineralogical Record to sell as a fundraiser. They are available, while they last, in the "Bookstore" section at www.MineralogicalRecord.com. Our sincere thanks to Stuart for his generosity! We hope he continues his series indefinitely.

John St. Aubyn Collection

The Plymouth City Museum and Art Gallery in Plymouth, England is currently undertaking a large project involving the mineral collection once owned by the famous British collector, Sir John St. Aubyn (1758–1839). Recently they secured a grant from the Esmée Fairbairn Foundation to enable the museum's natural history department to conduct a variety of work on this collection. Currently, there is much interest in the 'missing' elements of the mineral collection and the journey to their respective resting places. After his death, St. Aubyn's collection was split by the mineral dealer Isaiah Deck



Three of the labels glued onto St. Aubyn mineral specimens, probably by Count de Bournon.

(1792–1853); an extensive portion of the collection was given to the Civil Military Library at Devonport (and is now at Plymouth City Museum), whereas the remaining mineral specimens were auctioned off.

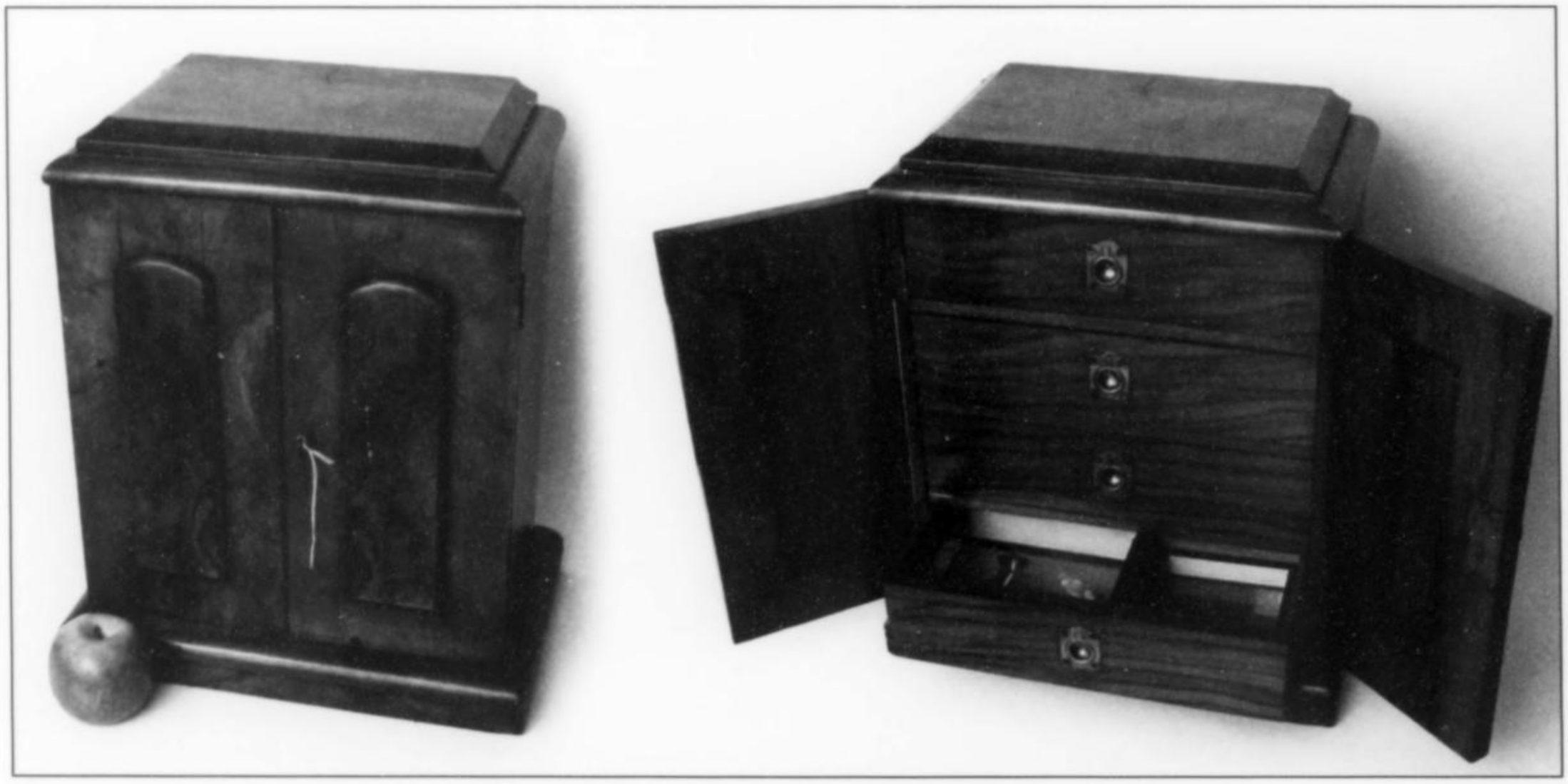
As part of the project, Plymouth City Museum and Art Gallery is trying to locate other specimens from the St. Aubyn mineral collection. They hope to find as many as possible so that St. Aubyn's collection can be fully documented. Their plan is to authenticate and photograph every St. Aubyn specimen, both in the museum and in other collections, so that they can create an online digital database.

Shown here are examples of two of the oldest and most common types of labels associated with St. Aubyn's mineral specimens. If you think you may have a St. Aubyn specimen, or if you have any information about the history of the St. Aubyn collection, please contact Plymouth City Museum. Their wish is only to authenticate and obtain photographs of specimens, not to try to repatriate them. For more information on St. Aubyn, visit the Mineralogical Record's "Biographical Archive" at www.MineralogicalRecord.com. If you have information to contribute, contact the Plymouth City Museum and Art Gallery at st.aubyn@plymouth.gov.uk. You can also visit their website: http://www.plymouth.gov.uk/museumstaubyncollection.

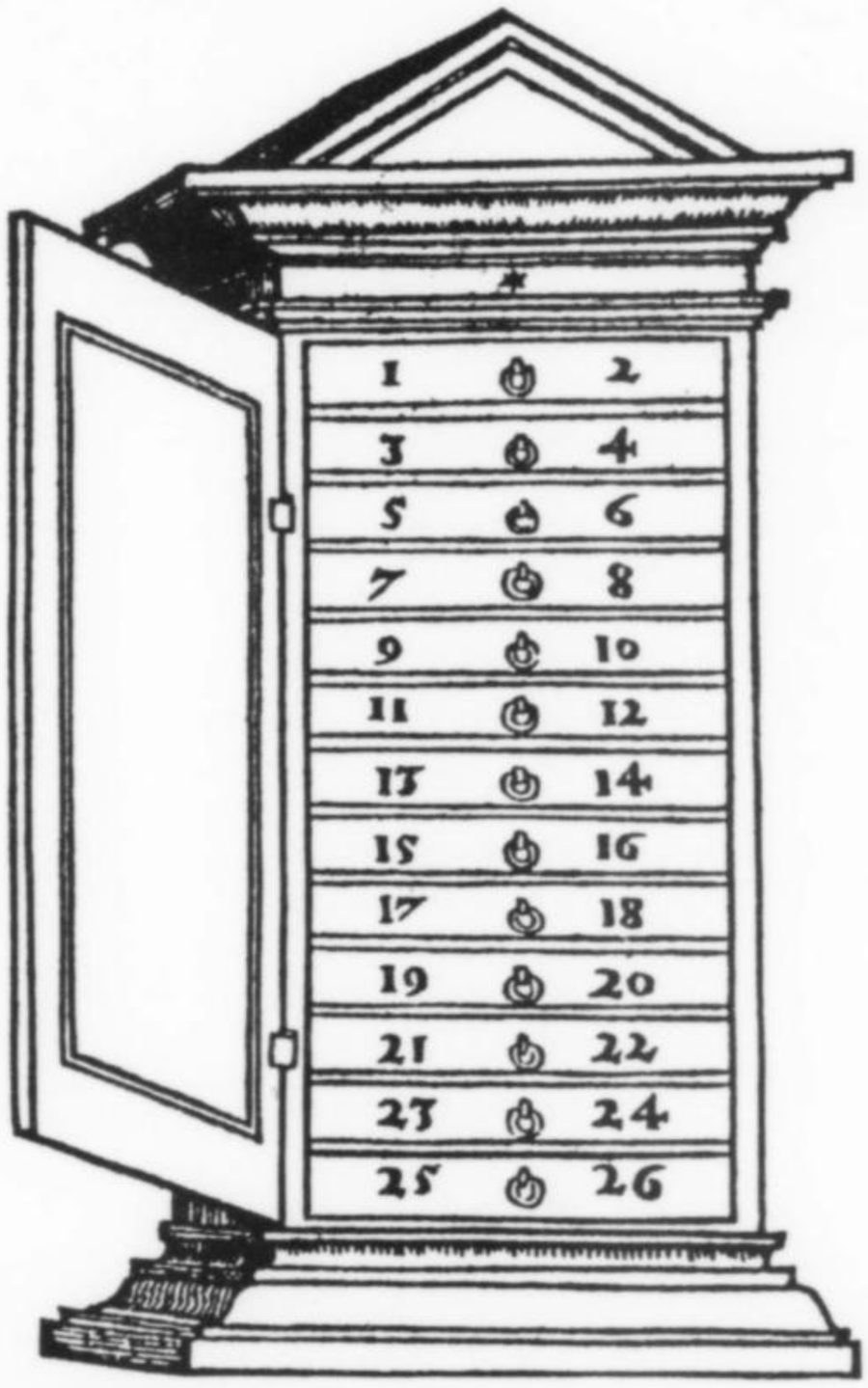
Mineral Cabinets

We periodically show various kinds of mineral cabinets in this column, as inspiration for collectors who may be looking for storage and exhibit options. Many of the ones we've pictured over the years are of modern manufacture and can still be purchased from the makers. However, as an alternative, antiques can sometimes provide a warm and evocative historical ambiance to one's collection. Just such an example is pictured here, a small four-drawer walnut specimen cabinet, probably made in England around 1860. Of course, such items tend to be rare and you can't predict when you may encounter one for sale. But it is always possible to commission a modern cabinetmaker to build something similar for you, to the exact size needed.

I would like to see someone commission a cabinet like the one pictured in Conrad Gesner's *De omni rerum fossilium* (1565). Made for the collection of Dresden physician Johannes Kentmann (1518–1574), it is the earliest known purpose-built mineral cabinet. Gesner does not specify the exact size of the cabinet, but the wide basemolding suggests that it was not a floor-standing cabinet but rather a smaller one designed to sit on a stand or a low table. If we assume that the 13 drawers were each about 2 inches deep,



Four-drawer English walnut specimen cabinet, 32 × 42 cm and 20 cm deep, dating to around 1860. Photo courtesy of Matthew Nunn, Apsley Antiques, London.



Johannes Kentmann's mineral cabinet, 1565.

and that the proportions of the engraving are reasonably accurate, the cabinet (including the pointed pediment at the top) would have stood about 4 feet tall. If the drawers were shallower, it might have stood closer to 3 feet tall.

Venezuelan Golds

Placer gold has been recovered from the Gran Sabana gold field in the Guyana Highlands of Venezuela, about 40 km from the town of Santa Elena in Bolivan state, since the 15th century. It was a great surprise when, during the 1980s, the Icabarú area began yielding some extraordinary, large and sharp crystals and crystal groups of gold. Specimens reached the American mineral market sporadically over the next 20 years, primarily through John Carlson and Roger La Rochelle. In 1998 Carlson and La Rochelle sold off a last hoard of crystals they had set aside during mining; no more specimens have appeared on the market since then.

Some researchers, suspicious that the crystals might be fakes manufactured by casting, subjected them to single-crystal X-ray diffraction analysis. The results indicated that what appeared to be single crystals of gold were actually polycrystalline aggregates—just what would be expected if the "crystals" were fakes cast from molten metal. The test was thought to be definitive, and the crystals were considered by many collectors to be fakes. However, recent work by John Rakovan *et al.* (*Rocks & Minerals*, January–February 2009) has reversed that conclusion.

Rakovan's innovative experiments showed that the thin surface zone of the slightly water-worn crystals has been bent and disrupted on a microscopic scale by the effects of stream-tumbling. Consequently X-rays, which cannot penetrate beneath this thin skin, show what appears to be polycrystalline gold. However, when the *interior* of a crystal is probed by a neutron beam (which penetrates more deeply), neutron diffraction shows that the interior is indeed a single-crystal domain as would be expected in a natural crystal.

The authors' conclusion is that the Venezuelan golds from Gran Sabana (four different specimens from there were tested) are indeed natural crystals. This should be a great relief to many collectors who paid high prices for these specimens.

On the other hand, tests performed on some purportedly Russian gold specimens in the shape of pyrite "iron cross" twins showed them to be polycrystalline aggregates throughout. In addition, it is crystallographically impossible for gold to form iron-cross twins. Unless it can be convincingly demonstrated that the Russian specimens are pseudomorphs of gold after pyrite, the conclusion is that they are not natural.

Venezuelan gold specimens to 3.8 cm, from the Santa Elena district. F. John Barlow collection; Wendell Wilson photo.

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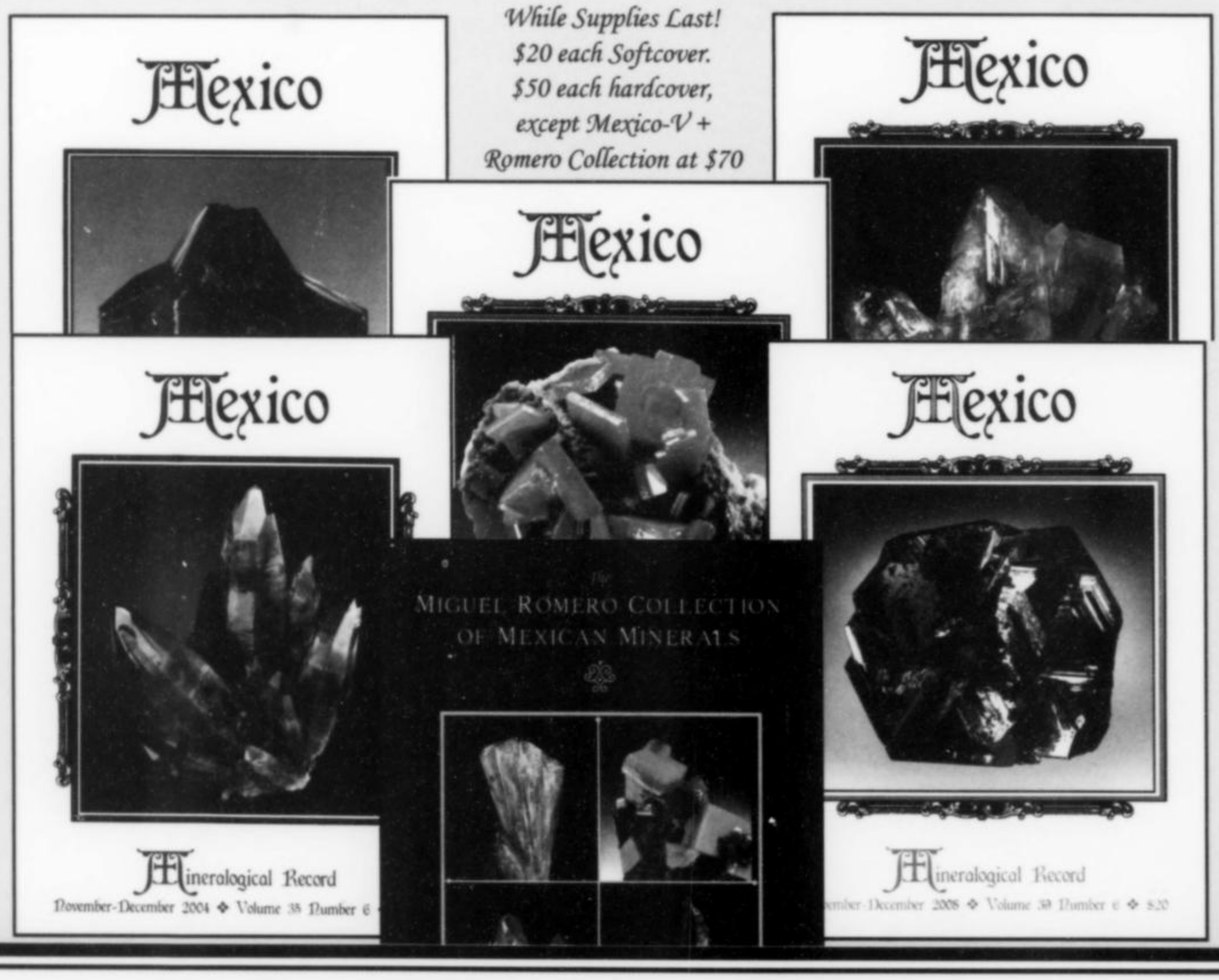

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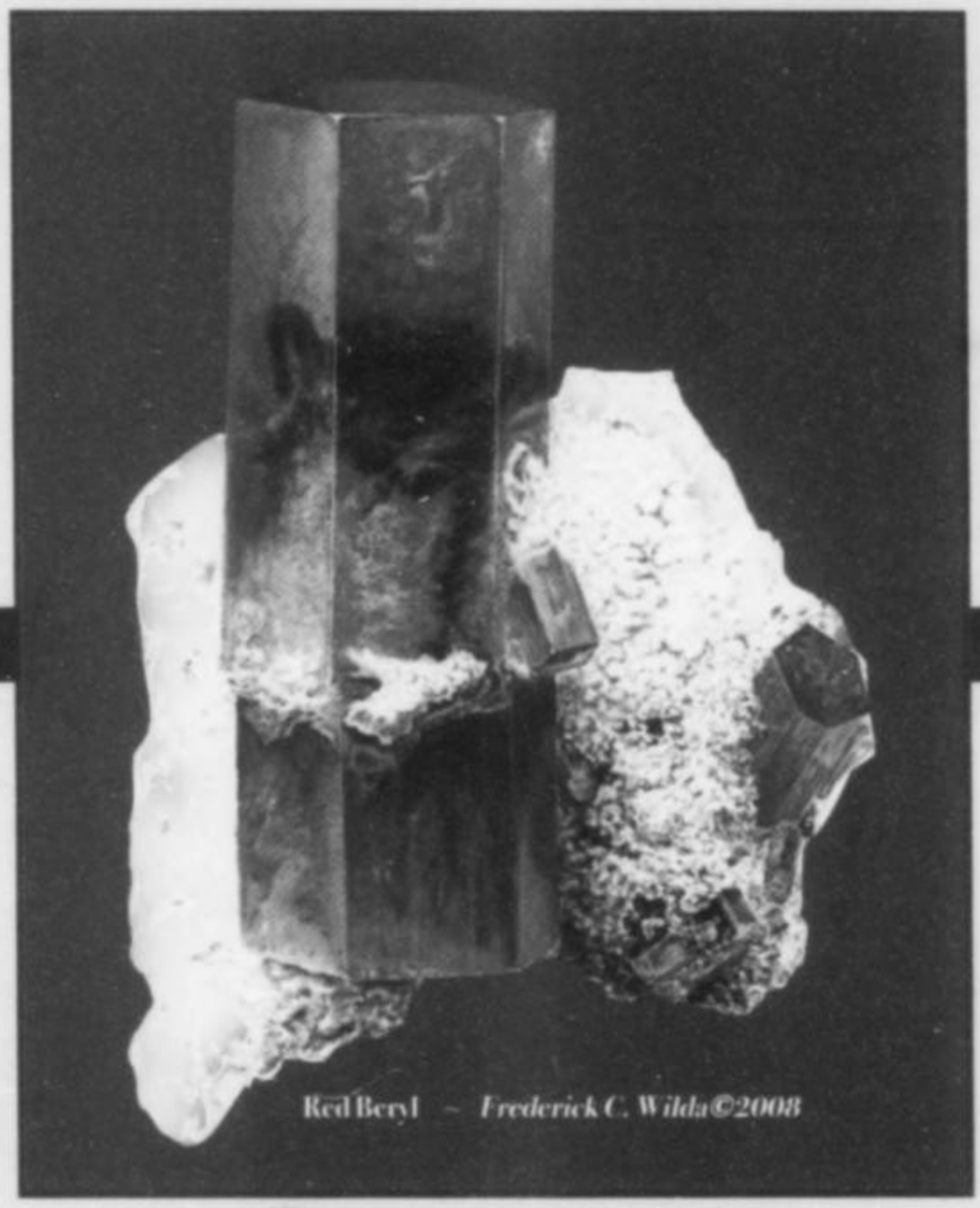

Red Beryl – *Frederick C. Wilda©2008*

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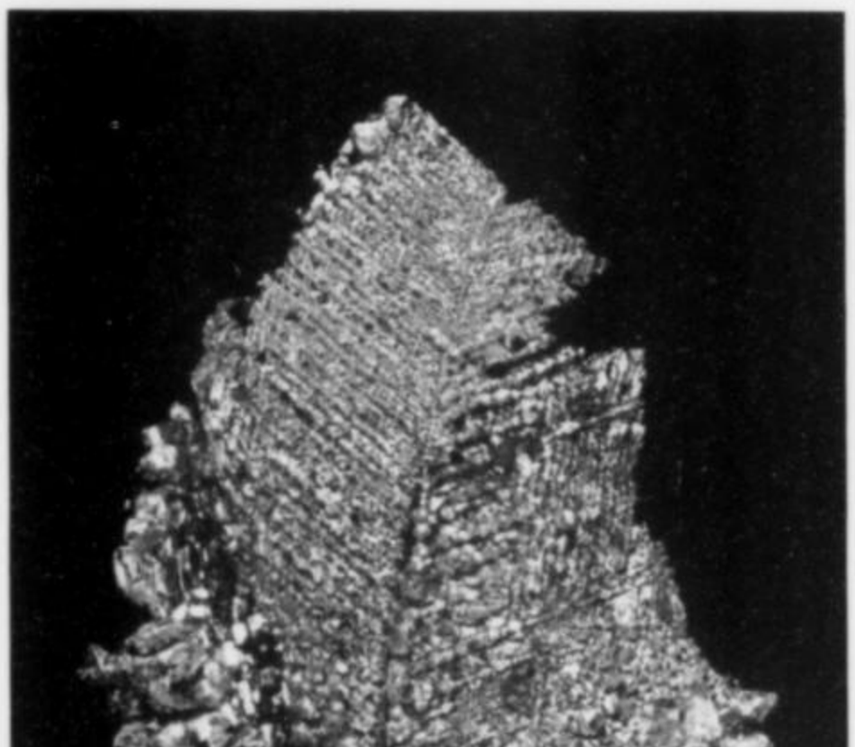
7.6 cm; Joe Budd photo.



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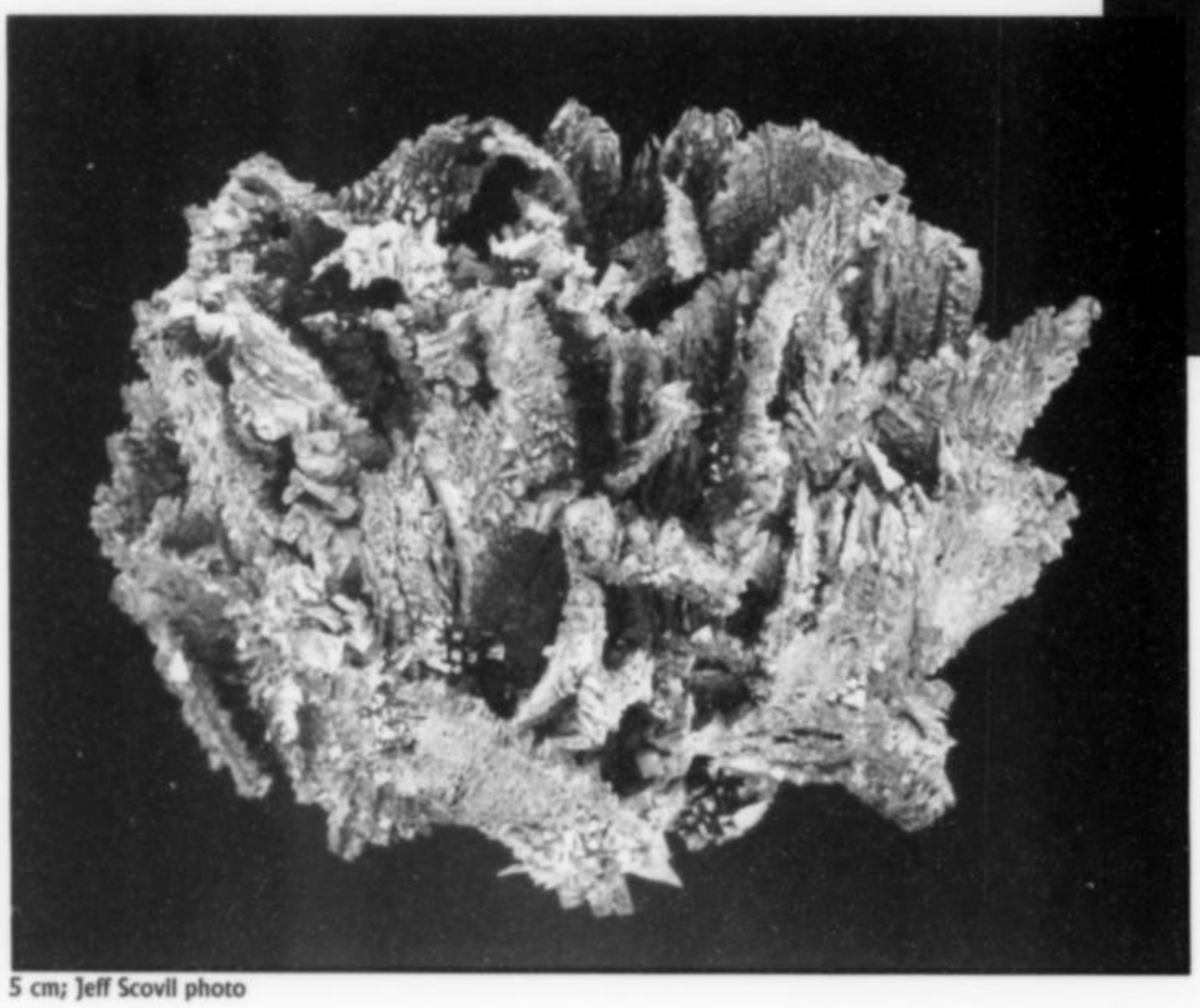

5 cm; Jeff Scovil photo

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Some personal observations, ruminations, reflections, reminiscences, ramblings, digressions, grumblings, approbations, wisdom and advice gleaned from 50 years of collecting and dealing in minerals

The Tucson Gem and Mineral Show

Attention, class! Where do you go to find mineral specimens? Museums, yes, very good, Johnny! Where else? Private collections, mineral dealers, schools, mines and quarries. Yes, good, class, those are all excellent places. But remember that the mines and quarries should be *active*, because if you have to move the rock yourself, all that exercise will help you live longer but you won't find as many good specimens as you will at the mines that are actively being worked and the rocks are being moved for you. Okay, class, where else? Gem and mineral shows. Excellent, Mary! Could you tell us which gem and mineral show is the largest and most important? The "Tucson Gem and Mineral Show"? Mary, that's a great answer. You get a gold star after your name today.

One mineral show in particular should be emphasized as being exceptionally important to the hobby: the "Tucson Gem and Mineral Show." This show is held each year in Tucson, Arizona, starting in late January and ending in the middle of February. It began as a small two-day show sponsored by the Tucson Gem and Mineral Society, held first in a grade school in 1955 and then, into the 1960s, in a single Quonset hut building at the Pima County Fairgrounds south of the city. The show has evolved into a month-long monster which literally takes over parts of the city. It is not a single show any more, but rather more than 40 different competing venues run by many different show promoters.

Thousands of dealers, collectors, shop owners, mineralogists and curators from all parts of the planet come to Tucson each February to buy, sell, trade and display every imaginable kind of gem, jewelry, fossil, meteorite, stone carving, and earth-science-related item. You can learn more about minerals and gems in a week at the Tucson show than you can during the whole rest of the year. The factor limiting how much you can learn is your ability to absorb and correlate information.

The hard-core people arrive in Tucson late in January and don't leave until the middle of February. If you are a collector looking to maximize your efforts and money, you may gain an advantage by getting there early so as to have first pick of what the dealers bring into town. If possible, make friends with some of them and help them unpack and set up their booths or rooms. Also you can sometimes gain an advantage at the very end of the show by looking for dealers who may be willing to "dump" good specimens cheaply so they won't have to store them for another year or transport them back to their country of origin. Most people can't stay for the full three weeks of the show and have to pick the few days when they think they can best accomplish what they need to do. Others come for a few days at the beginning of the

Collection of Gardner F. Williams
(1842–1922)
Diamonds
Republic of South Africa

Gardner F. Williams is known primarily as the author of *The Diamond Mines of South Africa* (1905), from which this illustration is taken. Williams was the first professionally trained mining engineer to be appointed in South Africa, where he worked for Cecil Rhodes and revolutionized De Beers' diamond mining practices.

show, and then return for a few days at the end of the show for close-out bargains.

What the dealers are offering is just one facet of the show. Much of the rest of the experience is listening to and talking with other people. This will go on as long as you can stand it. After the dealers close for the day, there is a huge amount of information exchanged by people who have met during the show and have dinner and drinks together in the evening. All-night poker games and rowdy parties are not unknown. Sometimes friends will make arrangements to rent rooms or apartments together, and fill literally every waking hour with shopping for specimens and jabbering about what they have seen and learned.

If you can, you should stick around for the Tucson Gem and Mineral Society show, the one that started it all. It is the last show to open and is still called the "main show" by the old-timers. Commonly, much of the money that collectors have to spend has already been spent by the time the main show opens; nevertheless, enough cash still changes hands there that all the high-end dealers are keen to secure space in this show. The competition at the show is intense, and dealers are always working to come up with something new that will improve their chances of good sales. New things generate free advertising for a dealer because reporters for various magazines, newsletters and web sites are circulating at the show, eager to report new, unusual and particularly notable specimens. This show is also the one that has the great exhibits of world-class specimens, lectures, meetings of various professional organizations, auctions, competitions and dinners. If you can, you should really make time to visit this particular show during the Tucson experience.

How to Get More and Better Specimens for Less Money

If you have a lot of money, just go out and buy what you want. Most collectors, however, have limited funds and could probably use some advice on how to get good specimens at lower prices. This usually means substituting effort for money. In other words, you must learn to do what the mineral dealers do to stay in business: you will need to learn how to buy specimens for less than the current market value (the retail price).

The two most important things that will enable you to get fine specimens at bargain prices are knowledge and mobility. Of these, I think mobility is probably the more critical. Mobility is a little bit like the random searches that ants do when looking for food. The trick is to use your intelligence to direct your mobility in order to maximize the return on your effort. Did you notice that five of the seven above suggestions for how to become proficient at your hobby require you to move around? You need to move around to find out what and where the good stuff is, and to learn as much as possible. The more mobile you are, the greater your opportunities will be. If you are able to identify at a glance rare minerals that others can't, by moving around you will encounter more such situations where you will know the value of things that others won't, and be able to profit accordingly.

Perhaps a miner will have a bunch of colemanite specimens for which he is asking $10 each. You make your selection and buy them. But what the miner did not know, and you did, is that one of the specimens is mostly hydroboracite and not colemanite, and is the finest specimen of that mineral known. Or perhaps you are on a street corner in Lima, Peru and a runner comes up to you and offers you a lot of octahedral pink fluorite crystals on matrix. What he doesn't realize, and you do, is that these are among the finest pink octahedral fluorites in the world and worth a great deal of money. Or maybe you have gotten to know the curator of an old and well known collection at a college. He likes the big flashy Indian zeolite specimens and Peruvian pyrites that you are offering to trade, but the department does not have a budget for buying specimens. He thinks your specimens will attract the attention and interest of the students much more than many of the other less spectacular specimens in the school's current collection. He is happy to trade you many fine small specimens from the collection for the big attractive ones. He opens the drawers down in the basement and lets you select pretty much what you want: a Bisbee azurite rose, a wire silver from Norway, a leadhillite from Missouri, crystallized coppers from Michigan. "Help yourself to the coppers, we have so many of them . . ." Or perhaps you were looking at some specimens from Burma and noticed a small ugly specimen that had some small rough ruby crystals growing on it. The dealer quotes you a very modest price and you buy the specimen. The thing that the dealer did not recognize, but you did, is that the rubies are growing on one of the largest known painite crystals. However, if you don't get around, you will never be able to take advantage of such opportunities. So we will assume that you have the knowledge and are ready to be

mobile. Where can you go that will be richer in opportunities than places where an ant goes on its random walk? Well, obviously, you have to go to where the specimens are.

Getting Specimens from Collections

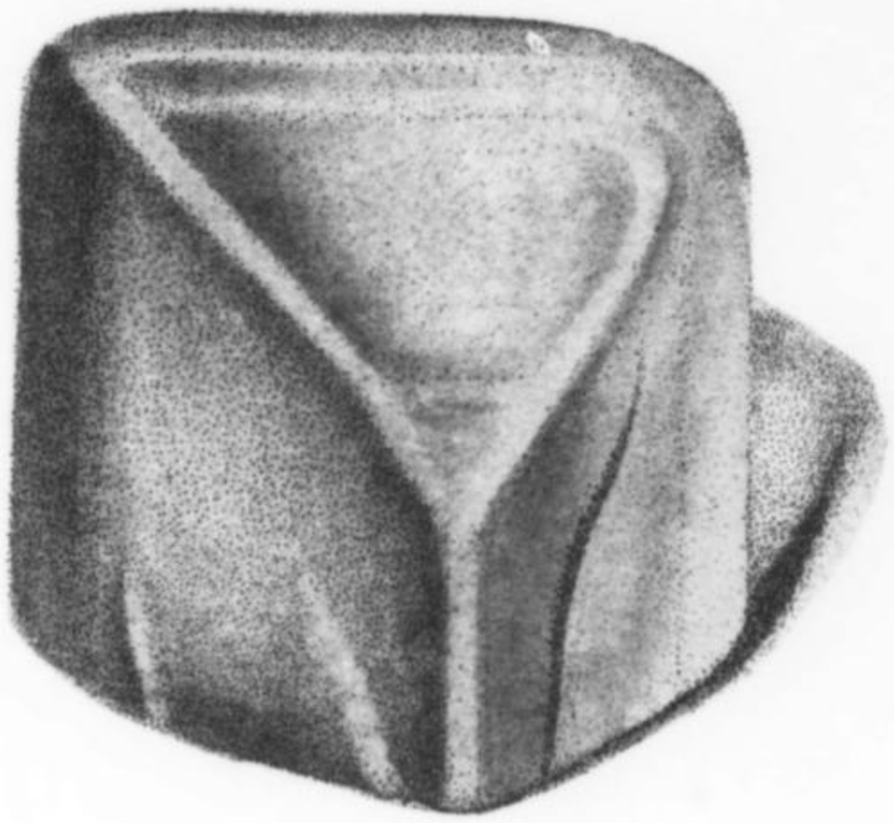
There are only two basic sources of specimens. These are collections and currently producing mineral localities. Mineral dealers usually specialize in one or the other, but will sometimes work both sides of the fence. The skills required to be successful at recycling old collections are somewhat different from those involved in going to the localities and getting specimens at or close to the producing source. Which of these you choose to concentrate on will probably depend primarily on your own personality.

If you are a "people person" you will probably gravitate toward getting specimens from collections. Buying collections that older collectors have spent their lives building can be a lucrative business, but you have to build up enough capital to buy whole collections all at once, or have a backer with deep pockets who trusts you enough to lend you the money. Some of these dealers are not great people persons, but have wives who are, and this smoothes over a lot of rough spots. Sometimes I almost think they've worked out a good-cop/bad-cop routine.

Being successful at getting specimens from collections involves knowing about hundreds of different collectors and collections and keeping abreast of the status of each one. You also have to get to know those collectors and convince them of your honesty and reliability. When they give you their collection to sell, it is a little bit like giving their children into the hands of someone else to care for. If you have a bad track record of honesty and reliability it will be difficult for you to deal in old collections. Collectors will often deal with and watch various dealers for years before deciding who to sell their collections to.

Right now the pickings are good for this kind of dealing because of two things. Prices for the finest specimens have escalated through the roof, and the value of our money is not what it used to be. In addition, we are on the cusp between the old way things have always been done and the new Internet economy. This means that old collectors who do not keep up with changing specimen values are sometimes dazzled by offers for their specimens which seem wildly inflated. They are still thinking in terms of 1970 dollars, not in terms of today's dollars and the Internet market. They may have paid $2500 for a specimen and thought it was a huge price. Someone comes along and offers them $25,000 and they can't believe it. So they sell it and the guy that buys it then may sell it for twice or even five or ten times as much. This has happened more than just a few times. The collector is amazed at the price he got for the specimen, but if he finds out that the buyer then sold it for five or ten times more, he is not so happy. Of course, collectors like this don't get around (have mobility), and so they have no idea how to find out on their own what their specimens are really worth, and if they did they would not be able to find the person who would pay them full price. The dealer makes his living on those two critical bits of information.

Often, if a collector trusts the dealer, or at least has heard nothing bad about him, he will give the dealer the collection to sell on consignment. This works well for the dealer because he doesn't have to lay out a big chunk of capital for the collection. It can work out well for the collector as well, because the dealer will usually be able to pay the collector a higher percentage of the sales price than he would if he had to lay out cash for the specimens. If the dealer isn't well known to the collector, he can often swing the deal by offering a substantial cash payment up front, knowing that he will almost immediately get this money back from the sale of the better



Collection of Thomas Allan
(1777–1833)
Topaz
Cairn-Gorum, Scotland

Thomas Allan, after whom *allanite* was named, was a prominent Scottish merchant, banker and mineralogist, and author of *Mineralogical Nomenclature* (1814). At Lauriston Castle, his home in Edinburgh, he developed one of the finest mineral collections in Britain, and made the acquaintance of James Sowerby, loaning him specimens to illustrate in his *British Mineralogy* (1811); the one shown here is pictured in vol. 4, plate CCCLXIII.

specimens in the collection, many of which he knows he can sell with a single telephone call.

Sometimes you can do well by trading specimens for the ones you want. One way to make trading work for you is to find a source of inexpensive trading material. A good friend of mine, Jim Minette, worked as superintendent of a large open-pit borax mine that produced good borate specimens from time to time. He made a point of collecting as many specimens as he could, and then traded many of them all around the world for specimens he wanted. He built up a wonderful collection that way. Another chap who has done this kind of thing very successfully lives near a quarry in Canada and has managed to convince the managers to let him be the official specimen collector for the quarry. He has managed to make a living by collecting the minerals from the quarry and has built up what must be the finest collection of specimens from that locality, including many fine and unique pieces. In both of these examples, however, the bulk of the rock has been moved by normal mining/quarrying operations. If you can put yourself in a situation similar to that of these two men, you can build a remarkable collection. The trick in successful trading is to have a good, inexpensive source of specimens that others want.

Once you know the kind of things particular curators and collectors want, when you find the right specimen(s) you can often make very advantageous trades. Museums frequently do not have funds to buy specimens and they are sometimes willing to trade. To be successful at trading requires a considerable knowledge of the current market values of minerals, and it requires knowing what museums and collectors particularly want, and what they have to

Collection of W. E. Sheffield
(*fl.* 1808)
Chrysocolla
Dalehead mine,
Cumberland (Cumbria), England

W. E. Sheffield was a British mineral collector and a friend of James Sowerby. He had a predilection for fine specimens, and loaned several to Sowerby for study and illustration. The Dalehead mine, source of this chrysocolla, is also known as one of the few British sources of good malachite. The illustration shown here is from Sowerby's famous book (1808) *British Mineralogy* (vol. 3, Plate CCLXXIX).

trade that they undervalue or have duplicates of. Many people during the last several generations have worked hard at trading specimens from museums, and in many cases the museums have felt that they have gotten the worst of the trades. This has caused a number of the major museums to severely restrict or eliminate trading altogether. But it can still be done.

Getting Specimens from Producing Localities

My forte was to go to the places where the specimens were coming from and buy a lot of them, import them to the United States, and sell them. You should probably learn to do this close to home before you move on to foreign countries. When I was getting started I did a fair amount of field collecting and found out firsthand just how much effort is required to move the rock yourself and what you can expect in the way of a reward. Most of the time the effort and expense is considerable and the reward minimal. One of the classic collecting localities in the United States is the Herkimer "diamond" region near Herkimer, New York. There you can experience firsthand the hard convict-type labor that is necessary. Some intelligent people with the ability to work hard still collect wonderful specimens there, but I think even they would admit that they could make more money by working at other things. You just can't move enough rock by hand to make a decent living collecting your own Herkimer-type quartz crystals. I enjoyed field collecting a lot, but eventually I concluded that it would be a hard way to make a living.

The first two places where I bought specimens from miners were at the open-pit mines at Boron, California and the big asbestos mine at Asbestos, Quebec, Canada. The mine at Boron produced many fine and unique specimens of various borate minerals, but I learned that they were difficult to sell to collectors. The mine at Asbestos produced wonderful specimens of orange grossular ("hessonite") garnets and some of the best prehnite, pectolite and vesuvianite specimens in the world. These proved to be much easier to sell. The miners often had specimens in abundance and sold them cheaply compared to the retail prices I was used to paying. It was difficult just to buy a few specimens for my collection, and soon I got the idea that I could buy a lot of them, keep the ones I wanted, sell the rest and sometimes even make a profit! Boy! This was a lot easier than moving the rock myself, and a lot more productive of good specimens. Although I kept my day job, I was well on the way to becoming a mineral dealer and didn't even know it.

Visiting foreign countries to get specimens is not all that hard, and I can offer some advice that may help. You have to get a passport, a visa for the country (or countries) you want to visit, and perhaps some vaccinations to protect you from diseases that are endemic in those regions. Then all you have to do is buy a plane ticket and go. You can do all kinds of planning for your trip. Read all the literature on the place, talk to as many people as you want, but basically you just have to go there, find out what is really going on, and get the rocks. Do you remember the "mobility thing" from earlier in this essay? I found that most of the advance planning I did was not worth very much. It helps if you speak the language, but even if you don't you can usually manage. It helps if you pick a place that is currently producing specimens because the odds of your being able to get specimens will be higher that way. The price you pay for specimens at a locality is directly proportional to how many other people have been going there to buy specimens. If you are one of the first buyers to get into a locality the specimens will be very cheap, but there will also not be very many specimens available. If you come to the locality late in the game the prices will be much higher, but there will also be many more specimens available to buy because the locals have become aware of their value and have been working to produce them.

The dynamics of this kind of business have changed since the advent of the Internet. Everyone now has access to the Internet: even miners in the most remote places can visit an Internet café, check out the websites of the top Internet dealers, and stare in disbelief at the incredible prices that are being asked for specimens. Imagine the impact of this on a miner who has been selling his good specimens for a few dollars each, and then sees the same specimens for sale on the Internet at $1000 each or more! However, such miners quickly learn that although it is very nice to know a specimen's potential retail value, they are seldom able to contact potential buyers in that market on their own. They soon learn to sell their specimens for what they can get, and not agonize too much about the retail mark-up. You can't eat rocks, after all.

My first experience in going to a foreign country to get minerals was in India back in 1972. Boy, what a shock that was— all that poverty and the press of humanity in Bombay. Fortunately I

did know some people there and they looked after me in a very considerate fashion until I could get over the initial culture shock and get my legs under me. I would not recommend visiting a poor third-world country on your first buying trip outside the United States, unless you have someone there to show you the ropes. The family I stayed with in India was interested in mineral specimens and knew some of the local quarries, but little else. I had to show them how to collect specimens, trim them and pack them safely for shipment. Over several years I developed a friendship and working relationship with the family which continues to this day. I have imported and sold many tons of zeolite specimens.

It was interesting to observe other Americans arriving in Bombay for their first visit to a poor country. Typically they would arrive in the early morning hours in Bombay and go directly to their hotel, which was often the Taj or one of the other five-star hotels down at the tip of the island. The next morning they would leave the hotel for a walk around the local neighborhood. As soon as they left the grounds of the hotel, they were set upon by beggars, usually sporting deformities real or cosmetic, usually women with crying babies and/or small children, begging for money. Each beggar had a well-defined stretch of turf that he or she would patrol and/or defend as the occasion warranted. As soon as a tourist entered the territory of the first beggar, he would be set upon by the beggar, who would walk in front of the tourist as much as possible while pleading for money. They would gently tug on the tourist's clothing and reach out and try to touch any exposed skin with damp fingers. As soon as the tourist crossed the invisible line into the next beggar's territory the first one would back off and the next beggar would take up the assault. This experience, combined with the efforts of the local shopkeepers trying to drag the tourist into their little tourist-trap shops around the hotel, would often cause the tourist to flee back to the safety of his hotel where he would immediately take a bath and make a reservation out on the next available plane. Fortunately, I had some friends who walked me through all of that and showed me that India was probably the most interesting and diverse country in the world. The assault by beggars turned out to be something that had developed only around a few of the better known tourist destinations.

Not all people who work at mines have an equal opportunity to get specimens. While chatting up miners and buying specimens, I learned that some of them always seemed to have better specimens than others, and this seemed to be related to the jobs they held. Some jobs put them closer to the working face of the mine where they had better opportunities to collect specimens. The jobs vary from mine to mine, but if you are really serious about getting specimens from miners you should find out which jobs those are and then talk to the men doing those jobs.

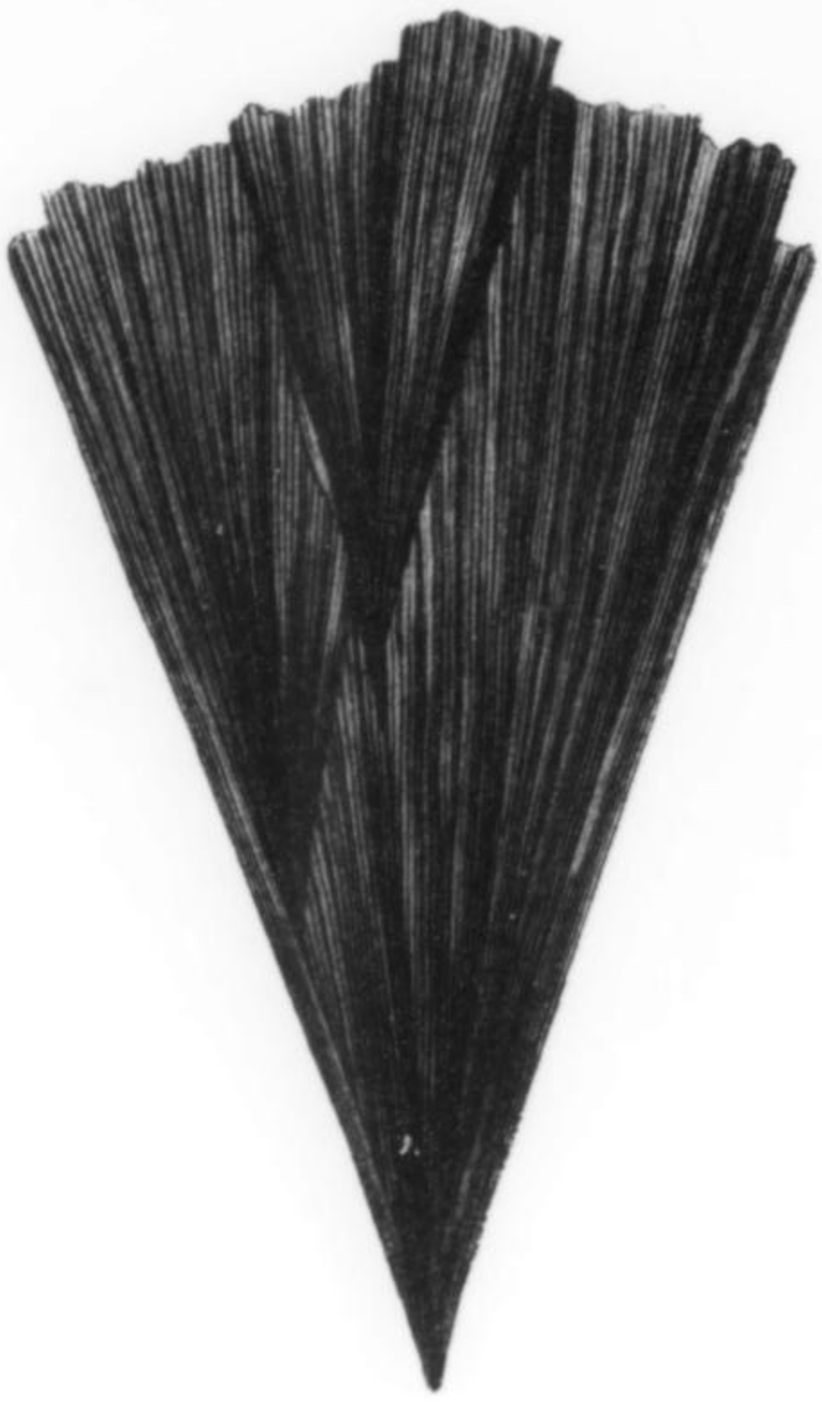
Logically you might think that the manager of the mine, or perhaps the geologists, might be in the best position to get specimens, but I discovered that that is usually not the case. The management is mainly interested in putting "rocks in the box," i.e. moving as much rock (rich ore) as they can to the crushers and through to the mill and smelter. Any activity that interferes with that goal is bad and must be eliminated. At some mines it is a firing offense to collect specimens or to even bend down and pick up a rock. Occasionally you can talk management into letting you collect specimens from their mines, but often your pleas to save a few specimens for future generations will fall on deaf ears. Also, never ask a mine manager for permission to buy specimens from his miners. Such a request is like asking a fine French chef for permission to dump a five-gallon bucket of cockroaches into his kitchen. If you buy specimens from the miners you are encouraging them to work for you, collecting specimens, when they should be working at putting rocks in the box.

Collection of John G. Children
(1777–1852)
Realgar
Almadenejos, Spain

John George Children was a prominent English chemist, mineralogist and zoologist after whom the species *childrenite* was named. He also served as librarian and keeper at the British Museum. He acquired the specimen shown here in Spain and donated it to the Royal Institution. James Sowerby then illustrated it in his famously rare book, *Exotic Mineralogy* (1811) (vol. 1, Plate XVIII).

In most mines the geologists have the freedom to go where they want in the mine, and so you would think that they would be good sources of specimens. Sometimes they are, but they must first have an *interest* in mineral specimens. Unfortunately, most do not. Often mines are not pleasant places to work. They are often very hot or cold and/or wet, and without exception they are quite dirty. In many third-world mines, the geologists are highly educated compared to the local miners and really don't want to get their hands dirty if they can help it. Their idea of getting specimens is to ask the miners for them. Unless the miners get paid for the specimens, they are likely just to pick up any old rock and give it to the geologist. You are better off sticking to the miners.

At mines there is usually a "sample man" whose job it is to collect samples of the ore to take to the lab for analysis. Frequently this man can get many good specimens. Often the man in charge of drilling and blasting can get good specimens as well. He is responsible for loading the blast holes at the working face and checking it after the blast to make sure that the explosives worked as they were supposed to. Electricians and men in charge of water and compressed air pipes are also good sources because they often work at or near the working face. In some open-pit mines, the guy in charge of moving the big electrical cable that supplies power to the big shovels also has access to specimens at or near the working face.



Collection of Charles Besson
(1725–1809)
Rubellite (Elbaite)
Ural Mountains, Russia

Charles Alexandre Besson was a French naturalist and Inspector of Mines in Paris. His mineral collection was regarded as one of the greatest and most instructive in France. The illustration shown here is from volume 2, page 121 of Patrin's *Histoire Naturelle des Minéraux* (1801).

In many poor countries, the mining techniques used are still quite primitive and still revolve around the drill-blast-muck cycle, with the mucking done by hand. Often the men doing the mucking can collect specimens as they shovel the muck (blasted piles of rock) into the ore cars. At Tsumeb, this job was usually done by the black miners. The specimens they collected usually had a lot of damage because they were mostly from piles of blasted rock. The white head miners or level bosses usually got the best specimens because they often got first shot at collecting directly from open pockets that the blasting had exposed.

In Peru, when I went to the mines to buy specimens from the miners, the first thing I needed to do was to find out in which part of the mining camp the actual hardrock miners lived, as opposed to the men who worked in the mill or at administrative jobs. It was better to visit the mining camps on Sundays because this was when the miners were not working underground and the chance of getting specimens was much better. Often the wives were reluctant to sell their husbands' specimens, so I had to wait until the miners got off work in the afternoon. Each locality will usually have somewhat different customs and conditions and you must adapt yourself to them as you encounter them. As the automation of mining increases, people will be kept increasingly busy operating machines and away from direct contact with the rock they are moving, with correspondingly decreased chances of collecting specimens.

For your first effort out of the country, pick a second-world country like Brazil or Mexico. Try to find someone there who will help you get familiar with the way things work: no sense trying to reinvent the wheel if you don't have to. The most important thing, however, is just to go there. On several occasions I have arrived in a country knowing little more than the names of specimen localities that I had seen on labels or in books. In these situations it helps if you stay at least the first two or three nights in a good hotel. The people in reception will always speak some English and will always offer good advice. During the first two or three days you can become familiar with the local currency and the exchange rate. You can also find out how to get around, and you can ask for advice from various people. Since you want to get mineral specimens, your first place to visit should be the local university and geology department. Here you will be able to find a professor who speaks some English and knows about the geology and minerals of the country. He can advise you best about what mines to visit, and the best way to go about it. I've found that asking the professors to recommend a geology student who can travel with me is a good way to proceed. From this point on it is pretty much up to you to make the best of the opportunities you encounter.

Each producing locality soon develops its own cadre of specimen dealers, and they have their own "specimen culture," stories and legends. In some countries, like Brazil, these cadres are many generations old. But business is business; the buying and selling of things is an ancient practice and the same principles and ethics apply almost universally, with various local twists. After a while, when you go to a new country and you encounter people selling specimens, whether it be at the mine level or a local wholesaler, you come to realize that it isn't really much different from the other places you've been, and you come very quickly to feel right at home.

What advice can I offer about places to go where you can get good specimens and achieve fame and fortune? Well, it depends on how tough you are, how much hardship you are willing to endure and the kinds of risks you are willing to take. There are still a lot of places in the world that are producing good specimens and that, in the future, are going to produce many more. If I were a young man full of ambition I would consider visiting these tough countries: Burma, Vietnam, Mozambique, Angola, the Congo (Brazzaville) and perhaps Algeria. But start with Brazil, Mexico or China. These are relatively easy countries to work in and you can probably get enough good things to keep you going. The profits won't be as high as in some of the tough countries listed above, but wherever you go, good luck!

What Will Happen to Your Specimens When you Die?

Since you can't take your specimens with you, you should make sure before you die that they pass into competent hands, or at least make some provision for them in your will. Whatever disposition you ultimately decide on for your specimens, you will not likely be able to invent some new thing to do with them that has not already been done many times before. Your choices are limited: they can either be sold or given away. You can also just decide to do nothing with them and let your family, friends, and/or perfect strangers fight over them or throw them away after you die. In general, whoever ends up paying the most for them is likely to take the best care of them.

Commonly a collection will be given to a school or museum in the hope that it will be kept intact, in perpetuity, as a memorial to the person who assembled it. When the museum or school later sells or trades specimens from such a collection it often causes problems because the family who gave the collection feels betrayed and concludes that the collection is just being used as another source of funding for the institution. I think that a lot of problems springing from the trade or sale of specimens by institutions could be avoided if, at the time of the donation, a letter of intent were generated by the institution, in consultation with the collector making the donation, stating plainly which specimens the institution is particularly interested in and what portion of the collection might be used at a later date for study, trade or sale. Recently the Philadelphia Academy of Science has been on the receiving end of a lot of criticism for selling off some of its collection of minerals, gems and meteorites. The heart of this collection was the collection left to the Academy in the 19th century by William Vaux. The bequest stated that the collection would be kept intact, and when the Academy tried to sell it, some of the surviving family went to court and, at least temporarily, stopped the sale.

Well, forever is a long time; almost no school or museum today will accept collections if it has to promise to keep the collection intact, since these institutions know that times change and that they may, in the future, need to make changes to survive. From strictly a moral rather than a legal perspective, how binding should an institution's promise to keep a collection intact "in perpetuity" be? How solemn and binding should the vow be? At least as binding as the vow of matrimony? The most recent estimate I've heard of the average length of a marriage is about seven years. Few agreements last more than a generation or two. If an institution accepts your collection under any kind of agreement, you should not expect that it will remain intact for more than 75 or 100 years. Even if the institution agrees to keep your collection around more or less intact, there is, in fact, no practical mechanism for your descendants to even know if it still remains intact. Specimens can be lost, stolen, damaged, or traded for other specimens, or they may simply disintegrate. There is no practical method to even keep track of such things, although one might argue that the rise of modern computer databases with image fields may offer some relief in this regard.

Unless your collection is pure junk, it represents a considerable financial asset, and you may want your family or friends to benefit from it. If the money is not important, then you might give your specimens away to those you think most deserving. Arthur Montgomery had a wonderful collection and gave it all away to friends, students, and institutions. If you can't afford to give it away, then you will want to sell or donate it. If you donate it to a suitable school or museum, at least in the United States, you can get an appraisal of its value and write the appraised value off against your taxes. If you decide to sell your collection, then you may want to sell it in a way that will generate the maximum return relative to the amount of effort you want to expend selling it. Gifts of minerals to schools and museums may not ensure that they will be taken care of. Institutions, in general, have a terrible long-term track record for taking care of collections. If you give your collection to a museum or school that currently has a knowledgeable and responsible curator, the specimens will be well cared for while that curator is there, but when the curator leaves he may be replaced by an academic who knows nothing about the values of specimens or how to care for them. Even worse, the institution may decide it is too expensive to have a curator of minerals; it may decide to make your specimens a teaching collection, turn them over to the art department, or put them in storage. If they are relegated to classroom use, students will run scratch tests or chemical tests on specimens worth thousands of dollars, or they may pilfer the specimens, which I think is a preferable alternative. The specimens may be used in art projects. It is always the gold, silver, diamonds, rubies, emeralds and tourmalines that disappear first.

Collection of Mr. Calley
(*fl.* 1817)
Wire Silver with Acanthite
Huel Dutchy, Cornwall, England

Wheal Duchy (Huel Dutchy) in the Callington District near the eastern border of Cornwall, was opened in 1810 and closed in 1816, after producing about 200 tons of silver ore. Published as Plate DXLV, Volume 5, of James Sowerby's *British Mineralogy* (1817).

To realize the maximum return on your collection you will need to do what all retail mineral dealers do: make up nice labels for each specimen and put current retail prices on them. You may need some assistance from a friendly mineral dealer to do this, since people late in life usually do not know what the current market values are. Then you will need to book space (if you can) in some of the major gem and mineral shows and haul your specimens there, putting them out for sale to collectors and museums. This is hardly ever done, because most people late in life do not have the interest or energy to do what retail dealers must do.

Another way is to auction off your specimens. You can do this via eBay on the Internet or at other auction sites or through someone who is running live auctions. This method is not often used for disposing of collections. Sometimes a dealer will sell a collection for the owner and charge him a 15% to 30% commission. The size of the dealer's commission is negotiable, depending on the quality of the specimens in the collection and how much work the dealer must do to get it ready for sale. If your collection consists of poor or common specimens with vague and/or missing labels, you may not be able to find a dealer willing to sell it on commission. If you sell your collection on a commission basis, make sure you can trust the dealer. Most collections are too large to permit a dealer to keep

Collection of Count Lev Perovsky
(1792–1856)
Alexandrite (Chrysoberyl) with Emerald
From near Ekaterinburg, Russia

Count Lev Alekseivich Perovsky (after whom perovskite was named) was a Russian government official and passionate mineral collector in St. Petersburg. He collected this specimen in 1833, and it was later illustrated in Plate 8, Figure I of volume 1 of *Schriften der in St. Petersburg Gestifteten Russisch-Kaiserlichen Gesellschaft für die Gesammte Mineralogie* (1842).

track of each and every specimen, and ultimately you must trust in the dealer to be honest. Some dealers have been known to paint rosy pictures of how much they can get for your specimens, and when they get their hands on the collection will sell only the outstanding pieces and then return the balance of the collection to you unsold. It was only the best specimens they wanted anyway, since that is where most of the value resides. Often whole collections are sold outright to dealers, at a wholesale price. This is probably the most common form of sale. Unless you get cash up front for the collection, you must find a dealer you can trust.

Or you can do nothing at all, trusting that fate will treat your collection kindly. A collector in California recently died, and a church was given the estate. The man who bought the collection from the estate was more interested in the guns and the fishing tackle in the estate, but thought the display cases which housed the specimens were nice. Reportedly he bought the display cases for $2,000, but on the condition that he had to take the "rocks" with him as well. He ultimately sold the specimens to a mineral dealer for about $200,000, and the dealer then sold the specimens retail for somewhere in the $750,000 to $1 million range. If you want to read about all the terrible things that can happen to mineral collections once supposedly knowledgeable and caring collectors and/or institutions get their hands on them, read "Mineral Specimen Mortality," in the July–August 2001 issue of the *Mineralogical Record*.

Why We Collect Mineral Specimens

Perhaps I should have started this series of articles with this topic, but for various reasons I have placed it last. I hope that if you have read this far you may have gained some insight into the avocation of mineral collecting and mineral dealing, and in the process may be more receptive to what I am going to talk about now.

Do you collect minerals because you are interested in minerals and want to learn about them? Do you collect minerals because it allows you to satisfy your desire to hoard things? Do you collect minerals because it affords you a social and recreational outlet that you might not otherwise have? Do you collect minerals because it allows you to compete with other collectors and lets you feel good when you can get one up on them? Do you simply crave recognition? Do you collect minerals because they are pretty? Do you collect minerals because it is like a treasure hunt which allows you sometimes to get something of value for very little? Do you collect minerals because you think they have power and energy that you can use to make your life better? Is building your collection a bid for immortality like building the pyramids of Egypt? There may be other reasons as well.

Also keep in mind that much of our collecting activity depends on other people. Consider the following scenario: you wake up in the morning and everything is the same except that you are the only person left on earth. Would you still be interested in building a fine collection of minerals?

We would all like to think that we collect minerals because we want to learn about them, wouldn't we? If we are honest with ourselves, we should realize and accept the fact that our motives are really more complex and less pure than that. Our motivations may include all of those listed above to various degrees. Even the few purists among us don't collect minerals strictly to learn about them. If we were really interested in learning about minerals we would go to school and study mineralogy and geology, but how many of us do? If we were really interested in studying minerals we would all have large libraries filled with books about minerals, and we would have read those books and the pages of our favorite texts would be dog-eared and falling apart. That doesn't sound like you? It doesn't sound like me either, so perhaps we should examine some of the other reasons.

Let me say that it is okay to collect minerals for other reasons than to learn about them. It has taken me more than 40 years to realize that I don't collect minerals only to learn about them; in that time I have gained a little insight concerning the less noble reasons why I collect minerals. I am still learning. If I can help you to understand and accept why you collect mineral specimens in, say, only 20 years, and be more successful in collecting them, then I will consider my work here successful.

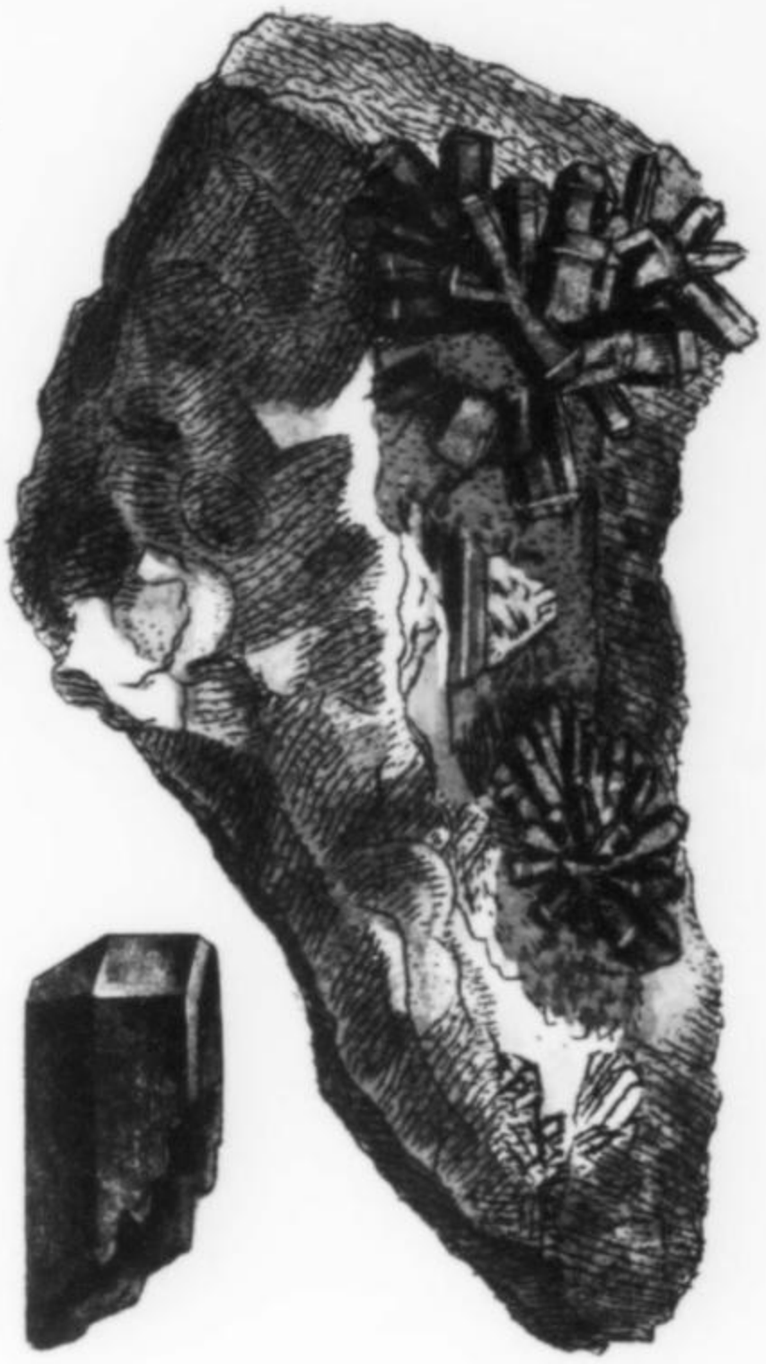
We can probably best understand our reasons for collecting minerals by looking at our collections and those of others and observing what we and they do with specimens. In many ways our collections reflect our personalities and the circumstances of our lives. Once you have become knowledgeable about mineral specimens you can look at the specimens in a collection and understand certain things about the person who collected them, much in the same way as an archeologist can make deductions about cultures by studying what they have left behind. You can make a pretty good guess regarding how well off financially the person was who built the collection, and you can often deduce approximately where they lived and when. You can easily tell how meticulous and thoughtful a person was by the labels he made for his specimens and how he cared for and cataloged them.

Do you know any real mineralogists? I have known a few. The striking thing I have noticed is that their collections are usually not

what most collectors would consider first-rate. They are full of all kinds of nondescript scraps of minerals. There are usually a few good ones scattered around just because they love minerals and just could not help picking up a few good ones when the opportunity presented itself. Also, they have tons of books on their book shelves, but mostly technical stuff; there are very few old leather-bound volumes or books with pretty pictures in them. The mineralogists' specimens are not pretty because they are more interested in what the minerals can teach them, and for that you don't need pretty specimens. Does the above describe you? It doesn't describe me either. Over the years I have learned to appreciate real mineralogists. The flame of knowledge and enlightenment burns brightly in such people.

What does your collection consist of? Is every nook and cranny of your house and garage filled to overflowing with specimens? Is there a big pile of rocks in your back yard that you have dragged home from field trips? Are all your specimens labeled, or are they just in boxes or paper bags with a scribble on the outside indicating the content? If such is the case, then you may wish to consider the possibility that you are collecting specimens to satisfy the urge to have things rather than to learn about them. Many collectors of this type don't interact much with other collectors, and are content adding still more boxes and more bags to their hoard. One guy I know collects quartz crystals. I and other friends of his have jokingly speculated that he must believe all the quartz crystals in the Cascade Mountains in Washington state belong personally to him. He has been adding to his pile for more than 40 years and it is still growing. At one point he ran out of room, so he built a 5,000-square-foot building on his property to house his collection, and now again he has run out of room! Almost everything he has is self-collected. For lack of space he put about 100 flats of quartz specimens beside his house and covered them with a tarp for temporary storage. What was supposed to be temporary storage wasn't, and after several seasons of rain and show the tarp went mostly away and the flats became nicely composted. But there is an upside to the story, because he can now collect the specimens all over again. Recently he has taken to buying cheap knapsacks at local swap meets and using those on collecting trips. When he returns home he puts them in a pile. When last I saw the pile it was about 4 feet high. And there was not a label on any knapsack. He has some amazing things in his collection, but I do wish he would put labels on them and would clean the damned dead leaves and tree roots off that ten-inch Japan-law twin on matrix that he has hidden out in the bottom of one of his cabinets. And this is a smart, intelligent man.

Is your collection a modest one, perhaps consisting of a couple of hundred specimens you have bought for mostly under $100, plus a bunch of stuff of little value that you have collected on field trips? Do you enjoy going to club meetings and on club field trips? Are you an officer of the society, and have you done the job of all the officers in the society at one time or another? Perhaps you have even been their Federation representative and become an officer of the Federation? If this is the case, then you may want to consider that your interest in minerals is mostly social. I know a man like this. His collection is quite modest and he has been a stalwart member of our local mineral society for more years than I want to think about. He has held all the various offices of the society and worked his way up through the various California Federation of Gem and Mineral Society offices, and for a while was President of the whole shooting match. When that was done he came back and still worked for years for the society in various other capacities. In my salad days I thought that getting the best rocks was the most important thing, and I was not as kind and considerate of this man as I should have been. He was a smart and thoughtful person. He made a living by running a machine shop that turned out highly intricate metal parts for satellites and other devices. He designed, developed, manufactured and sold his own brand of rock trimmer and faceting lap that were of high quality—I know because I bought and used both of them. If there were more men like this in the world it would be a better place.



Collection of Gilbert Laing Meason
(1769–1832)
Azurite
Wanlockhead, Scotland

Gilbert Laing Meason, a wealthy mineral collector and friend of Sir Walter Scott in Edinburgh and Lindertis, Scotland, is known primarily as the originator of the concept of "landscape architecture." He was a friend of James Sowerby, and loaned him specimens to illustrate in his *British Mineralogy* (1809); the one shown here is pictured in vol. 3, plate CCII.

Do you collect minerals because it allows you to compete with other collectors? Competition is a fact of life, and is hard-wired into the human species. If we did not have the competitive urge we would probably not exist as a species, let alone be the dominant species on the planet. Although we often disparage competitiveness, it operates within us all to a greater or lesser extent. I have heard collectors disparage trophy collectors as buying specimens only to lord it over those who can't afford such fine pieces. Yet I have also noticed that most of these collectors have their own collecting specialties at which they try to excel. Do you specialize in self-collected specimens, micromounts, thumbnails, miniatures, copper minerals, fluorescent specimens? Do you choose to specialize because you can't afford to have a fine general collection? Do you regularly spend more than $100 on individual specimens and place your

Collection of Henry Heuland
(1778–1856)
Helvite
The Brothers Lorenz mine,
Schwarzenberg, Saxony

John Henry Heuland was among the most famous of all British mineral dealers and collectors. At the time he acquired this specimen of helvite, the locality was the world's only known occurrence. James Sowerby then illustrated it in his famously rare book, *Exotic Mineralogy* (1817) (vol. 2, Plate CLXIV).

collection or parts of your collection regularly on display? When you do display your collection, do you like to hang around your showcase during the show so you can catch favorable comments and talk to people about your specimens? Do you have people over to your house to see your collection? If you do, you may wish to consider that at least part of the reason you are collecting minerals may be that you enjoy competing with your fellow collectors, and you enjoy the recognition that comes with success. Let me observe, at this point, that the real mineralogists or the more academic types also compete. It is just a bit more subtle. It takes the form of how many publications you can generate and how many times your publications are cited in the literature.

I know a collector who has one of the finest private collections in the United States. It is hard to find a specimen in his collection that you would not like to have in your own. Many of them are remarkable and some of them are world-class. The collection is wonderful to behold. He has devoted considerable effort to assembling the collection, and its value represents a sizeable portion of his assets. It is certainly more valuable than his house. Parts of his collection are sometimes on display at the annual Tucson Gem and Mineral Show. He is a remarkable man and his greatest claim to fame is not even related to mineral collecting. There are also a few collectors who just like the beauty of fine mineral specimens and have only a modest competitive urge. These individuals often spend a lot of money on specimens but rarely put their collections on display. But even these people, when they see a good specimen on display, take a quiet satisfaction in knowing that they have one as good or better.

Do you collect minerals because it is a great treasure hunt which may allow you to get something for nothing? If you are a dyed-in-the-wool field collector you understand the allure of this kind of collecting. If you have been fortunate enough to actually break into a fabulous pocket of specimens and to collect the treasures within, you may find yourself hooked for life. It makes discovering an unopened ancient royal tomb pale by comparison. A royal tomb will have been there only for a few thousand years, but a fine pocket of minerals may have been there for millions of years, and when you open it, you are the first living thing ever to see it. This is certainly high adventure that is impossible to resist. Once you have had this experience, you can understand why field collectors will work for years like slaves just so they can have the experience again. The behaviorists will talk about such motivation in terms of intermittent reinforcement schedules. If this is your motivation you may wish to consider that you are collecting minerals for reasons unrelated to learning about them, even though, certainly, you will try to learn about minerals because doing so will help you get to the next good pocket. The stories about finding and collecting great pockets of minerals are the stuff of legend, and articles about them are avidly read and appreciated by all mineral collectors. Even if you have never collected a great pocket of minerals, you probably enjoy telling about the great specimens you got for practically nothing at a swap meet, or because the person you got it from didn't know what it was. I have thought that antique scouts must have a lot in common with those of us who chase around looking for good specimens at bargain prices.

Is your collection beautifully cataloged and labeled? Does your catalog describe your specimens and how you got them, what you paid for them and what you think they are worth? Does each of your specimens have a label glued onto it that says where it comes from and what the species are, or at the very least a number that corresponds to a number in a ledger book with information about the specimen? Sadly, no collection I know of is cataloged that well. So why is that? Could it be that we are really just hoarders, not very interested in minerals but more interested in getting more and better specimens of them and to hell with the cataloging? Are the psychologists correct in calling this anal-retentive behavior? There is probably more than a grain of truth here. I know all about it; been there and done that! It has taken me 40 years to get better about cataloging my specimens. In my youth I was really more interested in getting more and better specimens. In addition, I knew I was never going to die and I could remember where I got each specimen, what it was, where I stored it, where it was from and what I paid for it. I didn't even want to spend the money to house them properly at first. After 40 years of collecting I have learned that there will always be another rock coming down the road as long as one is interested in minerals. And by the way, since you have so many specimens you must have a good idea of what you want to have happen to them when you die, right? You don't? You spend all your life creating a valuable collection and you have not made provisions for its disposal? Are you crazy? Well, no, you're not. You are just like most of the rest of us. So, don't you agree that most of us collect minerals for reasons other than learning about them?

That's all there is. This is the end! Why are you still here? Go away, shoo! Shoo! Go collect some specimens or something.

ROSE QUARTZ on Smoky Quartz, 10.9 cm, from Lavra da Ilha, near Itinga, Minas Gerais, Brazil.
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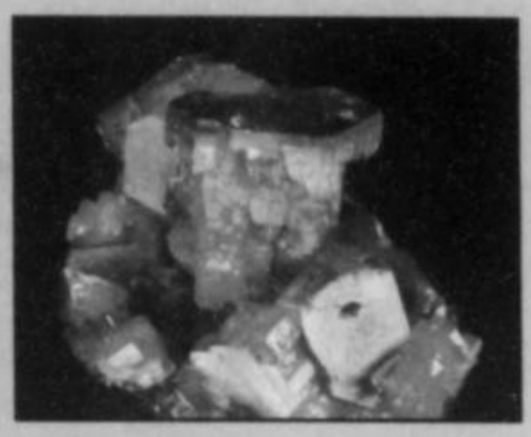

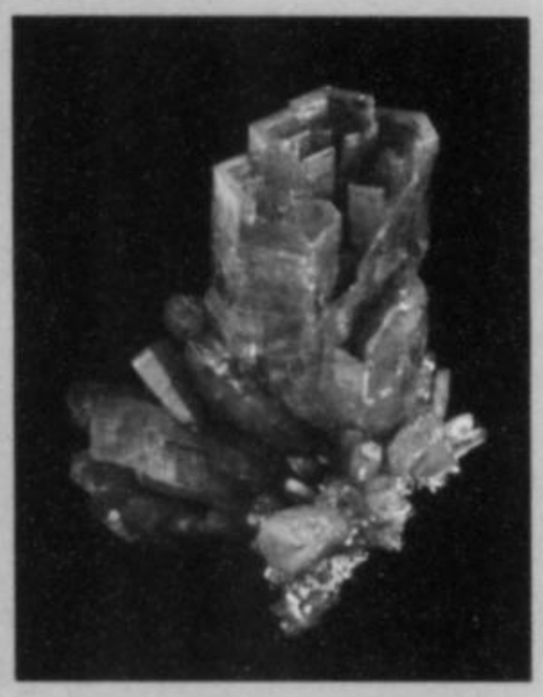

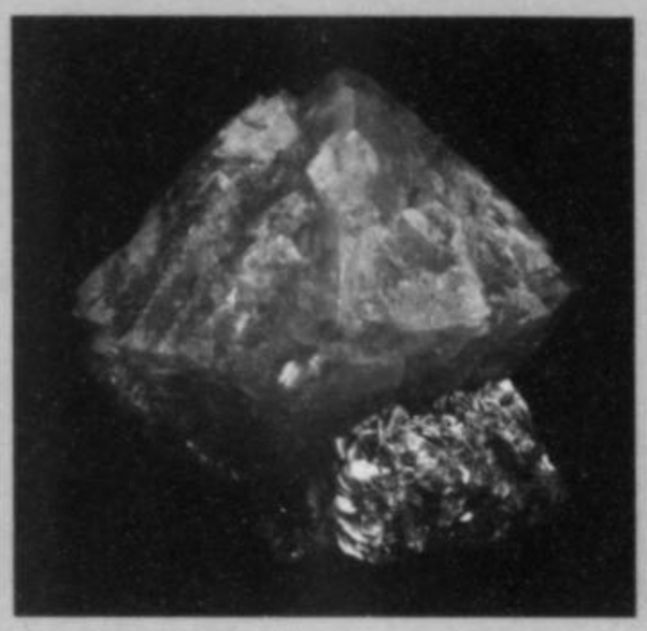

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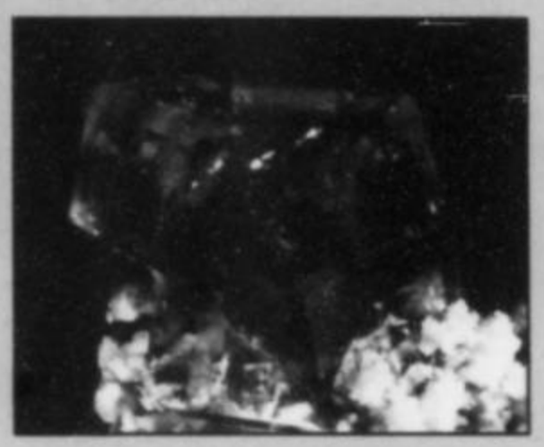

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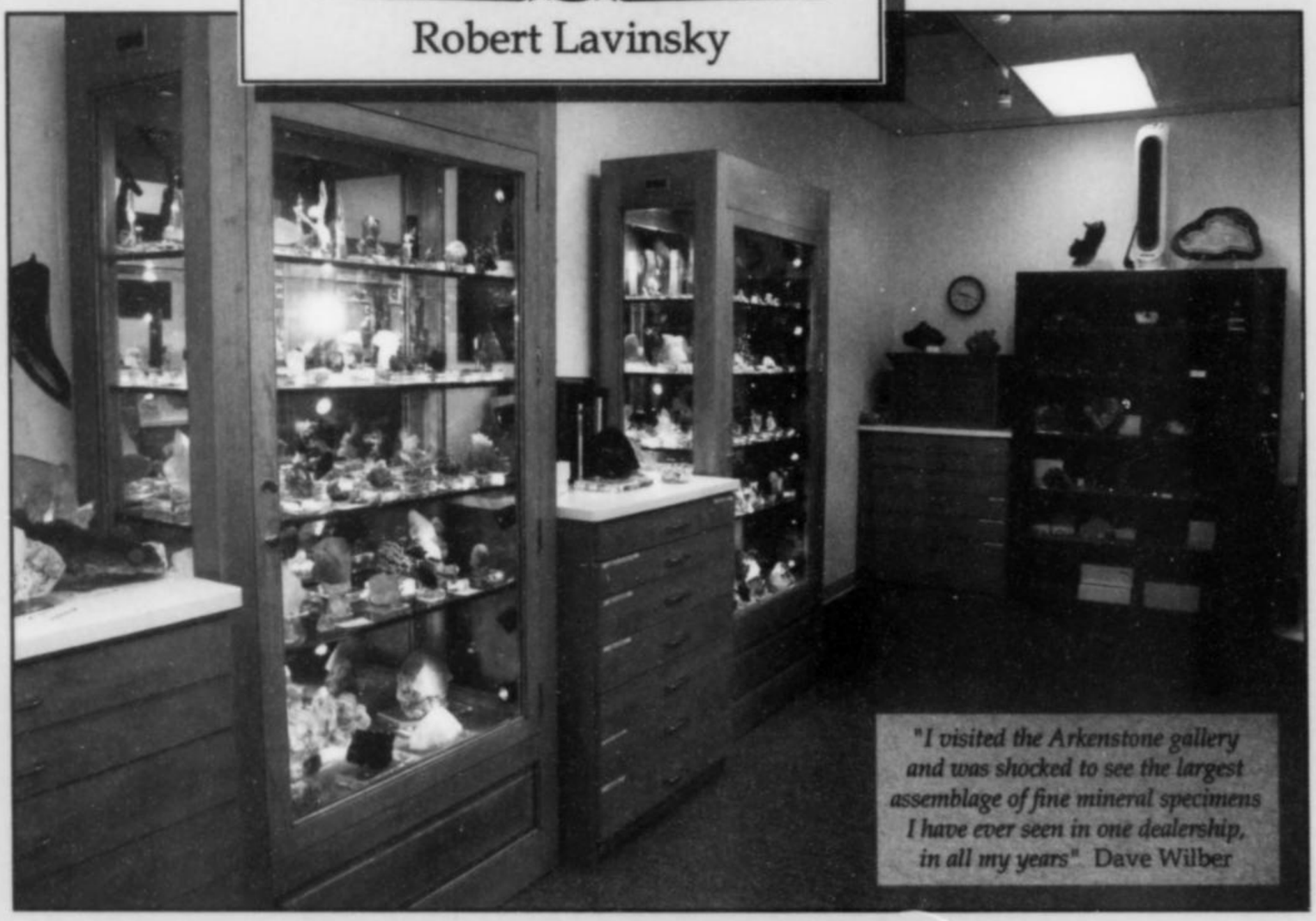

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Stibioclaudetite

$AsSbO_3$

A New Mineral from Tsumeb, Namibia

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Stibioclaudetite has been found at the Tsumeb mine, Namibia, in bladed crystals to 6 mm association with leiteite, ludlockite, smithsonite and quartz. Previously identified specimens of claudetite from Tsumeb may well be stibioclaudetite instead.

ABSTRACT

Stibioclaudetite is a new mineral species with ideal chemistry $AsSbO_3$. The mineral has monoclinic symmetry, $P2_1/n$, with a = 4.5757(4) Å, b = 13.1288(13) Å, c = 5.4216(5) Å, β = 95.039(4)°, V = 324.44(5) Å^3, Z = 4, and d_{calc} = 5.009 g/cm^3. The strongest X-ray lines (calculated) are 3.512 (100), 3.282 (82), 3.238 (71), 2.279 (34), and 4.995 (32). The average of ten microprobe analyses is 45.15% As_2O_3 and 55.77% Sb_2O_3, total 100.92, corresponding to $As_{1.088}Sb_{0.912}O_3$. Stibioclaudetite forms adamantine, colorless transparent bladed crystals to 6 mm, bound by {010}, {110}, {111}, and {$\bar{1}$01}. The mineral is flexible with perfect cleavage on {010}. The hardness is <2; indices of refraction are >2.00. Stibioclaudetite occurs with leiteite, ludlockite, smithsonite and quartz in a vug within massive tennantite from the Tsumeb mine, Tsumeb, Namibia. Stibioclaudetite is isostructural with claudetite, specifically an Sb-substituted ordered analog, and the name denotes the relationship. The crystal structure consists of corrugated sheets of corner-sharing AsO_3 and SbO_3 trigonal pyramids arranged in an ordered, alternating pattern. Raman spectra of stibioclaudetite, claudetite, and leiteite are presented and compared.

INTRODUCTION

Mineral dealer David W. Bunk obtained an unusual Tsumeb specimen containing a well-formed leiteite ($ZnAs_2O_4$) blade, red fibrous ludlockite, quartz, and an undetermined mineral occurring as colorless crystals to 6 mm in length. *In situ*, non-destructive examination of the unknown mineral with Raman spectroscopy failed to match its pattern from a large Raman spectral database that the Department of Geosciences at the University of Arizona is currently constructing. Raman spectroscopy confirmed that three separate crystals are of the same unknown. Similarities to the Raman spectrum of leiteite indicated an As^{3+}-bearing structure, and preliminary electron-dispersive spectroscopy (EDS) on an SEM indicated the presence of As, Sb and O (and no other elements with Z > 8). Since no known mineral contained only As, Sb and O, the authors initiated a full characterization of the material.

Crystal structure determination (Origlieri *et al.*, 2009) and quantitative electron-probe microanalysis identified this phase as naturally occurring $AsSbO_3$. Bodenstein *et al.* (1983) studied synthetic $AsSbO_3$, which they demonstrated to be isostructural with claudetite (As_2O_3) (Pertlik, 1978). The crystal structure of this

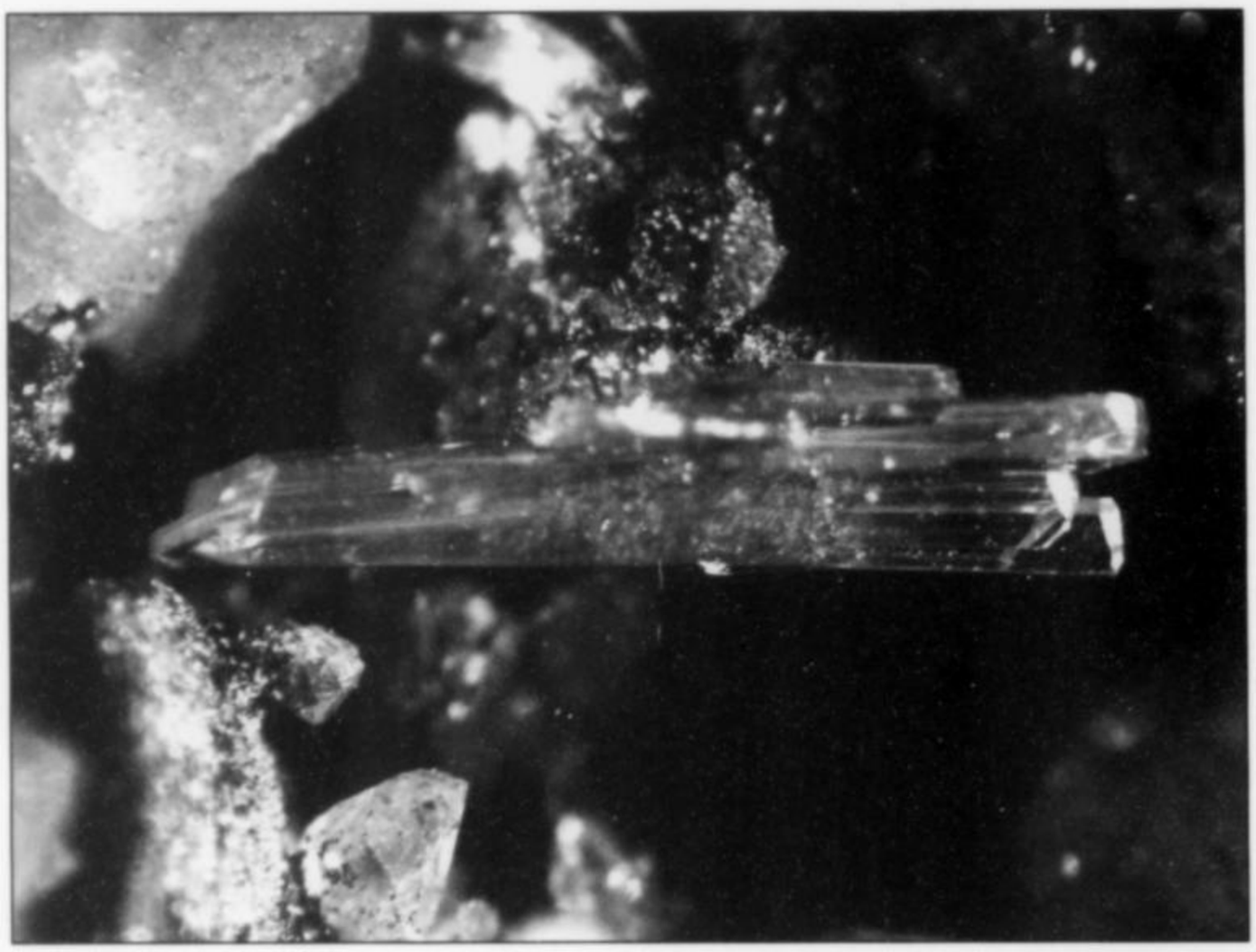

Figure 1. **The largest cluster of crystals of stibioclaudetite, 6 mm across, in a vug of massive tennantite with quartz crystals. This is the holotype specimen. D. W. Bunk specimen, now in the W. W. Pinch collection.**

Figure 2. **Scanning electron photomicrograph of stibioclaudetite, showing the terminal morphology of the crystals.**

new mineral consists of corrugated sheets of corner-sharing AsO_3 and SbO_3 trigonal pyramids, with sheets stacked along [010]. The Commission on New Minerals, Nomenclature and Classification (CNMNC) of the International Mineralogical Association approved the mineral (proposal IMA2007-028) and mineral name before publication. We have deposited type material at the United States National Museum of Natural History (Smithsonian Institution) in Washington, D.C. under catalog number 174550. The mineral name, stibioclaudetite, denotes the structural relationship with claudetite, as an ordered Sb-substituted analog.

Strunz *et al.* (1958) first reported claudetite from Tsumeb as gypsum-like platelets. Strunz (1959) further elaborated, describing 1–3 mm colorless to white crystals with unit cell dimensions a = 5.3 Å, b = 13.0 Å, c = 4.56 Å, and $\beta \sim 94°$. He sublimated the mineral in a closed glass tube and condensed minute octahedral crystals. This microchemical behavior is consistent with the known behavior of claudetite, which condenses into octahedral crystals (i.e. arsenolite). However, these tests are not sufficient to distinguish claudetite from stibioclaudetite. Synthetic $AsSbO_3$ also has a cubic modification with the same crystal structure as cubic As_2O_3 (arsenolite) (Hayek *et al.*, 1963). Consequently, sublimation of either claudetite or stibioclaudetite would produce octahedral crystals. The unit cell reported by Strunz (1959) lacks the precision required to reliably distinguish stibioclaudetite from claudetite. Keller *et al.* (1979) reported another occurrence of claudetite from Tsumeb in association with warikhanite, unfortunately without specifying the identification method. The original identification of claudetite from Tsumeb could be in error; therefore Tsumeb specimens labeled "claudetite" warrant re-examination.

Hayek *et al.* (1963) showed that cubic As_2O_3 (arsenolite) and cubic Sb_2O_3 (senarmontite) are miscible, forming a complete solid solution series. Consequently, ordinary solid solution between arsenolite and senarmontite might yield cubic $AsSbO_3$ without structural ordering of As and Sb atoms. In that case, a cubic dimorph of stibioclaudetite would simply be an intermediate of the arsenolite-senarmontite series, and would not qualify as a new mineral species. The ordering of Sb into a single As position of the claudetite structure is apparently unique to the claudetite and stibioclaudetite structure (Origlieri *et al.*, 2009). A literature search failed to locate any report of monoclinic Sb_2O_3; however, an orthorhombic phase which bears the mineral name valentinite is well known.

Mineralogist Sidney A. Williams identified hexagonal $AsSbO_3$ among mine fire products from Nevada (Gibbs, 1985).

OCCURRENCE AND PARAGENESIS

The new mineral occurs within a cavity in a massive tennantite sample (4 × 5 × 7 cm) from the Tsumeb mine at Tsumeb, Namibia. The cavity measures 3 cm across, and hosts quartz crystals to 3 mm, a single terminated leiteite blade 7 by 20 mm, red fibers of ludlockite, smithsonite and crystals of stibioclaudetite to 6 mm. Figure 1 shows a photograph of the largest group of stibioclaudetite crystals. Although we do not know the precise original location of the specimen within the Tsumeb mine, the association with leiteite leads to certain conclusions. Leiteite occurs in the second and third oxidation zones at the Tsumeb mine (Gebhard 1991, 1999). Type leiteite occurs with tennantite, chalcocite, smithsonite and schneiderhöhnite (Cesbron *et al.*, 1977). Our present leiteite sample occurs on tennantite matrix with quartz, ludlockite and smithsonite. This assemblage suggests that its specific origin within the Tsumeb mine may be distinct from other known leiteite occurrences.

Although antimony-dominant minerals are not typical of the arsenic-rich assemblages at Tsumeb, primary tennantite contains substantial antimony (Moritz, 1933). Previous investigators have

reported five mineral species from the Tsumeb mine with essential antimony: famatinite, stibnite, stibiconite and nadorite (Schneider, 1992), and biehlite (Schlüter *et al.*, 2000). Schneider (1992) quantifies the 1988 production of $NaSb(OH)_6$ at the Tsumeb smelter at 156 metric tons. Oxidation of host tennantite could readily supply both the arsenic and antimony sufficient to form stibioclaudetite. Moritz (1933) further notes a substantial zinc content in Tsumeb tennantite, which could supply both the zinc and arsenic required to form leiteite ($ZnAs_2O_4$).

Monoclinic As_2O_3 (claudetite) forms above 250° C, while cubic As_2O_3 (arsenolite) has a melting point near 275° C (Schulman and Schumb, 1943). Hayek *et al.* (1963) report a melting point of 315° C for claudetite. In other words, claudetite remains stable at higher temperatures than arsenolite. Bodenstein *et al.* (1983) synthesized their monoclinic $AsSbO_3$ at temperatures near 347° C. These data conservatively bracket the formation of stibioclaudetite between 300° C and 400° C.

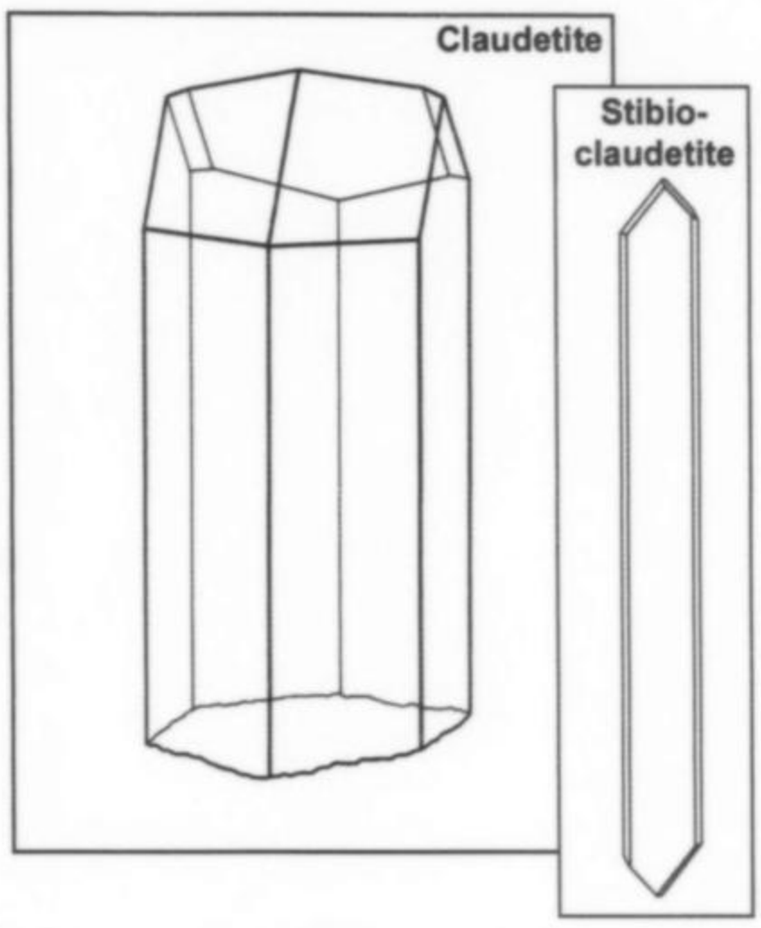

Figure 3. **Crystal morphology of stibioclaudetite, showing forms {010}, {110}, {111}, and {$\bar{1}$01}. At left is claudetite from Imperial County, California, as illustrated by Palache (1934).**

APPEARANCE AND PHYSICAL PROPERTIES

Stibioclaudetite forms bladed crystals to 6 mm bound by major {010}, major {110}, minor {111}, and very minor {$\bar{1}$01}. Stibioclaudetite is colorless and transparent with an adamantine luster and a white streak. The mineral does not show fluorescence under ultraviolet radiation. Figure 1 is a close-up of the largest stibioclaudetite crystals on the holotype, and Figure 2 shows the terminal morphology in a scanning electron micrograph. Figure 3 is a line drawing of the ideal morphology. Stibioclaudetite crystals mimic the morphology of claudetite from Imperial Valley, California as illustrated by Palache (1934), shown in Figure 3. Hardness is ~2. The mineral has perfect cleavage on {010}, readily obtained. Cleavage plates are flexible, and deform similarly to gypsum. The mineral shows strong relief under n=2.00 index fluids, indicating an index of refraction above 2.00.

CHEMISTRY

We conducted electron probe microanalysis on a cleavage plate of the stibioclaudetite attached to a glass disc. Qualitative WDS scans showed only As, Sb and O, and no other elements with $Z > 8$.

Table 1. **Electron probe microanalysis data for stibioclaudetite with corresponding atomic compositions normalized to three oxygen atoms. The average of these ten analyses, with standard deviations is 45.15(0.95)% As_2O_3, 55.77(1.07)% Sb_2O_3, total 100.92%. Normalized to three oxygen atoms, the average composition is $As_{1.088}Sb_{0.912}O_3$. Ideal $AsSbO_3$ contains 40.43% As_2O_3 and 59.57% Sb_2O_3.**

% As_2O_3	*% Sb_2O_3*	*Total*	*Composition*
45.66	55.03	100.69	$As_{1.100}Sb_{0.900}O_3$
44.57	55.46	100.02	$As_{1.084}Sb_{0.916}O_3$
44.82	56.39	101.22	$As_{1.079}Sb_{0.921}O_3$
43.95	55.64	99.59	$As_{1.076}Sb_{0.924}O_3$
44.30	56.13	100.43	$As_{1.075}Sb_{0.925}O_3$
46.62	56.33	102.95	$As_{1.099}Sb_{0.901}O_3$
44.54	56.77	101.31	$As_{1.072}Sb_{0.928}O_3$
46.75	56.76	103.51	$As_{1.097}Sb_{0.903}O_3$
45.50	53.16	98.67	$As_{1.116}Sb_{0.884}O_3$
44.74	56.05	100.80	$As_{1.081}Sb_{0.919}O_3$

Standardized quantitative WDS analysis employed a Cameca SX-50 electron microprobe at the Lunar and Planetary Sciences Department, University of Arizona. Operating conditions were 15 kV and 30 nA with a beam diameter of 1.5 μm. Enargite (As) and stibiotantalite (Sb) served as standards. Data reduction and correction followed the PAP method (Pouchou and Pichoir, 1984).

Table 1 lists the results of ten separate electron probe spot analyses. The average of these weight percent analyses with standard deviations is: 55.77(1.07)% Sb_2O_3, 45.15(0.95)% As_2O_3; total 100.92%. Normalized to three oxygen atoms, the average composition is $As_{1.088}Sb_{0.912}O_3$. The composition remained homogeneous over the sampled regions. In the solution of the crystal structure, use of the idealized formula $AsSbO_3$ produced a smaller residual error than the empirical electron probe formula (Origlieri *et al.*, 2009). The crystal structure analysis indicates that $AsSbO_3$ more accurately represents the chemistry of stibioclaudetite than the empirical electron microprobe chemistry given in Table 1. (Origlieri *et al.*, 2009).

X-RAY CRYSTALLOGRAPHY

We obtained single-crystal X-ray diffraction data using a Bruker X8 Apex diffractometer equipped with a 4K Apex II CCD detector. We used monochromatic MoKα radiation generated at 50 kV and 35 mA. A cleavage fragment of 30 × 70 × 220 μm produced diffraction spots with streaking along constant 2θ. Despite the poor appearance of the data, the reflections yielded a merged R_{int} value of 3.08%. A data collection strategy resulted in the acquisition of 1863 frames in 6 scans, from which the Bruker software generated the calculated powder pattern given in Table 2. We used Bruker Saint 7.16b to fit the unit cell parameters from the positions of 6609 reflections collected to 82° 2θ, and Bruker Shelxtl 6.14 to determine the space group. Table 3 compares the unit cell parameters for stibioclaudetite and claudetite (Origlieri *et al.*, 2009) in Table 3.

RAMAN SPECTROSCOPY

Raman spectroscopy provides a nondestructive and rapid means to distinguish claudetite from stibioclaudetite. Samples compared include the stibioclaudetite fragment from our X-ray study; claudetite from Jachymov, Czech Republic (University of Arizona Mineral Museum 16128; RRUFF R050313); and leiteite from Tsumeb, Namibia (RRUFF R040011). We collected Raman spectra with a benchtop 100 mW Ar-ion laser centered at 514.532 nm and a Jobin Yvon Spex HR 460 spectometer equipped with a liquid nitrogen cooled Princeton Instruments 1152 × 256 pixel CCD detector.

Table 2. **Calculated X–ray powder diffraction data for stibioclaudetite.**

d	I/I_0	*h*	*k*	*l*
4.995	32	0	1	1
3.645	11	–1	0	1
3.512	100	–1	1	1
3.400	18	0	3	1
3.342	14	1	0	1
3.282	82	0	4	0
3.238	71	1	1	1
3.157	24	1	3	0
2.8048	39	0	4	1
2.8006	31	–1	3	1
2.7003	23	0	0	2
2.6559	28	1	3	1
2.6450	24	0	1	2
2.2790	34	2	0	0
2.2692	8	–1	2	2
2.2454	5	2	1	0
2.1401	5	–2	1	1
2.1304	9	–1	5	1
2.1188	8	1	2	2
2.0853	17	0	4	2
2.0646	13	1	5	1
1.8825	10	0	5	2
1.8720	21	2	4	0
1.8223	8	–2	0	2
1.8096	6	–2	4	1
1.8050	5	–2	1	2
1.7344	16	1	7	0
1.7305	7	2	4	1
1.7270	5	–1	0	3
1.6649	7	0	3	3
1.6574	6	2	1	2
1.6263	7	1	0	3
1.6064	6	–1	3	3
1.5932	6	–2	4	2
1.5702	17	0	8	1
1.4876	7	–3	1	1
1.4572	7	1	4	3
1.3087	7	–2	8	1

Table 3. **Comparison of the unit cells of claudetite and stibioclaudetite.**

	Stibioclaudetite	*Claudetite**
idealized formula	$AsSbO_3$	As_2O_3
space group	$P2_1/n$	$P2_1/n$
a	4.5757(4) Å	4.5460(4) Å
b	13.1288(13) Å	13.0012(14) Å
c	5.4216(5) Å	5.3420(5) Å
β	95.039(4)°	94.329(2)°
V	324.44(5) Å^3	314.83(5) Å^3
Z	4	4
calculated density	5.009 g/cm^3	4.174 g/cm^3

*Origlieri *et al.* (2009)

Table 4. **Principal Raman peak positions (shifted cm^{-1}) of stibioclaudetite, claudetite, and leiteite.**

Stibioclaudetite	*Claudetite*	*Leiteite*
115		
125		125
		138
155		150
		168
171	175	179
183		
	193	201
202		205
210	218	220
	248	256
232	259	269
273	284	
298		307
	354	368
323	356	379
342		
414		
430		
468	459	459
477		
517		
	541	550
		603
620	626	649
631	632	
726		
766		764
817	814	806

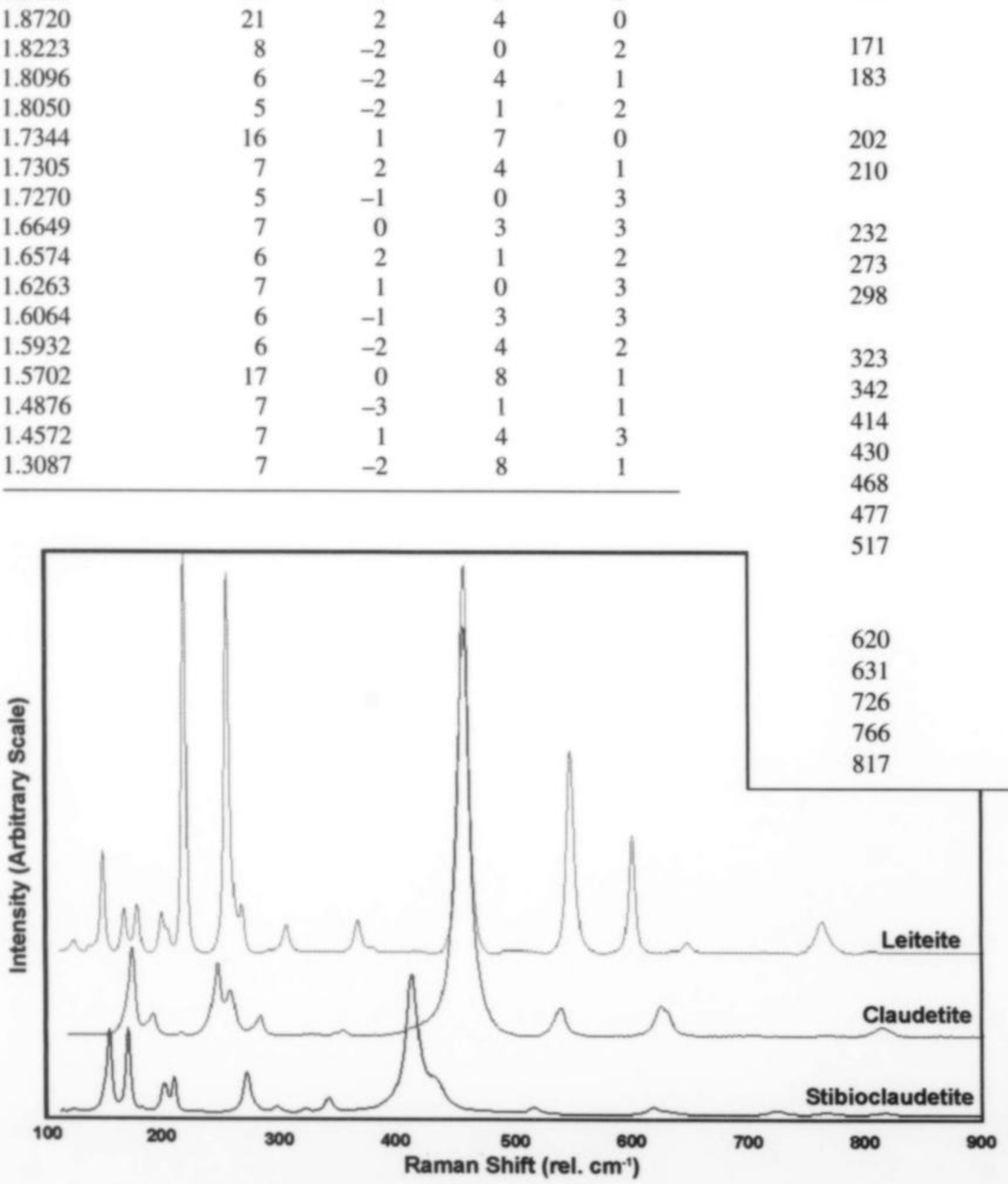

Figure 4. **Comparison of Raman spectra of stibioclaudetite, claudetite, and leiteite. Table 4 lists the peak positions for these spectra.**

Using a 1200 grooves mm^{-1} grating centered at 530.4 nm and Roper Instruments Winspec/32 software, we collected the shifted region from 113 to 1016 cm^{-1}.

Figure 4 compares the Raman spectra of stibioclaudetite, claudetite and leiteite, all in undetermined orientations. The stibioclaudetite spectrum shows 22 vibrational modes. Raman selection rules for the claudetite and stibioclaudetite structures allow for 15 A_g modes and 15 B_g modes, not all of which may be visible. Table 4 lists the principal Raman peak positions for stibioclaudetite, claudetite and leiteite. Additionally, Raman spectroscopy in the region between 3000–4000 rel cm^{-1} showed no active Raman modes of greater significance than background, demonstrating that the mineral is nominally anhydrous.

ACKNOWLEDGEMENTS

We graciously acknowledge Michael Scott for supporting the creation of a Raman database of all known mineral species. The authors appreciate the careful review of Andrew Roberts.

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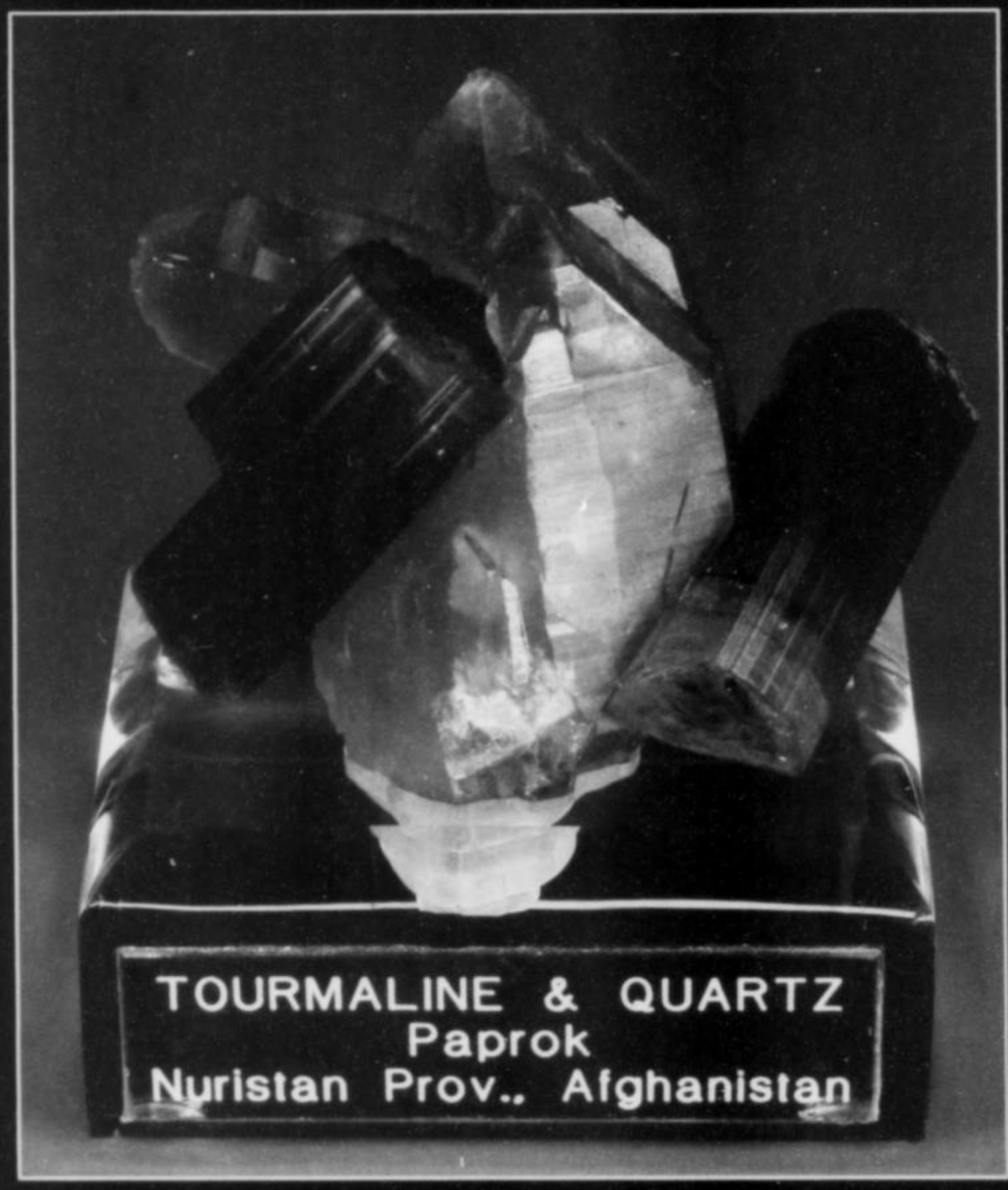

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Collector Profile:

JOHN S. WHITE, JR.

and his Single Crystal Collection

Thomas P. Moore
2709 E. Exeter St.
Tucson, AZ 85716

Former curator-in-chief of the Smithsonian mineral collection, founder of The Mineralogical Record, *author, dealer and consulting museologist, John White has built an elegant personal collection of nearly 500 "floater" single crystals and twins.*

INTRODUCTION

Though now comfortably retired from his positions of prominence, John Sampson White, Jr. is still a presence in the modern mineral world. Reliably each year at Tucson, Denver, Munich and many a lesser venue, he is to be found energetically moving about, asking more questions than he presumes to answer, engaging in behaviors friendly, witty, expert, loyal, alert, curmudgeonly—bringing the multiple traits of his complex nature to bear on all the proceedings. Since one of his activities in retirement has been to help out Spanish mineral dealer Jordi Fabre, John can often be found at major shows holding court in a rear area of Jordi's stand. But actually he seems to be *everywhere* at a show, which is all to the good since it makes him easy to find, and John is among your best prospects for a companion with whom to go for a civilized meal after, say, a long day on the scene in Munich. Highly aware of the major importance in life of good eating, drinking and conversation, John remains abundantly chipper at age 75 (as of September 2008), and projects unfailing curiosity, good humor and *bonhomie*.

John White is best known for his distinguished work as curator-in-chief of the great mineral collection of the Smithsonian Institution, and for having created and launched the *Mineralogical Record* in 1969–1970. Of his many other achievements, probably the least well known has been his fashioning of a personal mineral collection of a highly specialized kind: the collection consists now of almost 500 complete "floater" mineral crystals of thumbnail and miniature size which John has never displayed publicly.

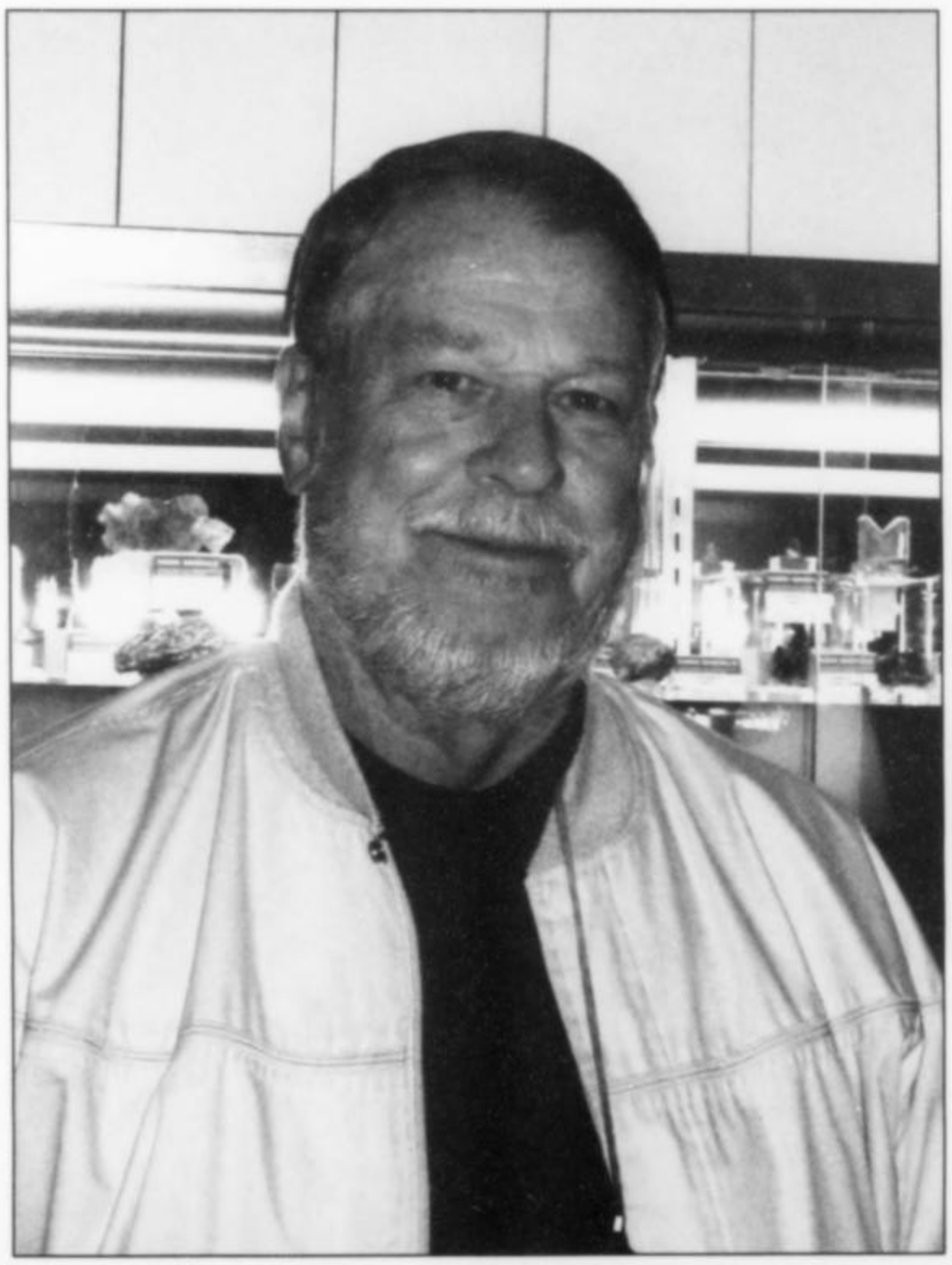

Figure 1. **John S. White, Jr. Jordi Fabre photo.**

BIOGRAPHICAL NOTES

John was born on September 30, 1933, in Monessen, Pennsylvania, a town about 20 miles south of Pittsburgh. His father, John

Figure 2. **Some of the more delicate thumbnail specimens in a foam-rubber-lined thumbnail box, 15 × 31 cm, designed by Richard Bideaux.**

Figure 3. **Large home-made box, 33 × 64 cm, containing 72 specimens.**

Sampson White, Sr., was a metallurgist, and his mother, Frances Sickler White, a homemaker. In 1942 his father's employment as a government inspector for the Bethlehem Steel Company required that the family move to Baltimore, Maryland. Of course John would later make other and larger moves, but the country around the Chesapeake Bay, and especially the beautiful farm country north of the bay, has remained John's home ground ever since (his present house in Pennsylvania is about 35 miles north-northeast of Baltimore).

John discovered mineral collecting in the 8th grade when his teacher in Towson, Maryland required that each of the students in John's science class assemble a "rock collection." While on this quest, John made another important contact: future Smithsonian curator Paul Desautels, then a chemistry professor at Towson Teachers College (now Towson University). Desautels, at that time a micromounter, introduced the teenager to two micromounting giants, Lou Perloff and Neal Yedlin, and John was inspired to do much digging, mostly for microcrystals, at field sites all around Baltimore County. Already at 17 a seasoned collector, John helped to found the Baltimore Mineral Society in 1950, and served as the club's first treasurer.

In 1952 he matriculated as a Geology major at Franklin and Marshall College in Lancaster, Pennsylvania. There he haunted the venerable, Doric-columned repository of natural science and local history, the North Museum, learning much about Lancaster County minerals (and advising the curator on how to make the mineral displays more effective). He also founded the school's first lacrosse team, acting as both its coach and captain. Before and immediately after graduation he worked for a Canadian gold-mining company and spent the summers of 1955 and 1956 in western Ontario, aiding in explorations for gold deposits. In 1956 he graduated from Franklin and Marshall with a BS in Geology—and in that same year he was drafted into the Army.

Trained as a cryptographer but working actually as a message center clerk (that's the Army!), he served out his two years mostly in Böblingen, near Stuttgart, Germany. For two more years after his Army discharge in 1958 he taught math and science at Franklin Junior High School in Reisterstown, Maryland. But in 1960 John came to the University of Arizona, Tucson, to do graduate work in mineralogy under Professor John Anthony (later the senior author of *Mineralogy of Arizona*). Until 1962 he took graduate courses and conducted research; for his thesis on plattnerite he received a

Figure 4. **Spinel-law-twinned spinel, 2 cm, from Burma; gift of Helmut Brückner. Isaias Casanova photo; J. S. White collection.**

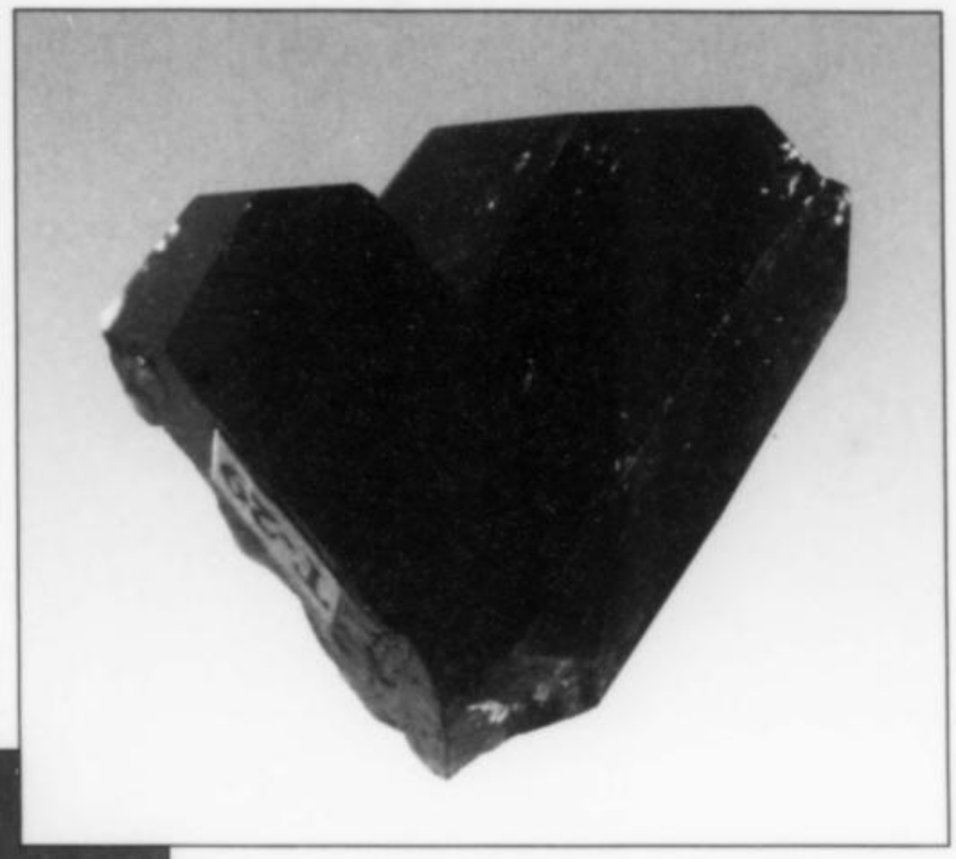

Figure 5. **Epidote twin, 2 cm, from Piemonte, Italy. Isaias Casanova photo; J. S. White collection.**

Figure 6. **Magnetite crystal, 1.8 cm, from Balmat, St. Lawrence County, New York. Isaias Casanova photo; J. S. White collection.**

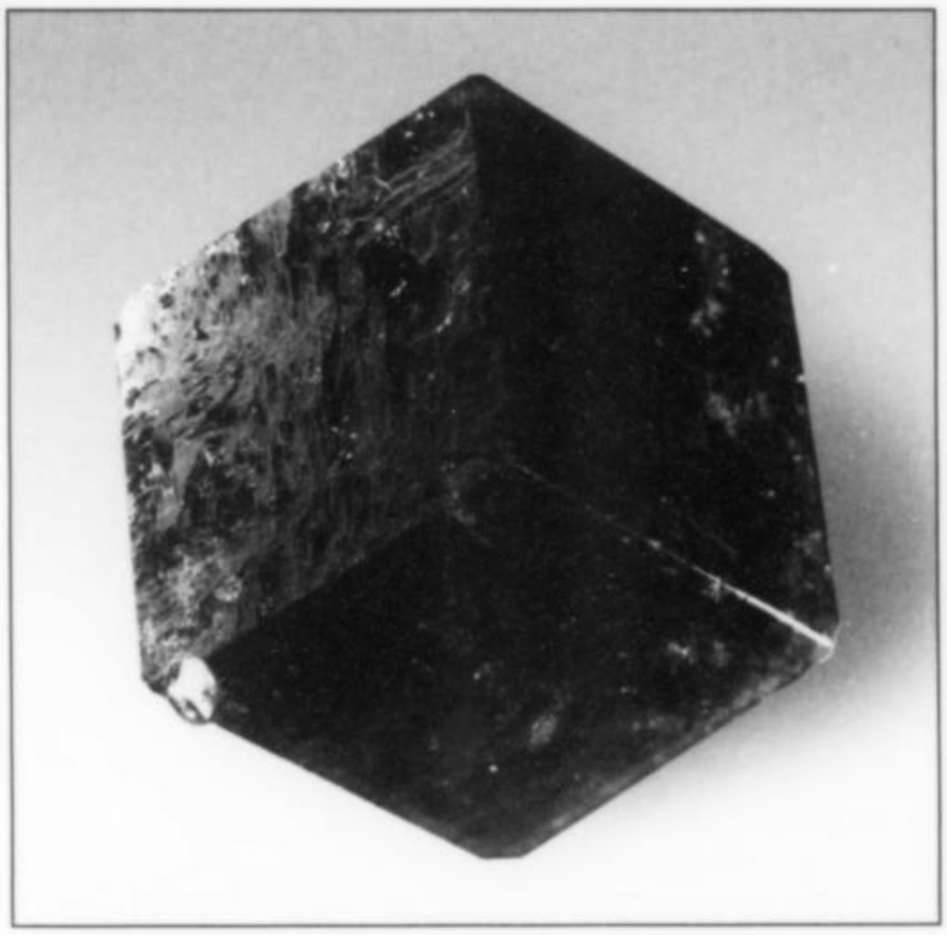

Figure 7. **Uvite crystal, 3.5 cm, from the Brumado mine, Bahia, Brazil. Isaias Casanova photo; J. S. White collection.**

Master's degree, formally awarded him in 1966. While in Tucson he also enjoyed field collecting at famous localities, often in the company of prominent local collectors (e.g. Dick Jones). With fellow graduate student Victor Hoffmann he set up a mineral dealership called "Delmann Minerals" (which did not survive past John's time at the University).

In 1962 he took a job as a field geologist with the American Smelting and Refining Company (ASARCO). This employment enabled him to stay in Tucson, where, on January 31, 1963, he married Mary Lynn Goebel, a University of Arizona undergraduate whom he had tutored in a geology course. During the next five years John and Mary Lynn had three daughters: Wendy (born 1963), Kendahl (born 1965) and Leslie (born 1968). One might say that eventually the couple would have a fourth "child"—for Mary Lynn tirelessly helped and supported John as he struggled to make the *Mineralogical Record* succeed in the difficult first few years after its "birth" in 1970. John and Mary Lynn separated in 1976 and divorced amicably in September, 1982; however, as almost all who are reading this essay know, Mary Lynn still works devotedly today as the magazine's Circulation Manager, having moved with the company back to her hometown of Tucson, Arizona in 1980, and remarrying (to Richard Michela) in 1983.

In 1961 the Tucson Gem and Mineral Society, seeking ways to expand the reputation and reach of the already burgeoning Tucson Gem and Mineral Show, invited then-Smithsonian curator Paul Desautels to come and give some talks and to display some English classics from the Smithsonian collection. That February in Tucson, Desautels stayed with John White, his old protégé, and when, in the next year, a vacancy occurred in the Department of Mineral Sciences at the Smithsonian, Desautels helped John to land the position. In

Figure 8. **Lavender beryl crystal, 3 cm, in a rare dihexagonal-bipyramidal habit, from Corrego do Urucum, Galileia, Minas Gerais, Brazil. Jeff Scovil photo; J. S. White collection.**

Figure 9. **Calcite crystal, 4 cm, from the San Martin mine, Zacatecas, Mexico. Isaias Casanova photo; J. S. White collection.**

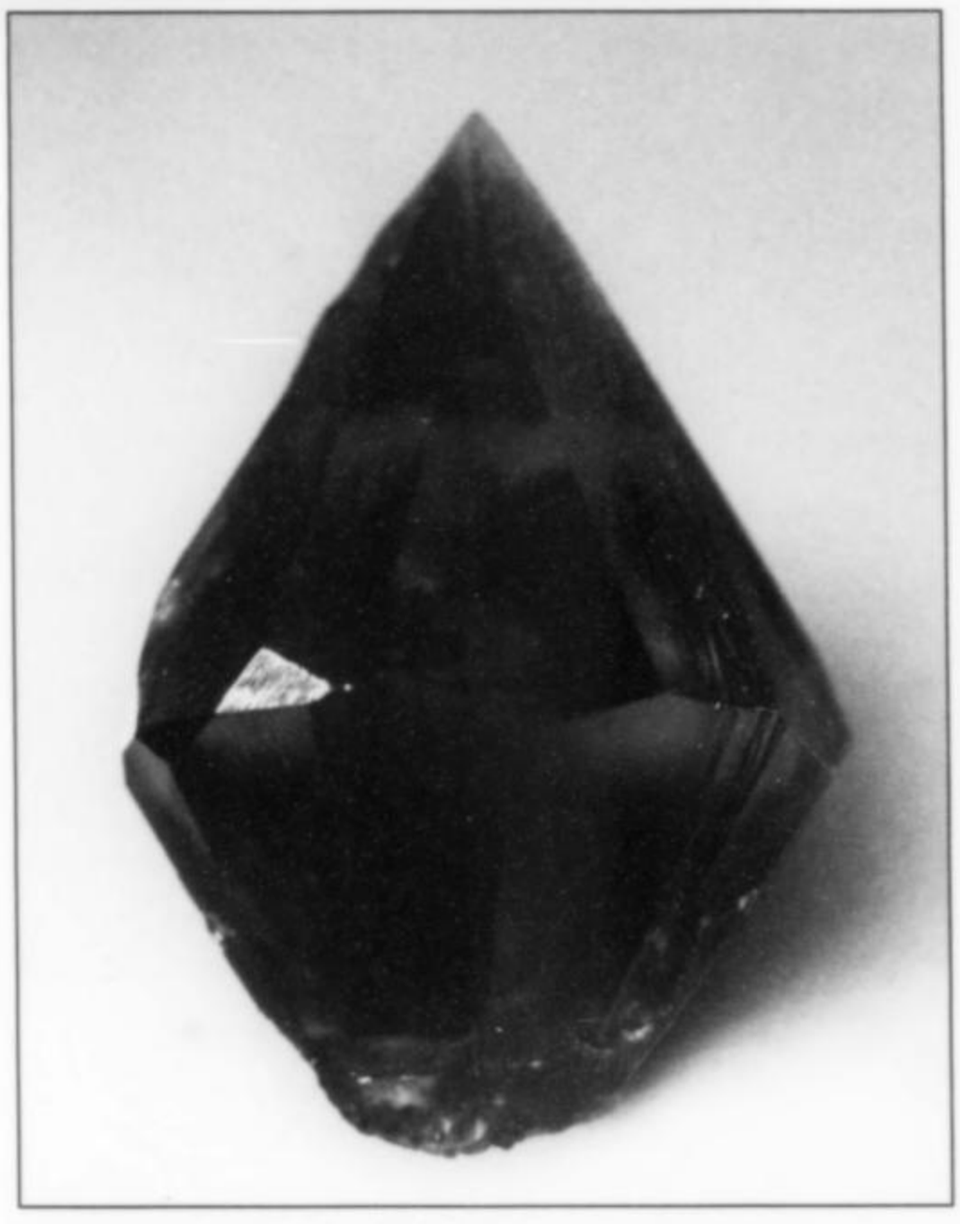

Figure 10. **Synthetic zincite crystal, 3 cm, grown in Poland. Isaias Casanova photo; J. S. White collection.**

1963 the Whites moved to New Carrollton, Maryland, just outside Washington, D.C., and John became a museum technician/specialist. In 1973 he was promoted to Museum Curator; in 1981 he became Associate Curator-In-Charge; in 1984, following Paul Desautels' departure, he was promoted to Curator-In-Charge. Some of these advancements had been substantially furthered by John's success in establishing and nurturing that fledgling publication for mineral collectors, the *Mineralogical Record*, while also holding down his full-time museum job. However, as John explains in his written account of the early years of the *Mineralogical Record*, the creative adventure in magazine publishing which initially had so aided him at the Smithsonian led at last, ironically, to his having to choose one of the two career roles while abandoning the other. John had already been training Wendell Wilson in the work of the magazine, and in 1981 he turned over to Wendell the duties (and title) of Publisher. But John remained in charge of the world's greatest mineral collection until he retired in 1991. I pass fairly quickly over these "administrative" matters because a much fuller and better account of them—John's own—may be found in the January–February 2004 issue of the *Mineralogical Record* (White, 2004).

Informed interlocutors seem to agree that John performed well at the Smithsonian, especially after assuming the difficult role of Paul Desautels' successor. One of the peak experiences whose memory he cherishes is having served as companion and "driver" for the legendary Martin Ehrmann (see Smith and Smith, 1994) on a trip in grand style all over Europe, with Ehrmann dealing in specimens that he had just acquired in Brazil. In 1968, while still working under Paul Desautels, John went with him and with Peter Leavens and Harold Banks to New Haven, Connecticut to pack up the Carl Bosch Collection in preparation for its move from Yale to its permanent home at the Smithsonian (see Roe, 1978). John recalls that after taking stock of this great collection back at the museum, he and Desautels decided which specimens were to be "keepers." They then offered selected major mineral dealers the chance to buy *any* specimen from the remainder for $100—and after that round to buy any specimen for $50—and after that to buy any specimen for $25. He tells this with much nostalgia and, inevitably, with rue at what has befallen specimen prices, and museum practices *vis à vis* dealers, since that distant time.

Since his retirement from the Smithsonian in 1991 John has been anything but retiring. Shortly after leaving the Smithsonian he began, in partnership with Joe Nagel, a museum/collector consulting business called *Kustos* (from the German word for curator or curation) at which he still works today, though alone, Nagel since

Figure 11. **Vesuvianite, 2.9 cm, from Handan mine, Fushan, Xintai, Hebei, China. Isaias Casanova photo; J. S. White collection.**

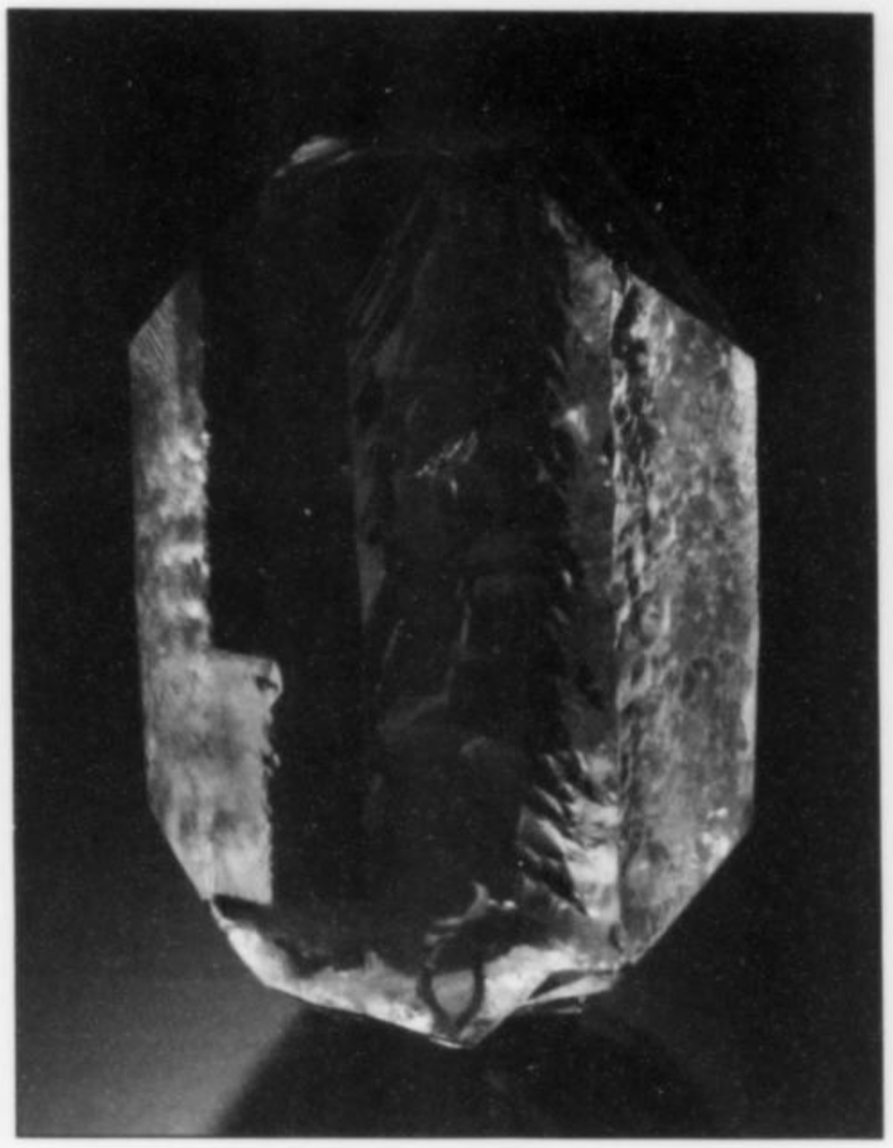

Figure 12. **Synthetic blue quartz crystal, 4.3 cm, grown in Russia. Jeff Scovil photo; J. S. White collection.**

Figure 13. **Monazite crystal, 2.8 cm, from Rio Preto, Espirito Santo, Brazil. Isaias Casanova photo; J. S. White collection.**

having died. John has served and still serves on the boards of several museological and mineralogical organizations, including the Editorial Board of *Rocks & Minerals*. He is a free-lance editor, part-time mineral dealer, and adjunct curator for two small mineral museums.

As already noted, he helps out with Jordi Fabre's mineral business, particularly as English-language facilitator for the excellent "Mineral Forum" on Jordi's website. Always a prolific writer, he has until very lately produced a regular column for *Rocks & Minerals* called "Let's Get It Right," addressing what his antennae have picked up as common slack-minded rumors, oversimplifications, conceptual kinks and outright erroneous thinking concerning minerals. For the *Mineralogical Record* he occasionally writes museum "Gallery Reviews" and feature articles, and he has often helped this show reporter in gathering and appraising material for "What's New in Minerals" installments. For still other items on the long list of John's undertakings and honors, see Wilson (2008).

In 1992 John married Merle Berk, then as now Editor-in-Chief of *Lapidary Journal* (recently renamed *Jewelry Artist*) magazine. In 1993 John and Merle moved to the house where they live today: a gray-slatted, rambling, well-kept structure, with extensive gardens and outbuildings, beside a country road ambling peaceably amid cornfields near Stewartstown, southern York County, Pennsylvania. John shares this bucolic space with Merle and with an ancient part-beagle-mixed breed named Buster, and grandchildren and friends often visit. Both John and Merle tend the gardens and labor lovingly to expand them, and John does a bit of woodworking, carpentry and stone wall building; life is good.

It was during an afternoon visit to this country house in July 2008 that I had the privilege and fun of examining John's single-crystal collection.

THE SINGLE-CRYSTAL COLLECTION

All older mineral collectors have had the tender experience of locating in their deep memories a single moment, or image, or personal interaction, that sealed their commitment to minerals forevermore. For John the epiphany came around 1950 when, during a visit to Paul Desautels at Towson Teachers College, he was shown a drawer full of neglected mineral specimens in the chemistry lab. John picked up and turned in his hand a yellow crystal of apatite—we

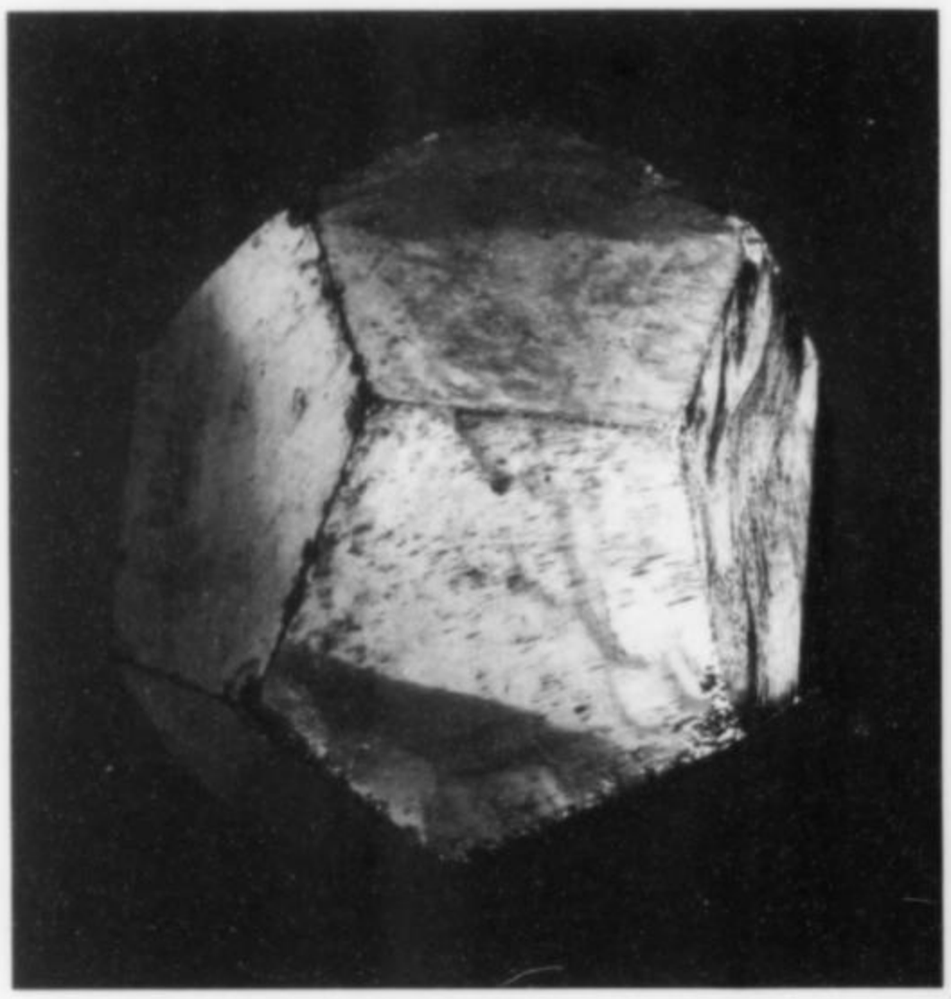

Figure 14. **Pyrite pyritohedron, 3 cm, from Turkey. Jeff Scovil photo; J. S. White collection.**

Figure 15. **Distorted pyrite pyritohedron, 3.5 cm, from Morococha, Junin, Peru. Jeff Scovil photo; J. S. White collection.**

Figure 16. **Apatite-(CaF) crystal with epitactic spessartine, 3 cm, from Pakistan. Jeff Fast photo; J. S. White collection.**

would now have to call it apatite-(CaF)—from Cerro del Mercado, Durango, Mexico. The crystal's sheer, shining, self-contained presence so mesmerized him that he remembers the moment vividly still, almost 60 years later.

During subsequent decades, and especially, of course, during his time at the Smithsonian, John handled countless mineral specimens of all sorts and sizes, including numerous world-class representatives of their kinds. But in the mid-1990s, i.e. just a few years into his retirement, John surprised himself with the realization that he had come to find most mineral specimens, including even the greatest ones, *boring* (his term). His typically eager and open-eyed exploration of this new feeling resulted in an editorial which was published in the September–October 1994 issue of the *Mineralogical Record*—and for present purposes "Do Your Minerals Talk to You?" is worth quoting at length:

> Since leaving the museum I have continued to buy specimens. Some of them are for other museums, some for private collectors, and some with no idea whatsoever of what their ultimate fate will be. Those in the latter category simply turn me on or, to use the phrase of Roz Pellman, they "talk to me." What they are not, however, are fancy aesthetic crystal groups of the competitive exhibit kind . . . The point is, I find such wonderful crystal groups **boring**! At a major show like Tucson I must force myself to look at such specimens in the special exhibit cases because, to me, they all look alike. Some are larger, some are smaller; some wider, some narrower; some brighter, some duller; but they really are all the same to me. I find them voiceless. In addition to being voiceless they have very little educational value.
>
> So, you might ask, what kind of mineral specimens have "voices?" For me, crystals with inclusions have voices, twinned crystals have voices, strange and curious crystal growths have voices, pseudomorphs have voices; specimen suites from a particular locality have voices; and, of course, especially for me, single crystals have something in addition to and better than voices: they offer a tactile experience that I find irresistible. I have always been a specimen "handler". . . Without venturing too near, I hope, to our crystal-crazed New Age cousins, I almost feel "at one" with a crystal when I can explore its forms with my fingers. In holding a crystal we not only note its overall shape, the nature of its edges, and many of the small-

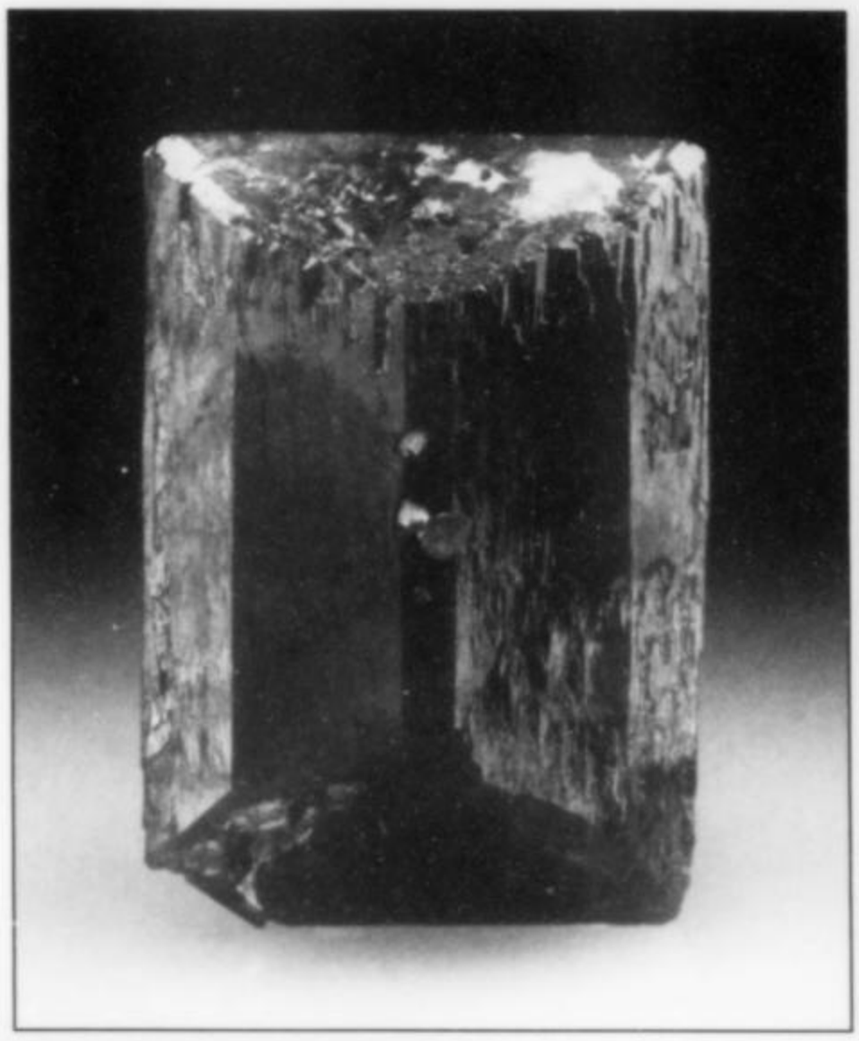

Figure 17. **Danburite crystal, 3.7 cm, from Locotal braccia, Alto Chapare District, Chapare Province, Cochabamba Department, Bolivia. Isaias Casanova photo; J. S. White collection.**

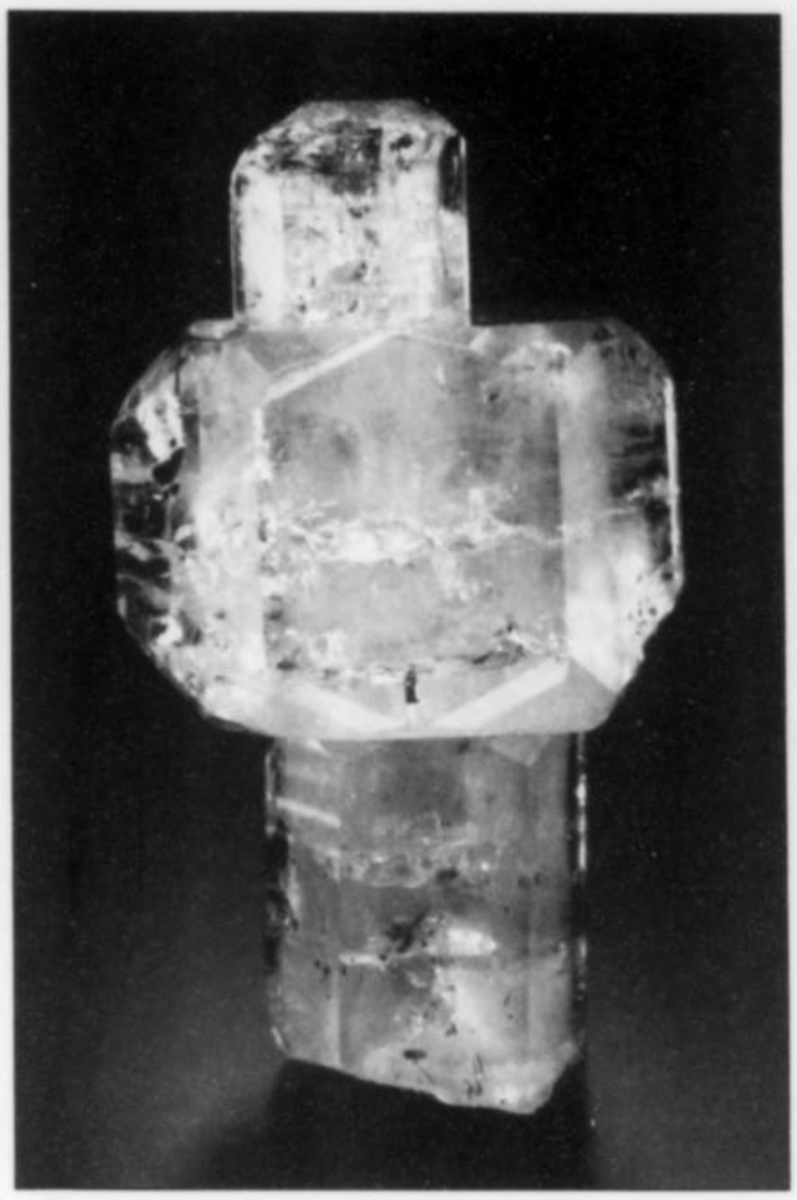

Figure 18. **Beryl scepter, 4 cm, from the Teofilo Otoni area, Minas Gerais, Brazil. Jeff Scovil photo; J. S. White collection.**

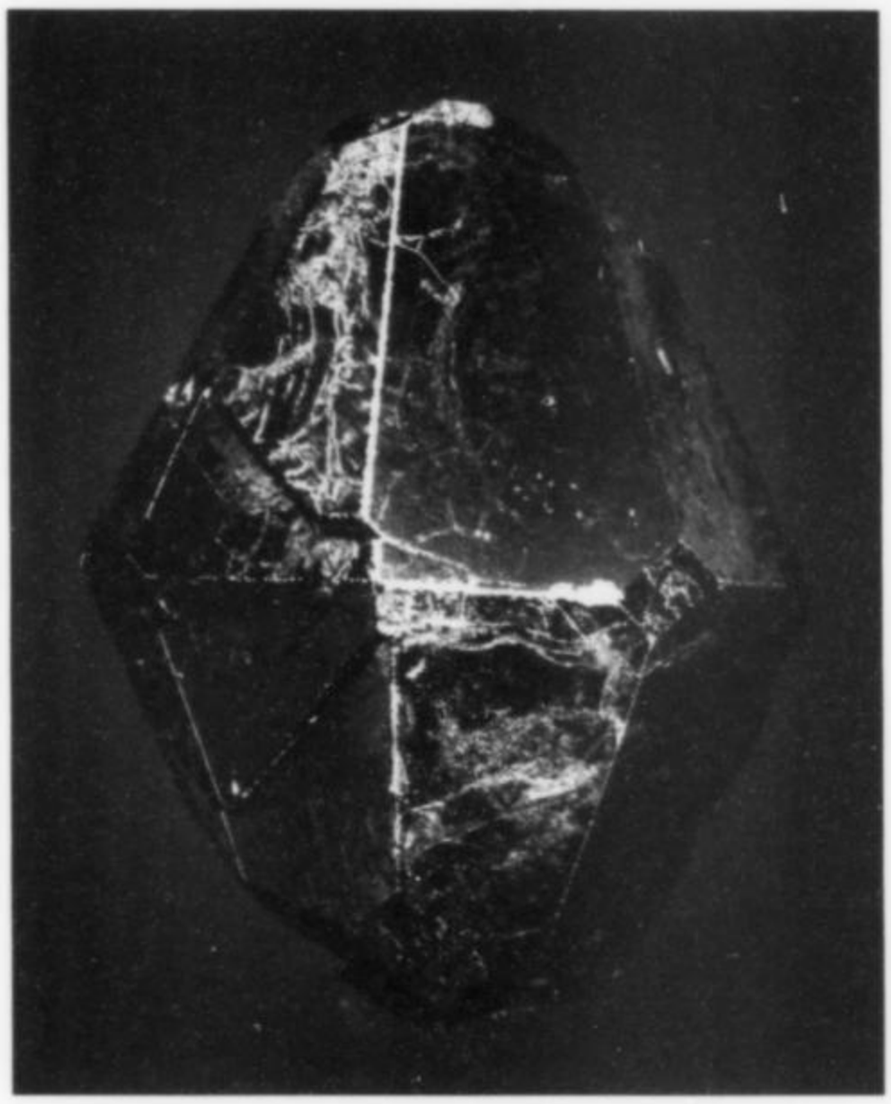

Figure 19. **Elongated spessartine crystal, 3.5 cm, from Shengus, Skardu, Northern Areas, Pakistan. Jeff Scovil photo; J. S. White collection.**

scale features of its faces, but we also can sense its density and we are made aware of the textures of its various surfaces. All of this provides the single crystal fancier an intimacy with crystals that few other collectors ever experience.

This feeling of "intimacy" with regular solids—which anyone may experience—seems resolvable into two components. The simpler of these is the sensual, or tactile, element as known to, say, tumble-polishing lapidaries who enjoy rolling perfectly smoothed-out pieces of colorful stone around in their palms. It is known as well to everyone who, in childhood or otherwise, has played with, and twiddled about, and "shot," glass marbles, or to anyone who has handled the hard little playful cubes of dice. More interesting is the *aesthetic* resonance of reading, or thinking we read, a crystal's inner nature by fingering it all around—contemplating a system of complex intra-relatedness with a firm boundary that separates it from surrounding, simpler realities. This is the magic of intricate games, with their little universes of rules, self-contained on the gameboard, and this is the secret of compositional harmonies in works of art: in the well-made painting or poem which is wholly an artifice and yet truer somehow than "real life." Lovers of faceted gems gaze into the intricate fretworks of outer reflections and inner refractions which characterize those bright jots of beauty, and seal them off beautifully inside themselves. And so can a mineral lover get "bored" with big flaring crystal groups lacking sufficient sense of coherent bounds, or internal order, or meaning? Why not? By 1994 John was set on pursuing—once having discovered—his own collecting aesthetic.

It remained, though, to decide whether to collect only single crystals which had formed as true floaters, without attachment to matrix, or whether also to look for crystals which had broken off from original matrixes and thus are not quite complete all the way around. John decided not to be *quite* the purist, and to take the latter course, in the interest of expanding his opportunities. Today the majority of the crystals in his collection are of the broken-off type. (Wendell Wilson recalls that some less than reverent visitors used to ask permission to dig in the hypothetical pile of discarded matrixes in John's back yard.) Deciding about the further question of whether to collect *twinned* crystals, John opted again for enhanced opportunity: twins, he decided, "count," and now the collection contains many excellent twins, of which the greater number (maybe ironically) are true floaters, showing no former attachments to matrix.

John keeps his thumbnail-sized crystals in three 1.75 × 6 × 11.25-inch "Bideaux boxes" designed by his longtime friend, the

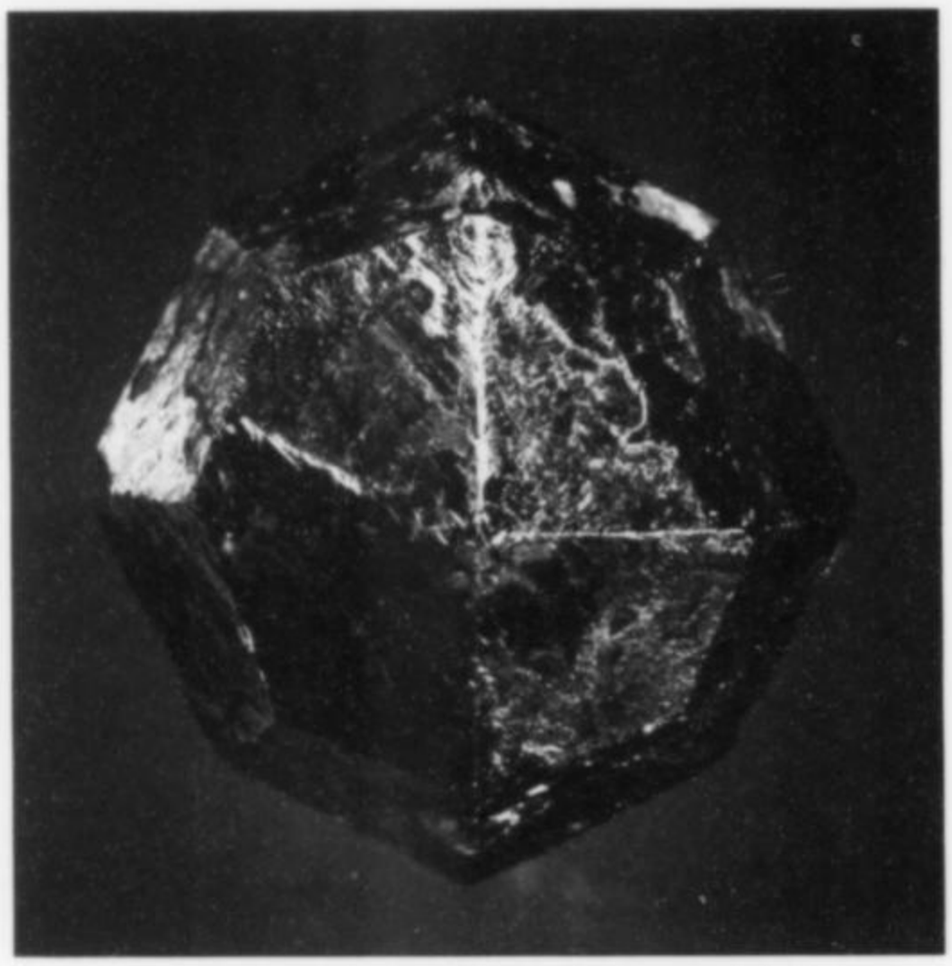

Figure 20. **Almandine, 3.5 cm, from Zimbabwe. Jeff Scovil photo; J. S. White collection.**

late Richard Bideaux, explicitly for the purpose of storing small specimen crystals and letting viewers lift them out safely for examination. Each square compartment has been punched out of a piece of soft Polyurethane; one's fingers, in closing around the crystal, sink into the sides and bottom, and a good, secure-but-gentle grip on the crystal results, without undue pinching or squeezing. There are 32 crystals in each box. The thumbnail collection has spilled over into a different box (Bideaux boxes being no longer available) measuring 1.5 × 9 × 15 inches. Housing John's miniature-sized crystals are four 2.5 × 13 × 25-inch hinged boxes made by John, with 72 crystals to a box. The twinned crystals are in two other boxes: one of these, measuring 1.75 × 9 × 13.5 inches, holds its full complement of 49 specimens, and another 21 twins are in one of the larger home-made boxes. All specimens have their own labels and carry attached numbers.

In the Editorial essay already quoted, John further observes that "Single crystals tend to be rare, at least the really good ones that are more or less complete all around. Of course many species are truly common—quartz, pyrite, beryl, topaz, garnets, tourmalines, etc.—but after these the challenge of finding good ones mounts." Indeed the collection today is heavy on quartz, pyrite, garnets, etc., but by no means does it seem pedestrian—too many crystals of the common species are too unusual and/or aesthetically striking for that. A thumbnail-size pyrite cuboctahedron from Traversella, Piedmont, Italy has, dead in the middle of each octahedron face, a pit of what seems to be pyritohedral outline, all pits being of exactly the same size. An almandine specimen from Palkino, Middle Urals, Russia shows oriented overgrowths of lustrous red trapezohedral crystals on an underlying, hidden crystal of an unknown species. A scepter aquamarine from Teofilo Otoni and a bipyramidal morganite from Corrego do Urucum are two of the finest small Brazilian beryls imaginable. A plank-like, gemmy green kyanite crystal, complete all around, from Brazil, is a distinct surprise, and a complexly modified magnetite from Balmat, New York is a wonderful classic. Of all the "common" things in the collection perhaps the most abundantly represented are sharp mahogany-brown pseudomorphs of goethite ("limonite") after pyrite cubes and pyritohedrons: John has specimens of these from perhaps a half-dozen localities, although the best are from Lancaster, Pennsylvania, where kids who dig these out of the soil call them "monkey gold" (I know, for I was once one of those kids).

There are also, of course, much fancier items in the collection, including sharp floater crystals and twins of some truly rare species: senarmontite, glaucodot, stolzite, hambergite, neptunite, epididymite, a petite cumengite "mace" on boleite, and (naturally) a superb specimen of a member of the whiteite group, specifically of whiteite-(CaFeMg). From Brazil comes an exceptional single crystal of shining brown monazite, a pale tan hydroxylherderite with oriented inclusions of cream-white clay, and a killer red zircon from the state of Goias. Gemstone-potential minerals in the collection (besides those already mentioned) include a textbook-perfect spinel-law twin of Burmese spinel, totally gemmy and purplish pink, measuring almost 3 cm; a palest yellow orthoclase from Madagascar,

Figure 21. **Pyrite crystal with cavernous faces, 1.8 cm, from the Traversella mine, Traversella, Chiusella Valley, Piemonte, Italy. Isaias Casanova photo; J. S. White collection.**

Figure 22. **Japan-law-twinned smoky and amethystine quartz, 3 cm, from the Andilamena mine, in the Alaotra-Mangoro Region, Tamatave Province, Madagascar. Jeff Scovil photo; J. S. White collection.**

Figure 23. **Staurolite twin, 3.7 cm, from Rubelita, Salinas, Minas Gerais, Brazil. Jeff Scovil photo; J. S. White collection.**

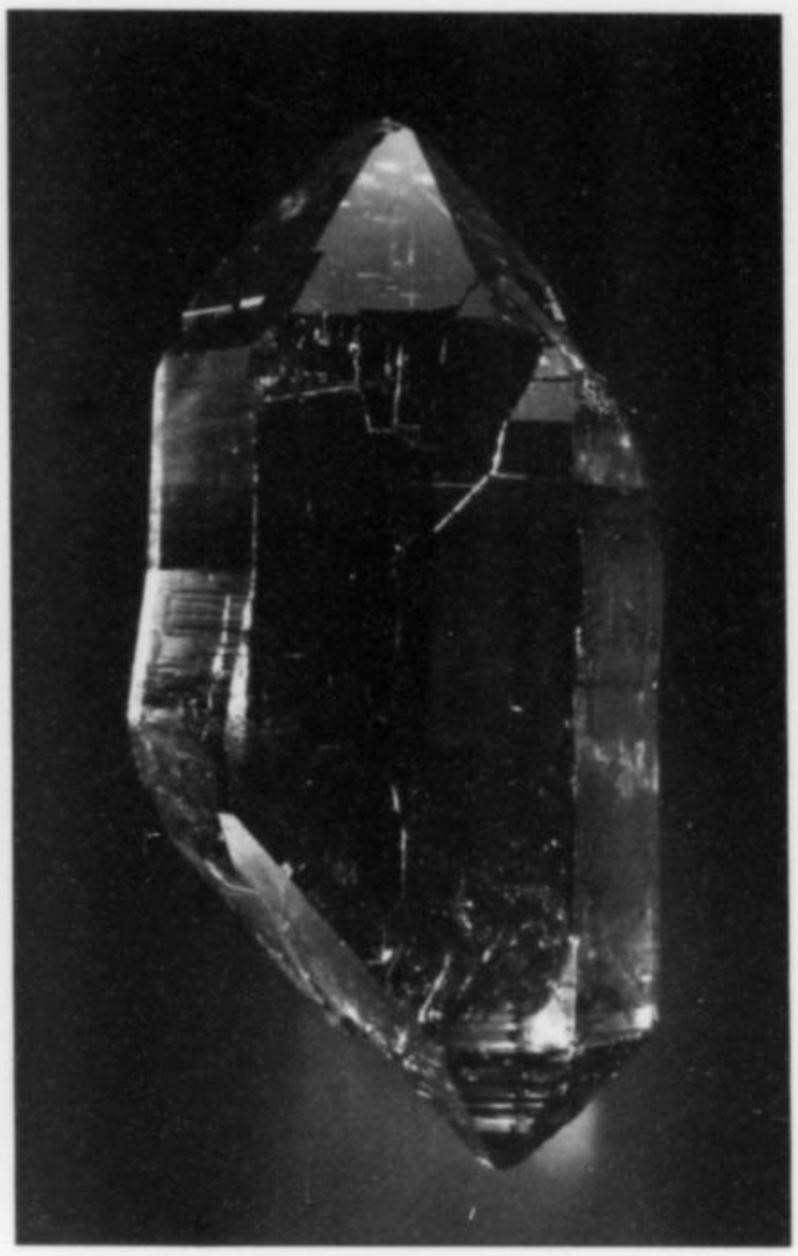

Figure 24. **Smoky quartz, 4 cm, from La Furka, Uri, Switzerland. Jeff Scovil photo; J. S. White collection.**

completely gemmy and razor-sharp; a superb kunzite from Afghanistan, also gemmy throughout; and even a few *synthetic* crystals of various substances. John is fully as pleased with a couple of his synthetic quartz crystals as with any of his real ones, for these lab products are gleaming, morphologically odd, and preternaturally colorless and transparent: pure pleasures to turn in the fingers and to introduce into streaming sunlight.

No, this is not at all a financially valuable collection, nor a large or species-rich one, nor one that represents classic localities especially well. But in its sophistication and idiosyncratic elegance it is the perfect expression—as are all really good collections—of the sensibilities of its creator. John White keeps other small collections in cabinets and showcases around his study/library: a collection of crystals with odd inclusions; a collection of unusual lapidary materials, with slabs and faceted gemstones; some drawers full of specimens, many of them self-collected, from localities in Virginia, Maryland and southeastern Pennsylvania; a collection of mineral items best called "keepsakes." But it is the single-crystal collection which holds the power to fascinate and to educate. This visitor is much the better for having seen it.

ACKNOWLEDGMENTS

Thanks again to John and Merle White for being my hosts, docents and lunch-providers that day in July 2008. Jeff Scovil and Isaias Casanova are responsible for most of the photos shown here. The photo of John was taken by Jordi Fabre. The other pictures were provided by John White himself.

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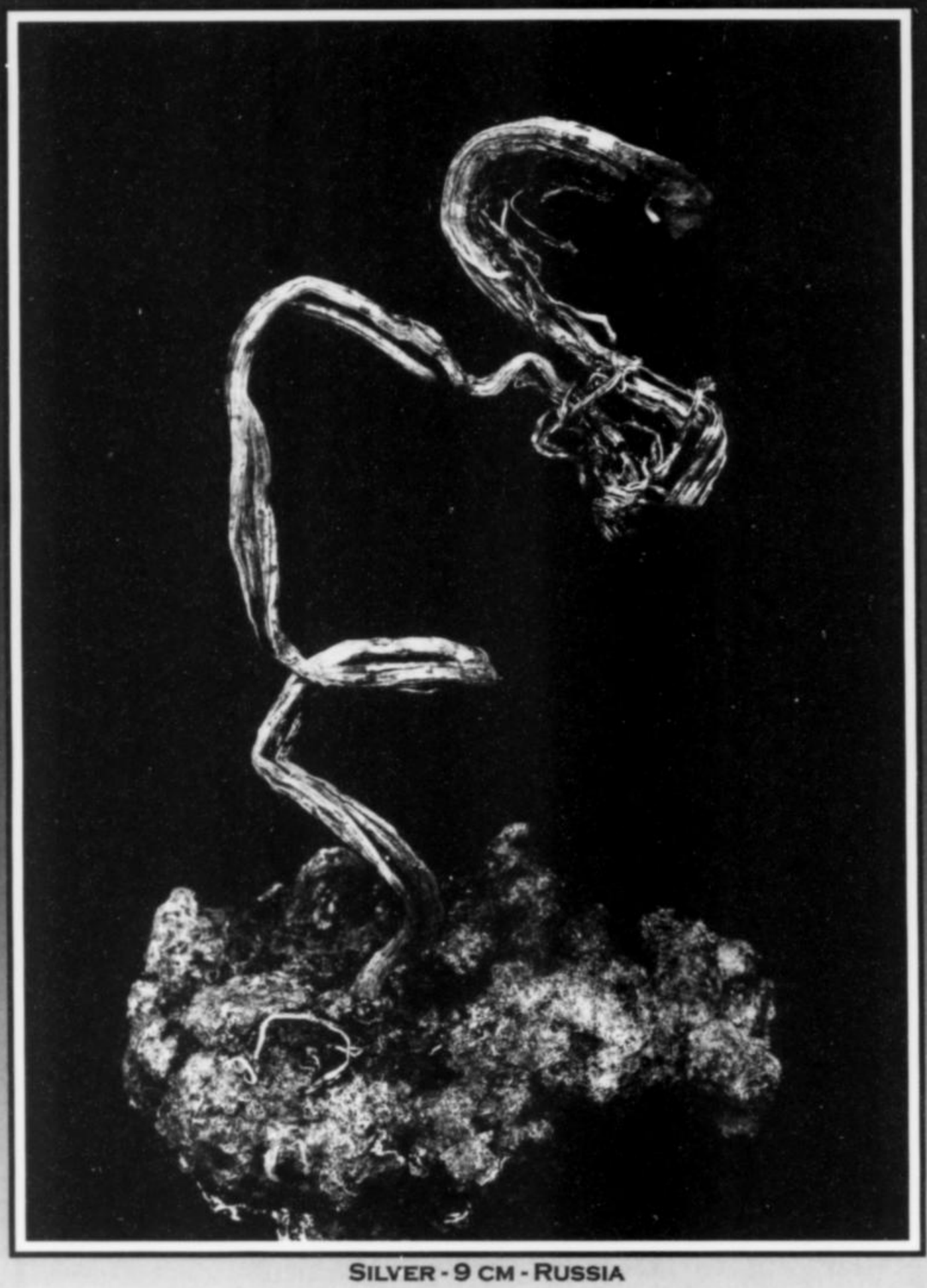

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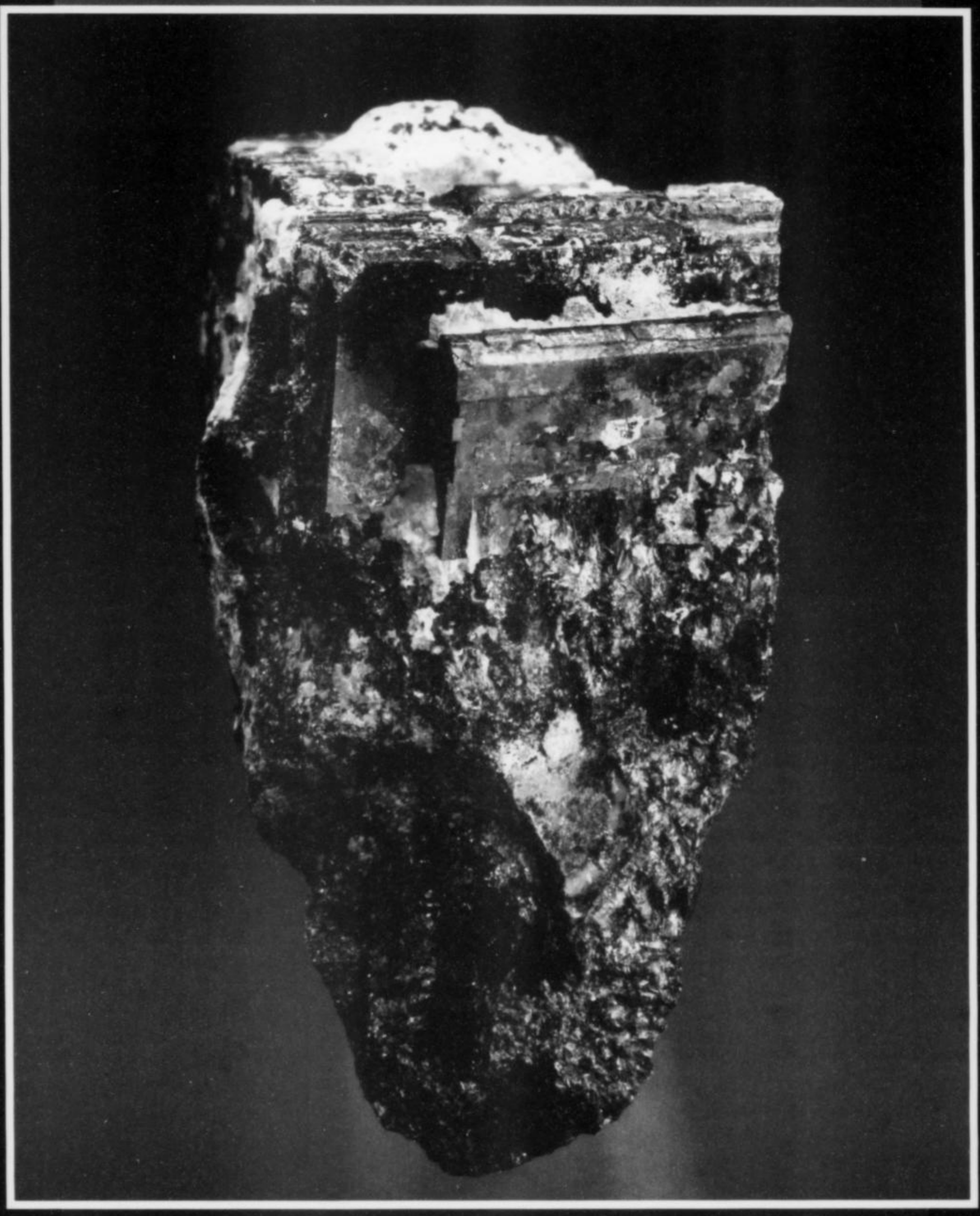

TENORITE pseudomorph after PARAMELACONITE with minor chrysocolla, 2.4 cm, from the Algomah copper mine, Ontonagon County, Michigan. Collected in 2003 by Shawn M. Carlson, Mark J. Elder and Robert Tolonen Jr.; formerly in the collection of Dr. Gene L. LaBerge.

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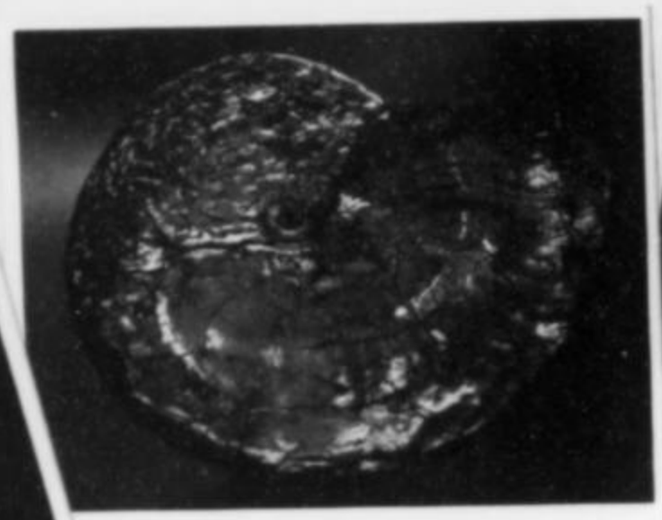

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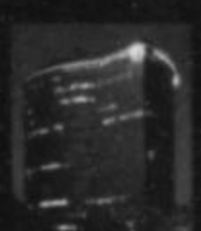

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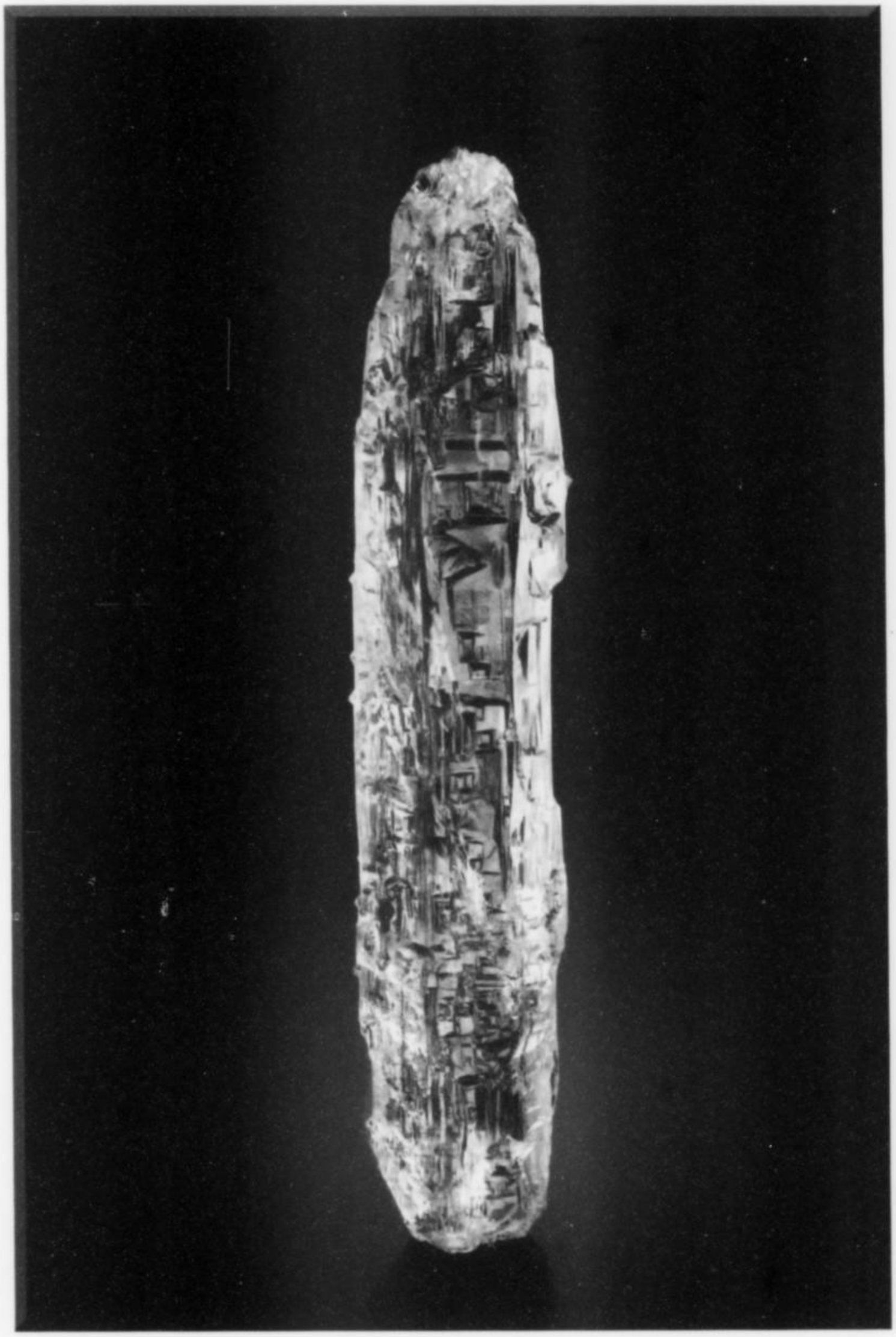

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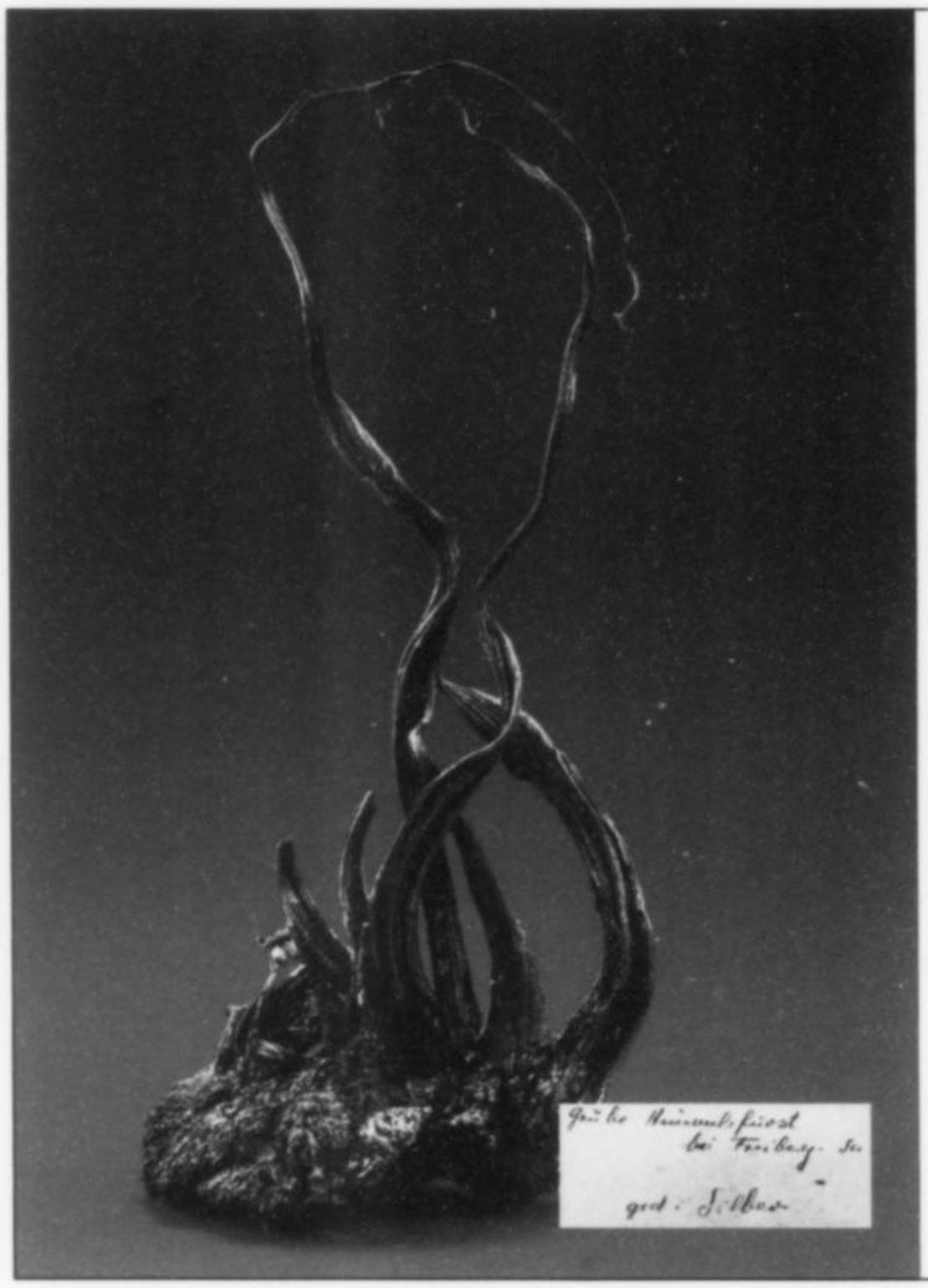

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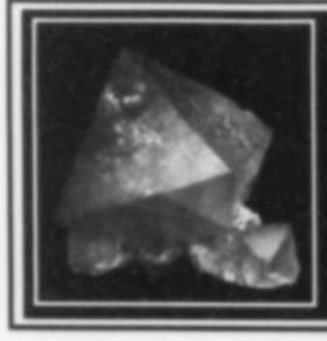

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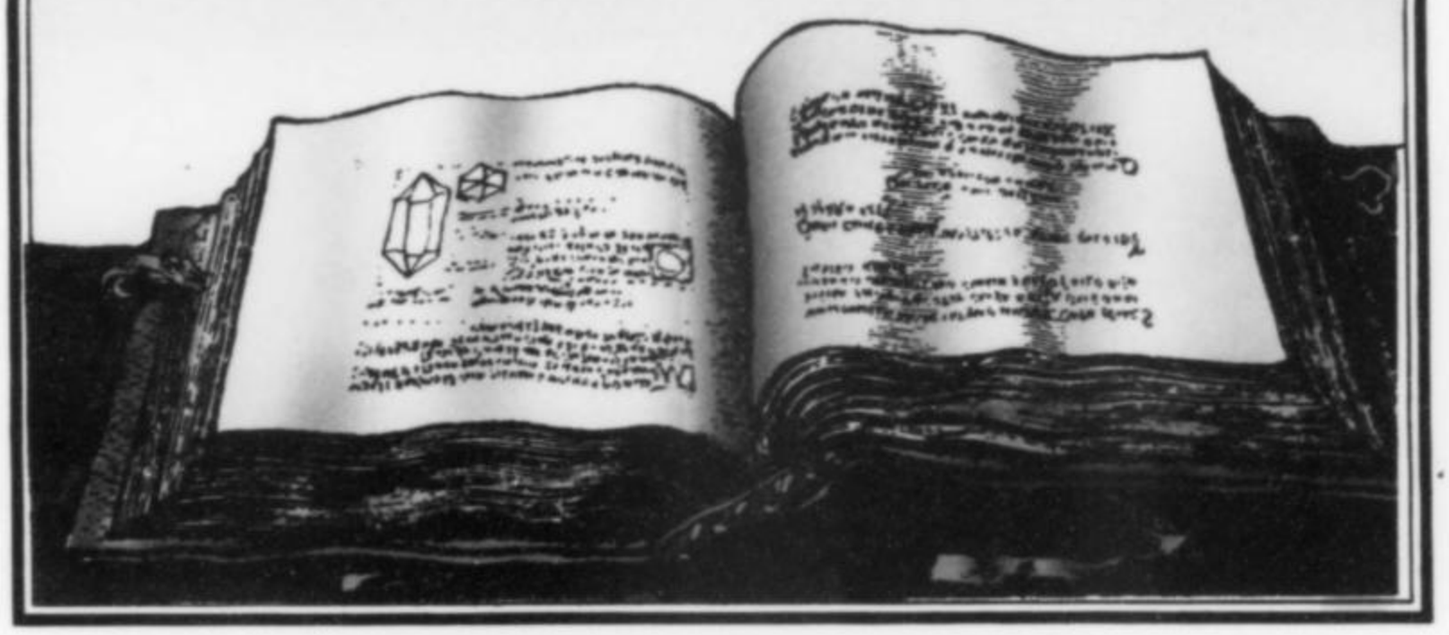
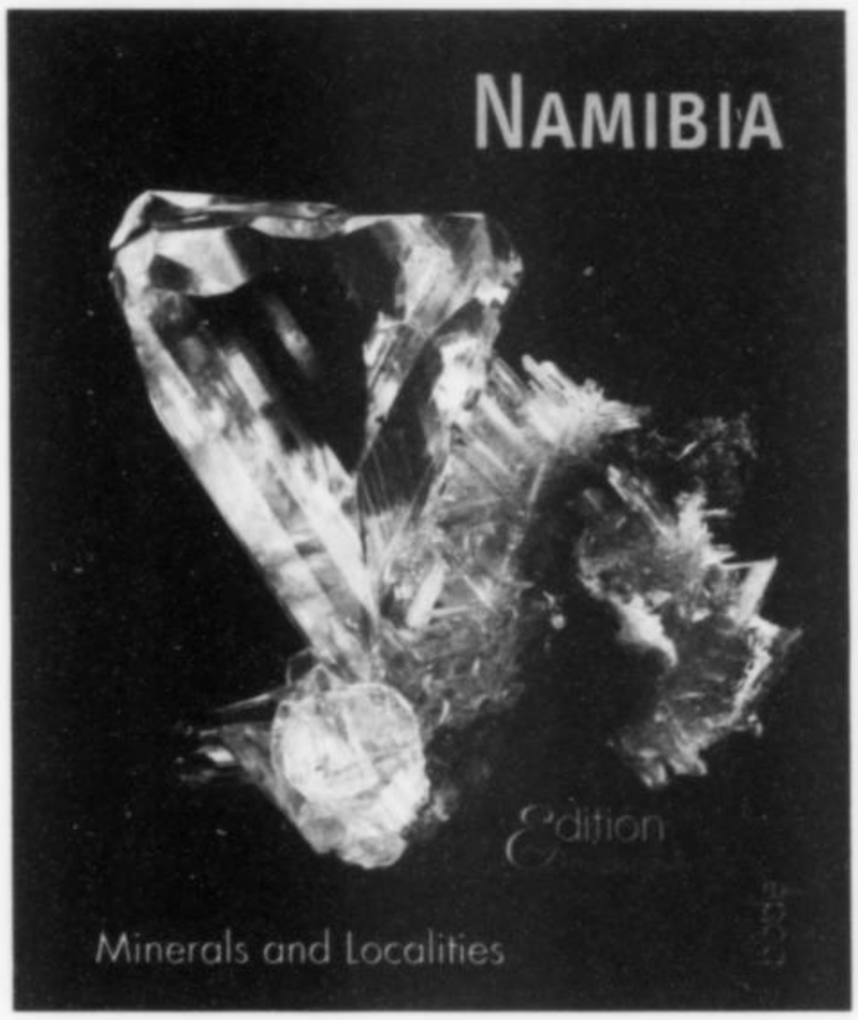




Namibia: Minerals and Localities

by Ludi von Bezing, Rainer Bode and Steffen Jahn, in collaboration with Peter Lyckberg, Olaf and Ulrike Medenbach, Gerhard Niedermayr and Gabi Schneider. Published (2007) by Bode Verlag GmbH, Örter Pütt 28, 45721 Haltern, Germany; price: €78. Hardcover, 9.75 × 11.25 inches, 856 pages.

For a long time now, the large topic of Namibian minerals and Namibian mineral localities has deserved an attractive and thorough, collector-oriented work. This book, with more than 1700 outstanding color photographs, is indeed very beautiful, and at 856 thick, glossy pages it is "thorough" enough to weigh almost ten pounds. The senior author is the well-known South African mineralogist Ludi von Bezing, but there are seven other authors and "collaborators" credited on the title page, all of them major figures in southern African and European mineralogy.

From the beginning, in fact, there's a sense that we are in good hands and distinguished company: the current President of Namibia, Hifikepunye Pohamba, provides a one-page Foreword, and two more Forewords are offered by Dr. Gabi Schneider, Director of the Geological Survey of Namibia, and Prof. Dr.-Ing. Georg Unland, *Rektor* of the *Technische Universität Bergakademie Freiberg*. In his Introduction the publisher, Rainer Bode, acknowledges the help of still more people, among them, intriguingly, Dr. Erika Pohl, who has recently donated her large private mineral collection to the Freiberg Mining Academy (that collection is now set up on public display at Schloss [castle] Freudenstein in Freiberg). As the Pohl/Freiberg collection, said to be one of the world's best, is seldom seen by Americans, one of this book's major services to the collecting community, especially in the U.S., is to display dozens of the collection's Namibian specimens, many of which, to judge from the photos, are record-shatteringly fine.

Indeed the words "Schloss Freudenstein Edition" appear on the book's front cover, leading one to speculate that Dr. Pohl substantially underwrote the production costs (Rainer Bode also thanks Dr. Bernd Schneider for his financial support)—for how else to explain a selling price as *low* as € 78 for such a lavishly illustrated, encyclopedic, class act as this giant monograph? Customers may, by the way, order the book with either English or German text. It is evident from some turns in the English ("Dr. Ludi von Bezing . . . since more than fifteen years . . . visited the localities") that German was the author's primary language in many cases, but all in all the writing in general is clear and crisp, as well as imbued with stylistic pizazz, i.e. a love of the subject matter quite clearly shared by all contributing writers.

The book's huge significance as a regional mineralogy text should be clear enough. The country known before 1918 as Deutsch Südwest Afrika (German South-West Africa), and as the British/South African protectorate of South-West Africa until independent Namibia was born in 1990, is only medium-size geographically (as countries go), but is one of the world's most amazing mineralogical treasure houses. Awareness of Tsumeb minerals in Europe, the book relates, really kicked off in 1907, when Wilhelm Maucher of Freiberg selected one ton of crystallized specimens from the first, 400-ton shipment of Tsumeb ores to reach Germany; Maucher went on to become a full-time mineral dealer in Munich, distributing Tsumeb and other Namibian specimens to European collectors and museums everywhere.

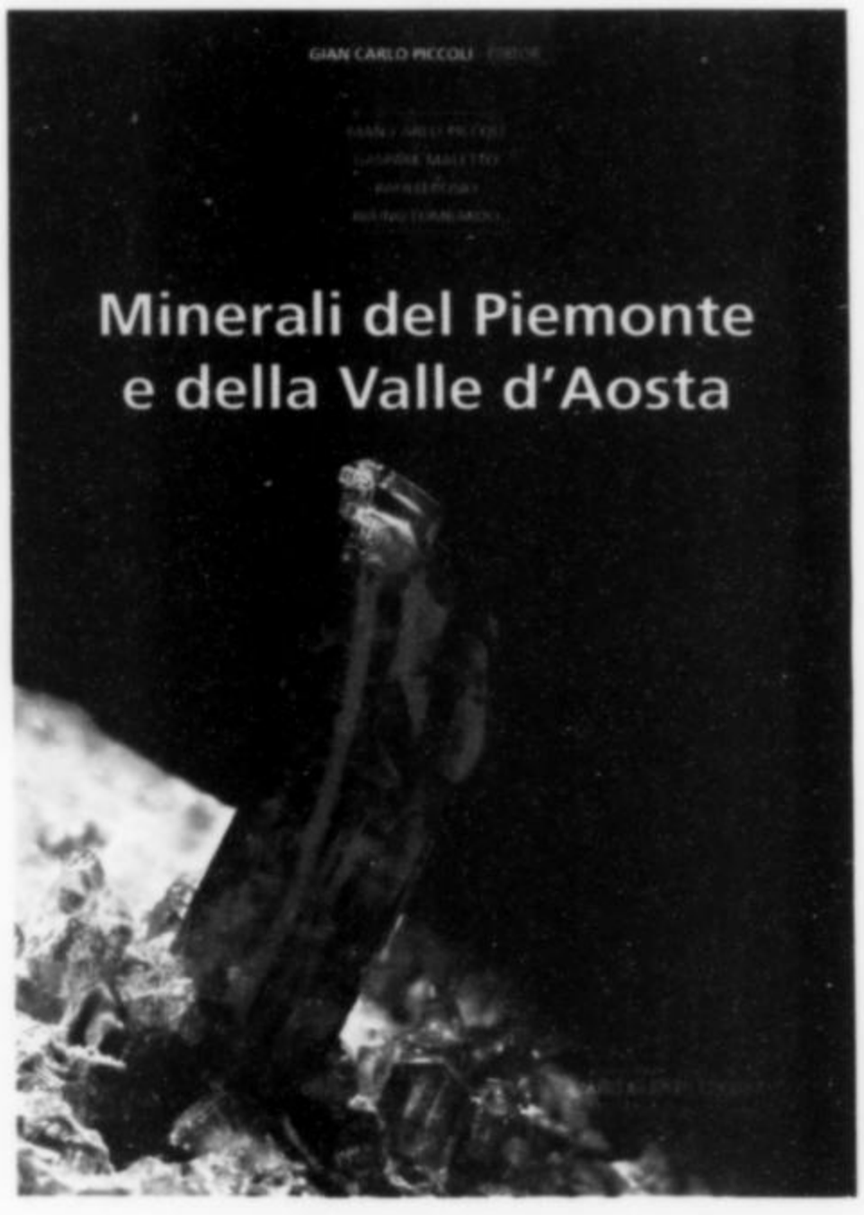
Maucher's early importance is described—for the first of two times—in "The Early Days—The Early German Geologists . . . Mineralogists and Collectors"—to conflate the titles of two early, "historical" chapters. In this part of the book, and in the 200-page section on Tsumeb which follows, and scattered throughout, we see photographs

from the early days of the German colonial enterprise in "Südwest," as this end-of-the-world desert place was familiarly called by the miners, adventurers, scientists, would-be entrepreneurs, and generally unquiet spirits who came "out" to it from Upper Saxony or the Siegerland. In the Tsumeb section are shown, in appropriate sepia shades, endearing old postcards from Südwest, as well as old-timey photo montages of barely settled, hot, prickly landscapes; German/Herero mine crews underground; original headframes; a just-opened pocket spilling its mineralizing waters; Tsumeb's first open pit, with a scary-looking ladder going straight down; the original "green hill" outcrop of the Tsumeb orebody, and so on. Some of these pictures we've seen before, in Georg Gebhard's two books on Tsumeb and in the *Mineralogical Record*'s Tsumeb issue of 1977, but of course it is good to see them again, accompanied by many other antique images of the same sort. There are also photos of people of major interest, from late 19th-century Wilhelm Maucher to mineral dealer Sid Pieters (1920–2003) and connoisseur Heini Soltau (the last-named being "*the* mineral collector of Namibia" today, according to the photo caption). While on the subject of photographs, let me stipulate that the quality of *all* the photos throughout the book, whether showing landscapes, historical scenes, collectors in the field, or crystallized mineral specimens, is absolutely superb. Rainer Bode, Olaf Medenbach and Ludi von Bezing are responsible for the lion's share of them, but about 20 other familiar names in the mineral-photography field are credited with at least a shot or two each.

The book's main body has two parts: a tour of Namibian mineral localities arranged roughly from north to south, and an "Encyclopedia of the Minerals of Namibia." Near the beginning of the geographical tour is a section on Tsumeb which, as mentioned, is almost 200 pages long: a very full, satisfying reiteration/update of the earlier book-length works on Tsumeb, including descriptions and specimen photos of a few very recently recognized, ultra-rare Tsumeb species. Then for another 200 pages or so we stop in turn at the Kombat mine, Berg Aukas, Gross and Klein Spitzkoppen, Usakos, Erongo, Rössing, Rehoboth, Gamsberg, Onganja, Rosh Pinah, etc., to catch our breaths, only to have them taken away again by gorgeous, often full-page color photos of mineral specimens—with well-summarized geological and mining backgrounds provided in every case. Beginning on page 444 the "Encyclopedia" section takes over. Here are listed, in alphabetical order, all interesting Namibian mineral species, and the inevitable small redundancies with the "locality" section are more than compensated for by *different*, and just as beautiful, specimen photos. This Encyclopedia section, being current as of 2007, offers many surprises: who knew, for instance, that lovely clusters of translucent pale green tarbuttite crystals with individuals to 1 cm are presently coming from the Skorpion zinc mine in the Lüderitz district in far southwestern Namibia? Finally, the book has a chapter called "Meteorites in Namibia," and wraps up with a bibliography of a few hundred titles, and a general index listing mineral, people and locality names all together (two or three separate indexes would probably have been better, making for easier use, but this is carping).

New and excellent publications addressed to mineral collectors are growing increasingly common these days. *Namibia: Minerals and Localities* furthers this happy trend in most spectacular fashion.

Thomas P. Moore



Minerali del Piemonte e della Valle d'Aosta
("Minerals of Piedmont and the Aosta Valley, Italy")

by Gian Carlo Piccoli, Gaspare Maletto, Paolo Bosio and Bruno Lombardo; Gian Carlo Piccoli Editor. Published (2007) by Amici del Museo F. Eusebio, Alba. *Hardcover, 30 × 23 cm, 622 pages, in Italian. Price: €95.00 plus mailing cost. For information and orders contact G. C. Piccoli:* piccoli.min@tiscali.it.

Piedmont and the smaller, autonomous region of Valle d'Aosta (Aosta Valley) are located in the northwestern corner of Italy, near the border with France to the west and Switzerland to the north. The Western Alps mark these borders, while to the south the Ligurian Alps and the Apennines separate Piedmont from Liguria. Needless to say, the alpine rock formations and minerals are of great interest to geologists, mineralogists and mineral collectors alike.

This new addition to the shelf library of regional mineralogies is the fruit of an ambitious project intended to document all relevant mineral finds of the Piedmont-Aosta Valley area—a six-year effort by a small group of authors and a much larger group of supporting collectors, museum curators and scientists coordinated by Gian Carlo Piccoli, general editor, author, photographer and constant driving force of the project.

The result is impressive: over 600 pages illustrated by 1500 color photos, maps and diagrams. The photos used in the book were selected from an extensive array of materials that had been gathered: about 25,000 shots of specimens from regional collections, plus landscapes, historical images and much more. Consequently the photography, on the average, is very good.

About 420 pages (two thirds of the book) are dedicated to a detailed review of

mineral species and their localities. Under the mineral name (arranged alphabetically according to the Italian name, with the English IMA designation given as well, when different), the various occurrences, associations, historical notes and references are reported in detail. In total about 570 species are included, 39 of them first reported from Piedmont-Aosta Valley. Some of these are new and especially interesting: for example, seven out of the ten IMA-approved species containing scandium as an essential element are represented here, and four of them (bazzite, cascandite, jervisite and scandiobabingtonite) are from the type locality, the Mottarone-Baveno pluton in eastern Piedmont.

Not surprisingly, the most impressive entries are those for the alpine minerals: grossular, diopside, epidote, quartz, cafarsite, vesuvianite, titanite, xenotime and many others, which have received a more extensive treatment and are illustrated by full-page plates of specimen photos.

The most famous collecting localities, as well as mining localities of industrial or historical interest, are reviewed individually in special sections included in the first part, or in chapters of the second part of the book. These include Baveno, type locality of six mineral species and whose name immediately calls to mind the beryllium mineral bavenite and the baveno twinning in feldspar; the alpine rodingite localities (Val d'Ala, Valle di Viù, Valle di Susa, Bellecombe etc.); the Cervandone area with its rare, often arsenic-bearing minerals such as cafarsite, gasparite-(Ce), tilasite, chernovite-(Y), cervandonite-(Ce), asbecasite, and paraniite-(Y); the Simplon tunnel; the Pestarena gold mine (one of the main sources of gold in Western Europe at the beginning of the 20th century); the Brosso and Traversella mines; the Candoglia quarries, source of the marble used to build the famous Milan cathedral and type locality of paracelsian, taramellite and wenkite; the pyrope-coesite-quartzite outcrops of Dora-Maira massif, source of six IMA-approved new species; and the eclogitized manganese deposit of Prabornaz (Praborna), type locality for braunite, piemontite, roméite, strontiomelane, and manganiandrosite-(Ce).

In the second part of the book an extensive section is dedicated to the metamorphic and magmatic rocks of the Western Alps. The 39 type locality species for Piedmont-Aosta Valley are reviewed in tabular form, and a fine historical section on mineralogy in Piedmont completes the book.

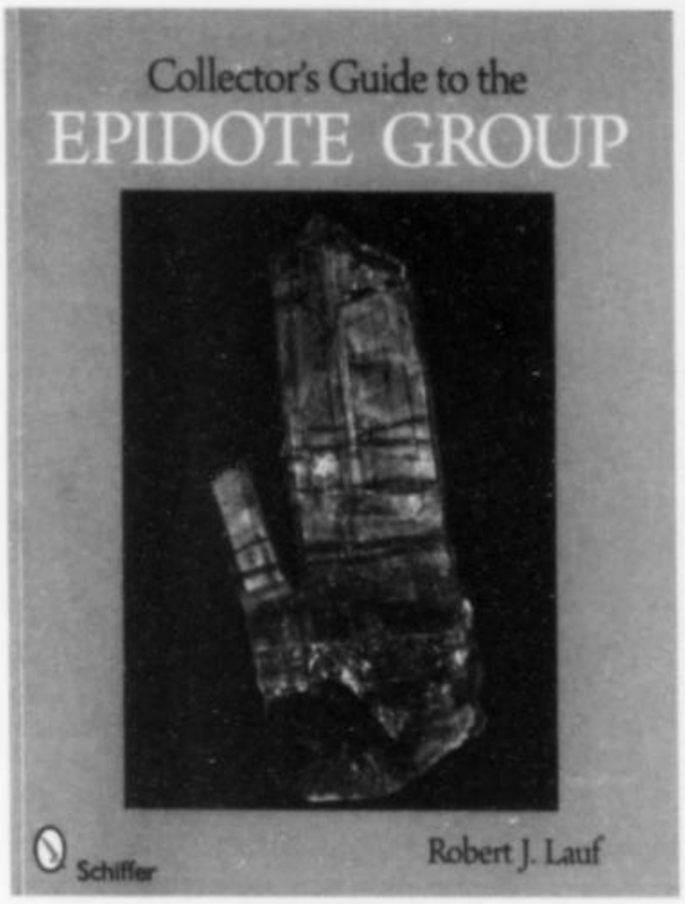
The amount of information gathered through the years on the minerals of Piedmont-Aosta Valley is impressive, as shown by this book and by some 1600 references listed in the 35-page bibliography section. This is remarkable for such a relatively small territory (about 30,000 km^2, less than 11,000 miles^2, about the area of Massachusetts).

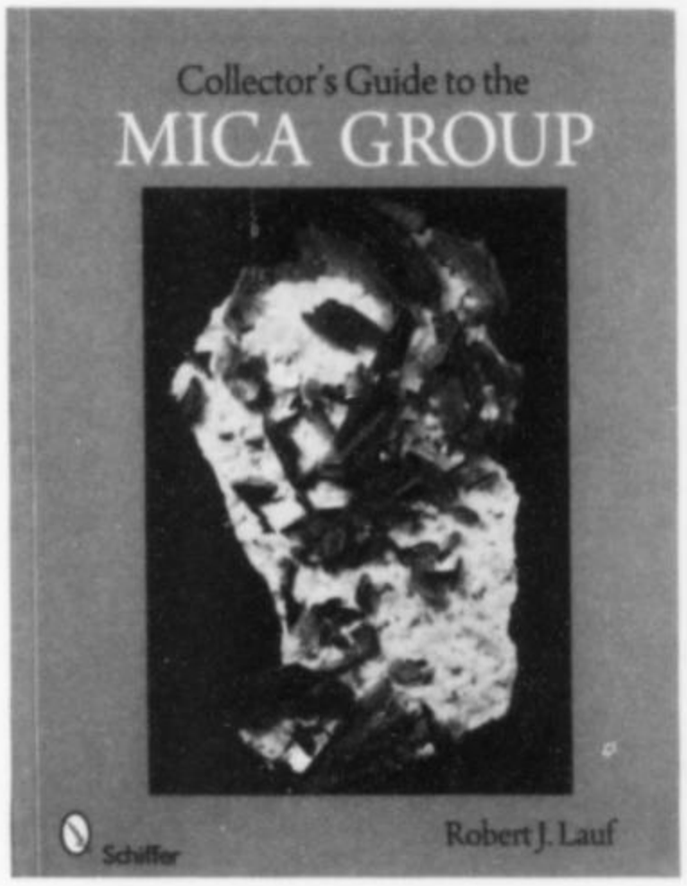
The causes are several. Firstly, the local rulers of the Savoia dynasty attached great importance to the exploitation of the natural resources of their state, and established Turin's first natural history museum in 1730. Secondly, a long sequence of museum curators and scientists operated there and contributed to the knowledge of the local geology and mineralogy: from S. Nicolis di Robilant and C. A. Napione in the 18th century, to S. Borson, V. Barelli, Q. Sella, A. Sismonda, G. Spezia, G. Strüver, G. Jervis, F. Zambonini and many others later on.

In more recent times, in Italy as well as in many other parts of the western world, the interest in minerals has slowly shifted, in part, from the professional to the amateur mineralogists. Piedmont is fortunate in this respect, being home to many very competent collectors, and to one of the longest-established mineral shows in Europe: the Turin Eurominералexpo, which each October continues to draw interested visitors from all over Italy and abroad. Therefore, it is easy to predict that this hotbed of mineralogy will continue to be a lively scene for mineralogy, producing good and interesting specimens and, at times, good science.

So, keep an eye on Piedmont and, in the meantime, have a look at this beautiful book!

Renato Pagano





Collector's Guide to the Epidote Group

by Robert J. Lauf, published (2008) by Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310. Softcover, 8.5 × 11 inches, 96 pages. ISBN: 978-0-7643-3048-3. Price $19.95 plus $5.00 shipping; order from publisher.

Collector's Guide to the Mica Group

by Robert J. Lauf, published (2008) by Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310. Softcover, 8.5 x 11 inches, 96 pages. ISBN: 978-0-7643-3047-6. Price $19.95 plus $5.00 shipping; order from publisher.

In their conceptions, organizations and formats these two new publications are identical twins, even to their numbers of pages (96), and both do highly efficient jobs of summarizing the mineralogies of (respectively) the epidote and mica groups. Their author, Robert J. Lauf, holds a Ph.D. in Metallurgical Engineering and has been granted more than 40 patents for his inventions; he is also a mineral collector. The same publisher has recently produced three other books on earth-science topics in its fledgling Schiffer Books series (see the review of Stuart Schneider's *The World of Fluorescent Minerals*, 2006, in the March–April 2007 issue), and Lauf's two new offerings should keep up the momentum for this series of crisply authoritative but not-too-technical monographs.

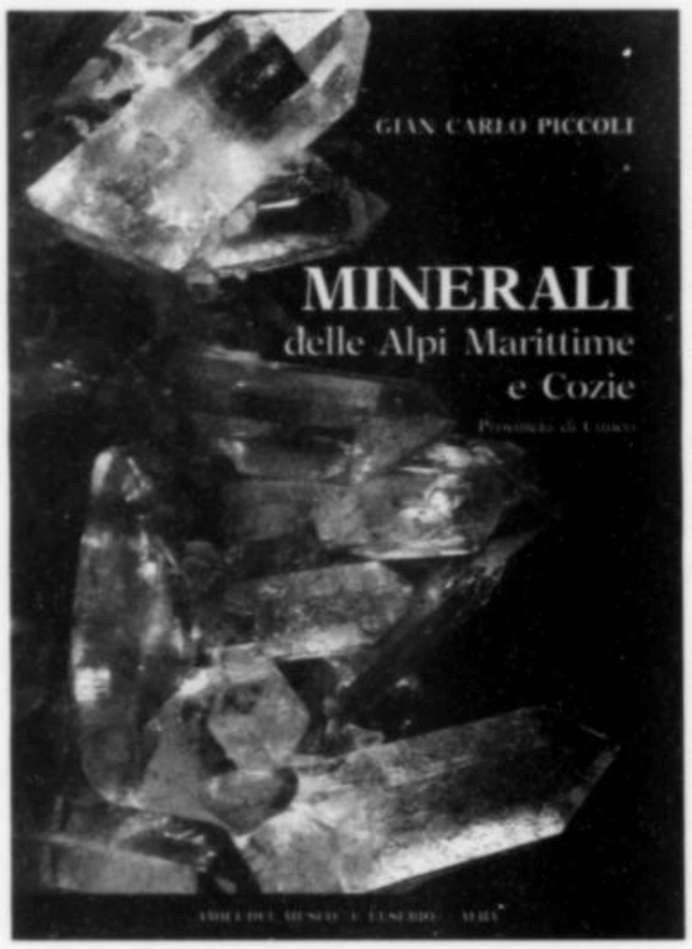
The Prefaces to both new volumes step up at once to call the rock-forming minerals "complex"; and they observe truly that collectors tend often to under-appreciate these minerals; likewise they pay due respects to Deer, Howie and Zussman's five-volume *Rock-Forming Minerals* (1962) as the ultimate reference work on the topic. But Lauf's books are for collectors who could use handier works than Deer, Howie and Zussman—works with specimen pictures and with surveys of specimen-producing

localities, as well as with plenty of data on such things as species taxonomies (with *all the latest* IMA-approved chemical formulas), crystal structures, and (a chapter title in both books), "Formation and Geochemistry." These books, I'd say, would be worth their modest prices if they *only* contained (1) the chapters called "Taxonomy of the Epidote Group" and "Taxonomy of the Mica Group," with clear explanations of the relevant chemistries and with tables of subgroups, and (2) the concise discussions of "formation and geochemistry." Not to be minimized, though—they are, after all, the longest sections of both volumes—are the two chapters called simply "The Minerals," wherein for each known species we find a short discussion of crystal sizes and habits, associations, and significant localities. Subtopics of collector interest such as pseudomorphism, fluorescence, and gem and lapidary implications are worked in smoothly. The epidote book has a bibliography listing 34 titles; the bibliography for the (messier, more species-rich) micas contains 57 entries.

For the (abundant) color photographs of specimens, no information is given concerning either specimen ownership or the identity of the photographer but, as most of the specimens are shown as having "RJL" catalog numbers, it's probably safe to assume that those specimens are in the author's collection, and perhaps too that the author took most of the pictures. In general the quality of the photography is good but the quality of the specimens is "mixed," i.e. there are many specimens pictured here which would not be at home in a good display case at even a middling-size mineral show. Of course this is forgivable for most of the very rare species, as well as for commoner species which simply don't come in good crystals (there is a significant number of these, especially among the micas); and it is true that a few of the pieces pictured *are* quite fine. But I still would have preferred to see a larger proportion of higher quality specimens: these books are, after all, addressed to the collector, and if we collectors are to be reminded that there is more to the world of beautiful minerals than gold, proustite, azurite, rhodochrosite and tourmaline, we need to see some specimens of rock-forming minerals performing at their peaks.

Other than that quibble, it must be said that as all-around reference volumes on two mineral groups which tend commonly to get marginalized in the minds of collectors, these Collector's Guides would be hard to improve upon.

Thomas P. Moore



Minerali delle Alpi Marittime e Cozie Provincia di Cuneo *("Minerals of the Maritime Alps and the Cozie Alps, Cuneo Province, Italy")*

by Gian Carlo Piccoli. Published (2002) by Amici del Museo "F. Eusebio"—I-12051 Alba, Cuneo, Italy. Hardcover, 30 x 21 cm, 366 pages, in Italian. Price: €62.00 plus postage.

The Maritime and southern Cozie Alps mark the border between Italy and France. The eastern slopes of these impressive mountains fall within the Province of Cuneo, the largest of the Piedmont provinces of Italy. Many rivers, flowing in a generally easterly direction, give their names to valleys, some of which are well known to collectors for their mineral localities.

Author G. C. Piccoli first collected in this area with his father as a young boy. A small group of collectors, gathered around the "Federico Eusebio" Museum in Cuneo, pursued the investigation of the local mineral deposits, rediscovering several forgotten mining sites and documenting their findings with the help of professional mineralogists.

The result of this teamwork, which involved over 150 field trips, has been documented in this book. The 541 illustrations (most of them in color), including mineral specimens as well as alpine landscapes, maps and mine plans, add attractiveness to this fine, large and high-quality volume. Much of the detailed information is mainly of local relevance, but some of the localities are important to science and others have produced very attractive specimens.

Proceeding from north to south, the first valley in Cuneo Province is the upper Po Valley. Here is found the most important locality of the area, at Case Ramello near Martiniana Po. The Dora-Maira Massif (composed of very high-pressure metamorphic rocks), is of great importance for the study of the alpine orogeny, and has produced large, somewhat rounded crystals of pyrope up to 25 cm in diameter. This pyrope, embedded in a quartz matrix, is whitish in color and very close to end-member in its chemical composition. The pyrope crystals are rich in interesting inclusions such as coesite (the monoclinic polymorph of quartz which formed at depths of some 100 km), two species for which this is the type locality (ellenbergerite, and magnesiodumortierite), and also bearthite, phosphoellenbergerite, zircon and monazite-(Ce).

The rodingite rocks of the Monviso Massif have produced fine specimens of grossular, as well as diopside, perovskite, titanite, vesuvianite and apatite.

More outcrops of the Dora Maira high-pressure pyrope in quartz are found in the next valley to the south, Val Varaita, in the vicinity of Brossasco. Here the pyrope crystals are smaller, but they commonly show pink to red glassy areas from which attractive gemstones up to several carats have been cut. Here coesite appears in larger nodules, up to a few millimeters in diameter, with its typical radial cracking. This is the type locality for phosphoellenbergerite, which has been found in bluish, elongated hexagonal crystals in pyrope.

Other remarkable occurrences in Val Varaita are well-known for albite crystals up to 3 cm lining clefts in ophiolitic metabasalts. Dark green epidote crystals in fan-like aggregates, commonly with quartz and albite, form very esthetic and desirable specimens. Occasionally, beautiful, shiny "iron rose" aggregates of hematite crystals are found in the same clefts.

In Val Maira, near Acceglio, fine epidote crystals in druses with "byssolite" are found. In the Preit area, uranium prospecting has yielded good specimens of torbernite crystals and of uranophane in aggregates of acicular crystals with barite.

A classic collecting site near the town of Sambuco in Valle Stura has yielded quartz crystals, albite, anatase, brookite etc., plus tabular black crystals of a mineral variously described as crichtonite, senaite or davidite.

In the nearby locality of Vinadio, remarkable clear quartz crystals, sometimes with "faden" structure, have been found, while the Bagni di Vinadio area has produced beautiful crystals of amber-colored anatase, sometimes with epitactic rutile. Anatase crystals and other minerals were also found in Valle Gesso during the excavation of

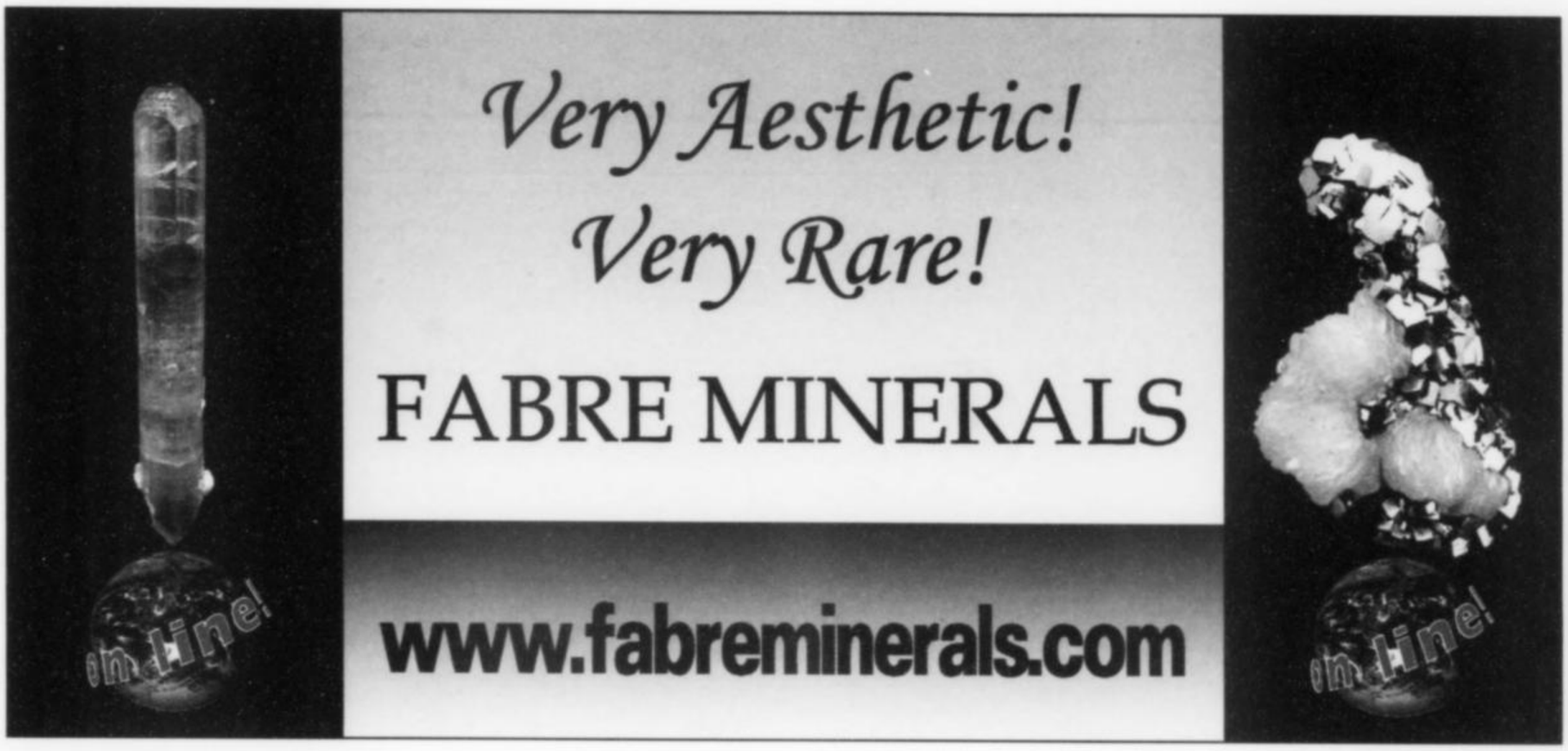
various tunnels in the Argentiera Massif. Several other localities, now exhausted or forbidden by new park laws, have yielded zeolites, large amethyst quartz druses and smoky quartz.

The Maritime Alps host the most famous Italian deposits of uranium minerals (Lurisia, Peveragno, Bric Colmè) where autunite was discovered in 1913. Autunite and torbernite were the only minerals found in fine specimens, although uraninite and phosphuranylite were also reported. In one of these localities (Bric Colmè) a very rare scandium mineral, kolbeckite, was found in small bluish crystals and globular aggregates. Another uranium mineral locality has been recently found in Val Infernotto, at the far north of the Cuneo Province: zeunerite, autunite, uranospinite and uranophane have been reported from there.

For being a book on mineral localities, this book is particularly rich in detailed geological observations and data, much of which was provided by Bruno Lombardo of CNR—Centro Studi sulla Geodinamica delle Catene Collisionali, Torino who has also contributed to organizing the massive bibliographic section, listing about 700 titles.

Giovanni Ferraris, Vice-President of the IMA's CNMNC, remarks in his Introduction that this book is a very good example of cooperation between amateur and professional mineralogists. Italy, according to Prof. Ferraris's latest count, is the type locality for 217 species, exceeded only by the U.S.A., Russia and Germany. Therefore, we are happy to report, mineralogy is alive and well in Italy!

Renato Pagano



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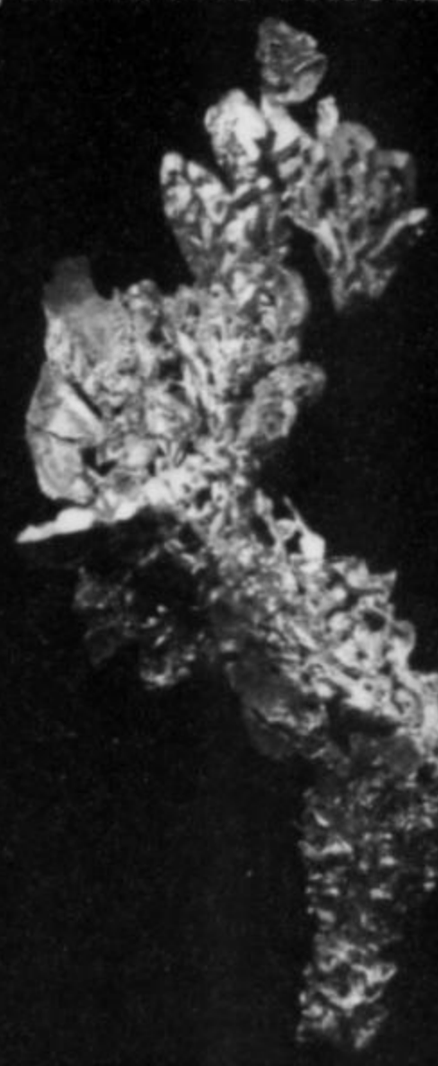

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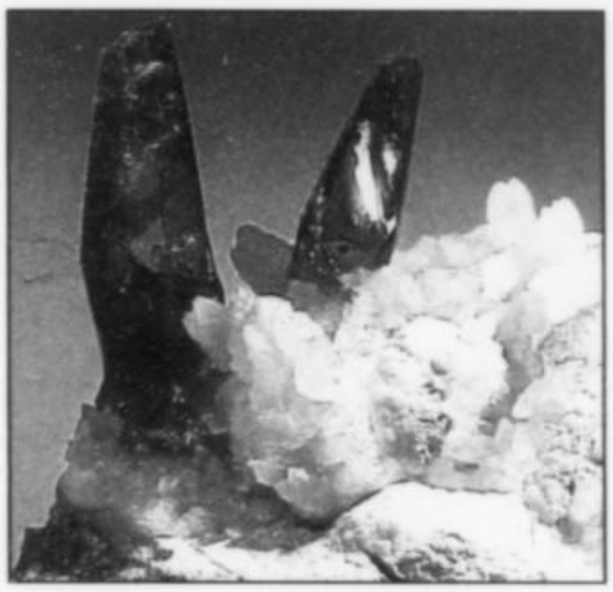

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What's New in Minerals

Tucson Show 2009

by Thomas Moore

[January 31–February 15]

"The Tucson Show," as the mineral world calls it, is a labyrinthine complex of events and venues which covers major tracts of the city during the first half of February each year. The official name, collectively, for the 45 earth-science-related shows is "The Tucson Gem, Mineral & Fossil Showcase," but unofficially, and for some of us a bit annoyingly, natives and the local media tend to call the entire motley extravaganza "the Gem Show." The happenings of greatest interest to mineral collectors (not necessarily in order of "greatness") are: (1) the Executive Inn Show, now showing signs of a renaissance after a few years of administrative confusion; (2) Dave Waisman's small, elite Westward Look Show, wherein 26 high-end mineral dealers set up at a gorgeous resort community on the north side of town; (3) Marty Zinn's "Arizona Mineral and Fossil Showcase," with five separate venues of which the chief one is at the InnSuites Hotel; and (4)—do you still have some money left?—the Tucson Gem & Mineral Show (now officially also called the "Main Show") run with no-nonsense efficiency by the Tucson Gem & Mineral Society (TGMS) at the Tucson Convention Center during the climactic four-day weekend.

At present the world's economic health is not good, and naturally there was some preliminary concern about whether the Tucson Show would thrive in its accustomed way, i.e. by adding $100 million or so to the city's economy and making a solid majority of dealers glad that they'd come. According to the Tucson Convention and Visitors' Bureau, the total attendance for all of the shows in the Showcase was around 55,000 in 2007, but they haven't done an extensive attendance survey since then, so a figure for 2009 is unavailable. According to Carole Lee of the TGMS, the total attendance figure for the four-day Main Show was down a few hundred from last year, though the attendance for Saturday was up.

In terms of revenues, the reports are variable. An *Arizona Daily Star* story on February 18, headlined "Dealers Disappointed in Gem Show Business," spoke gloomily of poor sales "even considering the economy," citing individual declines of as much as 70% of revenue in comparison with last year's figures, early departures by some dealers, cancellations of plans for next year, etc. That story, however, was about Showcase activity in general and does not (necessarily) apply to the *mineral* dealerships in the four important (to us) venues mentioned above. In fact, Carole Lee says that three mineral dealers at the Main Show had sales of over $1 million; presumably, good stock and good presentation/salesmanship, always critical for any dealer's success, played major roles in these cases. Having gone around asking randomly selected mineral dealers how they were doing, I got answers distributed quite evenly between "dead in the water" and "best year I ever had." Some wholesalers, in particular, reported very good sales, which is a promising sign. Meaningful generalizations are therefore impossible, but my impression is that this year was no worse for mineral dealers, *on the average*, than a "normal" year in Tucson, and that apocalyptic predictions about the health of the trade are unwarranted. Collectors at all levels still seemed to be buying. Later in this report I will offer a second installment of my new "HQLP" (High Quality Low Price) sub-column, which I debuted in the Denver show report last year, to assist readers in the goal of acquiring good stuff during economic hard times.

The *Mineralogical Record*, at least, had a very good show, with plenty of book and back-issue sales, a record number of new subscribers signing up, and some nice proceeds from our benefit auction during the Saturday night awards ceremony at the Convention Center. Decades ago this auction was a regular feature of the Main Show, and now, thanks chiefly to the hard work of our new Associate Publisher, Tom Gressman, the tradition is being revived, at least with regard to the silent auction. Collectors who couldn't make it to the show were still able to participate in the silent auction, as John Veevaert of *Trinity Minerals* (www.trinityminerals.com) took a flat of very good specimen donations with him, and auctioned them off for us in April on his website (thanks, John!).

During the Saturday night program at the Main Show it was announced that Rob Lavinsky of *The Arkenstone* and Daniel Trinchillo of *Fine Minerals International* are co-sponsoring a project designed to quicken the interest of young people in collecting minerals. Rob and Daniel have generously funded Brian Swoboda's Blue Cap Productions for the making of an hour-long DVD in which three bright, eager Californians, aged 12 to 14, were briefed on the pegmatite minerals of San Diego County and then, duly equipped and hard-hatted, were taken down into the Pala Chief mine to collect. Mine owner Bob Dawson and other expert adults looked on and provided advice as the kids extracted four large and fine smoky quartz crystals from an exposed pocket: Max, Brooks and Lauren (the last is Peter Megaw's daughter) got to keep one big quartz crystal each. Their running squeals of delight as the crystals are being extracted give sign of the indescribable joy and mind-broadening feeling afforded by successful field collecting, especially for the young who will succeed us. Indeed, besides addressing kids directly, this DVD models good grownup strategies by which we can help secure the future of mineral collecting, so the documentary is recommended for viewers of all ages. For $25 you can order a copy from Brian Swoboda's production company (www.bluecapproductions.com), although Brian also intends to distribute free copies to kids at shows, and to donate further copies to schools and other institutions so that *they* can hand the video out to interested youths.

The what's-new tour kicks off with a new find in Arizona—although it took a couple of Coloradoans, John Crowley and Dean Misantoni, to come down here and do most of the finding. At intervals over the past four years, John and Dean have been opening isolated miarolitic cavities in exposures of granite in the Santa Teresa Mountains, north of the town of Klondyke in Graham

Figure 1. **Aquamarine (beryl) crystal cluster, 10 cm, from the Santa Teresa Mountains, Graham County, Arizona. Evan Jones specimen; John Veevaert photo.**

County. From many of these cavities have come nice specimens of **fluorite, quartz** and **microcline**, and just one cavity has given up **aquamarine beryl**, a super-rarity (in good specimens) for Arizona. The accumulated stock was acquired by Evan Jones (evanabbottjones@gmail.com), who offered several shelves' worth of mostly miniature and small-cabinet specimens at his stand at the Main Show. The fluorite specimens show translucent, deep purple, slightly rough octahedral crystals to 6 cm on edge, forming tight clusters on gray quartz. The quartz itself forms typical transparent prismatic crystals of medium luster to 10 cm long, in groups to 20 cm across, commonly overgrown by a second generation of smaller, brighter crystals; in other specimens the large quartz crystals are smoky and more lustrous than the grayish ones. Rarely, microcline turns up as groups of sharp, glassy, brownish gray crystals to 2.5 cm individually, with quartz and fluorite. The single aquamarine-bearing pocket yielded a handful of odd-looking thumbnails: loose, skinny groups of subparallel, just slightly divergent prismatic crystals which are pale blue and opaque, priced at around $100 apiece. But in Evan's display case at the Main Show was the great find: a 10-cm starburst cluster of loosely attached compound beryl crystals to 5 cm, medium-blue and quite lustrous, with gemmy areas visible as you look down the *c* axis. I would be much surprised if this isn't the finest beryl specimen ever found in Arizona. Oh yes, and Evan shared with Mike Shannon a goodly number of specimens of **ramsdellite** from Arizona's Mistake mine—but these black beauties are so inexpensive that I'll defer description of them until the HQLP report, much later on.

At last year's Denver Show, fairly sizeable numbers of fairly good **gold** specimens from the Belshazzar mine, Boise County, Idaho, made their appearance with a couple of dealers, and one of these dealers, prospector Ed Muceus of the *Mad Mutha Mine* (P.O. Box 66, Paradise Valley, NV 89426), kept up his momentum at Tucson this year, both at the InnSuites and at his stand at the Main Show. Ed offered about a dozen very bright gold specimens taken recently from the Belshazzar mine dumps: intricate, glittering groups of dendritic aggregates and curving wires without matrix, ranging between 2 and 3 cm and priced between $150 and $350. Ed also had a few more of the specimens, mentioned from Denver, consisting of loose, whitish gold "herringbone" leaves, to 4 cm, of what's probably the Au-Ag alloy informally called "electrum." This time, though, Ed could give the locality: the dumps of an old mine called Howard's Claim, in Nye County, Nevada.

Large and spectacular specimens of acicular **natrolite** in dense coatings, sprays and "nests" over matrix, the natrolite crystals sparkling with colorless, lustrous apophyllite microcrystals, were taken from pockets struck in the late 1990's in the Weyerhaeuser Lincoln Creek quarry, Doty Hills, Lewis County, Washington. These wide, beautiful, wintry-looking specimens have not circulated much on the market, but *Bruce Wood Minerals* in the InnSuites (www.brucewoodminerals.net) this year had about 15 pieces, from 6 to 30 cm across, from a pocket which was cleaned out in 1998 by Rudy Tschernich (zeolite expert and author of *Zeolites of the World*, 1992). Very thin, delicate natrolite "needles" to 5 cm, with uniform dustings of apophyllite microcrystals to make them glitter all over, cover the black basalt matrix plates. A few rooms away in the InnSuites, John Cornish (Cornish@tfon.com) had a few more specimens from the same pocket, and both dealers asked low-three-figure prices for excellent cabinet-size plates.

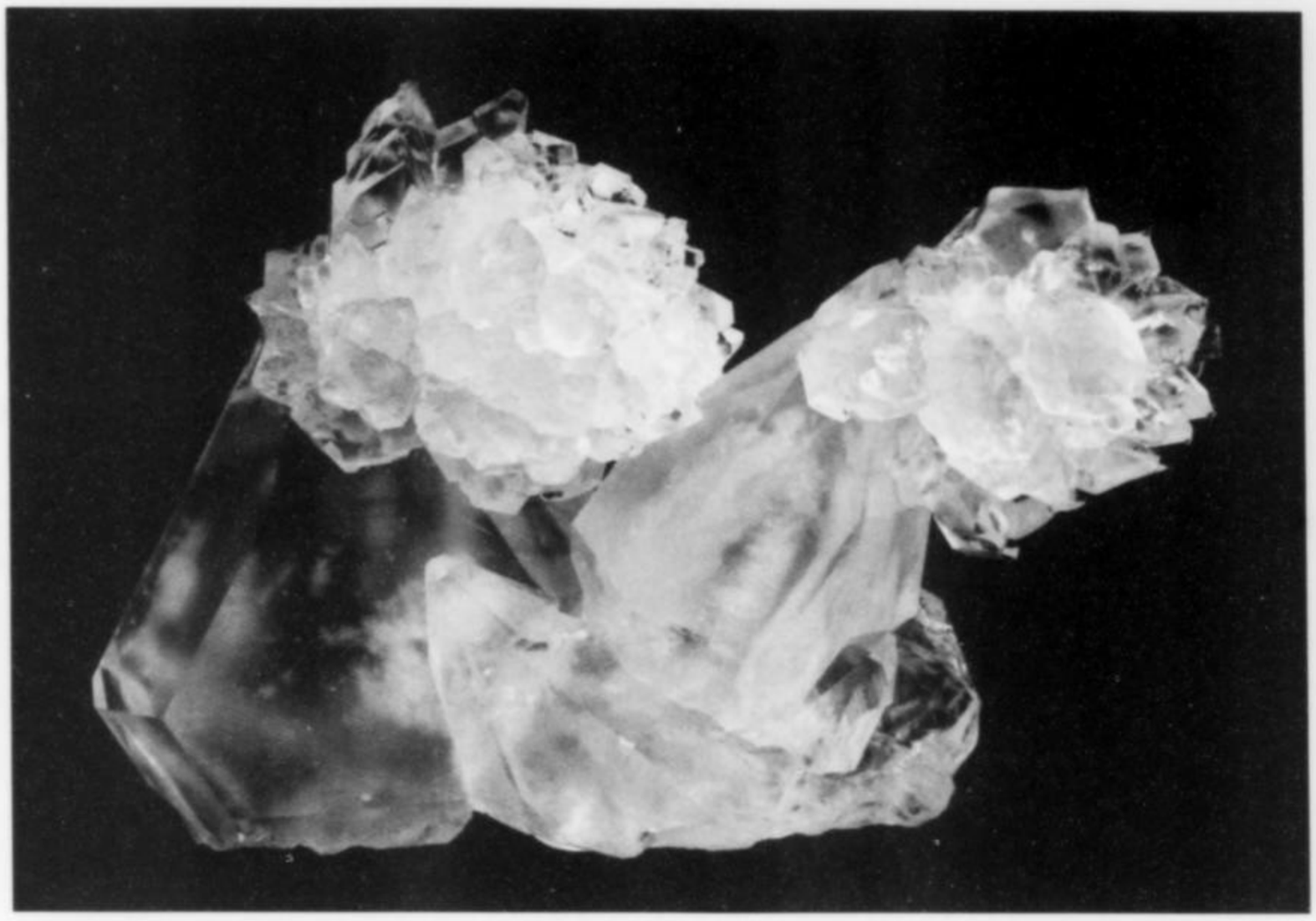


Figure 2. **Accidental synthetic heklaite crystals, 6.5 cm, from the Bone Valley District near Bartow, Polk County, Florida. Isaias Casanova (I. C. Minerals) specimen; Jeff Scovil photo.**

Large-scale copper mining has long since ceased in the Keweenaw Peninsula of northern Michigan, but "copper country" collectors still make significant specimen finds from time to time. In August 2008, Bob Barron collected about 500 **copper** specimens, miniature-size to one which measures 20 × 30 × 30 cm, from a vein outcrop which he located with a metal detector—funny thing is, the outcrop was *under water* in Lake Superior, near Eagle Harbor, and so the find has been christened "the Laker Pocket." Many of these "Laker" specimens found their way to Ross Lillie of *North Star Minerals* (www.northstarminerals.com), who had them at the Inn Suites. The best pieces are large, gnarled-looking things with surfaces and crevices showing clusters of sharp, complex copper crystals to 1 cm, and with crisp dendritic growths to several centimeters making drapes and spikes all around. Some surfaces show brick-red cuprite patinas, while others show dull black patinas of tenorite; the color and luster of the uncoated native metal is fairly bright, but the two other tints add variety and aesthetic interest to these fine copper specimens.

The Linwood mine, Buffalo, Scott County, Iowa was begun as a limestone quarry in 1918, and now exploits high-quality limestone from underground workings; the locality is known chiefly for its beautiful calcite crystals. But in the summer of 2008 there was a find of about 50 very nice **barite** specimens showing lustrous, colorless, transparent barite crystals ranging in habit from equant to columnar, some partly clouded by sand inclusions, reaching 7 cm long individually. Attractive groups of these crystals measuring between 5 and 20 cm appeared at the Main Show with Dan Weinrich (www.danweinrich.com), as the leftovers from a batch which Dan began selling on his website a few weeks before the show. He says that the barite specimens are from a single-pocket occurrence, although, of course, a repeat performance is possible at any time.

Isaias Casanova of *IC Minerals* (www.icminerals.com) filled most of his InnSuites room with a haul of very pretty, very well crystallized specimens of something he was calling "alkali silicon hexafluoride," from a phosphate processing dump site in the Bone Valley phosphate mining district near Bartow, Polk County, Florida. A few curmudgeons pointed out that this substance is not a mineral in the strict sense, being an accidental post-mining product resulting from the weathering of (at least in part) anthropogenic substances used in ore processing. That is true, under current International Mineralogical Association rules established in 1995 and 1998. However, the X-ray diffraction pattern of crystals (courtesy of Dr. Robert Downs at the University of Arizona) is an exact match for **heklaite*** ($KNaSiF_6$), a new species recently approved by the IMA. So the Florida specimens should be labeled as accidental synthetic heklaite. And there may actually be other compounds present as well. Isaias, with his usual burly good cheer, had no trouble selling all 300 or so specimens. The material forms very sharp, lustrous, totally colorless and transparent, blocky to prismatic crystals reaching 7 cm individually, in well-composed groups. Some of the crystals show chalk-white inclusions of gypsum, and some clusters rest on a fine-grained, white matrix of massive gypsum. Collected between 2006 and 2008 from streams and ponds in low hills of mine waste called "gypstacks," the specimens range from thumbnail to small-cabinet size, and Isaias was letting them go for prices between $30 and $300.

At the Main Show, Terry Ledford of *Mountain Gems & Minerals* (TerryLedford@gmail.com) showed up with some excellent **quartz** specimens he dug last year at the hiddenite/emerald claims near Hiddenite, Alexander County, North Carolina. Colorless, transparent, highly lustrous quartz prisms were available in thumbnail-size single crystals and in great clusters to large-cabinet size. Some crystals are sceptered or reverse-sceptered, some are of the "Tessin" habit and taper smoothly to points, and some are smoky or yellow ("citrine"), but the niftiest thing about this quartz is its variety of associations: around the bases of crystal groups and/or included within the crystals are creamy white, lustrous dolomite rhombs, green muscovite, and nests of gleaming red-brown sagenitic rutile needles. Terry is still well stocked, I might add, with **amethyst** from Jacksons Crossroads, Georgia, and he still has some loose **hiddenite spodumene** crystals from Hiddenite as well.

Rocko Rosenblatt of *Rocko Minerals & Jewelry* (rocko@catskill.net) had a flat of unusual-looking **heulandite** specimens, between

*See Jakobsson, S. P., Leonardsen, E. S., Balic-Zunic, T., and Jónsson, S. S. (2008) Encrustations from three recent volcanic eruptions in Iceland: The 1963–1967 Surtsey, the 1973 Eldfell and the 1991 Hekla eruptions. *Fjölrit Náttúrufrædistofnunar,* **52**, 5–67.

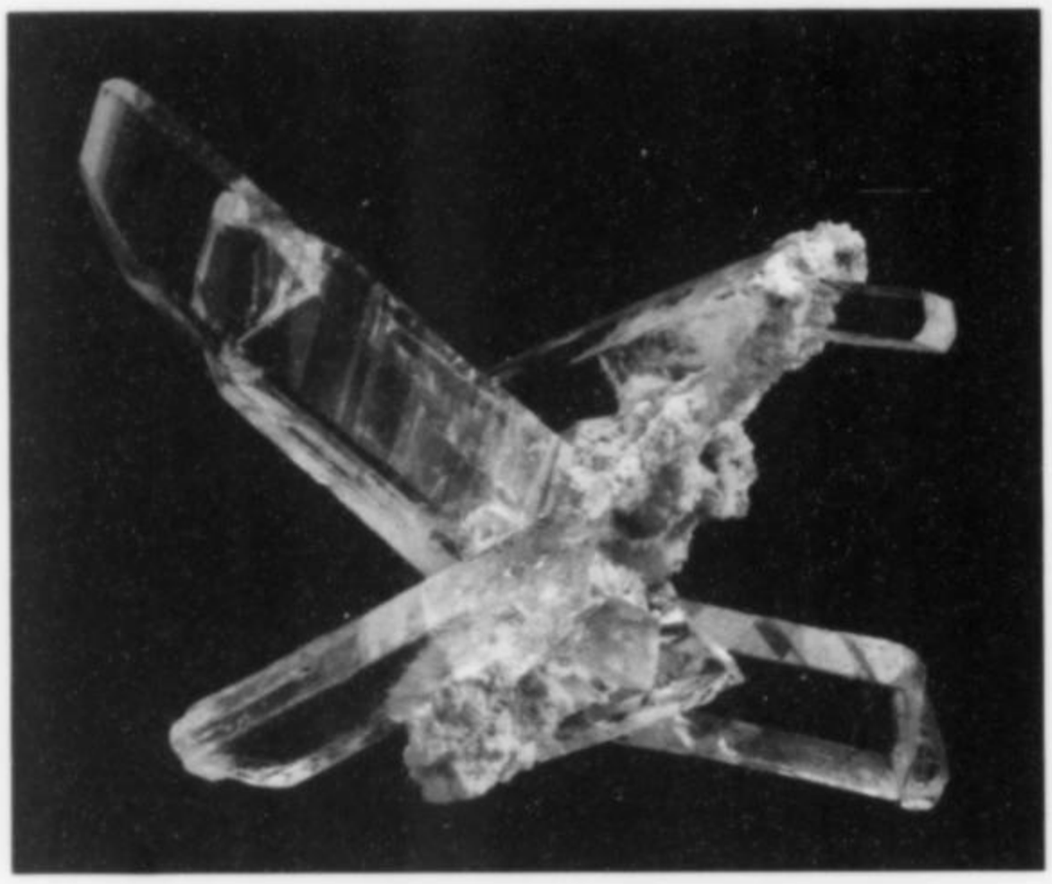


Figure 3. **Nifontovite crystal group, 5.2 cm, from the San Bartolo mine, Charcas, San Luis Potosi, Mexico. Peter Megaw collection; Jeff Scovil photo.**

Just as a goodly portion of last year's Tucson report was devoted to Mexico, so it will be again now, for another impressive list both of new and of sort-of-new Mexican mineral finds confronted us in 2009. Last year I mentioned that Peter Megaw had a few superb thumbnails of **cerussite** from a pocket discovered in late 2007 or early 2008 in the Ojuela mine, Mapimí, Durango—never productive of notable cerussite specimens in any earlier times. Well, in 2009, at an "open house" gathering in the apartment hangout of John Veevaert and Steve Perry just west of town, Marcus Origlieri of *Mineral Zone* (www.mineralzone.com) offered ten more specimens of Ojuela cerussite, presumably from the same single find, each with glassy crystals to 1.5 cm; most are colored gray by inclusions but a few are colorless and transparent (average price for the thumbnails: $100). And speaking of Mexican-minerals guru Peter Megaw, here's a photo of an amazing **nifontovite** specimen in his possession: probably the best from the single pocket discovered in early 2008 at Charcas, San Luis Potosí, which yielded about 35 specimens, mostly thumbnail-size loose crystals, of the exceedingly rare hydrous calcium borate.

By now everyone knows of the Milpillas copper mine, Cananea district, Sonora, and its world-class specimens of **azurite** and **malachite pseudomorphous after azurite** (if somehow you don't know of it, see last year's Tucson report, the 2007 Denver report,

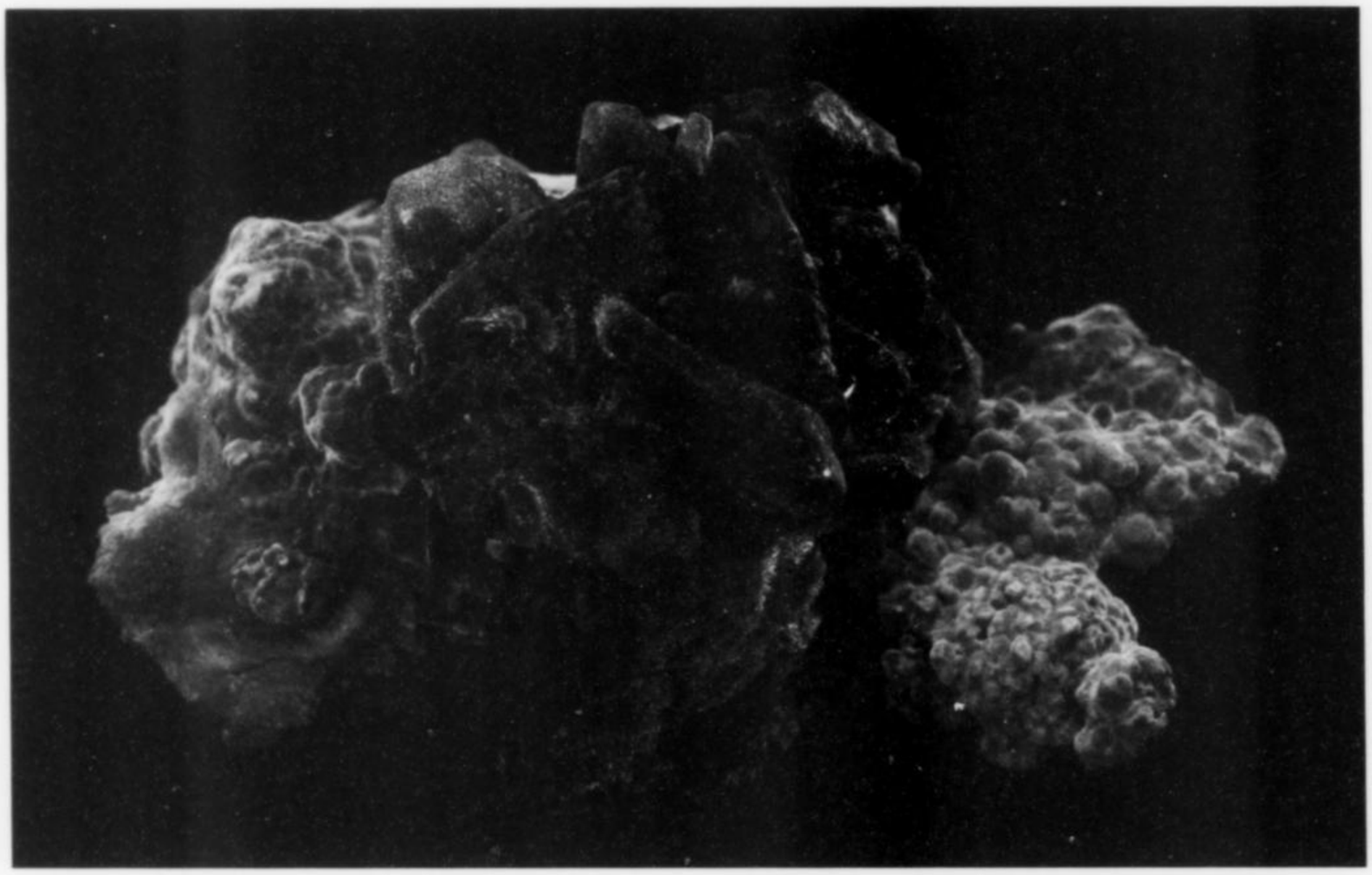


Figure 4. **Malachite pseudomorphs after azurite on velvety blue plancheite, 5.5 cm, Milpillas mine, Cananea District, Sonora, Mexico. Jordi Fabre specimen; Jeff Scovil photo.**

2.5 and 5 cm, from the Fanwood (or Weldon) quarry near Fanwood, Watchung, New Jersey. Recently garnered by Rocko from one of northern New Jersey's enthusiastic diggers of "traprock" zeolites, the specimens show single, sharp, typically coffin-shaped heulandite crystals to 2.5 cm associated with chalky white calcite and 5-mm crystals of brownish stilbite. The heulandite is lustrous, translucent, and of an odd shade of grayish green. The crystals are actually composites, with stepped surfaces formed by sub-individuals in tight, parallel growth. Considering that handsome thumbnails of this material cost only about $15, they might well be described in the HQLP section later, but as the Fanwood quarry is fairly new (as a specimen source) and the heulandite is so special-looking, a what's-*new* paragraph seems in order instead.

and the article in "Mexico V," i.e. November–December 2008). These gorgeous specimens are everywhere on the market today, despite adverse export conditions, discouragement of collecting by mine management, and other problems . . . more about Milpillas in the HQLP section, but here I want to salute Evan Jones, who furnished his stand at the Main Show with hundreds of copper carbonate specimens from a big strike a few months ago in the mine, and who had, besides, a few Milpillas items so new that they postdate last fall's published article. That article averred that only

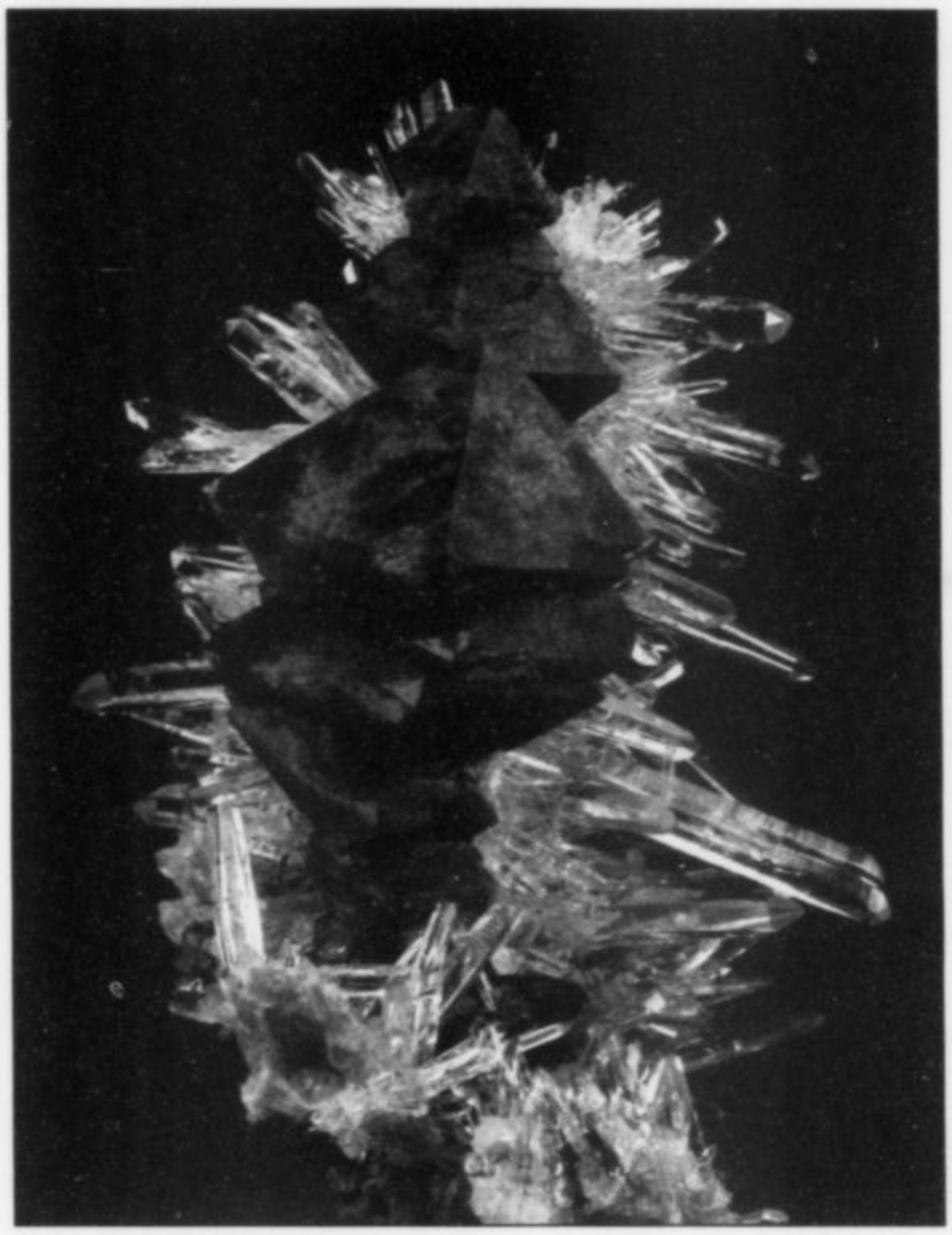


Figure 5. **Scheelite crystals with quartz, 8 cm, from the Tamboras mine, Pasto Bueno District, Ancash Province, Peru. Jaroslav Hyršl specimen; Jeff Scovil photo.**

one pocket with good **copper** specimens had been found in the mine—but Evan had big, bright pieces with rough copper crystals to 2 cm in masses to 25 cm, from a pocket struck just a few weeks ago. Also with Evan were a couple of notable Milpillas **cuprite** specimens: patchy druses of sharp, bright red octahedral crystals to 5 mm on copper. And there was a flat of miniatures consisting of loose botryoidal crusts and grapy coagulations of dark to baby-blue **plancheite**, with malachite pseudocrystals.

The polymetallic mines of the Naica district, Chihuahua, have of course long been known for their fine minerals, with the **fluorite** specimens being among the finest. Some truly superlative thumbnails and miniatures showing spinel-law-twinned fluorite crystals were found in one of the Naica mines exactly one week before this year's Tucson Show, and they made it north in time to be offered, first, by *Gemini Minerals* in an InnSuites room, and then by Benny Fenn (www.fennsminerals.com) in the InnSuites ballroom. At an average price of $300 these could not be called "HQLP" specimens, but they show highly lustrous, totally gemmy, pale bluish purple spinel-law fluorite twins to 2.5 cm, standing up smartly on each other and on miniscule bits of matrix. Also—and much less expensively—there are gemmy deep purple, cubic crystals of fluorite with beveled edges, alone and in groups with calcite and quartz, from Naica, with individual cubes to 3 cm on edge. Benny Fenn told me that this last-moment Naica lot had contained about 80 specimens showing the purple cubes, and only about 10 showing the pale-colored spinel-law twins.

Specimens showing gleaming sprays of colorless to amethystine **creedite** crystals from the Potosí mine, West Camp, Santa Eulalia district, Chihuahua were first found in quantity around 1970, and the early 1980s saw several major finds, but the bounty ended in the mid-1980s. Since then, purple creedite specimens from Santa Eulalia, with individual prismatic, wedge-terminated crystals exceptionally to 8 cm, have been the world's ultimate creedites (unless you prefer those found in the early 1990s at Akchatau, Kazakhstan). It turns out that Dalton and Consie Prince, major dealers of yesteryear who have since passed away, had a hoard of about 30 creedite specimens collected long ago in the Santo Domingo shaft of the Potosí mine. These pieces, finally resurrected, were being offered this year in the InnSuites ballroom by John and Maryanne Fender of *Fender Natural Resources* (fenderminerals@yahoo.com). Ranging in size from about 3 cm to about 15 cm across, the matrix specimens show generous coverages of transparent, pale lilac-colored creedite crystals to 2 cm individually. I am always glad to report on resurfacings of old items like that—but now it is time to move on to Peru, where some *really new* things await us.

These Peruvian stimuli were to be found in the InnSuites room (and remainders were later to be found at the Main Show stand) of Spanish dealer Luis Miguel Fernández Burillo (Paseo del Canal, s/n Urb. Pinar Canal, 24, 50720 Zaragoza, Spain)—a dealer blessed both with an excellent aesthetic "eye" and with (apparently) very good contacts, such that he nearly always comes up with something that begs mention in show reports. This time, he had about ten outstanding **scheelite** specimens from a pocket discovery of September 2008 in the Tamboras mine, Pasto Bueno district, Ancash Province, Peru. The sharp pseudo-octahedral crystals of scheelite range between 1 and 3 cm, though Luis says he has one specimen at home with a 5-cm crystal. This scheelite is brown to almost black, with submetallic luster; the crystals perch delicately among bright clusters of "needle" quartz crystals (with a few Japan-law twins), in striking, pincushiony-looking specimens measuring between 4

Figure 6. **Pearceite crystals with stephanite, 3.3 cm, from the Uchucchacua mine, Oyon Province, Lima Department, Peru. William Pinch collection; Jeff Scovil photo.**

Figure 7. **Alabandite crystal cluster, 7 cm, from the Uchucchacua mine, Lima Province, Peru. William Pinch collection; Jeff Scovil photo.**

and 10 cm. A more recent pocket in the same area of the same mine yielded simple but beautiful **quartz** specimens, the crystal clusters reaching small-cabinet size.

Luis also offered about 20 superb thumbnails which are probably the world's best-yet specimens of the rare sulfosalt **pearceite**—the arsenic analog of polybasite which, like that more common species, is apt to form platy, metallic black crystals grouped in rosette-shaped aggregates. Luis's specimens are from a pocket opened last June in the famous Uchucchacua mine, Oyon Province, Lima Department, Peru. Similar pearceite specimens have trickled out before from the huge silver mine, but these new pieces display very brilliant rosettes, some with attachments of bright red, pinwheel-shaped aggregates of what is probably **proustite** (Luis's labels call it pyrargyrite, but proustite seems more likely, as the Uchucchacua orebody is arsenic-heavy, and the association here is with As-rich pearceite, not Sb-rich polybasite). The brilliant black pearceite rosettes, vaguely suggesting Swiss hematite "roses," are probably bargains even at Luis's prices of $250 to $400 per thumbnail. Watch for these specimens, too, on the website of John Veevaert's *Trinity Minerals* (www.trinityminerals.com), for John was quick to scoop up some pearceites from Luis early in the "hotel show" period.

In October 2008, one pocket in the Huantajalla mine, Oyon, Lima, Peru produced about 50 good specimens of **wire silver**, and a few miniatures representing this find were also offered by Luis Burillo. From matrix lumps, to 6 cm or so, of massive quartz mixed with dull black ore sulfides, very bright, lone silver wires and curlicues twist out to lengths of between 1 and 3 cm.

Very hot news, now, from Bolivia: there is a brand-new locality in that country for **phosphophyllite**. No, the new specimens are not anything like, and do not rival in glamour, the fabulous blue-green gemmy twins found in the early 1960s in the Unificada mine, Cerro Rico de Potosí; rather, this phosphophyllite is more humble-looking and hails from a recently worked surface prospect at the Infiernillos mine, Canutillos, Colavi district, Potosí. Opaque, pale apple-green, greatly elongated, splintery-looking phosphophyllite crystals to 1.5 cm form dense matrix coverages, with the matrixes, in specimens seen at Tucson, ranging between 3 and 5 cm ($445 to $500). I saw this material first as a handful of pieces in the InnSuites room of Alfredo Petrov, then as a somewhat larger handful offered by Marcus Origlieri (*Mineral Zone*) at the Veevaert/Perry "open house" described earlier; finally, a small cabinet-size piece which was about 500 times better than those I'd seen earlier reposed among other wonderful things from the Jim and Gail Spann collection, displayed briefly at the Westward Look Show. Because these specimens pose "preparation" problems—it's very difficult to remove the chalky white coatings of an unknown species from the delicate phosphophyllite crystals beneath, without hurting the latter—most of the pieces on hand at Tucson (except for the Spanns') were incompletely cleaned and not especially head-turning. But a new find of phosphophyllite in Bolivia *must* by its nature be an exciting development, even if specimens found so far are beauty-challenged. Keep an eye out.

For a change, there is not a great deal in the what's-new department from Brazil this time. The stunning, gemmy red **rhodonite** crystals from Conselheiro Lafaiette, Minas Gerais (see the cover of our January–February 2009 issue) are still "around," and the best are still with Rob Lavinsky and Daniel Trinchillo, but I was even more highly impressed by a single specimen of **rhodochrosite** from Conselheiro Lafaiette flashed at me by Daniel in his big white house adjacent to the InnSuites. This 10-cm matrix plate sports a number of smooth, perfectly round, baby-pink spheres of rhodochrosite, all about 1.5 cm in diameter, on white chalcedony. Utterly different from any rhodochrosite from Colorado, South Africa, Peru, Germany, etc., this material is just as lovely as any of those—and now, O mineral gods, we just need *more* of it.

Otherwise, from Brazil, the story is **topaz**, and the dealer of note is Luiz Menezes (lmenezesminerals@uol.com.br), who held court in two rooms at the InnSuites. Luis was pleased to be offering a new lot of *pinkish purple* topaz from the great Brumado mine, Bahia: the topaz crystals, scattered on faces of quartz crystals, are lustrous, gemmy, and well terminated, but they do not get larger than 1 cm (and most are smaller). Less pretty and more conventional, but much bigger, are the colorless, transparent topaz crystals found in

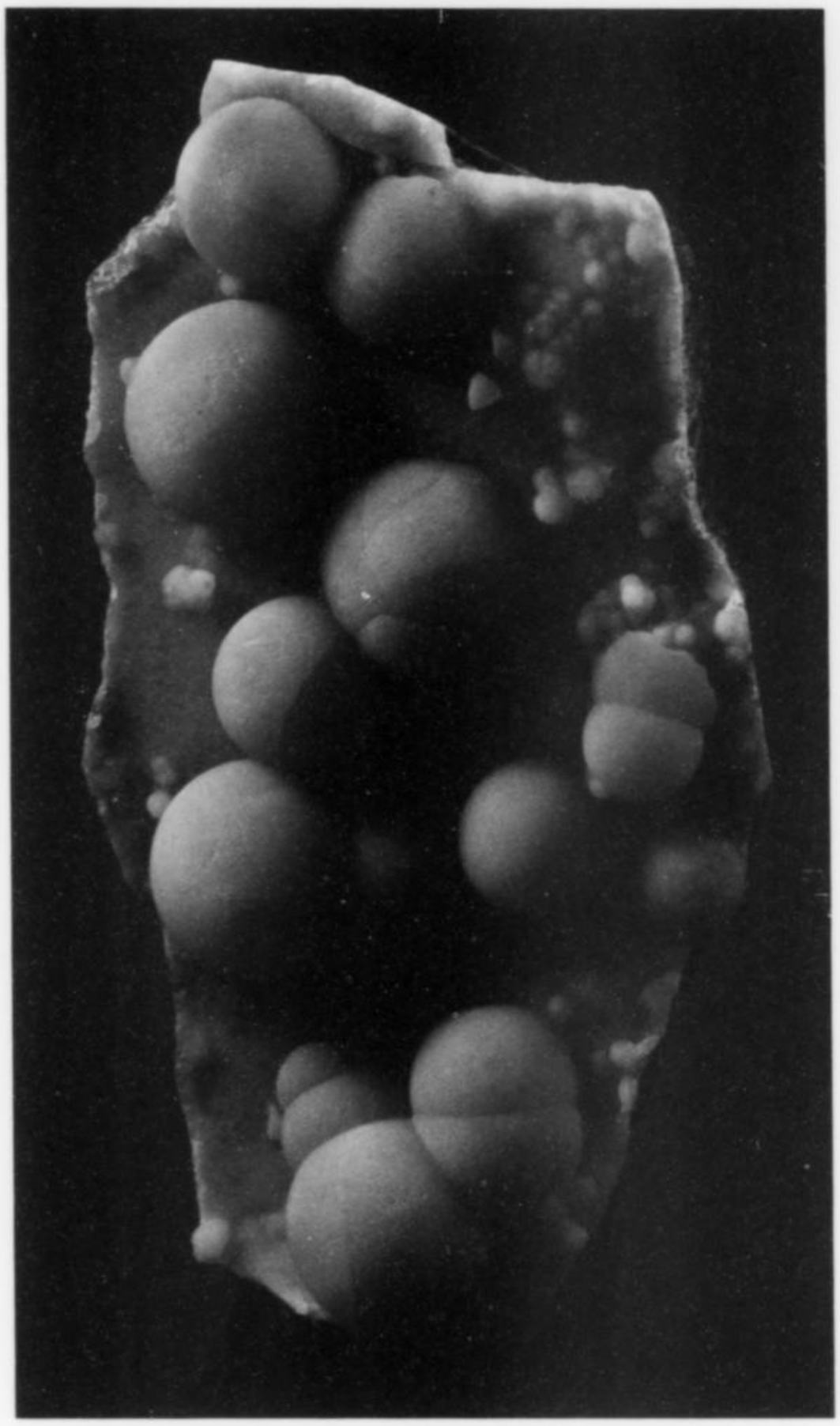


Figure 8. **Rhodochrosite on drusy quartz matrix, 10 cm, from Conselheiro Lafaiette, Minas Gerais, Brazil. Daniel Trinchillo (*Fine Minerals International*) specimen; James Elliott photo.**

October 2008 in a completely kaolinized pegmatite in the Águas de Marambaía district, Carai, Minas Gerais. Luiz had dozens of these: all sharp, glassy crystals of typical form, from 2.5 to 10 cm.

Still farther south, we pass yet one more **topaz** station, a very remarkable one in southernmost Argentina. In the January–February 2009 issue of this magazine, Robert Brandstetter gave a lively account of a mountaineering expedition gone "wrong" when bad weather in a remote corner of Patagonia forced a party of Austrians to change their climbing plans . . . forced them, poor guys, to settle for just cleaning out some pegmatite pockets exposed at a site near the village of El Chaltén, Santa Cruz Province. The collecting involved scary rappelling down a cliffside, but the mountain men were up to it, and they expertly extracted "approximately two dozen outstanding jewel-like crystals of topaz, most of them doubly terminated 'floater' crystals showing attractively irregular, spiky terminations on both ends," to quote from the article. These topaz crystals are of a very faint cognac color, thick, completely transparent, highly lustrous, and altogether spectacular (see photos in the article), and the good news at Tucson was that about 15 of the crystals were being marketed, both at the InnSuites and at the Main Show, by *Collector's Edge*. The crystals were priced between $750 and $12,500, but really, you can't ask for more beautiful topaz, and given the collecting circumstances you won't see any more of these crystals, either, after the *Collector's Edge* stock is gone (which quite possibly it will be by the time you read this).

At the InnSuites, Jordi Fabre had about 50 specimens from an interesting new French find of **pyromorphite**. The specimens were collected in 2008 from an outcropping vein near an old lead mine; the collecting site is called Brèzies, and the mine, called La Vidale, lies very near the village of Asprières, in Aveyron Department. In matrix pieces ranging between 5 and 25 cm across, bright lime-green and yellow-orange hemispheres of curved, tightly intergrown crystals (the "campylite" habit) reaching 1 cm in diameter rest on seams in quartzite, or are implanted on drusy quartz in vugs. These are not first-rate pyromorphite specimens, but they are fairly pretty, and of course they might be harbingers of something more.

At a very old locality called Loučná, Ostrov, Krušné Hory Mountains, Bohemia (Czech Republic), **leucite** was once found abundantly as sharp trapezohedral crystals to 20 cm in a weathered igneous dike. Well, actually these smooth-surfaced, earthy "crystals" are pseudocrystals wherein a fine-grained orthoclase/mica mixture replaces original leucite—such alteration products, varying in composition from place to place, are loosely called "pseudoleucite." In the InnSuites I found that Jaroslav Hyršl (Hyrsl@Kuryr.cz) had brought about ten very nice matrix specimens of this material to town, the Loučná locality having begun about three years ago to yield collector-quality specimens once again. The pale brown "pseudoleucite" trapezohedrons reach 5 cm, and are well exposed on their lumps of still paler brown matrix, the lumps reaching 10 cm.

Just one more entry in Europe and we're outta there—but it's a *good* entry. You will recall that in late 2005 and into 2006 the market was briefly flush with superb specimens of **realgar** from a then-new find in one of the old mines of Baia Sprie (formerly Felsöbánya), Romania. The realgar crystals are vividly red, razor-sharp, obliquely terminated prisms, and in the great majority of the specimens they rest on chalky white carbonate matrix, or else they form loose groups without matrix. But in his room at the Westward Look Show, Rob Lavinsky of *The Arkenstone* let me gape at one of six large pieces he had saved out from the original find, and is now about to market: realgar crystals to 3 cm nest amid mats of

Figure 9. **Topaz crystals to 1 cm on quartz crystal, from the Brumado mine, Bahia, Brazil. Luiz Menezes specimen; Jeff Scovil photo.**

lustrous steel-black acicular **stibnite** crystals, for a flashing, deluxe red-and-black aesthetic effect. These are cabinet-size specimens, and certainly they won't be cheap, but they are as spectacular as one could wish.

In 2008 the El Hammam fluorite mine near Meknes, Morocco produced a new batch of good **calcite** specimens, and small numbers of these were with several dealers around the show, but the most and best were with Horst Burkard (Dornheckenstr. 20, D-53227 Bonn, Germany). The calcite occurs as translucent milky white prisms to 8 cm with low rhombohedral terminations, and these crystals form divergent groups, some decorated with little yellow and blue fluorite cubes. From Morocco also this year comes **azurite** of a new type, and from a new place: several large cabinet-size specimens were unearthed in October 2008 at Tafraout, Azilele, Beni Mellal, Morocco, and Jordi Fabre had ten of the specimens at the InnSuites. Matrix plates to 30 cm across are solidly blanketed by bright blue azurite crystals; the latter are very thin blades reaching only 3 mm or so individually, but their good color lends lushness to the big plates, and on most of the specimens there is a smattering of bright green malachite spots (as well as dull brown spots of an unknown species).

A wealth of colorful gemstone-potential material, some old, some new, from Tanzania appeared in Tucson this year. Isolated examples of Tanzanian tremolite, tanzanite (zoisite), titanite, zircon, spinel, and more were available from many dealers, but the best selections I came upon were at the Executive Inn room of Jochen Hintze of the dealership *M. Jentsch* (www.jentsch-mineralien.com), and at the Riverpark Hotel Show, just west of I-10, with Steve Ulatowski of *New Era Gems* (www.neweragems.com). Of course, the Tanzanian locale you've been thinking of since this paragraph started is the Merelani mine—and indeed the two dealers named above (and others) had beautiful gemmy **tanzanite** (zoisite) crystals aplenty, in multiple shades and heat-settings of blue and yellow, as well as bright grass-green, gemmy, loose crystals of chromium-rich **diopside** from Merelani. Last year in Denver, Daniel Trinchillo showed us how extraordinarily fine the green diopside crystals can get—and showed us the world's best crystals of graphite in association—no Merelani diopside crystals I saw in Tucson were of the caliber of those pictured in the Denver 2008 report (January–February 2009 issue), and not even Daniel had any graphite to speak of. Looks like it was an isolated pocket. But medium-grade gem diopside from Merelani, at least, is plentiful now, and that is very encouraging. Much rarer from Merelani are specimens of chromium-rich **tremolite**: jumbled groups of splintery crystals, part pearly white, part apple-green, to 5 cm. And rarest of all seems to be Merelani

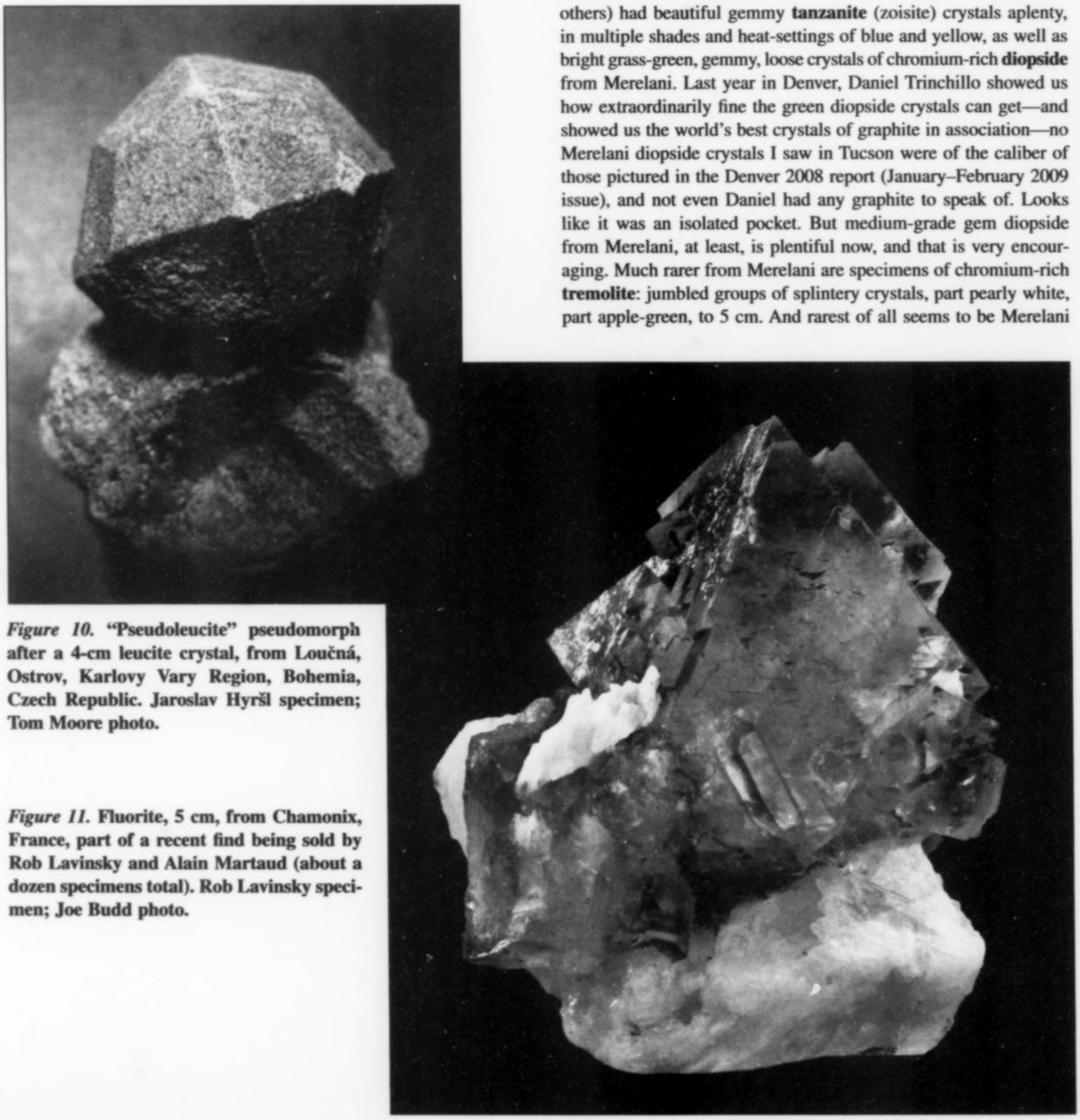


Figure 10. **"Pseudoleucite" pseudomorph after a 4-cm leucite crystal, from Loučná, Ostrov, Karlovy Vary Region, Bohemia, Czech Republic. Jaroslav Hyršl specimen; Tom Moore photo.**

Figure 11. **Fluorite, 5 cm, from Chamonix, France, part of a recent find being sold by Rob Lavinsky and Alain Martaud (about a dozen specimens total). Rob Lavinsky specimen; Joe Budd photo.**

axinite-(Mg) (formerly magnesio-axinite), of which I saw just two lustrous, transparent, purplish, loose crystals, both about 2 cm, in *another* booth at the Riverpark Hotel Show.

Rose-pink octahedral **spinel** crystals from Tanzania are not exactly "new," but both their numbers and general quality seem to be on the rise. The crystals come from near the town of Mahenge, in Morogoro Province, and they are sharp, partially gemmy, medium-lustrous, and reach 5 cm on edge. Some small but very spiffy **zircon** crystals from near Mashewa, Pare Mountains, northeastern Tanzania *are* new this year—they are found in alluvium near the deeply eroded alkaline rock complex which was their first home, and they reach 10 cm exceptionally, although most are of thumbnail size.

Figure 12. **Zircon crystal, 2.4 cm, from near Mashewa, Pare Mountains, northeastern Tanzania. New Era Gems specimen; Jeff Scovil photo.**

The gemmy to part-gemmy simple tetragonal prisms with simple (fourfold) pyramidal terminations are a rich yellowish brown, and a few elite crystals are doubly terminated (most are broken on at least one end). *M. Jentsch* had about 20 of these fine little zircon specimens. Finally, and most surprisingly, from Tanzania comes a December 2008 discovery of beautiful gemmy green **titanite** crystals. Mostly these floaters are single crystals but there are also a few "fishtail" twins; all are fat and highly lustrous, and they reach 8 cm. The crystals have more green and less yellow than the Brazilian ones, and generous swaths of internal gemminess, but every last crystal I saw is chipped, bashed, wilbered, etc. to some degree: clearly they have spent too much time rolling around loose in sacks. The locality is Mpwapwa, Dodoma Province, to which are attributed also those lovely yellow gem scapolite crystals which we've been seeing around for years. According to Jochen Hintze,

Figure 13. **Titanite twinned crystal, 7.4 cm, from Mpwapwa, Dodoma Province, Tanzania. Jochen Hintze specimen; Jeff Scovil photo.**

the titanite crystals come from Alpine-type clefts in biotite gneiss, and the collecting site is a near-surface occurrence. Jochen has passed through the neighborhood, and every titanite crystal that *he* has seen is seriously damaged; still, though, this looks like a significant locality-in-the-making.

Ever-jolly Laurent Thomas of *Polychrom Minerals* (www.polychromfrance.com) came up with some thumbnail and small-miniature **chrysoberyl/smoky quartz** specimens from a new prospect near the town of Ambatomanoina, Antananarivo Province, Madagascar. The yellow-green, partially gemmy single crystals of chrysoberyl reach only a few millimeters, but they perch smartly on faces of tapered ("Tessin"-habit) smoky quartz crystals. Laurent's bad news is that he has resolved to cease digging at the prospect which has produced modest numbers of very distinctive, thick, rootbeer-brown **brookite** crystals for about a year now (you're going to insist that I write out the locality one more time? Okay, okay, the occurrence is an Alpine-type cleft near Fitampito, near Ikalamavony, Fianarantsoa Province, Madagascar). At the InnSuites in 2009, Laurent had about 30 of the brookite crystals, all between 1 and 3 cm, but very decidedly he said that no more would emerge (at least not through him).

Daniel Trinchillo (*Fine Minerals International*) leaves the front door of his big white house on Granada Street open during the show, so that pedestrians and even motorists (watch the *road*!) will be enticed to come in for a closer look at the contents of the big cases in the front parlor. A major enticement this year was a spread of about a dozen big **fluorite** specimens newly found at the huge Okorusu fluorite mine in Namibia. The cubic crystals, in loose, flat clusters to 15 cm across, are transparent and strikingly color-zoned: some square-outlined areas within the crystals are colorless, and others are deep purple. Also (and fittingly, in this

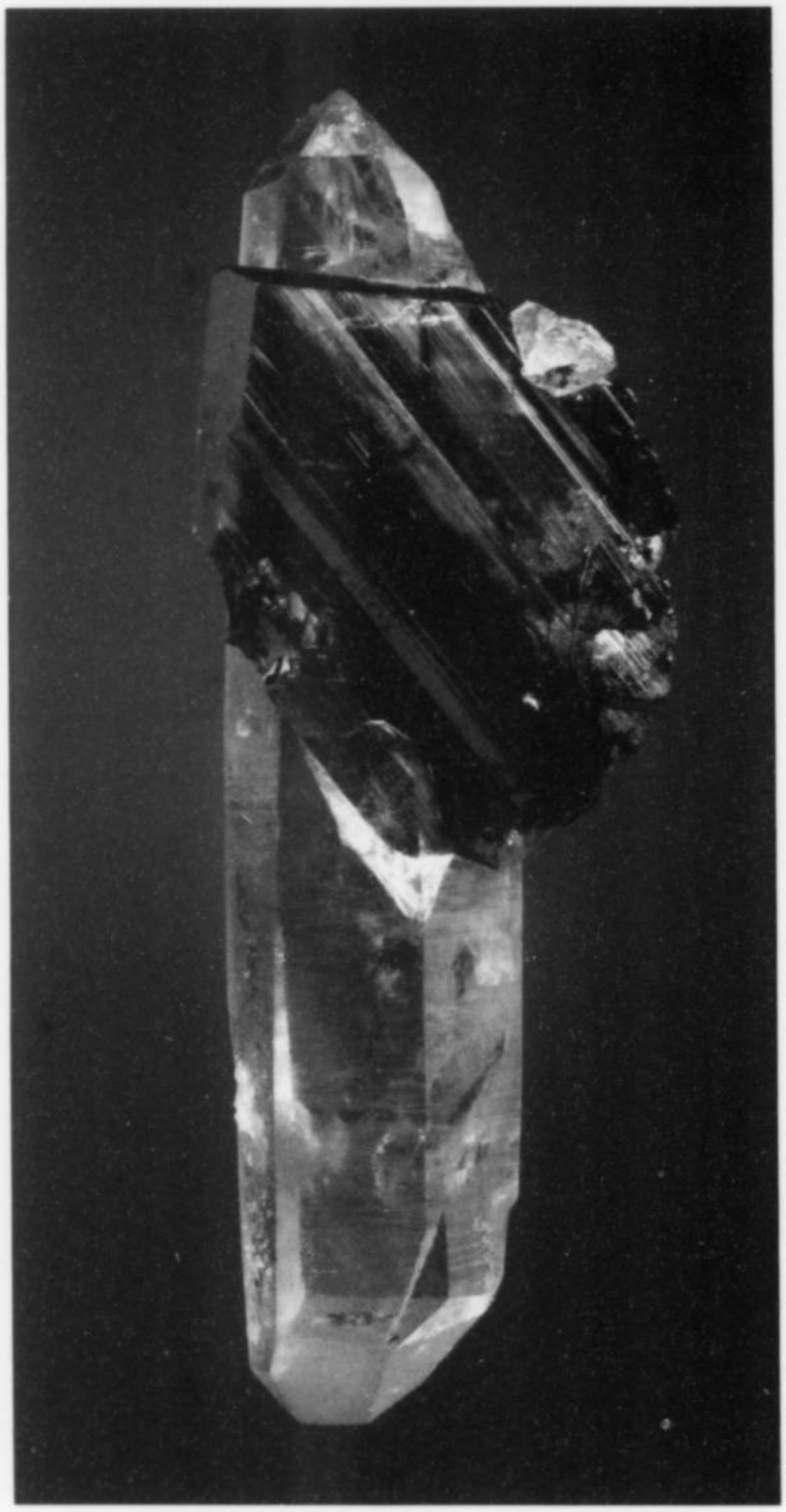


Figure 14. **Brookite crystal on quartz crystal, 7.7 cm, from Fitampito, Ikalamavony, Fianarantsoa Province, Madagascar. Laurent Thomas (*Polychrom Minerals*) specimen, now in the Kyle Soller collection; Jeff Scovil photo.**

year of "mineral oddities"), Scott Werschky of *Miner's Lunchbox* (www.minerslunchbox.com) brought to the Main Show a flat of peculiar **scepter fluorite** thumbnails from the Erongo Mountains, Namibia; these were found within the past few months. On pale apple-green fluorite stems perch somewhat etched-looking, roughly octahedral fluorite caps which are totally colorless, and stems and caps alike are translucent and highly lustrous. One of the best of these winsome little specimens would run you about $150.

Another **fluorite** occurrence in southern Africa which we've learned about lately yields transparent apple-green, octahedral fluorite crystals to 6 cm on edge, in clusters to large-cabinet dimensions (see the photo in the Denver 2008 report). These very dramatic specimens are taken from near-surface veins in pegmatite in the Riemvasmaak region of northern Cape Province, South Africa, and their chief conduit to the market so far has been Bryan Lees'

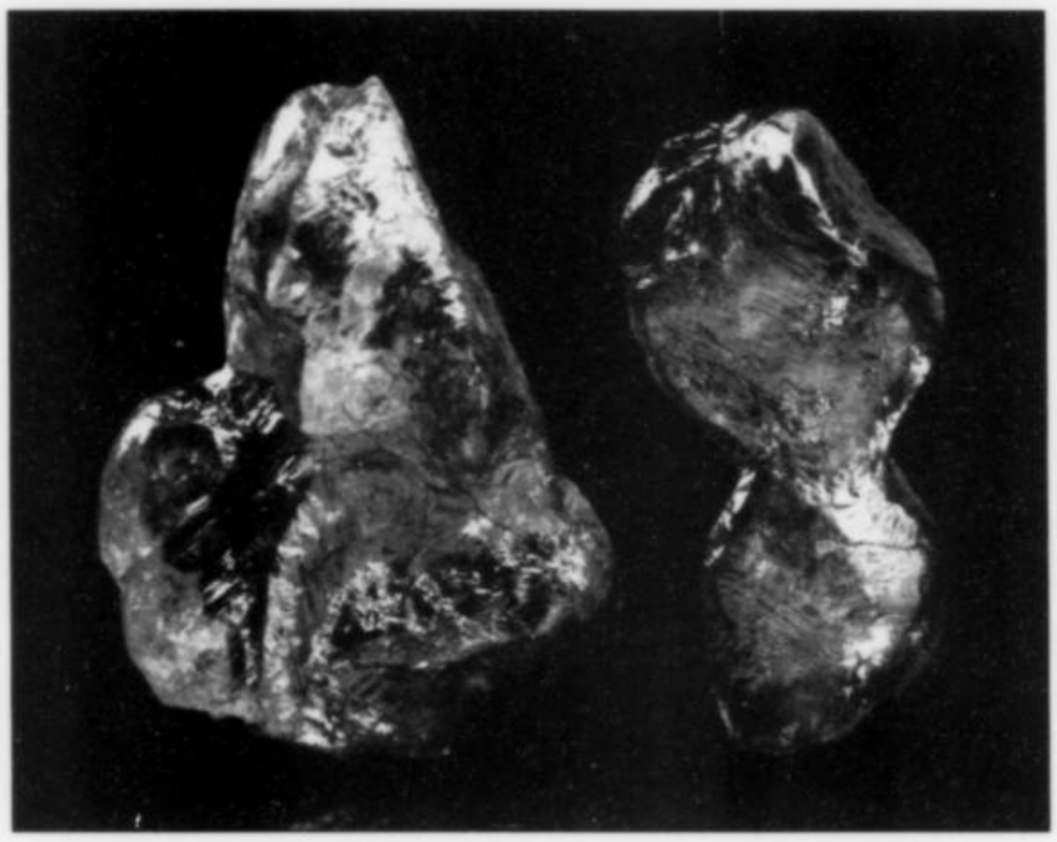


Figure 15. **Diamond crystals to 2.5 cm, from the small West African nation of Guinea. Rob Lavinsky (*The Arkenstone*) specimen; Joe Budd photo.**

Collector's Edge dealership. *Collector's Edge* indeed brought many superb specimens of Riemvasmaak fluorite to Tucson this year—but so did a partnership of South Africans, Rob Smith and Fernando Abrantes, who hit the Main Show with a stunning casefull of green fluorites, as well as with Rob Smith's collection of old-time **ajoite-in-quartz** specimens from the Messina mine, Limpopo, South Africa. The quartz/ajoite lot is being sold as a complete collection (interested parties should visit Rob's website, www.africangems.com) whereas the green fluorites may be pursued either via that same site or via Fernando (fabrantes@mweb.co.za).

Nor, before we leave Africa, should we neglect to look again at the wonderful **olmiite** specimens lately found by Paul Balayer in the N'Chwaning II mine, Kalahari Manganese Field, Northern Cape Province, South Africa. These specimens debuted last fall at the Munich Show, and you may read more about them (and ogle some photos) in my Munich report in January–February 2009. *Collector's Edge* still has some very fine pieces, and in general South African olmiites were well distributed around the show. Rob Lavinsky of *The Arkenstone* had three flats of topmost specimens showing rich pink-orange, translucent spheres to 10 cm diameter, alone and in cabinet-size clusters.

Those who were serious collectors in the early 1990s—just after the Fall of the Wall—can remember the flood of diverse specimens, many quite exotic and new, which washed over the market in those days from what had been the Soviet Union. That time now belongs to nostalgia . . . and thus it was sort of wistfully nice to see a "what's-new" in Tucson in 2009 hailing from a locality in Russian Central Asia. That locality is an old copper mine, reopened in 2006 (when copper prices rose), called the Rubtskoye mine, near the border with Kazakhstan in Altayskiy Kray, western Siberia, Russia. (Some dealers' labels wrongly said "Kazakhstan," and one dealer called the mine "Poteryaevskoe," although all others, including all relevant Russians, including a short article in the Russian journal *Mineral Observer*, vouched for "Rubtskoye"). This mine has very lately produced magnificent specimens of **cuprite** and of **copper**, as well as combination pieces showing superb crystals of both species, with the cuprite generally overgrowing the copper. The native metal comes as three-dimensional dendritic aggregates to cabinet size, many branches hung with sharp, complex copper crystals to 5 cm. Most of these pieces have a penny-bright metallic luster without looking "cleaned"—the knowledgeable Russians say that no acid

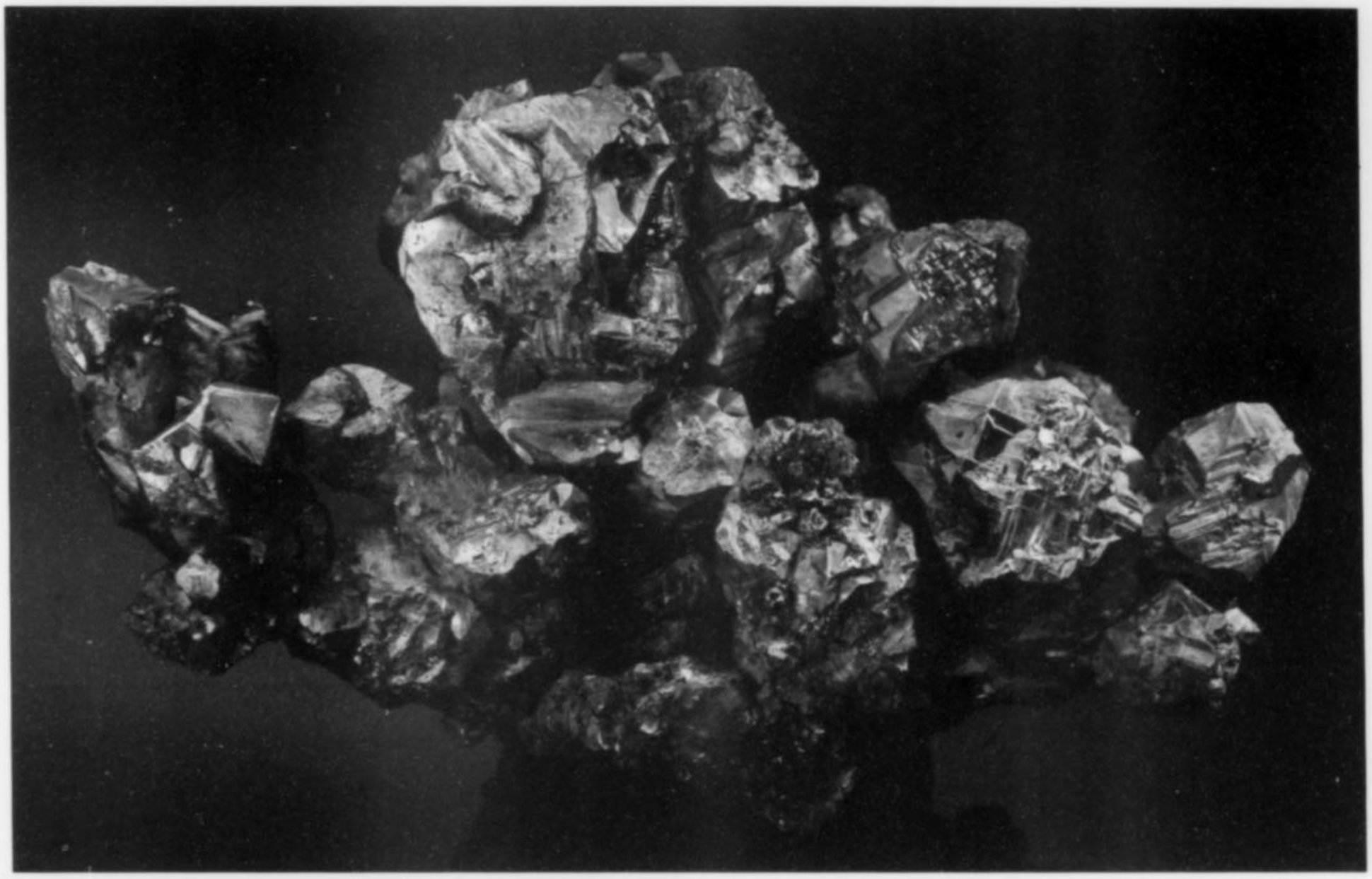


Figure 16. **Copper crystal cluster, 7.6 cm, from the Rubtskoye mine, Altai Mountains, Altayskiy Kray, Russia. Daniel Trinchillo (*Fine Minerals International*) specimen; James Elliott photo.**

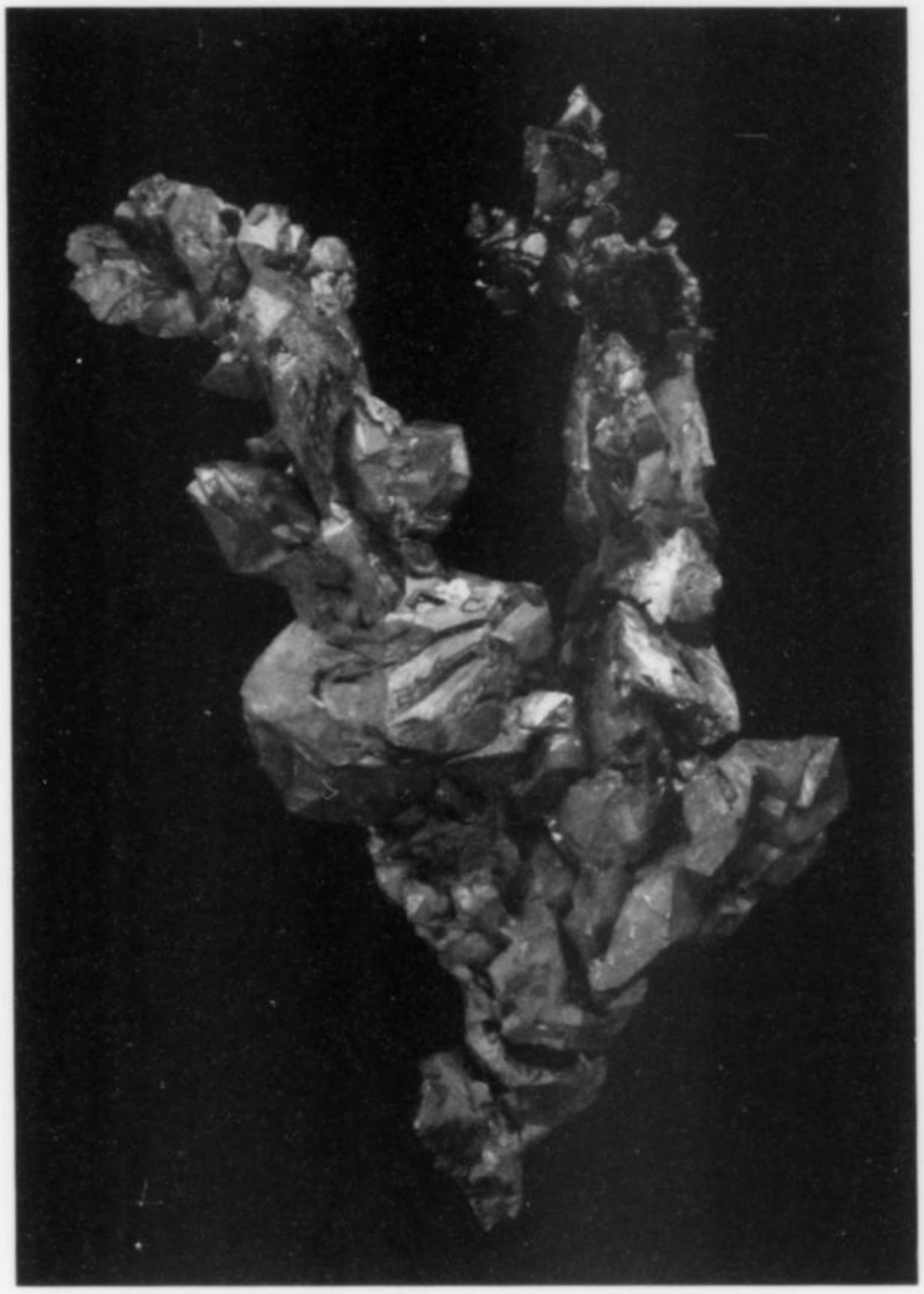


Figure 17. **Copper crystals with cuprite crystals, 4.5 cm, from the Rubtskoye mine, Altai Mountains, Altayskiy Kray, Russia. Jordi Fabre specimen; Jeff Scovil photo.**

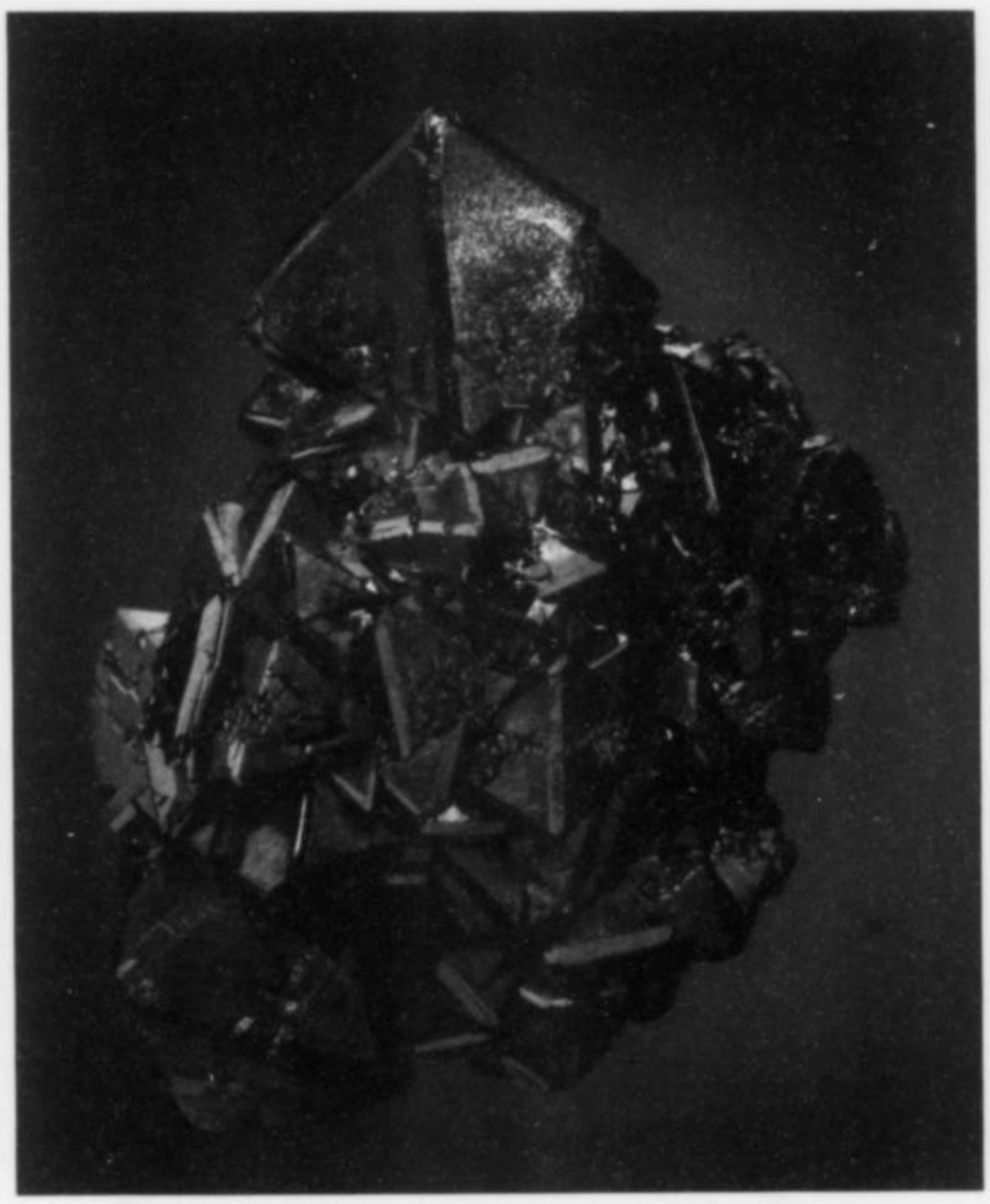


Figure 18. **Cuprite crystal cluster, 5.2 cm, from the Rubtskoye mine, Altai Mountains, Altayskiy Kray, Russia. Jürgen Tron specimen; Jeff Scovil photo.**

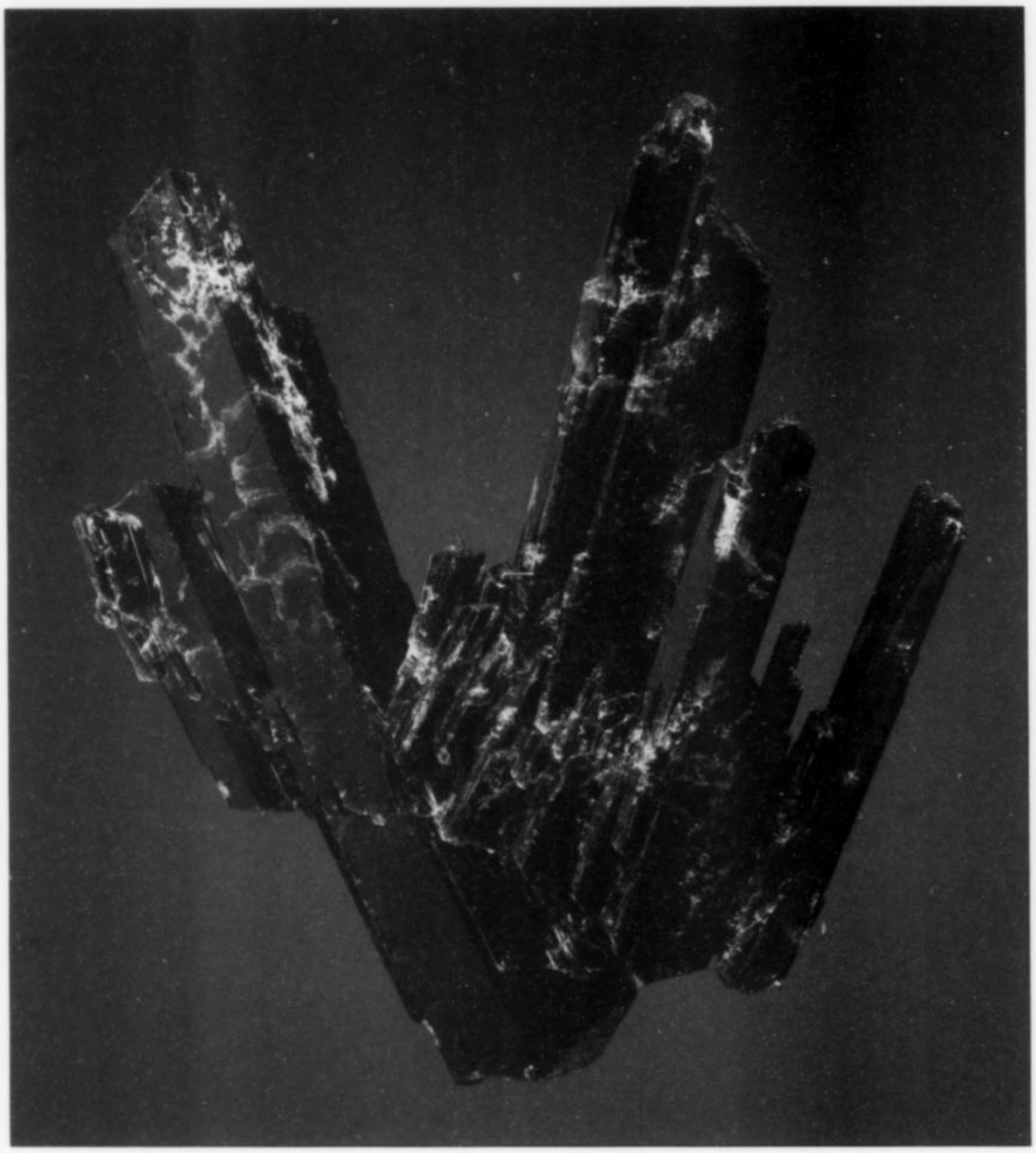


Figure 19. **Epidote crystal cluster, 8.5 cm, from Alchuri, Shigar Valley, Skardu District, Northern Areas, Pakistan. Dudley Blauwet (*Mountain Minerals International*) specimen, now in the John Taylor collection; Jeff Scovil photo.**

cleaning was used. Cuprite occurs as very sharp octahedral crystals, simple and compound, reaching 5 cm on edge. They are opaque but are of a lively red-black color, with adamantine luster. Single, simple, razor-sharp cuprite octahedrons of thumbnail size exist, but then there are also gleaming clusters of crystals to 10 cm across, and, as mentioned, some specimens show cuprite crystals draped over the copper "trees." All in all these are superlative specimens of both species, and were the Talk of The Show. Early on, I found a stash of fine Rubtskoye mine specimens in one room in the Quality Inn; the dealers were Mikhail Anosov, Alexsandr Nikiforov and Victor Levitskiy of *Russian Minerals* (www.rusmineral.ru), and for the excellent cuprite thumbnail I wish I had bought but didn't, the price was just $75. Before and during the show, many specimen lots found their ways to Western dealers, and their prices began to take on extra zeroes; however, at the Main Show stand of the Russian publication *Mineral Observer* (formerly *Mineral Almanac*) Victor Ponomarenko of *"Axinite-PM," Ltd.* (mineralvvp@yandex.ru) had a batch of Rubtskoye cuprites, coppers and copper/cuprites of varying sizes, going for prices mostly in low three figures. All signs seem to point to continued supplies of these lovely specimens during the next, say, year or two. And micromounters take note: hiding in the copper, in some cases, are sharp, tiny crystals of cerussite, silver, pyromorphite, iodargyrite, and probably an unknown or two.

The *"Axinite-PM," Ltd.* dealership also occupied a room in the Quality Inn, and in that room were just five specimens from a **dioptase** pocket hit last September at the classic locality of Altyn-Tube, Karaganda Oblast, Kazakhstan. The remote limestone hill was first found to harbor dioptase crystals in 1780, and specimens have been trickling out ever since (with a predictable surge after 1991), but the products of this brand-new pocket *must* set a quality record, for the dioptase crystals are sharp, deep green, much more highly lustrous than usual for Altyn-Tube, and reach 2 cm individually. There is one superb thumbnail, and the largest of the five pieces is a 15-cm matrix studded with resplendent dioptase crystals to 1.5 cm.

Time now for the roll-call from Pakistan. At the InnSuites, Jeff Fast (www.MineralMovies.com) had some impressive **elbaite** specimens found last December near Bulochi, Diamar district, Northern Areas: sleek, doubly terminated elbaite crystals, to 8 cm long, are jacketed in white albite and quartz. The crystals are black for most of their length but gemmy green at their tips, and (as you have inferred by now) the specimens bear a close resemblance to the famous elbaites of Stak Nala, Skardu district. Jeff had two flats of these specimens, all miniature-size; additionally, he had 15 nice thumbnails and miniatures of **hydroxylherderite** found, also last December, somewhere near the village of Shengus, in Skardu, about 2 km north of Bulochi. The sharp little hydroxylherderite crystals, sprinkled around over tan-colored matrix pieces of feldspar, are colorless to grayish, transparent, and doubly terminated, and they reach 1.5 cm; an excellent thumbnail costs around $400.

And now let's visit Muzaffar Ali of *Al-Rehman Gems & Minerals* (www.alrehmangems.com), whose room at the InnSuites also harbored some superb hydroxylherderites from Pakistan, as well

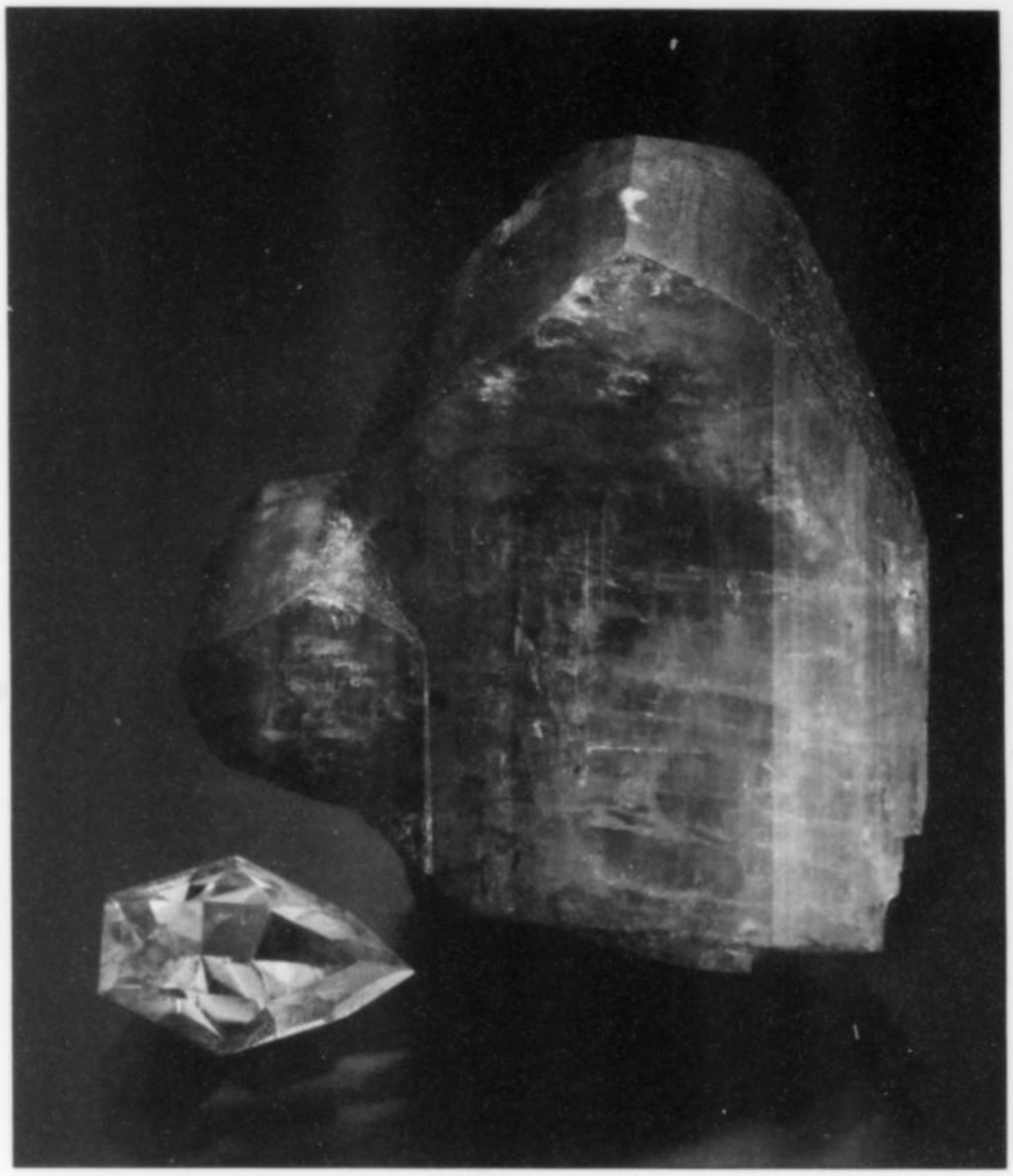


Figure 20. **Väyrynenite crystal, 2.8 cm, with 1.89-carat faceted stone, from Shengus, Shigar Valley, Skardu District, Northern Areas, Pakistan. Herb Obodda specimen; Jeff Scovil photo.**

as some noteworthy **hambergite** and **beryllonite** specimens. Ali's hydroxylherderite crystals, found last fall, are from Yuno—a village on the Shigar River, in Skardu, heretofore best known for its fabulous gemmy brown topaz crystals. Hydroxylherderite crystals to 3.5 cm from Yuno are sharp, translucent gray-green, and equant, with mild internal crazing, and they come out both as loose singles and as pert-looking clusters of two or three. The hambergite and beryllonite specimens are, Ali says, from a mine which currently exploits a pegmatite 1.5 km from Shengus (perhaps the same mine produced Jeff Fast's hydroxylherderite crystals also). Hambergite from the mine forms simple, flat-topped prismatic crystals to 4 cm, with unidentified chalky white coatings over some surfaces; the hambergite is colorless and transparent, and the crystals rise from massive white albite matrix, making for some excellent thumbnails and miniatures of this rare species. Beryllonite from Shengus comes as multiply twinned, cogwheel-shaped aggregates closely resembling beryllonite specimens of this type from Paprok, Afghanistan. The Shengus specimens show good "ribbing" along the cogwheel edges, and they are lightly stained orange-brown by iron oxides; these specimens reach 15 cm across.

At the Westward Look Show, Andreas Weerth (www.weerth-mineralien.de) was showing off some excellent fishtail-twinned crystals of **titanite** found recently at Mulaghany Baba, Federally Administered Tribal Areas, Pakistan. The loose, knife-edged, partially gemmy crystals reach 10 cm and display complex colors, with red, brown, yellow and green hues all sort of ghosting into each other as the crystals are turned in strong light. And from somewhere near Shigar, Northern Areas, Andreas had just one specimen (more are back home in Bavaria) of an undetermined **tantalite** species. Jet-black bladed crystals to 3 cm make a bright jumble on matrix of quartz crystals in this handsome 7-cm specimen.

Trust Herb Obodda (minerals@obodda.com) to come up with something super-rare and superlative from Pakistan—as he did in his Westward Look room, where he had just four crystals of **väyrynenite**, found last October "near Shengus," which thoroughly shame all earlier crystals of this rare species, yes even the ones I've enthused about in recent reports. The loose crystals, ranging between 1.5 and 3 cm, are lustrous, extremely sharp, and attractively colored somewhere between salmon-orange and medium pink. And they are *thick*, approaching 1 cm, especially where low-angle pyramid faces rise smoothly, thickening as they go, to form elegant wedge-shaped terminations. Surely this is the end of the line—so far—for euhedral crystals of väyrynenite from Pakistan's phosphate-enriched pegmatites.

Since 2004 the market has seen fairly good supplies of the beautiful, colorless to palest yellow, transparent, drill-bit-twinned **phenakite** prisms from the Paleini mine near Khetchel (or Khat Che) village, Mogok district, Burma (Myanmar). But what has been missing are really fine *matrix* specimens of Burmese phenakite. François Lietard (francois.lietard@wanadoo.fr) to the rescue: at the Main Show, besides a small swarm of the usual loose phenakite "drill bits" from Mogok, François put out a few terrific pieces which show phenakite crystals to 3 cm perching on sharp, clean smoky quartz crystals. One mesmerizing 3.7-cm piece consists of a very fat phenakite prism (with prominent twinning notches on top) and a translucent smoky quartz crystal, the two of about equal size and perfectly "composed" together—for me, it was one of the most aesthetically dazzling mineral specimens on view anywhere in Tucson in 2009.

No major new finds from China revealed themselves in Tucson this year, but a few occurrences discovered in the recent past are now yielding dramatically *better* specimens. **Rhodochrosite** from

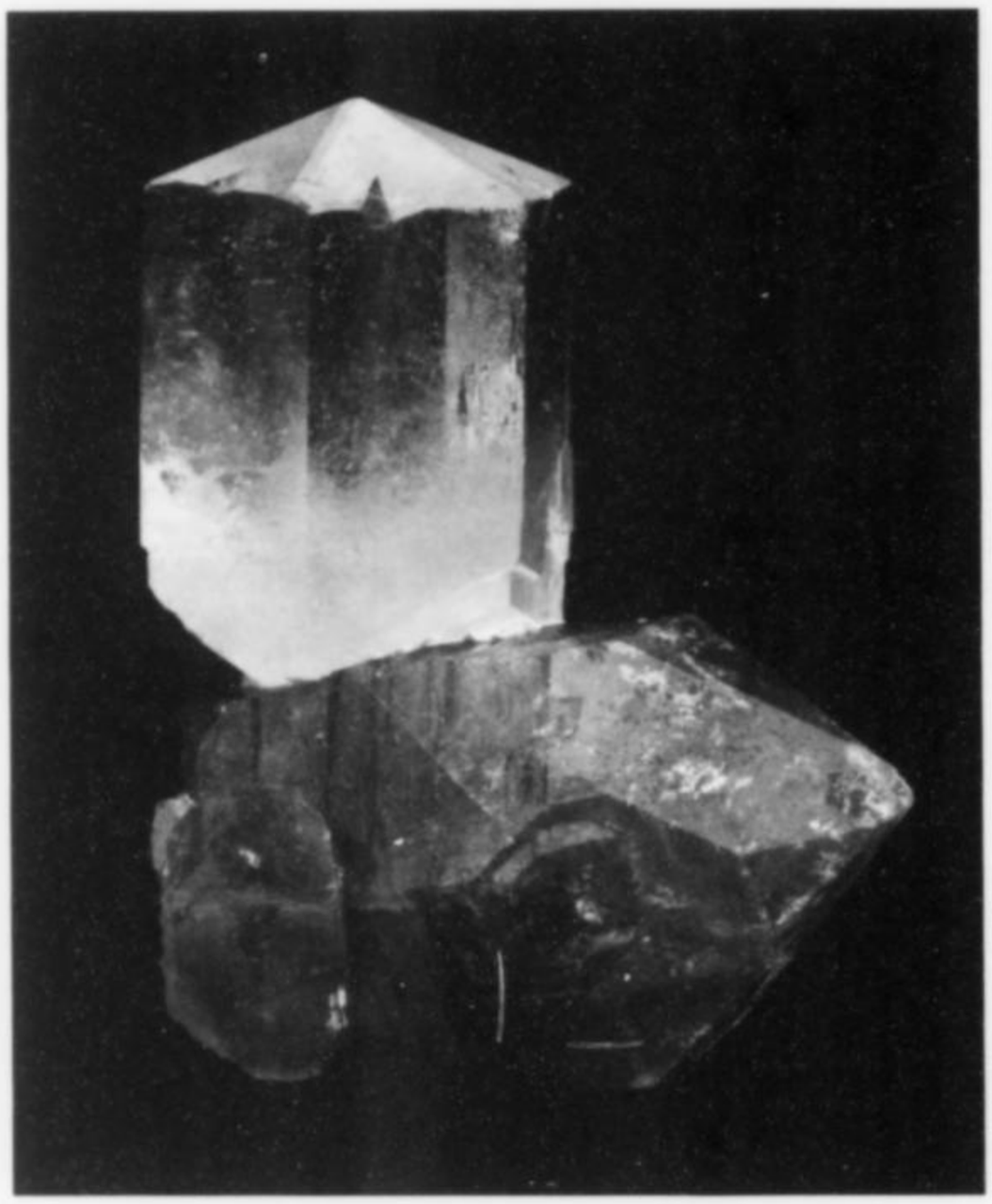


Figure 21. **Phenakite "drill bit" twin on smoky quartz, 3.7 cm, from the Paleini mine near Khetchel village, Mogok District, Burma.**

the Wudong (or Wutong) mine, Wuzhou Prefecture, Guangxi Zhuang Autonomous Region, is creeping up on the second-tier material from the now-closed Sweet Home mine in Colorado—and what do you know, the locality is being worked by *Collector's Edge*. In 2008, in cooperation with the mine owners, "the Edge" set up an arrangement to collect rhodochrosite pockets discovered during base-metal mining activities and, to quote Bryan Lees' handout, "techniques learned from years of production at the Sweet Home mine . . . are being used in an identical effort at the Wudong mine." Although the Wudong host rocks are sedimentary while those at the Sweet Home are granitic, and except that tetrahedrite is absent at Wudong, the two localities are near-twins, both producing rhombohedral crystals of rhodochrosite with crystallized fluorite, pyrite, chalcopyrite, galena, apatite, quartz and sphalerite. *Collector's Edge* was able to deck out its Tucson 2009 showcases with a few hundred beautiful Wudong mine specimens, including cabinet-size plates on which rest calcite-dusted rhombohedrons of rose-pink rhodochrosite to 4 cm, with small gemmy areas. One memorable Edge specimen has gemmy purple, 2-cm fluorite cubes with the rhodochrosite. Some Chinese dealers around the show had lesser Wudong mine specimens and, by arrangement with Bryan Lees, Doug Wallace of *Mineral Search* (www.mineralsearchinc.com) obtained about 2,000 specimens, from thumbnail-size to 20 cm across. Although the quality of Doug's lot varies widely, the best of his specimens are very, very good; his booth in the InnSuites ballroom sang with clusters of sharp, bright rose-pink, rhodochrosite rhombs associated with "needle" quartz and purple fluorite.

Another American dealership which is keeping up with the best from China these days is Daniel Trinchillo's *Fine Minerals International*. Daniel showed me some mind-bendingly fine specimens of **acanthite** and **wire silver** which have just come from the Hongda mine, Linqqiu County, Datong Prefecture, Shanxi Province: sharp, lustrous metallic gray acanthite crystals to 2 cm form stately stacks to 7 cm, and wonderful thick silver wires rise from matrix of massive acanthite; this matrix is adorned, in a few cases, by gemmy 1.5-cm sphalerite crystals. Daniel's best Hongda mine silver is a 15-cm arabesque of twisting wires, some with gray patina, others quite silvery-bright: a piece which would do Kongsberg or Freiberg proud.

From Tucson last year I mentioned the mysterious Chinese **calcite** which (quoting myself) "comes as pristinely colorless and transparent, lustrous, lightly striated crystals [which are] either simple hexagonal prisms with flat-topped terminations or sharp V-twins with shallow re-entrant angles." Daniel Trinchillo's new babies from this occurrence are gleaming clusters to 40 cm across (*big* babies), with single, thick, prismatic calcite crystals to 12 cm, most of them with woolly brownish inclusions of something or other around the bases. From the same locality Daniel had calcite specimens, new this year, of a second habit: loose, singly terminated, utterly colorless and transparent, flattened prisms, tapering to small sets of rhombohedral terminal faces. Most of these crystals are thumbnails and small miniatures. Now about that locality: although Daniel has been given "Wuzhou Prefecture, Guanxi Zhuang Autonomous Region," he is pretty sure that this attribution (vague in any case) is wrong. As at Tucson last year, the calcite specimens are said by several different dealers to be from several different places, and no one source—not even Bert Ottens' fine new book *China:*

Figure 22. **Fluorite crystals with calcite, 7.1 cm, from Leijei, Yunnan, China. Joe and Susan Kielbaso (*Gemini Minerals*) specimen; Jeff Scovil photo.**

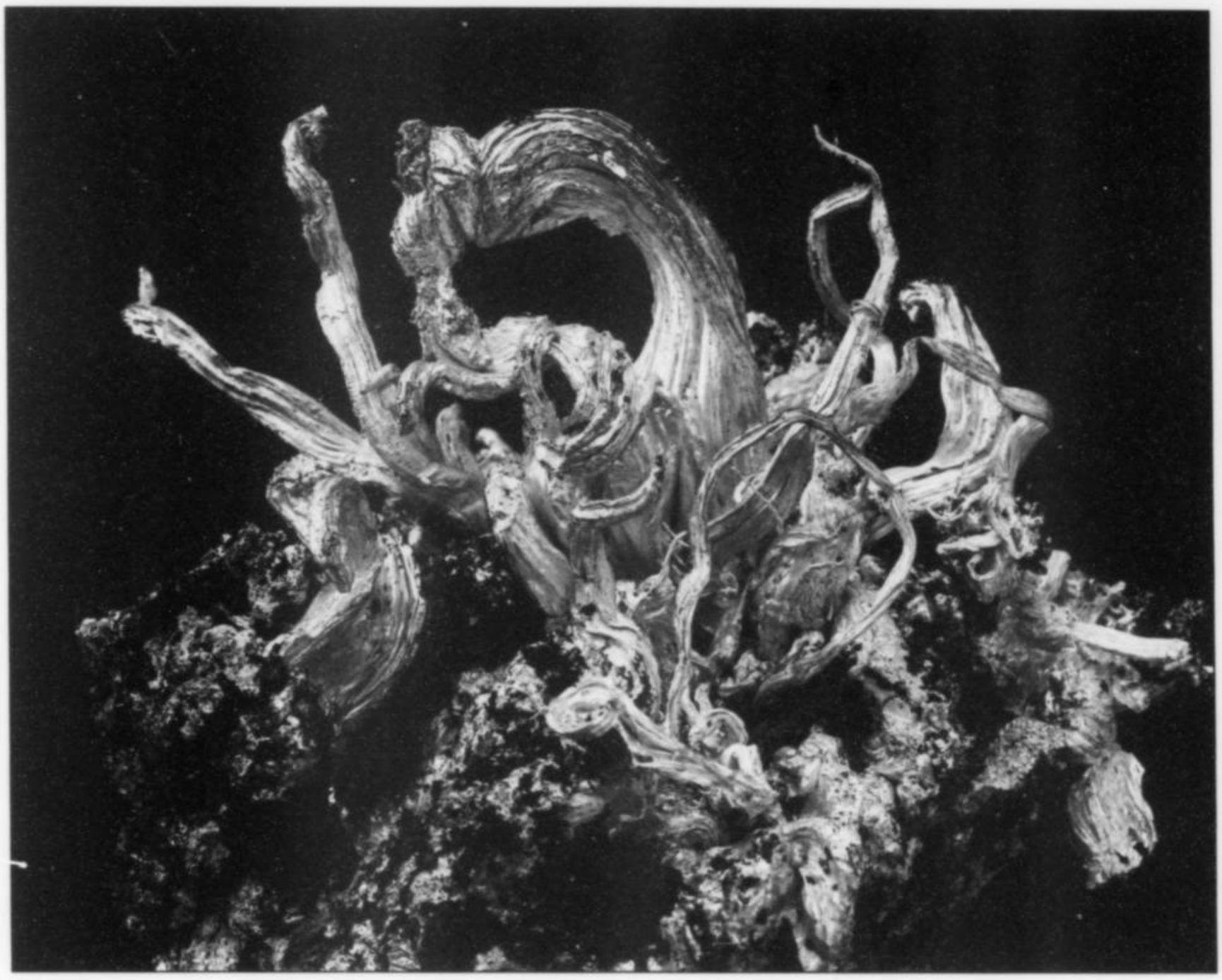


Figure 23. **Wire silver with acanthite, 6.4 cm, from the Hongda mine, Datong Prefecture, Shanxi Province,China. Daniel Trinchillo (*Fine Minerals International*) specimen; James Elliott photo.**

Mineralien-Fundstellen-Lagerstätten, published late last year—is willing to take an authoritative stand on the matter. But these really are world-class calcites, and sooner or later their birthplace will get pinned down.

The world tour is finished, but before turning to HQLP (High Quality Low Price) matters I want to mention a new dealership which had a stand at the Main Show. Kyle Soller, Ryan Lay and James Skalsky operate *Altamont Minerals* (AltamontMinerals@gmail.com), and I hung out a great deal at their booth, for the minerals were sophisticated and most of the prices were on the low side. Even better, these three hard-working, enthusiastic guys are *young*—only in their late 20s, I'd say—and the more up-and-comers the better, given a "mineralculture" in which an alarming number of denizens are turning gray these days. Patiently, courteously, Kyle and Ryan and James looked on while I fondled specimens and inquired about prices, localities and associations. They didn't always have answers, but when they didn't they said so frankly. Most of the best things I left my fingerprints on were small gem-crystal specimens: emeralds from Colombia; gemmy purple apatite-(CaF) crystals, loose and on matrix, from Pakistan and Afghanistan; elbaite crystals to 10 cm from the Himalaya mine, California; and a few gorgeous, loose liddicoatite crystals from Madagascar, richly red/green and reaching 8 cm. The stock held surprises too—I'm still evoking in memory the brilliant metallic black miniature of Mexican polybasite, with a great upstanding crystal of 2.5 cm, which was lying, unlabelled, beside the Herkimer diamonds on one front table. This was *Altamont Minerals*' first appearance at the Main Show in Tucson, and they will be back next year, so let's all of us geezers plan to give them a friendly, encouraging, geezerly visit.

The HQLP Report, Tucson 2009

The first HQLP (High Quality Low Price) report came out of Denver last year (see January–February 2009), and it's a fair bet you read it (some positive feedback has come in already), and so I won't repeat all the general remarks of September 2008. But here is a short list of some items seen around Tucson in 2009 which are mineralogically interesting, fully "collectible," pretty (in most cases), and—the major point—which were on sale for $200 or less per specimen.

The new strike of **ramsdellite** made in November 2008 at the Mistake mine, Yavapai County, Arizona, produced something like 30 flats of thumbnail and miniature specimens, much better on average than the ramsdellite specimens which were dug and marketed in the 1990s by the late Dave Shannon. His son, Michael Shannon of *Shannon & Sons Minerals* (www.shannonsminerals.com), had some of the flats at the Executive Inn show, while the rest were with Evan Jones at the Main Show. Shining metallic black ramsdellite crystals to 1 cm form mounds and blankets on matrix of massive ramsdellite, in specimens ranging from $30 to $125.

At the Main Show, Jim McEwen of *Lehigh Minerals* (www.lehighminerals.com) had excellent **pyrite** miniatures, all costing under $100, from two little-known Utah localities. From the Moonlite claim, Bullion Canyon, Tooele County, groups of lustrous cubes and pyritohedrons, with individuals to 4 cm on edge, emerged during the 1980s and 1990s; from the Four Metals mine, also in Bullion Canyon, clusters of distorted pyrite cubes, individuals to 5 cm, on greenish clay matrix, emerged during the past few years.

Fine colorless, transparent crystals of **quartz** with greenish chlo-

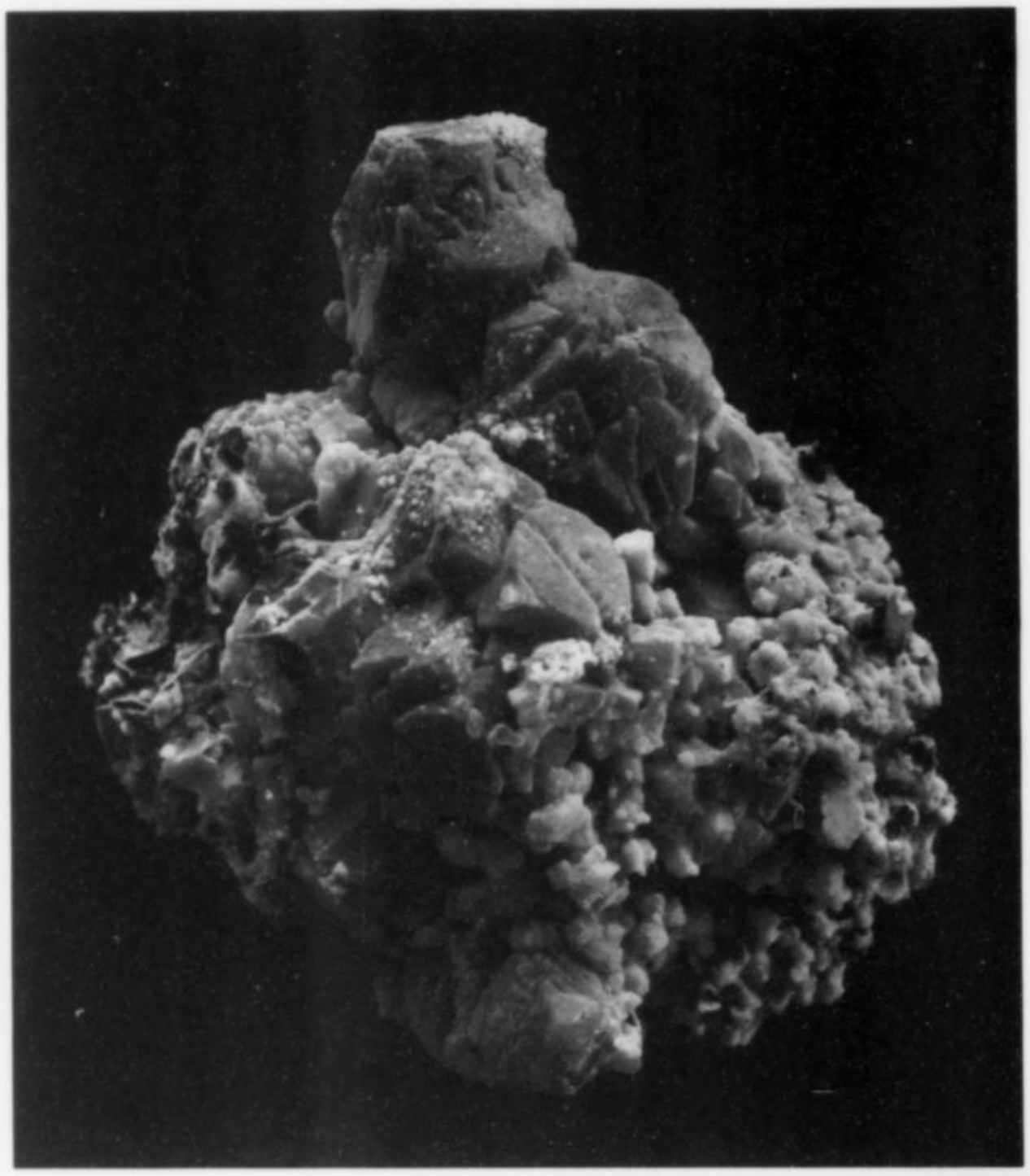
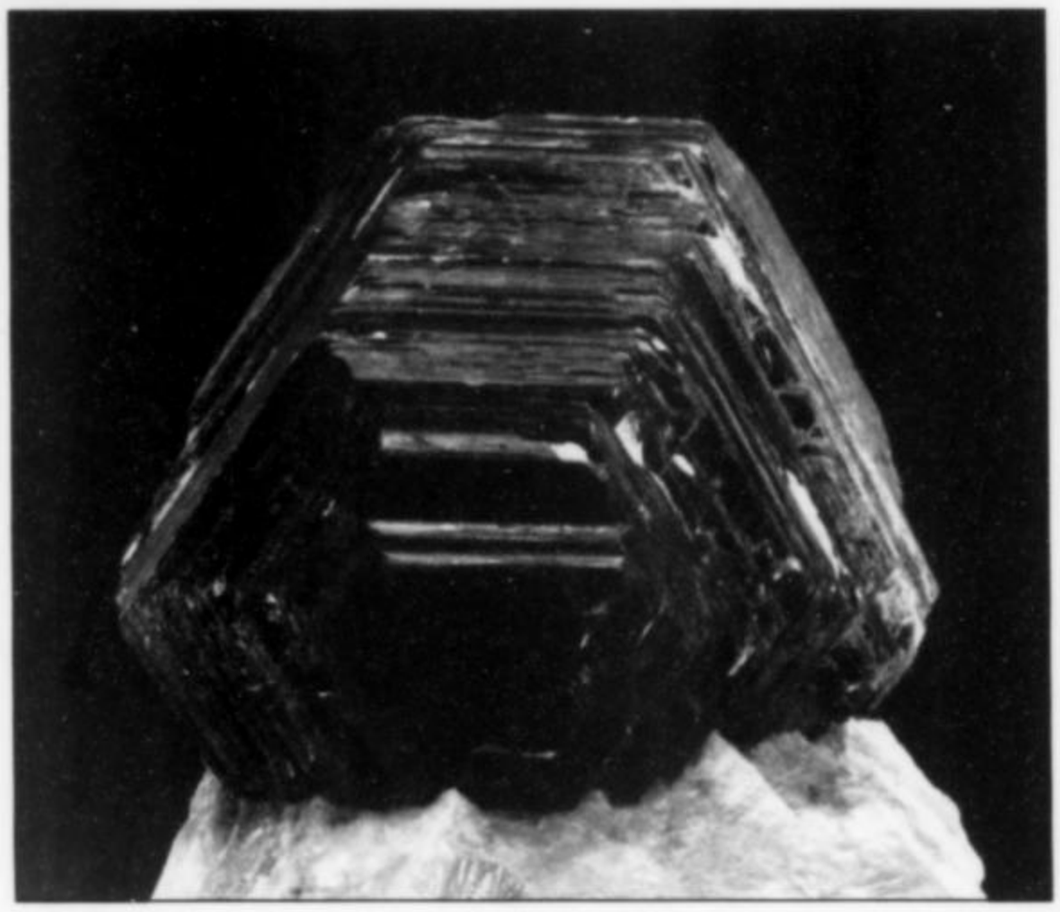


Figure 24. **Chrysocolla pseudomorphs after boleite, 2.7 cm, from Santa Rosalia, Baja California, Mexico. Jack and Marty Crawford (JaM's Rocks) specimen; Jeff Scovil photo.**

Figure 25. **Biotite crystal, 4.4 cm, from the Namib Desert near Swakopnund, Namibia. Doug Coulter (*Geodite Minerals*) specimen; Jeff Scovil photo.**



rite inclusions sharply outlining phantoms within have been known for decades from Shingle Springs, near Rescue, El Dorado County, California. In the InnSuites ballroom, Kurt and Cynthia Monnich of *Cinderhill* (www.Cinderhill.com) offered about 30 quartz specimens lately dug at this old locality. Most are large-miniature and small-cabinet pieces, with lustrous, transparent, chlorite-included crystals to 12 cm, and most cost well under $200.

John E. Garsow (www.johngarsow.com) is primarily a dealer in gem rough and in cut gems, but when he came to the InnSuites this year he also had about 20 beautiful, loose, singly terminated crystals of **clinozoisite** from Alchuri, Pakistan, asking just $30 apiece. The crystal blades are highly lustrous and totally gemmy in the characteristic brown/green hue. Also offered by John were 25 thumbnail-size, loose crystals of gemmy **kunzite** (spodumene) from a pocket mined in 1951 in the San Pedro claim, Hiriart Hill, San Diego County, California. These crystals, roughly terminated but of a good medium-intense pink, also went for $30 apiece.

I've already emphasized, in this report and elsewhere, that the new **azurite** and **pseudomorphous malachite** specimens from the Milpillas mine, Cananea district, Sonora, Mexico are (1) beautiful and top-class at their best, (2) very abundant on the market now, and (3) inexpensive in almost all cases. If you didn't get one of these specimens from Evan Jones at the Main Show (or from many another familiar dealer), you might have gotten it from Jesus Valenzuela (licetyenyhu@hotmail.com), who offered his spread on tables set up just outside the main entrance to the InnSuites, and had hundreds of pieces, thumbnail through 35 cm, showing superb, lustrous azurite crystals, and malachite pseudocrystals to several centimeters across. Jesus, a Mexican national, even offered ten flats of fine miniature malachite specimens at a low-three-figure *per flat* rate.

Then there were the very unusual specimens showing **chrysocolla pseudomorphs after boleite**, collected by Jack and Marty Crawford of *JaM's Rocks* (jamsrocks@wildblue.net), in January 2009, at a little outcrop 2 km south of the famous Amelia mine, Boleo, Baja California, Mexico. Jack and Marty had thumbnails and miniatures of this material spread over an outdoor table at Marty Zinn's "Mineral Marketplace" venue, near the Executive Inn, and for a very good thumbnail they were asking $20 or so. The specimens show bright baby-blue chrysocolla completely replacing octahedral and cuboctahedral crystals to 6 mm; some of the pseudocrystals rest in veins in a matrix mixture of black tenorite, blue massive chrysocolla, and white calcite. Of course, one can't be sure that the original isometric mineral was boleite—but Jack and Marty have found loose boleite crystals to 3 mm at the same outcrop, and Mexican-minerals expert Peter Megaw also believes that the original crystals were indeed

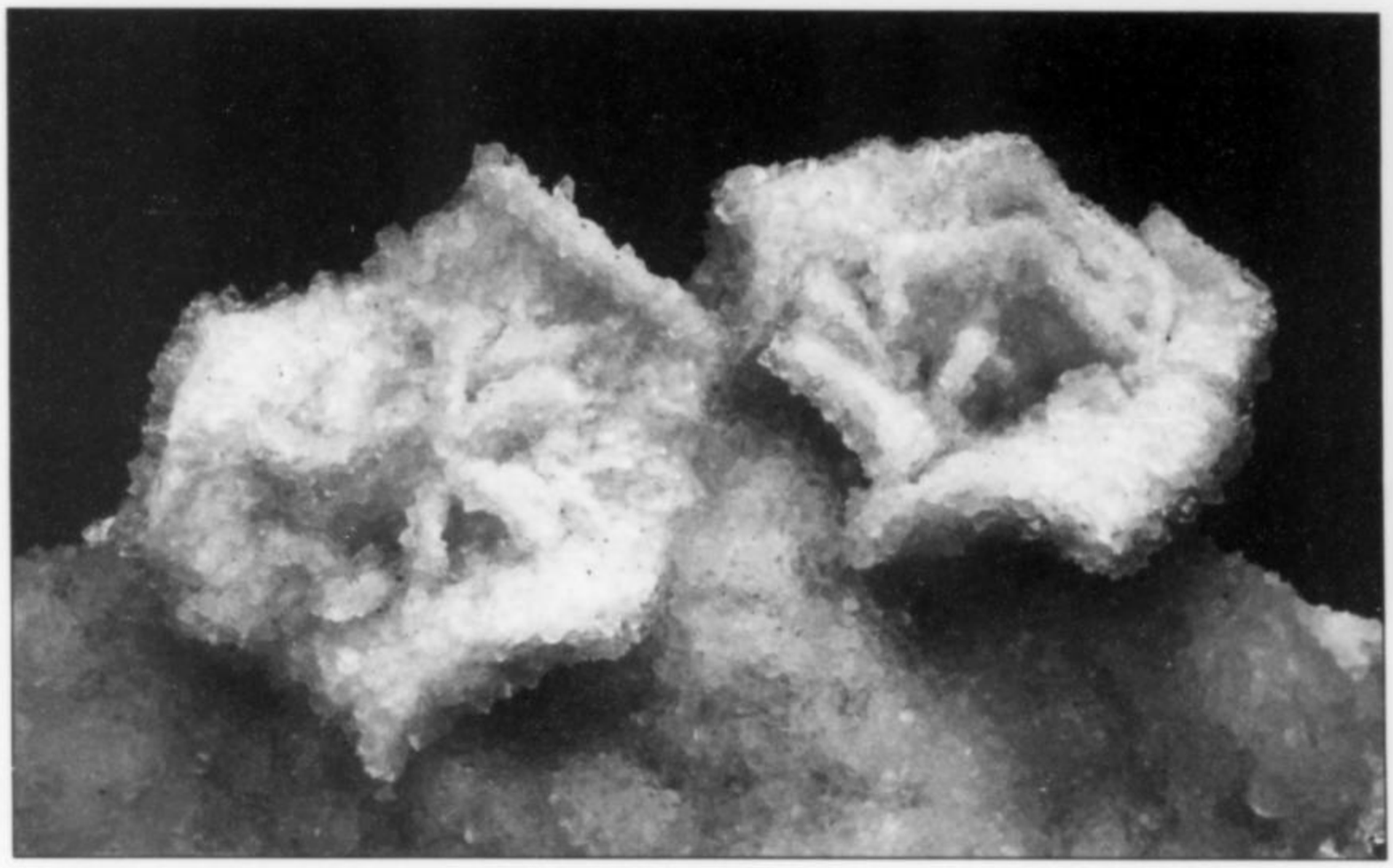


Figure 26. **Rhodochrosite crystal clusters to 3 cm with drusy quartz, from the Huachocolpa District, Huancavelica, Peru. Jaroslav Hyršl specimen; Jeff Scovil photo.**

boleite, although Marcus Origlieri holds out for cuprite. Anyway, this out-of-the-way material, found in an out-of-the-way venue of the Tucson Show, and obtainable practically for pocket change, illustrates what this HQLP sub-column is all about.

In an earlier report I mentioned that semi-retired dealer John Medici of Ohio (rockfishjcm@gmail.com) goes up to Ontario regularly to collect, among other things, **betafite** crystal specimens from the famed Silver Crater mine (commercially closed since the 1950s). At the Main Show, John was selling specimens showing reasonably sharp, dull brown betafite cuboctahedrons to 3 cm; crystal clusters, with or without matrix, to 7 cm were going for $50 to $150. For prices *under $10* John also had nice, bright, small-miniature groups of extremely complex **pyrite** crystals from the Duff quarry, Huntsville, Ohio.

In the Quality Inn, Jacek Wachowiak of *Minerwa Co.* (office@minerwa.pl) had a big selection of very attractive **marcasite** specimens collected five years ago from one of the largest copper mines in the world: the Lubin mine, Lubin, Dolnyslask Province, Poland. The marcasite forms thick colloform coatings of iridescent crystals on matrix pieces from thumbnail to large-cabinet size, and a fine miniature could be had for around $40.

For around $30 one could pick up a gleaming, miniature-size group of brown **andradite** crystals from the skarn of the Sinerechenskoye mine, 200 km east of Dalnegorsk in Primorskiy Kraj, Russia. The *"Axinite-PM"* dealership offered these newly collected specimens in the Quality Inn; they show sharp, lustrous dodecahedral andradite crystals to 2.5 cm.

Excellent specimens of **biotite**, with sharp, stepped, black "books" partly embedded in salmon-colored feldspar cleavages, are now coming from a remote site in the Swakopmund region, Namibia. I mentioned these from the Denver Show in 2008, and in November/December 2008 Doug Coulter of *Geodite Minerals* (www.geodite.com) procured about 300 more pieces, many of which he offered at the Main Show for $50 to $120. Biotite crystals to 6 cm on matrix pieces to 17 cm were on hand.

Takeda Kozo of *Takeda Mineral Specimens Co., Ltd.* (mail@takeda-mineral.com) had a display case in the Inn Suites with fine specimens of **microcline** and of very dark **smoky quartz** from the now inactive granite quarries of the Hirukawa area, Gifu Prefecture, Honshu, Japan. Collected 30 years ago, the lot includes exquisite ivory-white single crystals, from 2 to 7 cm, of Baveno-twinned microcline; lustrous thumbnail-size clusters of smoky quartz; and smoky quartz/microcline/albite specimens reaching 10 cm. No single piece here was priced at more than $100.

Peru-specializing Czech dealer Jaroslav Hyršl had about 40 miniature to small cabinet-size specimens from a new discovery of **rhodochrosite** in a mine in the Huachocolpa district, Huancavelica, Peru. These pieces show smoothly curved crests of parallel, bladed crystals of opaque, palest pink rhodochrosite, the crests reaching 3 cm, frosted on top with drusy quartz; clusters of blocky, submetallic black **sphalerite** crystals to 1 cm individually came from the same December 2008 find. These specimens were all priced around $100.

Also, Jaroslav Hyršl had in his InnSuites room a flat of thumbnail specimens of **bournonite** from Machacamarca, Bolivia: the luster is dull but the sharp gray bournonite crystals reach almost 3 cm, and these thumbnails were "on special sale" for an amazing $5 to $10.

Even collectors who fancy "old classics" can find bargains at great omnibus shows such as this one. In one corner of the big Executive Inn room-complex shared by Mike Shannon, Jochen Hintze and Mathias Rheinländer, there was a huge pile of flats of old specimens recently de-accessioned by the Freiberg Mining Academy (in connection with the Academy's recent acquisition of the fabulous Erika Pohl-Ströher collection), and among these many hundreds of specimens there were, if you looked carefully, numerous low-priced "sleepers." My own coup here—for $25—was an aesthetic thumbnail-size group of sharp, opaque white, tabular crystals of aragonite from the Laramie Basin, Wyoming, with which came a printed *Bergakademie Freiberg* label filled to the margins with careful German handwriting in ancient black ink.

Displays and Awards

According to Peter Megaw, the TGMS collectively thought that this year, after last year's "American Treasures" blockbuster astonishment, it was time to "take a break and have some fun." The theme-concept, "Mineral Oddities," can admit varieties of interpretation (are twinned crystals oddities? meter-long crystals? gwindels? epimorphs? crystals with allochromatic color-quirks? stones that look like bunnies?), and certainly, all along the usual mile or so of display cases, points of view such as these, and still others, were represented.

Don't get me wrong: there were many superb cases with superb

Figure 27. **Group showcase for the Houston Area Mineral Society (HAMS). Joe Budd photo.**

Figure 28. **Rob Lavinsky's showcase featuring specimens from the Lindsay Greenbank collection. Joe Budd photo.**

specimens in them; it's just that the prevailing mood was much more like the "fun" to which Megaw alluded than it was like aesthetic or intellectual awe. (The pendulum may swing back a bit next year, as the 2010 show theme will be "Gems and Gem Minerals.")

What might be called "general oddities" cases, stocked with specimens each of which is an oddity unto itself, were contributed by Jim and Gail Spann, Bruce Carter, the Arizona-Sonora Desert Museum, Herb and Moni Obodda, the American Museum of Natural History (with the great Neudorf galena bequeathed by Clarence Bement—what's so odd about *that*?), and the Carnegie Museum of Natural History. Then came the cases devoted to *specific* oddities: peculiar quartz specimens (Jim and Von Ceil Bleess); overgrowths and rosettes (the Smithsonian); fluorite twins (Jesse Fisher and Joan Kureczka); inclusions and phantoms (a group case by the Society of Mineral Museum Professionals); polymorphs (Harvard); mineral oddities from Brazil (Natural History Museum of Los Angeles County); bicolor beryls (Stan Korfmacher); "mineral mimickry" (Carolyn Manchester); "humor in minerals" (Patsy Schmidt); weird apatites from the Sapo mine (Maria and Luis Menezes and Wendy and Frank Melanson); Moroccan quartz oddities (Si and Ann Frazier); calcites in amethyst geodes (Victor Yount); "eccentric" pyrites (Bob Morgan); a big, learned case of pseudomorphs (Stretch and Lynn Young); quartz gwindel cases (Siber + Siber Ltd.; University of Arizona Mineral Museum).

Then there were, of course, the big showboat cases, restoring some of that awe we withheld before. Rob Lavinsky displayed major pieces from the Lindsay and Patricia Greenbank collection of English minerals, which he has just acquired, and in this wide, well-lit case there were Cumbria calcites and Weardale fluorites such as can stun the senses and radically elevate standards. The

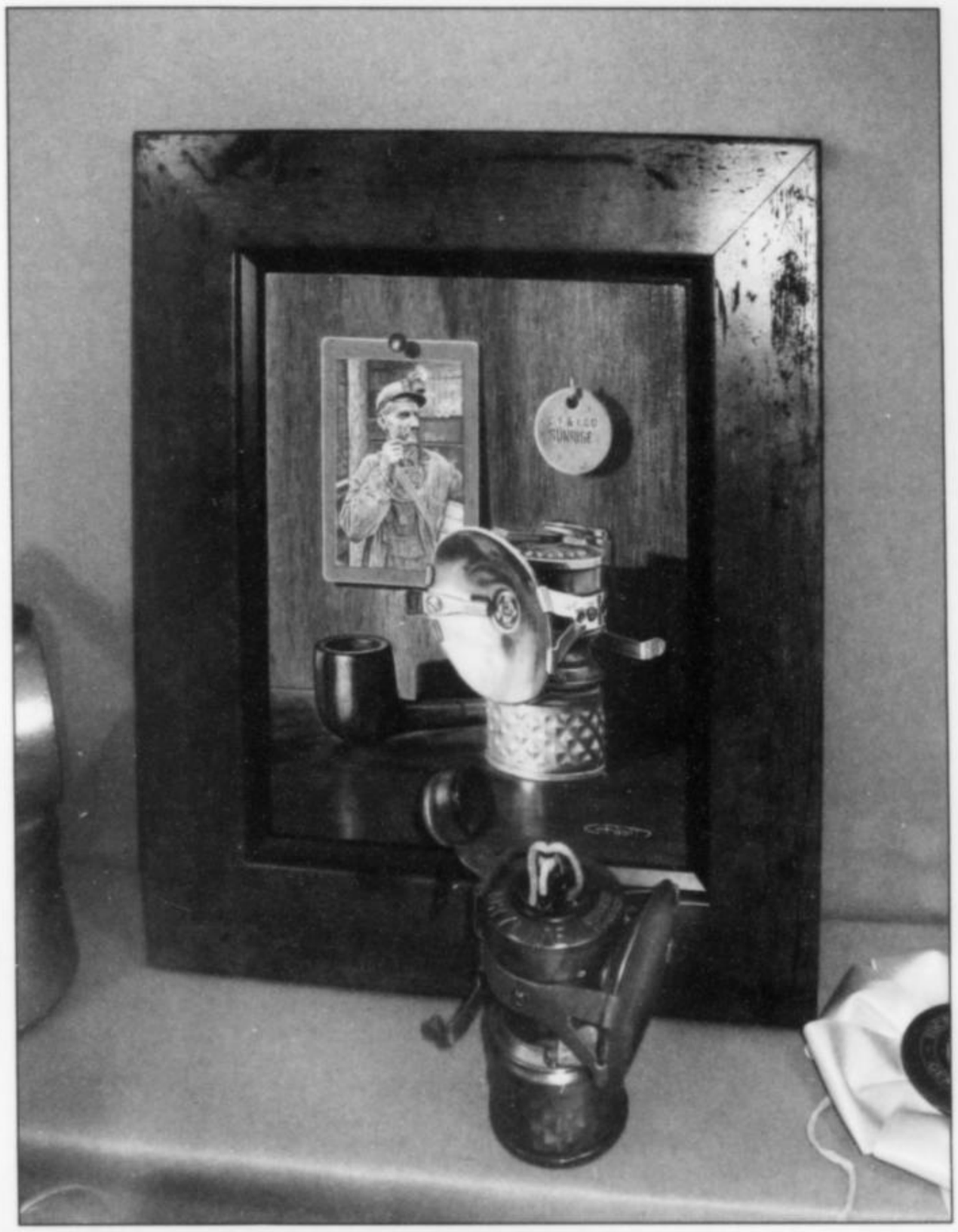


Figure 29. **Oil painting by artist George Foott (see the article about him in the January-February issue) in the showcase of Siegbert Szecha. Wendell Wilson photo.**

Figure 30. **Pseudomorph exhibit by Texas collectors Stretch and Lynn Young; it won the prestigious Desautels Award. Wendell Wilson photo.**

Scott Rudolph/Keith Proctor collection occupied two jumbo cases, brimming with vivid colors and excellent mineralogical taste. Both the MAD (Mineralogical Association of Dallas) and the HAMS (Houston Area Mineral Society) group cases were splendid, as usual. Gene and Roz Meieran displayed ten large, fabulous wire silver specimens. Tsumeb killers were shown by Bill Severance; majestic old Bisbee specimens were shown by the Bisbee Mining and Historical Museum. And then came Minerals of Mali (Demetrius Pohl and Rock Currier); amethyst specimens (Bill and Diana Dameron); California borates (California State Mining and Mineral Museum); giant gem crystals (Rob Lavinsky); thumbnail specimens, spheres and cabochons (Merle and Ruby Munson); diverse

choice thumbnails and toenails (Michel Jouty) . . . and a tall case of "Mineral Art," with specimens and matching paintings thereof by Gamini Ratnavira, who, it seems, has been working furiously at his craft since his much smaller debut display last year.

At the awards ceremony, The Friends of Mineralogy bestowed its Best Educational Case award for an individual(s) on Stretch and Lynn Young, for the masterly pseudomorph case I have already mentioned. The FM's Best Educational Case award for an institution went to the Carnegie Museum, and its award for the best article in the *Mineralogical Record* during the preceding year went to David London for "The barite roses of Oklahoma" (July–August 2008).

The TGMS Romero Award for best Mexican specimen in the show went to Gene Meieran; the Bideaux Award for best Arizona specimen in the show went to Evan Jones. The much-coveted Lidstrom Award for the best single specimen among those entered (from any case, anywhere in the show) went to 14-year-old Lauren Megaw. The Mineralogical Association of Canada's biennial Pinch Medal for "major and sustained contributions to the advancement of mineralogy by members of the collector-dealer community" went to Norwegian mineralogist Roy Kristiansen. And the prestigious Desautels Award (the highest award in the world of mineral collecting) for best case in the show, period, went to Stretch and Lynn Young for their pseudomorph case (again!).

The 2008 Carnegie Mineralogical Award for "outstanding contributions in mineralogical preservation, conservation and education" went to the first Canadian ever to receive it: Frank Hawthorne of Winnipeg, Manitoba. Born in England in 1946, Hawthorne has had a lifetime of academic achievement and was the most cited geoscientist in the world for the decade 1997–2007, but he has made a point also of being helpful to amateur mineral collectors and mineral dealers, especially regarding identification of species and the description of new species. In a soft voice with a relict trace of an English accent he made a short, dignified acceptance speech.

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Letters

Saeijs & Currier

Thank you for the excellent, beautiful color photos and informative articles. Wim Saeijs's "An appraisal of Haüy's wooden crystal models" and Rock Currier's "About Mineral Collecting" (vol. 39, no. 5) are especially highly informative and very very interesting. The story of Haüy's study is, I think, highly educational. I'd sincerely like to use this information in my lectures on science.

Motofumi Kuze
Tochigi Prefecture, Japan

Kudos to an Advertiser

I am a 22-year-old mineral collector in Johannesburg, South Africa. I first became interested in minerals when I was 15, and for seven years I have been regularly visiting Rob Lavinsky's *irocks.com* website. From that website I have learned a great deal about minerals and the many habits and forms they can take on.

I emailed many people looking for more information, but most were not interested in helping or even replying to me. About three years ago I introduced myself to Rob by email, and he was very decent right from the start, helping me and guiding me. I sold specimens I had collected in the field to Rob, and he trusted me, not just with money but for my opinions on specimens. With the money I was able to buy myself a vehicle to travel more widely in Africa to collect specimens, and I built a showroom in my home to display my sales stock. I've also managed to pay my college tuition from my mineral income (which was a huge deal for me), and all of this I owe to Rob. He took me under his wing, and has taught me so much about minerals and the mineral business. I just want to publicly say thanks to Rob; I look forward to doing many more years of good business with him.

Luka Berkovic
Johannesburg, South Africa

Houston Gem & Mineral Society

Before beginning to state my concern, let me say that I have nothing negative to say about the Dallas MAD group or the Houston HAMS group or anything bad to say about any of their members. I have friends in both and know they are serious mineral collectors and they enjoy their activities and opportunities with these groups. The groups' recently published supplement to the *Mineralogical Record* illustrates the top-quality specimens in their collections, the photography is first-class, and the writing was well done. To me, any reason that makes you want to collect minerals is good for all other collectors. How serious you are about minerals is a personal choice, as is joining a group to learn about minerals, to socialize, and share other members' knowledge of minerals. I wish the best for both groups and their members.

However, a sentence in the introduction to the supplement makes me question the writer's or writers' true knowledge of Texas mineral organizations. This statement is made: "Of these (Texas Gem & Mineral Societies) the two most important organizations representing exclusively the serious mineral collector of Texas are the Mineralogical Association of Dallas (the MAD group) and the Houston Area Mineral Society (HAMS group)." It is also implied that the MAD group may be a continuation of the Texas Mineral Society that was headquartered in Dallas in 1943. Its newsletters discussed interesting Texas minerals and localities. Did I see even one Texas mineral illustrated or discussed in the supplement? Or did I miss it ?

Well, I do not know about the other Texas Gem & Mineral Societies but I do know that the Mineral Section of the Houston Gem & Mineral Society probably fits in that "exclusive group," possibly better than the two groups mentioned. We as a group have

been exclusively concerned with minerals but have the advantage of being under the umbrella of the Houston Gem & Mineral Society which gives us more assets including a fine clubhouse, that has equipment to clean and trim minerals, an extensive mineralogical library that is indexed and is far more extensive than any of us could have individually, plus in our library is a preliminary Texas mineralogy. This association also allows us to have enough money and additional manpower to put on a first-class annual show.

The Mineral Section started in the early 1960s when Al Kidwell moved from Tulsa to Houston. First he started identifying rocks and minerals that people brought to the show. Connections from this started the Coon Creek Association that was prominent in Arkansas minerals for 30 years. Having a free identification booth continues still at shows. A separate mineral study group was started that became the Mineral Section of the Society; it has its own officers, meets twice a month, and has a representative on the HG&MS board. A sampling of our list of people who have given programs at our section meeting is long and includes John S. White, Jeff Scovil, Paul Desautels, Rich Whiteman, Joel Bartsch, Dave Wilber, Ewald Gerstmann, Ed Raines, Allan Mitchell and many more. Our influence with the Society brought first-rate mineral dealers to Texas starting with the Lidstroms in the early 1970s and include many other top dealers such as Herb Obodda, the Zweibels, Ken Roberts, and Kristalle, and this continued into the 1980s. We were supported in this endeavor by the mass migration of the MAD group members to the shows in September and that was appreciated. However, once the Denver show got organized we again became a good regional show with fewer top dealers. Where would you rather go in September, to see the yellow aspen trees in the Rockies or experience a possible hurricane in Houston?

The Mineral Section has one member who designed and constructed our portable dark room and display cases for fluorescent minerals that we use at our shows. As a group we have put in display cases of faked mineral specimens, altered mineral specimens, self-collected minerals, etc. Now if we are not too involved with the show we put in individual cases. The Mineral Section has supported *Rocks & Minerals* by selling subscriptions and publications from our booth, plus making money donations for special articles.

Our clubhouse has a unique display of minerals in cores from Gulf Coast salt domes that were assembled by the late Texas Gulf Chief Geologist Dudley Rainey who was also a Mineral Section member. We have two shelves of Texas minerals on display but have run out of room to display more. For over 15 years with the support of Conoco-Phillips we have assembled and distributed labeled basic mineral, economic rocks and minerals, and rock sets to local teachers and classrooms at the rate of about 100 a year. We have put mineral displays in local libraries and schools. The Houston Gem & Mineral Society has a youth section, and the Mineral Section supports them along with the rest of the society. We encourage any youths interested in minerals to come to the Mineral Section and we have given cash prizes to any youth who displays minerals at our show. This is how our Houston Museum of Natural Science President Joel Bartsch got his start.

There are few mineral collecting areas in the Houston area but members have done significant collecting in the Texas Hill Country, Arkansas, New Mexico, and Oklahoma. Minerals unreported from many locations in these areas have been collected and identified. Minerals new to the location and some new to science have also been discovered. Mineral Section members have contributed many articles to all of the major mineral publications. The Houston Gem & Mineral Society's prize-winning Newsletter, the *Backbender's Gazette*, is an excellent place to hone your writing skills and many have taken advantage of it to start writing on minerals and mineral experiences.

I think about the only thing that the Mineral Section has not done is make a supplement to the *Mineralogical Record.* Perhaps we were too busy with other worthwhile things to think of it. I notice that 8 of the 29 contributors to the supplement or almost 30% have been or are current members of the Mineral Section of the Houston Gem and Mineral Society. This shows the wide influence we have had in Texas.

Through volunteer work, specimens, and money we supported the Houston Museum even before the Perkins & Ann Sams collection was purchased. I think our record for the past 45 years or so is very significant and speaks well for our influence as a group. I am sorry that I had to toot our horn to be recognized for what we are but please do not forget us and what we mean to minerals and mineral collecting in Texas.

How do you become a member of the Mineral Section? Just join the Houston Gem & Mineral Society and then come to the Mineral Section meeting and you are in and welcomed.

Art Smith
Houston TX

HQLP Report

I have been subscribing to the wonderful *Mineralogical Record* for over ten years now, and mineral collecting for nearly 40 years. I have, however, never been to any of the shows that you describe, nor have I ever been able to justify spending over $50 for any specimen: family commitments always take precedence. So, I have long cherished your show reports as the next best thing to being there, and they are my favorite part of the magazine, providing a more rounded insight into our collective passion than individual location reports ever can. Sometimes, though, I must admit to feeling a little glum after their reading, as I am unlikely ever to aspire to purchasing the star finds that are chronicled.

Your new HQLP ("High Quality Low Price") feature therefore is perfect for me, as I hope it may be for other readers, as extending hope that we can still participate in the excitement of these shows without breaking the bank—which is especially relevant in these economically challenging days. Thank you for this new feature, and I trust that you will receive more encouragement of this kind to ensure that HQLP becomes a permanent part of the *Mineralogical Record.*

As I am writing to you, I am also moved to commend this month's Texas supplement. Please pass on the grateful thanks of one more collector to all those responsible, both for their generosity and of course for sharing their magnificent specimens with us, the humble readers. In particular, I valued the personal introductions of the collectors. These added a human touch to the ethereal images, and often touched personal points of similar experience that brought a whole new dimension to the minerals themselves.

Chris Robinson
Toronto, Ontario

As a collector who never pays more than $200 for a specimen, I was very pleased to read your comments and to note those dealers who carry high-quality affordable specimens. I realize with my budgetary limits, and my concentration on miniature and small cabinet sizes, there are certain mineral species and locations I will never own, because decent specimens will always be priced more than $200. I've turned my attention instead to minerals I can afford to collect—prehnite, stilbite, calcite, quartz, fluorite and the sulfides—where there are endless varieties and locations, and aesthetic specimens are commonly available to someone with a good sense of form. When the Texas collectors issue came out, I went through my collection, assembled over 45 years, and picked out a dozen or so speci-

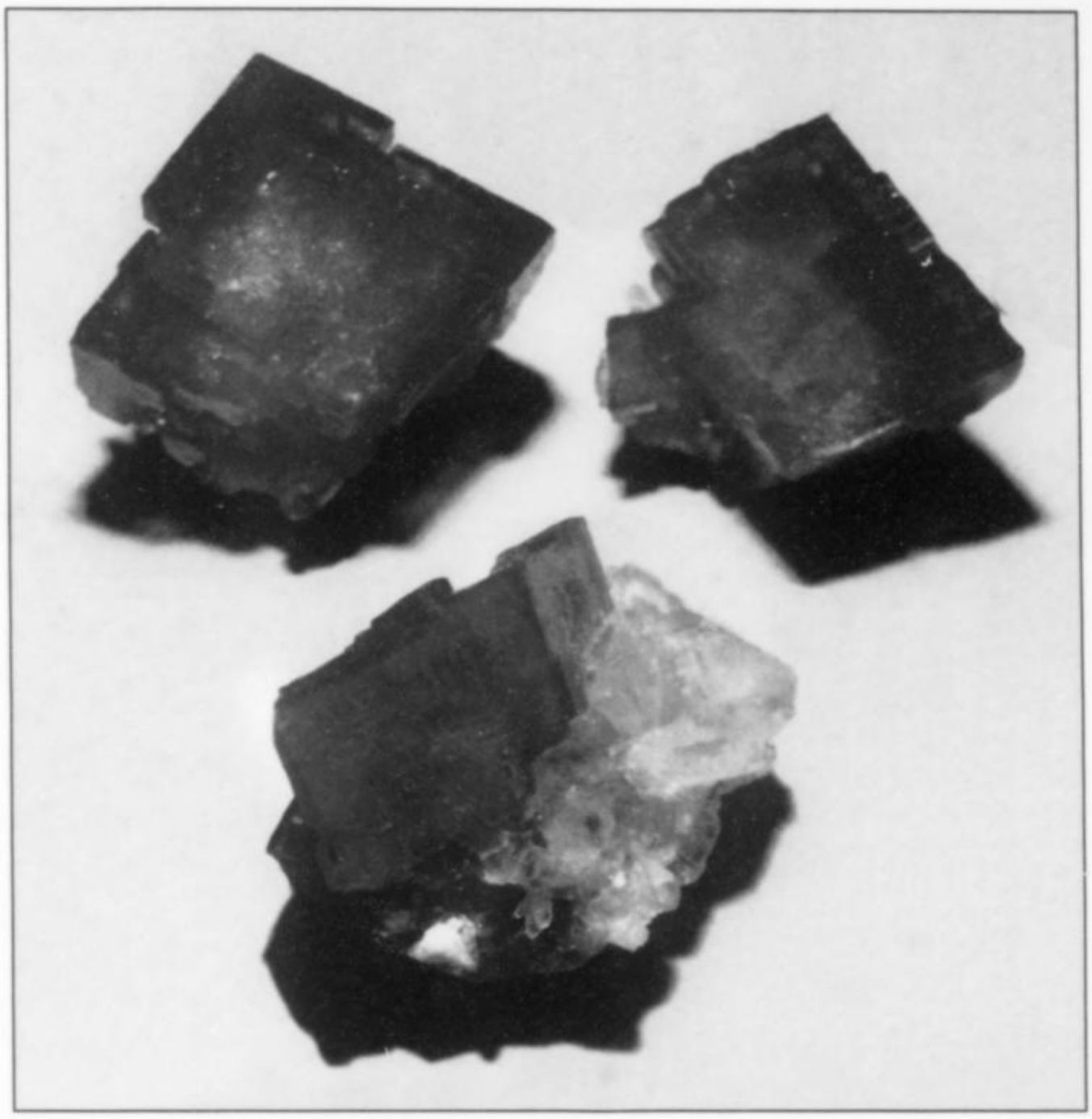
mens I thought would photograph just as nicely as any of the high-dollar specimens, and most cost me less than $100, though I imagine the price for them today might be somewhat higher. While I would never think of spending the money to highlight my specimens the way the other collectors did, I do spend what it takes to be able to photograph them in a professional way.

Most of the collectors I know are limited in their budget, and a few have developed the aesthetic sense needed to pick out fine specimens that "sit" well. Others collect minerals or locations with little concern for aesthetics or later value, and more emphasis on obtaining a full suite from a site, for instance. While we have advanced collectors in the Houston Mineral and Gem Society, most are not.

Articles like yours might attract some of the developing collectors to subscribe to the *Mineralogical Record*, if they feel their needs are being looked after.

Steve Blyskal
Houston, TX

Peruvian Rhodochrosites



Do you own one of the three Peruvian rhodochrosite specimens shown here? These were part of an extraordinary "Distinguished Gathering" exhibit assembled for the Tucson Show in 1985 by Ken and Betty Roberts. It was the seventh such annual exhibit they had sponsored, each one focusing on a different well-known species from a famous locality. That Peruvian rhodochrosite exhibit is being recreated for the 2010 Tucson Show by Texas collector, Karl Warning, and he would like to invite the owners of these specimens to participate, but he has not been able to locate them. Contact him at warben@dfwair.net.

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Best Article 2007, *Rocks & Minerals*, "Greenockite and Associated Uranium-Vanadium Minerals from the Huron River Uranium Prospect, Baraga County, Michigan," v. 82, n. 4, p. 298; S.M. Carlson, G.W. Robinson, M.J. Elder, J.A. Jaszczcak, and T.J. Bornhorst. (This was a tough call because there were so many fine articles to choose from.)

Best Article 2007, *extraLapis English*, (No. 10 – Opal, p. 14)—WERNER LIEBER AWARD, "Rainbows, Harlequins and Pins Afire: Play of Color in Opal"; M. Weibel.

Best Educational Case, TGMS, 2008—Individual, Dr, Georg Gebhard, "Silver"—A very clever and artistic presentation of silver oxidation (the moon waning) and chemical combinations.

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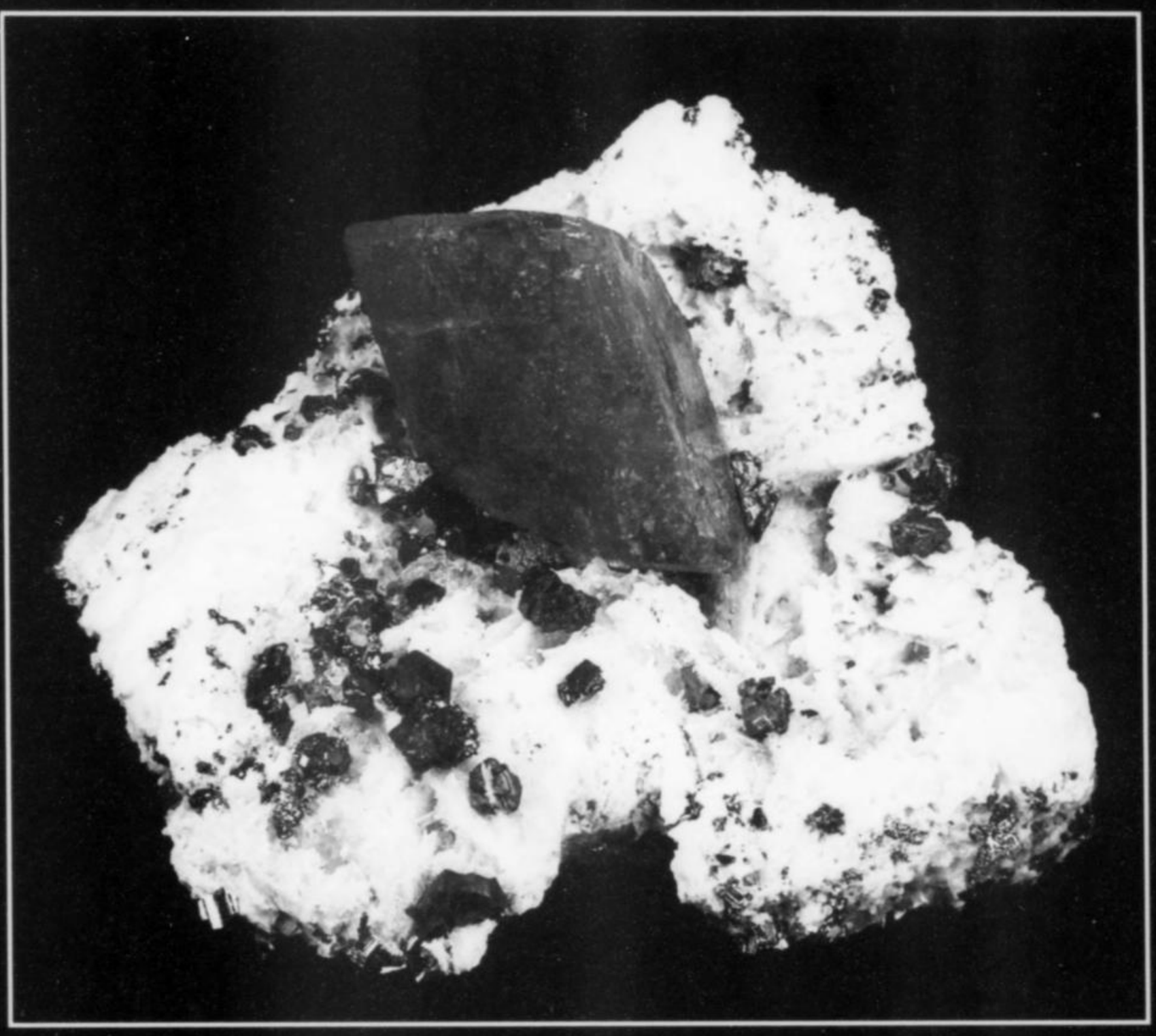

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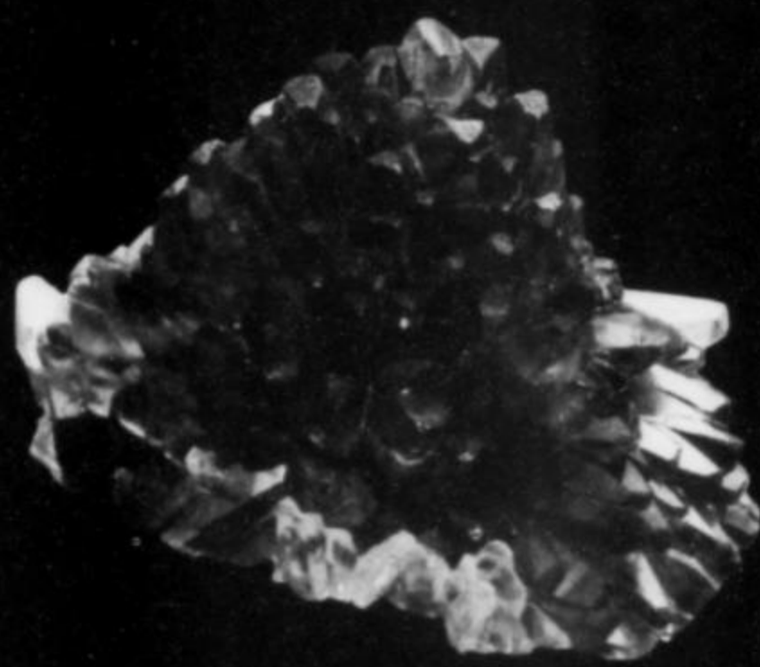
The long-continued concentration of vision on an object tends to produce a partial paralysis of certain functions of the brain.

– George F. Kunz
The Curious Lore of Precious Stones, 1915



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Three specimens from the newly acquired Gabriel Risse Collection: Pyromorphite, Tourmaline on Quartz, Rhodochrosite
Photos: Wimon Manorotkul