MINERALS

Issue #9 The Collector's Newspaper 2015

Gypsum; 10 cm; Naica, Mexico.
K. & C. Graeber specimen. J. Scovil photo.

In this issue also:

Proustite; 2 cm; Bou Azzer, Moroco.
Spirifer Minerals specimen. J. Scovil photo.

Jean COWMAN & Philip PERSSON

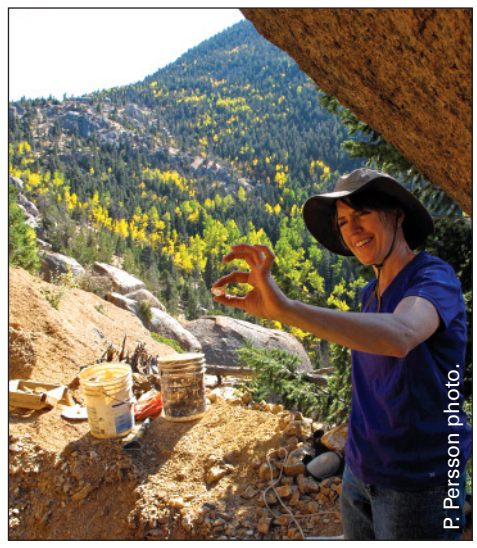
Great topaz find: Tribute Pocket, CO, USA

J. Scovil photo.

Topaz from the Tribute Pocket, Agnus Dei claim; 5.9 cm high. Spirifer specimen.

INTRODUCTION

Topaz is a rather common mineral, forming during the later stages of crystallization of siliceous igneous rocks such as granites and rhyolites; commonly it occurs as granular aggregates or as small, poorly-formed, colorless crystals which are of little interest to the collector. Larger topaz crystals of gem quality are comparatively rare, however, and not surprisingly, colored varieties are particularly sought-after. The 2012 discovery – or rather, re-discovery – of colored topaz in the pegmatite at the *Agnus Dei* claim, on the northern slopes of Cameron Cone, in the south-eastern portion of the Pikes Peak massif, El Paso County, Colorado, was one of the most significant mineral finds of recent times, yielding some of the best specimens of topaz ever found in the United States.



P. Persson photo.

Jean Cowman examining a freshly mined topaz crystal from the Tribute Pocket, Agnus Dei claim, Colorado, USA.

HISTORY: DISCOVERY AND RE-DISCOVERY

Topaz has been known from the Pikes Peak area since the early twentieth century and local prospector Richard Fretterd has been searching for pegmatite minerals in the area for more than 20 years. A few years ago, he came across a reference to "magnificent peachy-pink topaz crystals up to 5 cm"

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Daniel TRINCHILLO, Geology by Federico PEZZOTTA

The Afghan Pocket, Pederneira Mine (Brazil)

INTRODUCTION

The Pederneira Mine is one of the most important sources of top quality tourmaline specimens in the world. Long, pencil-like, colorful tourmaline crystals on matrix are the signature specimens for this mine.

FMI photo.

A bird's eye view of the enitre Pederneira Mine camp from higher up the mountain.

In more than 30 years of specimen mining in Pederneira, many exceptional pockets have been discovered. The mine is renowned for the diversity of colors and habits of its tourmaline crystals and, in many cases, individual pockets are distinguished by unique combinations of color, habit and style. One of the most remarkable pockets found at the mine was the Afghan Pocket, collected in 2001; it did not produce many specimens, but the quality and colors of the crystals it contained distinguish it as one of the best tourmaline pockets ever found.

HISTORY

The Pederneira Mine, and the equally-famous Cruzeiro Mine, are located in a mountainous region of Minas Gerais, in Brazil. The Pederneira pegmatite was discovered in the aftermath of a major storm, which exposed the mineralization at surface in the sides of a small valley.

Early mining at Pederneira, in the 1940s, was focused on the recovery

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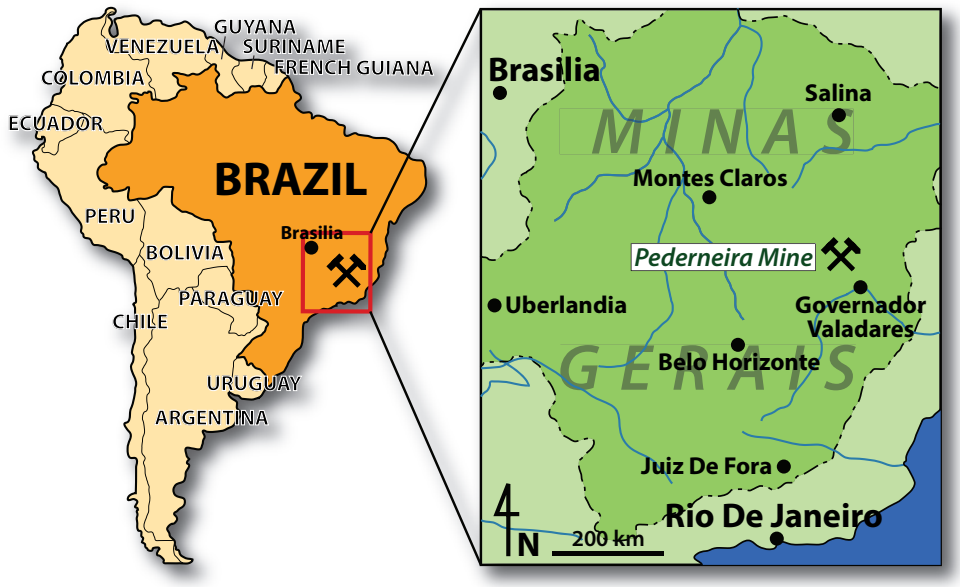
J. Elliot photo.

Bi-colored tourmalines on pink lepidolite from the Afghan Pocket, Pederneira Mine, Brazil; 18 cm high.



Map of South America with insert showing the location of the Pederneira Mine.

Continued from page 1

of muscovite, which is used in a range of industrial applications. Demand was high during WWII, but when the war came to an end the miners quickly abandoned the operation, returning to their traditional agricultural occupations.

Entrance to one of the tunnels of the Pederneira Mine. B. Swoboda photo.

The mine lay dormant for almost 40 years until, in the early 1980s, it entered a new phase of operation for specimen quality tourmaline. In the past thirty years there have been several mining campaigns, but the two most important ones were from 1982 to 1991, by Dilermando Melo and Julio Cipriano and, most recently, from 1999 onwards, by M.Pederneira Ltd.

In this most recent campaign, at least two dozen outstanding pockets have been discovered, each seemingly better than the one before, and collectors around the world have been captivated by the beautiful specimens that have been unearthed here. The author has been working with Pederneira since 2000, and as a partner in the operation since 2005, and it has been a privilege to have seen the extraordinary variety of high-quality tourmaline specimens that have been produced.

GEOLOGY AND SPECIMEN COLLECTING

The Eastern Brazilian Pegmatite Province is associated with a diverse suite of igneous intrusive rocks, formed in late Neoproterozoic and early Palaeozoic times during the assembly of the Gondwana supercontinent. At Pederneira there are two main pegmatite bodies which outcrop in a small valley at an altitude of 700-750 meters. These two bodies are tabular in form, and subparallel to one another, trending approximately East-West. Sub-horizontal sections of the pegmatite consist of quartz, feldspar, biotite, muscovite, and accessory black tourmaline and garnet, while in the inclined, columnar pegmatite sections, biotite is usually absent and tourmaline, with garnet and muscovite, becomes much more abundant.

Menezes, with Ju and Marco Lorenzoni in front of a quartz pocket, which is shown in detail in the insert above. A. Dini photo.

In both of the pegmatite bodies, the most productive zones for tourmaline specimens occur in sectors where the attitude of the pegmatite changes from horizontal to sub-vertical. At such points, the pegmatite forms elongated prismatic bodies some 15 to 20 meters thick. The crystal-bearing cavities are rare, but can occur in any zone of the pegmatite. In contrast with pegmatites in other parts of the world, the cavities in which the crystals are found at Pederneira typically contain little or no clay. Generally, the larger pockets are "collapsed", with fresh, rough rock surfaces in the roof, and a pile of broken rubble below, including the crystals. Typically, the contents of such pockets formed many millions of years ago and geological forces in the interim have fractured some of the crystals and caused them to fall to the floor of the cavity. In some cases, of course, the pocket collapse can be triggered by the mining process.

"*The Crossroads*", *where different levels of the mine diverge. FMI photo.*

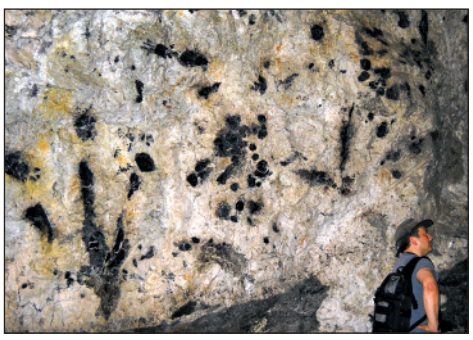
Authors Daniel Trinchillo (right) and Federico Pezzotta (left) with two other mine partners in the workings where many incredible pockets were found. FMI photo.

A recently opened pocket (also shown in the photo below) from which fine quartz specimens were recovered. A.Dini photo.

Surrounding area of the Pederneira Mine. B. Swodoba photo.

Analysis of gem-quality tourmalines from Pederneira shows compositions in the elbaite field, although rossmanite occurs in some pink crystals. Foitite has been confirmed in some dark-green and black crystals, while schorl and probable dravite also occur in parts of the pegmatite. Accessory minerals include albite, beryl, fluorapatite, helvine, hydroxylherderite, lepidolite, orthoclase, quartz and spodumene.

Workings in the pegmatite body, over 12 meters in height, where many amazing discoveries were made, including the Afghan Pocket. A. Dini photo.



Bryan Swoboda examining an underground exposure of the pegmatite, with giant black tourmaline crystals. F. Pezzotta photo.

Gem quality tourmaline from Pederneira occurs in a wide range of colors and color combinations, including red, purple, pink, blue, green and yellow. Bicolored and multicolored crystals are common, as are "watermelon" varieties. Every pocket is different, but one of the most important and distinctive discoveries was the "*Afghan Pocket*", discovered in 2001.

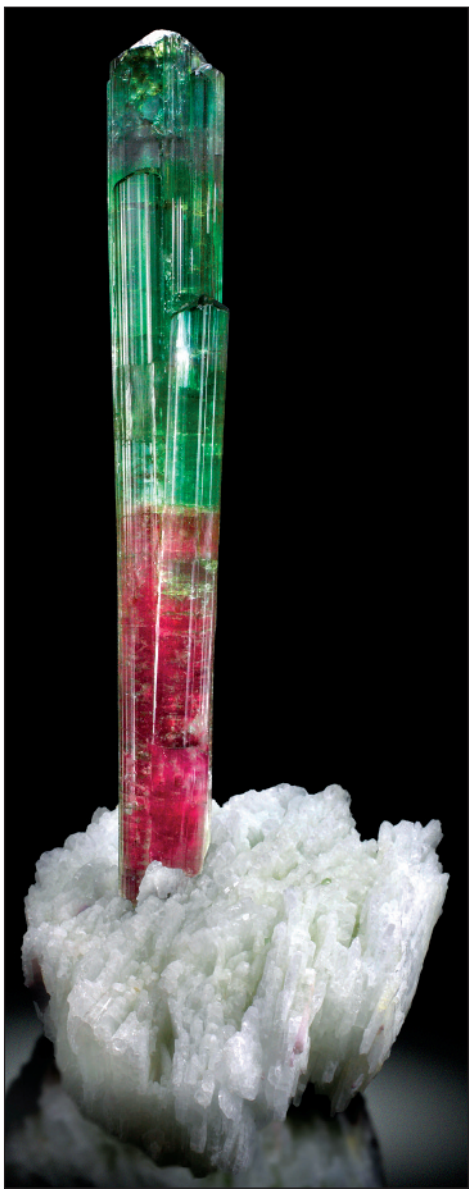
THE AFGHAN POCKET (2001)

The Afghan Pocket was small, the size of the large beach-ball, and produced only seven specimens and a small

Daniel Trinchillo demonstrating where the Afghan Pocket was found. A. Talbot photo.

Contents of the Afghan Pocket on a table, shortly after their recovery, and before cleaning and preparation. Post-preparation photos of many of these specimens are shown elsewhere in this article. J. Menzes photo.

Toumaline on lepidolite, 12,5 cm high. G. Risse colelction. M. Sickinger photo.



Toumaline on albite, 17,5 cm high. M. Pauwels colelction. J. Callen photo.

Specimen known as the "Gemeos" (Twins), with two tourmaline crystals on quartz, 17 cm high. J. Elliott photo.

The "Afgan King", arguably the best specimen recovered from The Afghan Pocket, 14 cm high. FMI specimen. J. Elliott photo.

number of single crystals – but the quality of the tourmaline was outstanding. It was encountered shortly after the discovery of the finest pocket ever found at the mine – the "*The Bi Color Steel Pocket*" – with which it shares many characteristics. Sadly, the The Bi Color Steel Pocket yielded even fewer specimens, one of which is considered the finest specimen to have come from the mine, was truly magnificent (it can be seen on page 13, in the article on James Elliot).

The Afghan Pocket was found in the "collapsed" condition described above. Delicate and painstaking work was required to remove the rubble and the loose crystals. When this material had been extracted a diamond chain saw was used to recover matrix crystal groups from the pocket walls. These groups included the connection points where some of the loose crystals could later be reattached. This is very typical of tourmaline pockets in general and, for this reason, repairs and restorations of tourmaline specimens are common and widely accepted by collectors. Most of the specimens pictured in this article have at least one or two repairs.

The color combinations of the tourmalines from the Afghan Pocket, and the characteristics of the crystals, are unique at the Pederneira Mine, and probably in the world. When the pocket was first excavated, the colors of the crystals reminded the partners of the famous tourmalines from Afghanistan, with pastel pink and green colors, and the pocket was named with this in mind. But it is the combination of these colors – a brilliant, pinkish-red, and a bright pastel-green – that is most striking.

The Afghan Pocket contained all of the typical matrix elements found at the Pederneira Mine: K-feldspar, albite var. cleavelandite, quartz and lepidolite. The quartz crystals are a light smoky color, with a glassy luster and gemmy translucency; the lepidolite is a pale pink, with elongated crystals approaching 2.5 cm; and the cleavelandite occurs as beautiful snow-white groups of well-crystallized blades.

The main attraction of this pocket, however, is the suite of tourmaline crystals growing on top of these attractively

An unfortunate lab accident resulted in these two specimens breaking apart from one another (details in text). The specimens are 13.5 cm (left) and 11.5 cm (right) in height. FMI specimens. J. Elliott photos.

colored and well-formed matrix minerals. The tourmalines reach a maximum length of about 15 cm, and occur in two habits (representing types growing to the antilogous and analogous poles respectively).

The first habit (growing to the antilogous pole) resembles the crystals from Afghanistan that gave the pocket its name. They have relatively shallow, pyramidal terminations, and a range of color from the bottom to the top. The crystals begin at the base with a red core and green rind that, initially, seems transparent because it is so thin. This continues to about midway up the crystal, and then the color shifts completely; the red core is no longer present and the crystal becomes a homogenous gemmy green. In this gem portion of the crystal, the color changes with proximity to the termination until, just about 1.5 cm below the end of the crystal, there is a distinct stripe of completely colorless tourmaline, a few millimeters wide and then, finally, the color switches back to a greenish blue. The combination and contrast of the two dominant colors – red and green – makes for striking specimens, but the most remarkable fact is that every crystal of this habit exhibits this same unique color sequence, which provides a diagnostic signature for specimens from the Afghan Pocket.

The second habit of Afghan Pocket crystals (growing to the analogous pole) is quite different. These crystals begin similarly, with a red core surrounded by a green rind that is so thin as to appear colorless, so that the crystals appear red. This red color persists almost to the top of the crystal and then, about half a centimeter before the termination, the color changes to a vibrant bluish green, creating beautiful “green-caps”. The terminations of these crystals are flat pedions, glassy, and with a mirror-bright luster.

The combination of these two crystal habits on the same specimen contribute to the unique beauty and balance of the best Afghan Pocket material.

One sad story about the Afghan Pocket concerns the restoration of a specimen comprising two “antilogous” tourmaline crystals on a knob of cleavelandite; in fact this was the only specimen from this pocket with a cleavelandite matrix (see on one of the photos with specimen on the table right after pocket was collected). After repair and some minor trimming the specimen was quite superb, but the decision was taken to do some further work on the cleavlandite matrix, with disastrous results. The matrix became destabilized and the specimen split into two smaller pieces (see photos on this page) – still fine specimens, but each a shadow of what the original had been. Sometimes it really is better to leave well enough alone!

Contents of the Afghan Pocket on a table, shortly after their recovery, and before cleaning and preparation. Post-preparation photos of many of these specimens are shown elsewhere in this article. Note the big "albite ball", which broke in two during preparation (see two photos at left, and text for details). J. Menzes photo.

"Afghan Steel", one of the best specimens from the pocket, showing scepter-like lower sections of the tourmaline crystals where some areas were affected by selective dissolution. 12 cm high. M. Budil specimen. M. Sickinger photo.

CONCLUSION

The discovery of pockets, recovery of crystals, reassembly of specimens, and cleaning and trimming in the laboratory are all parts of a sophisticated process which many collectors really never get to see. Mishaps can occur at any stage but, eventually, with a great deal of skill and a little good fortune, fine specimens appear in the showcases at mineral exhibitions. These should be prized by collectors not only for their visual beauty but also for the awesome geological processes that led to their formation and the considerable efforts that enable their conservation.

The Afghan Pocket will go down in history as one of the all-time great tourmaline discoveries. It is to be hoped that similar pockets will be encountered at the Pederneira Mine in the future, but it seems improbable that specimens surpassing, or even matching, the quality of the Afghan Pocket material will be found again.

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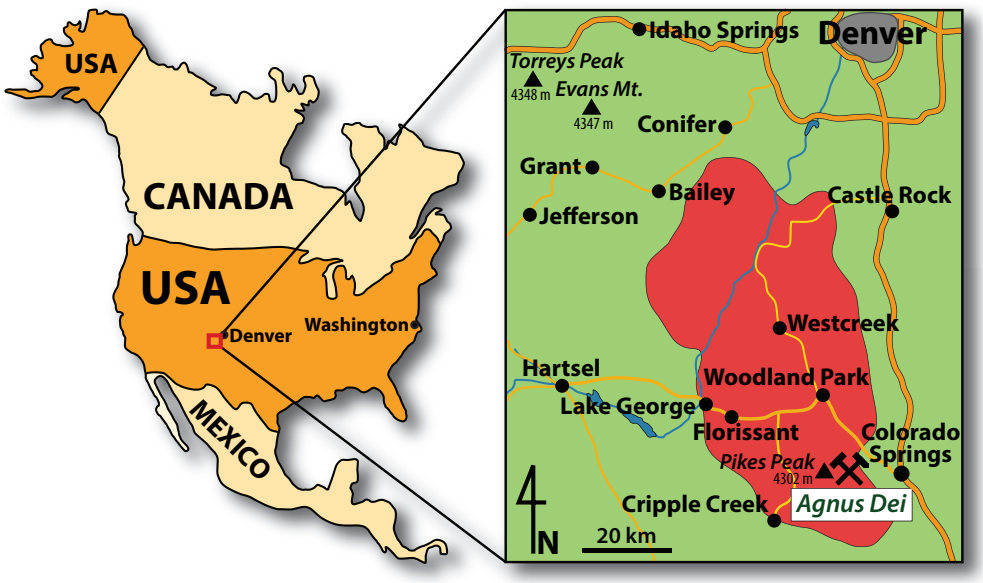
Tourmaline on quartz, 14 cm high. G. Wagner collection. M. Mauthner photo.

Great topaz find:
Tribute Pocket, Colorado, USA

Jean COWMAN & Philip PERSSON

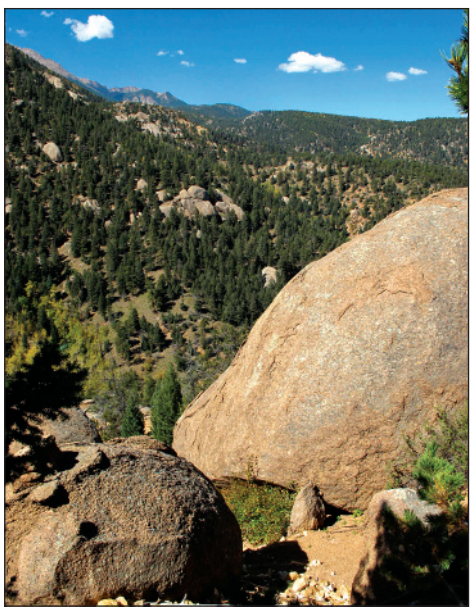


Map of North America with insert of the Pikes Peak area and the location of the Agnus Dei claim where the Tribute Pocket was found.

Continued from page 1

that had been found somewhere in the Front Ranges by Ed Over (of Red Cloud wulfenite fame) during the late 1950s.

Over, it seems, had worked with fellow collectors Art Montgomery and George White to recover pegmatite minerals, including topaz, from a number of Colorado localities. In 1957, he discovered an isolated pocket approximately 0.5 by 1.0 m in size on Cameron Cone, east of the Pikes Peak summit. The pocket yielded approximately 7 kg of topaz as well as etched crystals of amazonite and quartz. Over sold 5 topaz specimens to dealer Bill Hayward who, after Over's death in 1963, managed to find the locality from Over's description, but recovered only amazonite and a few topaz fragments.



Granite outcrops on lower slopes of the Agnus Dei claim. P. Persson photo.

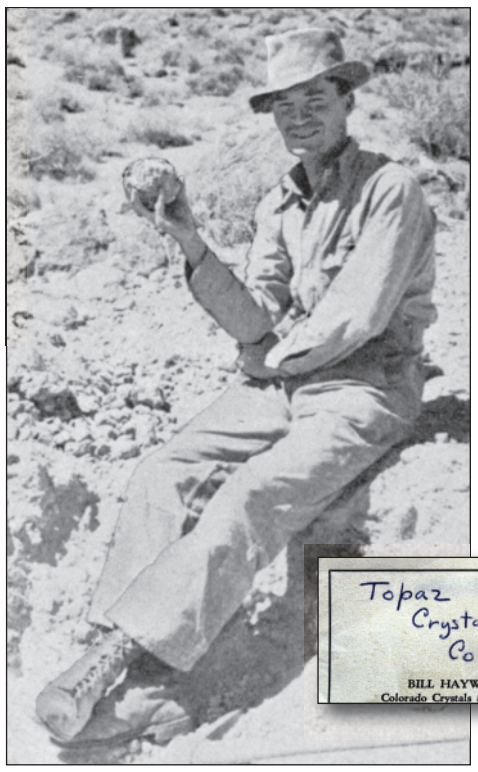
Jean examining specimens. P. Persson photo.

Inspired by the description of peachy-pink topaz, Rich Fretterd embarked on a mission to rediscover the Ed Over topaz locality. For two summers he hiked and explored the hills to the west of Colorado Springs, but with no success. Then, by chance, he had a conversation with a friend who recalled finding a shard of a pink gemstone some 40 years earlier, very close to Rich's most recent search area. With renewed enthusiasm Rich continued his explorations for a third summer along with his mining partner, Jean Cowman. They hiked into the hills together where, usually, they would split up to cover more ground, remaining in contact by radio.

Rich and Jean, with Shadrach (the dog), taking a break on the hike to the dig-site. The trail climbs 1100 m in elevation in a distance of just 3.2 km. P. Persson photo.

One day in October 2012, Rich was circling around the top of a ridge (where he had located a number of smoky quartz pockets). Jean was walking in the opposite direction to reach the low end of the valley floor, when she noticed a trail of quartz fragments that had washed down the hillside. Following the quartz trail back uphill, she came to an exposure of quartz and microcline. She radioed Rich, who hiked back down the hill to join her. Together they investigated the outcrop which consisted of quartz, with a buff-colored, vein-like structure of microcline running through it. They quickly agreed that the outcrop was sufficiently unusual to be worthy of further investigation.

Subsequently, an old digging was found some 45 meters along the same trend as this new outcrop, which is believed to be one of Ed Over's original excavations. After a three year search, Rich's quest for the lost topaz locality was looking decidedly more promising! Rich and Jean staked a claim, naming it the *Agnus Dei* (Lamb of God).



Edwin (Ed) Over, a legend of mineral collecting, and the original discoverer of the topaz locality in the 1950s.

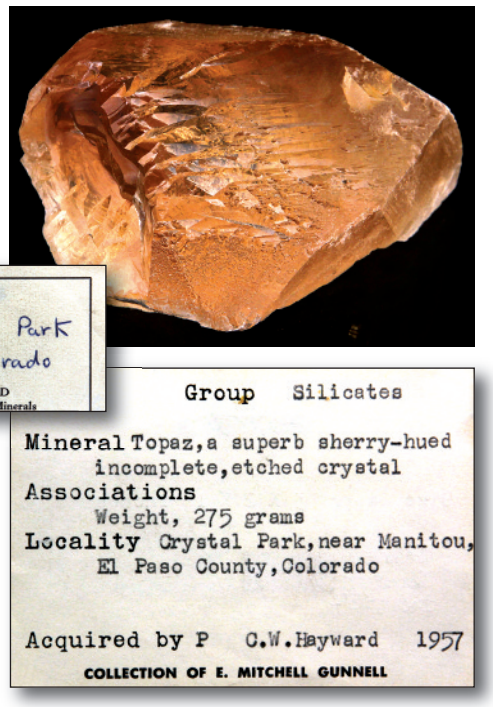
Discovery pit at the Agnus Dei claim where the Tribute Pocket was uncovered. P. Persson photo.

GEOLOGY

The *Agnus Dei* claim is located on the lower northern slopes of Cameron Cone, a 3264 m sub-peak of the Pikes Peak massif (4322 m) in the south-eastern portion of the Pikes Peak Batholith (PPB). The PPB is a major granitic intrusion of just over one billion years old, with a surface expression of approximately 3100 km².

Typical granite exposures in the foothills below Pikes Peak. P. Persson photo.

The batholith was formed in a lengthy, multistage process including several magma intrusions, and it contains many pegmatites of various types. However, the pegmatite at the *Agnus Dei* claim is atypical in a number of respects, with features of both miarolitic and zoned pegmatites. It measures approximately 5 x 8 x 6 meters, and appears to be cone-shaped, pinching out at a depth of 8-10 meters below the surface and, for a pegmatite of this size, it is unusually well-zoned. Furthermore, it is somewhat anomalous both chemically and mineralogically.



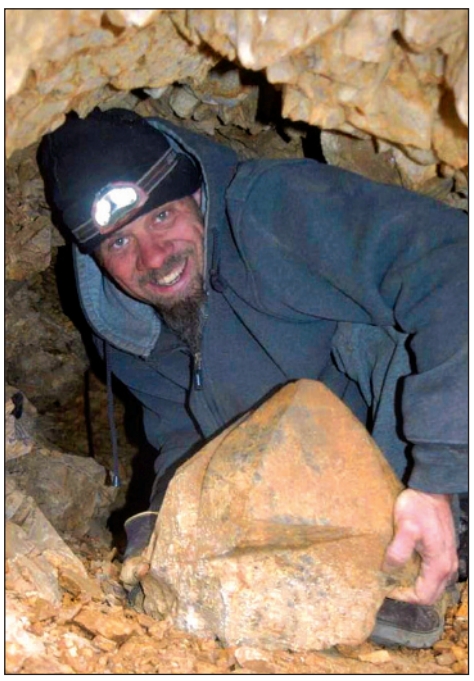
One of the topaz specimens from the original Ed Over find (7.7 cm wide) with original labels. Collectors Edge specimen. R. Jackson photo.

Crystallization is believed to have occurred from a fluid associated with a late-stage melt in the upper portion of the batholith. The outermost zone consists of a 15-40 cm layer of graphic granite. Inward from this, is a blocky quartz-microcline zone, ranging from

Philip Persson mining with Richard Fretterd. J. Cowman photo.

Quartz crystals in situ *in the pocket known as the Halo Pocket. R. Fretterd photo.*

0.3-1.0 m in thickness. Finally, the "core" of the pegmatite is complex in composition and dominated by quartz, which comprises 70% or more of its volume. Much of this quartz occurs as large eu-



Donovan Sutters excavating the largest quartz crystal from the Halo Pocket. The crystal weighed over 22 kg. R. Fretterd photo.

hedral crystals, almost all of which show compromised growth surfaces, and habits consistent with a combination of rapid, oscillatory crystallization. Faces and fractures in the quartz bear evidence of extensive etching and recrystallization by a late-stage acidic fluid. Many of these quartz crystals are over 30 cm in length, although from a collector's perspective, most are opaque and poorly-formed.

Rich looking at the world through peachy-pink topaz. D. Sutters photo.

in size. Occasionally, a hydrated, waxy gray-blue clay is found to contain hundreds of minute, 1-5 mm crystals of gemmy topaz.

Topaz also occurs in the *Agnus Dei* pegmatite as crystals embedded in an altered, iron-stained mixture of quartz crystal shards, microcline, micas, and clays which appears to represent pocket material which was tectonically fractured either as the pocket crystallized or shortly afterwards.

Several accessory minerals have been identified from the *Agnus Dei* claim. These include albite, biotite, *columbite-Fe*, fluorite, hematite, muscovite, *nontronite*, *talc*, *zinnwaldite*

Rich with freshly excavated quartz crystals from the Halo Pocket. D. Sutters photo.

Within this quartz core are two zones containing different types of euhedral, gem-quality topaz crystals. The first consists of open, lenticular spaces to 2 x 0.5 m, with domed roofs composed of inward-projecting crystals of quartz and microcline. These pockets, when first opened, were found to be full of both shards and crystals of quartz and microcline, as well as a fairly dense, flaky to clayey material which, upon closer inspection, is actually composed of discrete hexagonal tablets, 1-5 mm, of what appears to be muscovite

Rich with a freshly mined 9 cm topaz crystal from the Tribute Pocket. J. Cowman photo.

and sericite (pending analysis). The more typical red, iron-stained "pocket clay" is seldom encountered in the *Agnus Dei* pockets. Topaz crystals occur in this micaceous material as highly etched and recrystallized fragments, or as euhedral crystals to over 10 cm

Rich following the pegmatite. D. Sutters photo.

ered quartz, Jean encountered several flat, tabular, doubly terminated quartz crystals. They were milky to clear, but with none larger than 10 cm. Underneath these oddly shaped quartz crystals, a layer of putty-colored clay appeared. Using skewer sticks to probe the clay for more crystals, some needle sharp terminations were revealed. When cleaned, these terminations turned out to be the tips of topaz crystals! None were larger than 2 cm, but all of them were doubly terminated, and the color was a peachy-pink. Eventually two small surface pockets of this material were uncovered, each about the size of a grapefruit. Although the topaz crystals were very much smaller, much of what Rich and Jean

Rich with newly found quartz and topaz crystals. D. Sutters photo.

and zircon (*italicised* species have been provisionally identified, pending analysis).

THE TRIBUTE POCKET

As the fall of 2012 continued, fortunately with dry weather, Rich and Jean hiked back on several occasions to the outcrop they had found and continued digging. Jean worked directly on the quartz, in a weathered seam that broke easily when struck with a hammer, while Rich moved a few meters to the north of the outcrop and began digging down into the decomposed granite slope. A few meters downhill along the seam of weath-

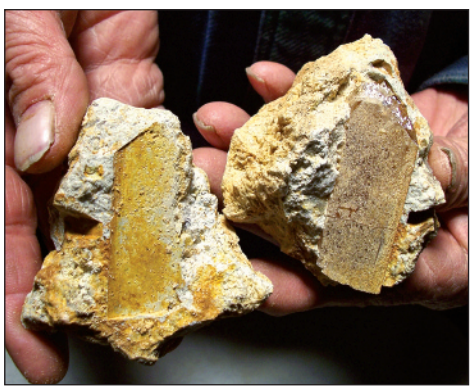
Freshly dug topaz crystal. D. Sutters photo.

were finding, encouragingly, was consistent with the descriptions of the Ed Over discovery.

Rich decided to dig deeper, and he continued working down into the weathered surface a few meters from the main

Large fractured topaz crystal in situ. *J. Cowman photo.*

outcrop. As he worked he found quartz crystals that at first appeared to be smoky but, as they were cleaned, turned out to be clear but with frosted surfaces. Some of the first crystals were several inches long and many of them were doubly terminated. Then larger quartz crystals were uncovered as the pocket advanced. It took several more trips to the area just to excavate this quartz pocket which turned out to be about 2 x 1 x 1 m in size. Much of the quartz occurred in crystal clusters, the largest



Very rare matrix specimens of topaz crystals from the Tribute Pocket. P. Persson and J. Cowman photos.

of which weighed in at 22 kg. Some of the quartz crystals were peppered with tiny purple fluorites about 1.5 mm in diameter. Interestingly, much of the "frosted" quartz appeared to be water-

Brecciated and re-healed topaz crystals, 7.5 cm high. R. Fretterd specimen. J. Callen photo.

worn, with rounded edges; even a few spherical quartz "marbles" were extracted from this unusual pocket. However, no topaz was found; not a single shard!

Only the promise held out by the two small surface pockets of topaz crystals kept Rich and Jean digging deeper at this stage. They recalled that the small

Freshly mined topaz crystal. P. Persson photo.

topaz crystals had been located in clay just below a tabular zone of oddly shaped quartz crystals. What if this much larger quartz pocket was part of a similar zoning? Could it be possible that topaz might be located underneath this quartz "lid" in the same way that the surface pockets had occurred?

Rich began digging directly below where he had excavated the quartz

Typical habit of an Agnus Dei topaz crystal (6.7 cm high), with a lustrous termination and frosted prism faces, the latter showing a distinct etch-pattern mimicking the now-decomposed albite. Spirifer specimen. J. Scovil photo.

pocket. He worked his way down into a layer of sandy material that ended at a quartz shelf. After working his way through the quartz shelf to see what was underneath, he found ... a second quartz shelf. Tedious excavation finally removed this second shelf to reveal another sandy layer resembling damp saw-

Box with topaz crystals after first wash. J. Cowman photo.

dust. Curious, Rich began pulling out handfuls of the loose sawdust-like material and, in one handful there was a large crystal. It had several glassy faces about 5 cm long and seemed to be much denser than quartz. Cleaning the sandy material away revealed a peach-colored topaz crystal which later weighed in at a respectable 255 grams.

Freshly mined topaz crystal. P. Persson photo.

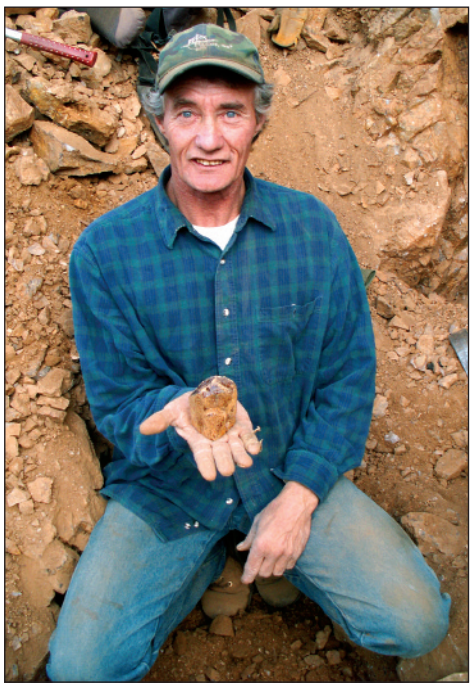
Rich named the main topaz pocket the "Tribute Pocket" in honor of Ed Over, Art Montgomery and George White, the original discoverers and dealers of similar topaz from this area six decades earlier; but the Tribute also pays respects to George Fisher, Bill Hayward and Ray Berry all of whom had extensively researched and prospected this area prior to Rich's re-discovery. Rich renamed the upper quartz pocket (with fluorite) the "*Halo Pocket*", as the quartz crystals had formed a halo above the main topaz occurrence.

The Tribute Pocket contained a mixture of topaz shards, broken crystals, and occasional complete crystals. The

Topaz crystal with mica inclusions, 6 cm high. T. Dorris specimen. J. Callen photo.

The story of Richard and Philip mining a topaz crystal from the Tribute Pocket. P. Persson and J. Cowman photos.

crystals had multiple sharp terminations with a complex, ridged appearance, and most of the fracture surfaces showed multiple regrowth faces. The sides of the crystals were all etched to varying de-



Rich with one of the best topaz crystals collected from the Tribute Pocket, also shown in two photos below. J. Cowman photo.

Probably the best topaz crystal mined from the Tribute Pocket, 7.8 cm high. Collector's Edge specimen. J. Budd photo.

Approximately 100 topaz crystals with well-defined terminations and prism sides were recovered. Many more pieces of broken and re-healed topaz were also recovered. Some of these are of no specimen value but were very suitable for faceting as gemstones.

The largest topaz crystal came out in four pieces, one of which was the termination. If this crystal had been complete it would have weighed approximately 2 kg. Meanwhile the largest complete single crystal weighed in at approximately 1.3 kg. The longest crystal, doubly terminated, was 13 cm long by 6 cm wide by 2.5 cm thick. One of the most spectacular specimens comprises two adjoined topaz crystals; it weighs 590 g and measures 7.8 cm.

The unique combination of crystallographic features of the *Agnus Dei* topaz also contributes to the aesthetics of these specimens. In particular, the contrast of bright, lustrous, composite terminations, with frosted (etched) prism faces, on gemmy, peach-colored topaz, makes for some highly attractive specimens.

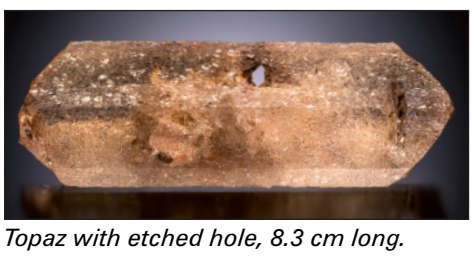
There are very few matrix specimens; most of the topaz crystals occur in clusters suspended in the flakey muscovite/sericite pocket-fill, which formed from the alteration and partial dissolution of the matrix – probably albite – in which the topaz was originally embedded. The distinctive etching pattern on the prism faces of the topaz, then, is the result of the removal of the abutting matrix crystals, probably by reaction with very late stage fluids as the pockets cooled. Some specimens show etching patterns at the base of the crystal which are related to the cleavage direction. The fact that the crystals generally have clean, gemmy interiors, however, indicates that the chemical

Typical for the locality topaz crystal (6.4 cm wide) with a lustrous termination and frosted prism faces, the latter showing a distinct etch-pattern mimicking the now-decomposed albite. Spirifer specimen. J. Scovil photo.

Highly etched topaz crystal, 10 cm high. M. Posipil specimen. J. Budd photo.

Topaz, 7.8 cm high, Tribute Pocket. J. Cowman specimen. J. Callen photo.

One of the best topaz crystals from the find, 12 cm high. Collector's Edge specimen. J. Budd photo.



Topaz with etched hole, 8.3 cm long. Spirifer specimen. J. Scovil photo.

Topaz specimens in the Collector's Edge collection. The two specimens on the left (also shown in detailed photos on this page) are from new diggings; the one on the right is from the original Ed Over find. Size from left: 12 cm, 7.8 cm, 7.7 cm. R. Jackson photo.

Topaz, 8.9 cm high. J. and G. Spann specimen. T. Spann photo.

etching occurred as a single post-crystallization event.

Topaz and quartz crystals from the newly discovered Tribute Pocket were displayed at the Denver Show in September, 2013, along with photos of Over, White and Montgomery, and this small exhibition caused a lot of excitement among mineral collectors and dealers.

Many faceted stones have been produced from Tribute Pocket rough, but two are particularly worthy of mention, both faceted by Stephen Kotlowski. The first is a peach-colored super-oval gem of 1345.25 ct, which Stephen cut from a piece of rough weighing 3,634 ct. The finished stone is known as the "*Agnus Dei* Tribute Topaz" and it is the biggest faceted topaz from North America, also with great color. The second is a blunted trilliant of 171.77 ct known as the "Snow Angel" because of the shape made by the back-facet reflections when the stone is viewed blunt side-up.

Topaz; 8 cm high. M. Oleszczuk specimen and photo.

Topaz, 6.1 cm wide, Tribute Pocket. R. Fretterd specimen. J. Callen photo.

Etched topaz cleavage, 6 cm high. R. Fretterd specimen. J. Callen photo.

PERSPECTIVES

The Tribute Pocket is probably the largest known pocket of topaz in Colorado history and many consider that it ranks among the largest ever discovered in the USA. Economically, the *Agnus Dei* pegmatite represents an important resource relative to its size, having produced a number of fine specimens and a significant quantity of gem rough over a two-year period since its re-discovery. Rich and Jean continue to work the *Agnus Dei* claim in the hope that further topaz pockets will be found although, in reality, the potential for fresh finds is unknown.

Topaz crystals and faceted stone (99.76 ct) from the Tribute Pocket. S. Kotlowski photo.

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Faceted topaz known as the "Snow Angel", 171.77 ct, from the Tribute Pocket. J. and G. Spann specimen. S. Kotlowski photo.

The story of how the largest faceted topaz from the USA was cut. This 1,345.25 ct stone, known as the "Agnus Dei Tribute", was fashioned from a 3,634 ct topaz crystal fragment. S. Kotlowski photos.

Mineral photography: James Elliott (USA)

James' interest in photography began while he was a student, studying music and graphic design, but he was also interested in engineering. His photography instructor loaned him a 4 x 5 Super Speed Graphic camera, and photography quickly became an all-consuming passion, combining James' interests in engineering and art. In his words: "*Engineering is about problem solving, while art is about communicating something that can't be said with words*". Photography became James' method of telling a story.

After college, James worked in commercial advertising in Texas, but found that catalog, editorial, and architectural photography were not really what interested him. He missed the chemistry of the darkroom, and the craftsmanship of making large prints.

He was introduced to the mineral world while doing catalog work for an auction house. "*I had no idea that this market existed. I was awe-struck the first time I saw a water-clear, Russian fluorite*". But it quickly became clear that "telling the story of a mineral" was very different: "*I had spent years learning how to light 3-dimensional subjects, based on their shape and material. With minerals, you have to learn what is important about each specimen and figure out how to show it*".

At this time, James was also transitioning to digital photography. "*Film had more tonal range so I had to rethink my lighting for the digital format*".

James relocated his family to New Jersey to become the Creative Director for Fine Minerals International (FMI): "*It's been a big change. Instead of just the photography, I am now putting ads together from start to finish*".

He had to learn more about the technical side of preparing an image for printing. It is still about telling the story, but not only about each mineral: "*There are a lot of great mineral dealers, but I try to give an impression about who FMI is in each of my photos*".

Beryl var. heliodore, 19 cm high. Shaft #6, Volodarsk-Volynskii, Ukraine. M. Amabili collection. J. Elliott photo.

Rhodochrosite, 16.5 cm wide. Sweet Home mine, Colorado, USA. Private collection. J. Elliott photo.

Fluorite with great phantoms, 10.8 cm high. Rosiclare, Cave-in-Rock, Illinois, USA. MIM collection. J. Elliott photo.

Creative advertisement for FMI with tanzanite, crystal 6 cm high. Merelani Hills, Arusha, Tanzania. MIM collection. J. Elliott photo.

Elbaite tourmaline, 10 cm high. Paprok, Nuristan, Afghanistan. Private collection. J. Elliott photo.

Native copper, 12.5 cm high. Ray mine, Arizona, USA. D. Trinchillo collection. J. Elliott photo.

Scolecite on stilbite, 23 cm high. Ozar quarry, Nasik, Maharastra, India. D. Trinchillo collection. J. Elliott photo.

Elbaite tourmaline, 19 cm high. Cranberry pocket, Pederneira mine, Brazil. M. Pospisil collection. J. Elliott photo.

James Elliott, photographer of Fine Minerals International. A. Elliott photo.

Fluorite with incredible color zoning, 11 cm high. Minerva #1 mine, Cave-in-Rock, Illinois, USA. MIM collection. J. Elliott photo.

Native gold on quartz, 12.5 cm high. Colorado Quartz mine, California, USA. D. Trinchillo collection. J. Elliott photo.

Quartz var. amethyst, 20 cm wide. Jackson's Crossroads, Georgia, USA. L. Hill collection. J. Elliott photo.

Helvite on quartz, 20,3 cm wide. Huanggang mines, Inner Mongolia, China. MIM collection. J. Elliott photo.

Beryl var. aquamarine with muscovite, 9.5 cm high. Nagar, Pakistan. D. Trinchillo collection. J. Elliott photo.

Example of the creative advertisement of Fine Minerals International produced by James Elliott using his photos.

Elbaite tourmaline, 28 cm high. Bicolor Steel pocket, Pederneira mine, Brazil. D. Trinchillo collection. J. Elliott photo.

Elbaite tourmaline, 30.5 cm high. Paprok, Nuristan, Afghanistan. D. Trinchillo collection. J. Elliott photo.

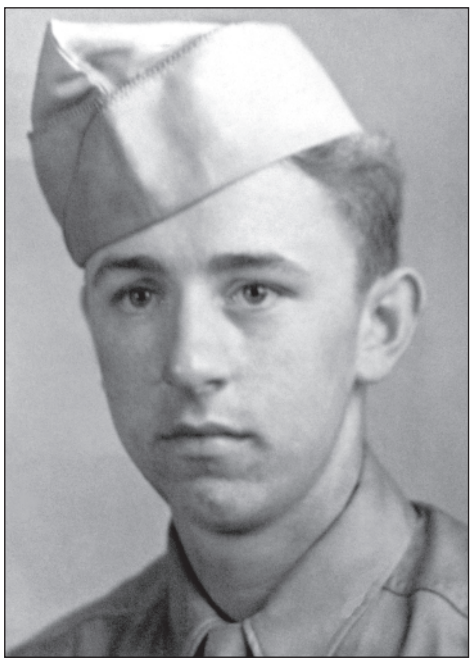
Calcite "flower" on fluorite, 7 cm high. Yaogangxian mine, China. J. Elliott photo.

Calcite scepters on amethyst, 25.5 cm wide. Irai, Alto Uruguai, Brazil. L. Hill collection. J. Elliott photo.

Collector interview: Bob and Evan Jones (USA)

Bob and Evan Jones – father and son collecting partners. H. Mercado photo.

For this edition we decided to interview a father-son mineral collecting partnership, which is actually quite uncommon. Bob Jones is well known as the author of hundreds of mineral articles and many books. He has been in the hobby for almost 80 years! He built a world-class collection which he later passed to his son Evan who curates and continues to add to today. Evan also deals commercially in fine minerals and, in recent years, has brought many of the best quality Mexican azurites to the market. The suite of Arizona minerals in Evan's collection is one of the best in existence.



Bob Jones at age 19 in the U.S. Army Air Force 1946.

Tomasz Praszkier (Minerals): *Bob, in your life you have had many different jobs, but none of them connected to minerals. Can you give us a short summary please?*

Bob Jones (BJ): My main job was as a science teacher for 32 years, 1957-1988, but prior to that I also worked as a fireman for several years in Connecticut in the 1950's. I also did steel rigging and worked as a mailman when I was a teenager before going into the service.

Bob collecting in Arizona mid-1960's.

I enlisted in the U.S Army Air Corp in 1944 and ended up on the Atomic Bomb Project in 1946 on the island of Kwajalein in the Pacific. As a member of the 509th Atomic Bomb Group I witnessed the first two post-WWII atomic bomb tests. After that, I also worked on my father's farm in Connecticut while going to college to become a teacher.

TP: *How did your interest in minerals start? How old were you then?*

BJ: I started collecting in 1936 (almost 80 years ago!) at the age of 10. My interest in minerals began when I was in the fifth grade. We went on a field trip to the Yale Peabody Museum where I saw the mineral collection and fell in love with the fluorescent mineral display. After the war I got serious about collecting and developed a fluorescent mineral collection. Living in Connecticut made it easy to collect fluorescent minerals especially being so close to Franklin, New Jersey.

TP: *That was a long time ago; mineral collecting must have been very different in those times, especially field trips. How do you remember your early mineral collecting trips?*

Bob with his mineral cabinet late 1960's.

BJ: My field trips were mainly with a buddy, and all the localities were wide open and minerals were plentiful versus today, where localities are closed, claimed, or picked clean. Access was often difficult back then due to bad road conditions and the remoteness of collecting localities. We often camped at the locality or even underground.

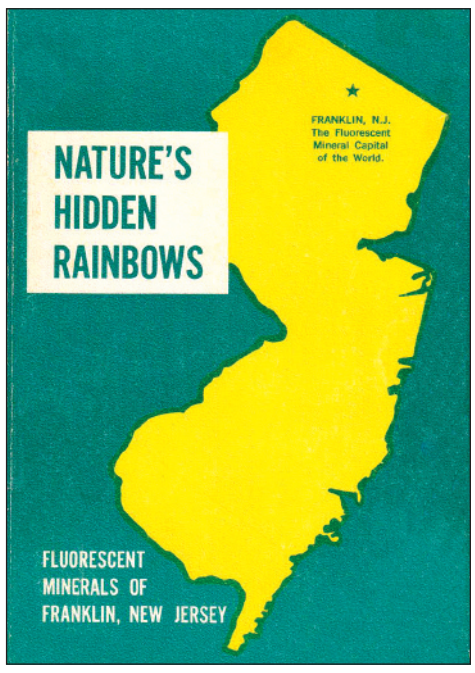
TP: *What are the biggest differences between mineral shows in the 40s and 50s and modern ones? I know you have been on the TGMS show committee for over 40 years, so you have quite a unique perspective on how it has been changing.*

BJ: Mineral shows are quite different now. In the early days there were only club shows, no promoted events. Minerals were cheap and there was a definite separation between wholesale and retail dealers. Everything was on a much smaller scale and prior to the early 1960's, museums were not involved in exhibiting at all.

Vanadinite, 22 cm wide, collected by Bob Jones in 1969. One of the best pieces from this big find. Now in Evan Jones collection. J. Scovil photo.

TP: *Tell us about your most exciting and exotic mineral travels. What was the best find in which you participated.*

BJ: My most exciting travels were to lands outside the United States. For example I collected at a chrysoprase mine in Western Australia, visited the Tsumeb Mine in Namibia and several mines in Russia and England. Collecting underground in six different emerald mines in Colombia was an experience unlike any I've had elsewhere due to the constant threat of robbers and highwaymen. Of course I've taken many trips to Mexico and visited several famous localities there.



Cover of the first book by Bob Jones published in 1964 about fluorescent minerals from Franklin.

Perhaps my most significant mineral find was opening up a huge pocket of vanadinite at the Apache Mine near Globe in 1969. The vanadinite pocket was actually a seam which we followed for about 3-3.5 m. The specimens consisted of lustrous cherry-red hexagonal crystals up to 1 cm scattered on quartzite breccia fragments. Many were complete floaters. One of the best specimens from the find, a large plate, is now

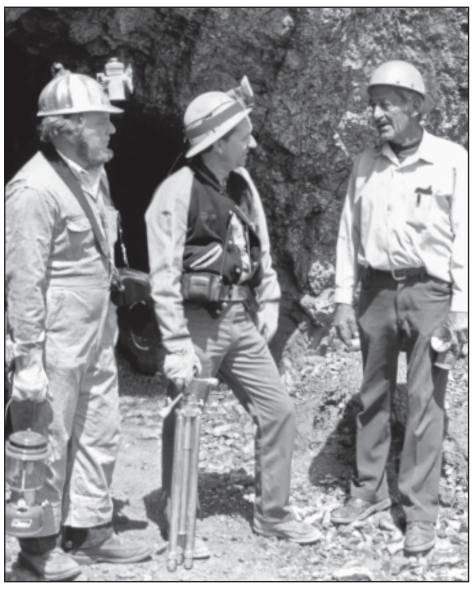
12 year old Evan in 1973 collecting underground near Wickenburg, Arizona.

in Evan's collection (see photo above). I collected the pocket with Tom McKee. This find produced hundreds of flats and took several days to collect.

TP: *In your life you've built and sold a few mineral collections. Why did you sell them and what was your specialty and what were the best specimens?*

BJ: My first real collection was fluorescent minerals. I sold that in the 1960's

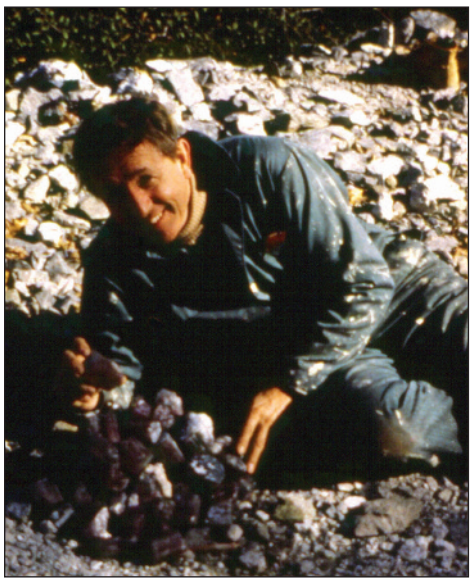
Legrandite with paradamite, 3.5 cm wide, from Ojuela mine, Mexico. Acquired by Bob in 1969 from Benny Fenn. E. Jones collection. J. Scovil photo.



Bob (center), at the entrance to the San Francisco Mine, Mexico in 1974. Below, specimen of the wulfenite with mimetite, 5 cm wide, collected by Evan during the same trip. J. Scovil photo.

when my interests changed. Mineral dealer Scott Williams was a huge influence on my collecting tastes in the early 1960's and he got me started collecting worldwide specimens. My next two collections were also worldwide until I turned over my international collection to my son Evan in the mid-1980's. The finest specimen I ever acquired was a large wire silver specimen from Kongsberg (see photo on this page, now in the Gene Meieran collection) which was in a collection acquired by a college friend in Connecticut who had rescued it from being taken to the dump and thrown out. After some diligent research we figured out the collection once belonged to Dr. Fairchild Wheeler who was a friend of the famous J. P. Morgan (also a collector, and the creator of the one of the world's biggest banks; morganite is named after him). A Los Lamentos wulfenite and a large legrandite ball (photos on pages 15 and 16) acquired from dealer Benny Fenn in 1969-1970 are two other significant specimens I acquired. The wulfenite is now owned by collector Scott Rudolph and Evan still has the legrandite ball, the largest of its kind in existence.

Evan with Chris Panczner collecting open pocket of stibnite in front-end loader in San Martin Mine, Mexico, in 1979. Below, 9 cm high specimen collected from that pocket. J. Scovil photo.



Bob, during collecting trip in 1981, examining freshly collected tourmalines from the Himalaya Mine, California, USA. Below Evan examining pocket in Himalaya Mine, during the same trip.

Evan and Bob in La Caverna de Santo Domingo, Buena Tierra Mine, Santa Eulalia, Chihuahua, Mexico in 1979.

TP: *For many decades you have been an author of articles and also editor of many publications. How many articles did you write about minerals and which were the most important from your perspective?*

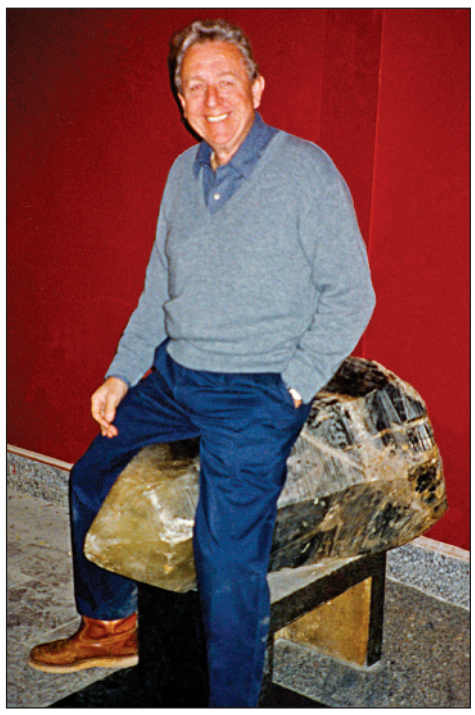
BJ: I've written about 2,000 mineral articles, mainly in *Rock & Gem* magazine, but a few others in *Mineralogical Record*, *Rocks and Minerals*, *Arizona Highways*, *Lapidary Journal*, and *Monde et Minereaux*. I have also done a half dozen books, the best of which is probably "*A Fifty Year History of the Tucson Show*". My research article on "*The Bristol, Connecticut Copper Mine*" probably ranks high. My first book, published in 1961, entitled "*Nature's Hidden Rainbows - Fluorescent Minerals of Franklin, New Jersey*" was very popular also. Recently,

Happy Bob in 1980's.

I consolidated a lot of information from my *Rock & Gem* articles into a book entitled "*The Frugal Collector, Volume 1*".

TP: *You have received many awards. Which are the most important for you?*

BJ: The most important award was the Carnegie Mineralogical Award, given for my writing and work at the Tucson show. I've received a total of eight awards with the Lifetime Award from the Tucson Gem and Mineral Society (TGMS) being another important one. When I was granted the Carnegie award I proposed



Bob on the "quartz rocket" during European trip in 90s.

Bob (center) with Bryan Lees (left; mine owner) at the entrance to the Sweet Home Mine, Colorado, USA, in early 90's.

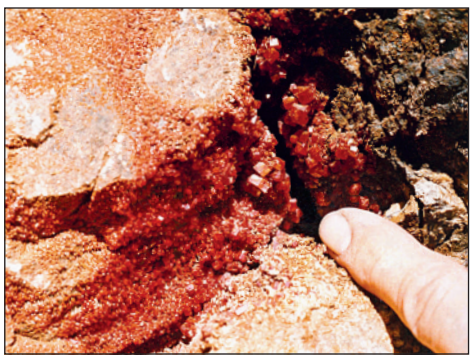
to my current wife Carol from the podium in front of about 250 banquet guests, making it all the more memorable. Luckily she said "*yes*", after being mildly stunned and somewhat speechless for a moment.

Famous Kongsberg (Norway), silver, 13 cm high, acquired by Bob in 1970, it was the best specimen in the worldwide collection built by Bob. Now specimen resides in G. Meieran collection.

TP: *Your son Evan, is a full time mineral dealer and collector and is very involved in collecting activities. Are your other two kids also interested in minerals at all?*

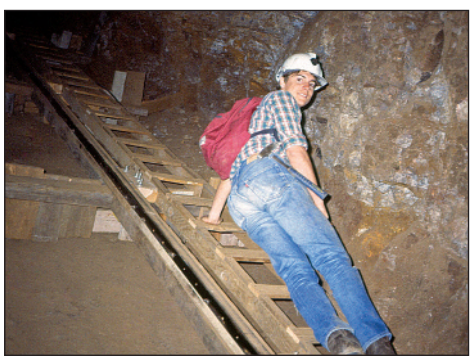
BJ: My daughter Suzanne and son Bill are not into minerals, although Bill has

Wulfenite, 7 cm wide from Erupcion Mine, Mexico. For many years one of the major specimens in Bob's worldwide collection. Now in S. Rudolph collection. J. Scovil photo.



Evan collecting vanadinites at the Apache Mine, Globe, Arizona in 1982. Below, vanadinite specimen, 3 cm high, collected by Evan during that trip. E. Jones collection. J. Scovil photo.

been involved in mining and assaying for 40 years, mostly in Colorado where he is well-known in mining circles. Currently he is Process Director and Chief Assayer for Kinross Gold Corp. at their Buckhorn Mountain Gold Mine in Washington.



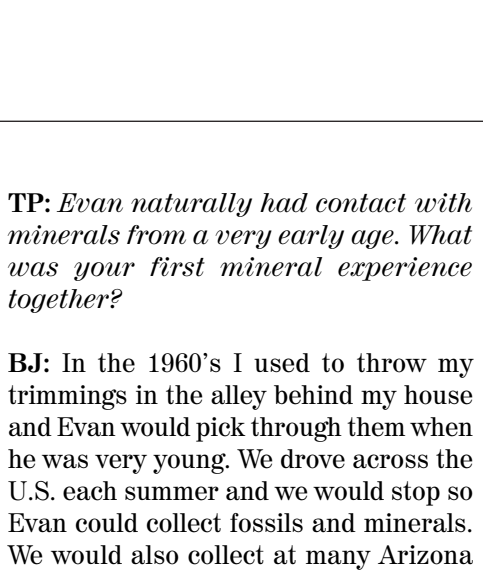
Evan underground in Old Yuma Mine, Tucson, Arizona in 1983.

Evan became my partner in the hobby, through digging, mineral shows and mineral collecting. Having a son who has taken up the same interests in minerals and taken that interest far beyond what I have is a great joy in my life. I am very proud of him.

Evan (and Bob at the back) with Lidstrom Trophy during Tucson Show in 1988.

TP: *Evan naturally had contact with minerals from a very early age. What was your first mineral experience together?*

BJ: In the 1960's I used to throw my trimmings in the alley behind my house and Evan would pick through them when he was very young. We drove across the U.S. each summer and we would stop so Evan could collect fossils and minerals. We would also collect at many Arizona mines and localities from the time he was about 8, including underground in the Old Yuma, Apache and Rowley mines. Sometimes we would go gold panning as well. We also collected in New England, in places like Vermont for serpentine and magnetite and Roxbury, Connecticut for garnets, and for tourmalines in pegmatites. I took Evan to Mineralogical Society of Arizona meetings



Bob in the Colorado Quartz Mine, California, USA in 1997.

from an early age, where he was a junior member. All this took place in the 1960's and early 1970's.

TP: *Evan, when did you go into the field with your father for the first time? Do you have any memories from that experience?*

Evan Jones (EJ): I went on field trips with my father long before I can remember, but one of my earliest field recollections is digging turquoise near

Bob relaxing during his trip to Australia.

Wickenburg, Arizona perhaps around 1970. But my earliest mineral-related memories were from the 1960's and include visits to institutions like the Yale Peabody museum and the British Museum. We visited mineral dealers like Dick Hauck, Susie Davis and David New, going to local mineral shows, and attending Mineralogical Society of Arizona meetings where I stared endlessly at the A. L. Flagg Foundation collection.

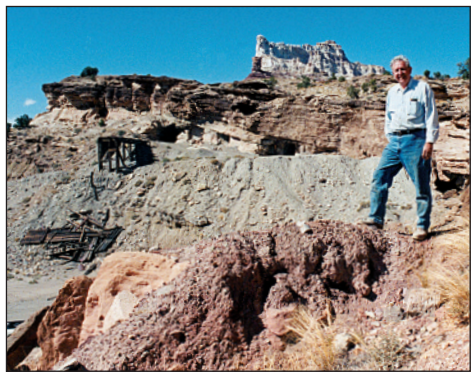
TP: *How old were you when you started to get interested in minerals?*

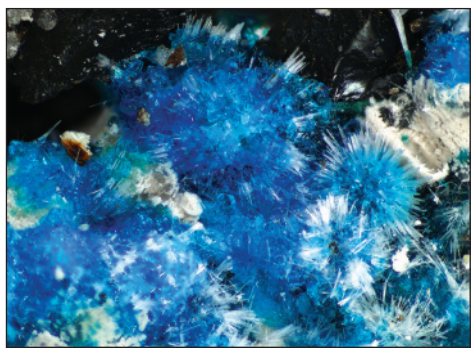
Bob during trip to emerald mines in Muzo area in Colombia in 1994.

EJ: I was fascinated by them almost from birth. I remember looking into my father's mineral cases and opening his mineral cabinets with wonder even before I started collecting in 1969 at age 8. I distinctly remember breaking a pectolite ball after being told not to touch it. Dad was very upset. I don't buy pectolite to this day.

TP: *What were the, most exciting and productive field trips you had together?*

BJ: One of the most memorable trips we had together was spending a month in Mexico in June of 1979. We visited many mining districts and localities including Cerro de Mercado (Durango), San Martin (Zacatecas), Fresnillo (Zacatecas), Mina La Fe (Durango), Naica (Chihuahua) and Santa Eulalia (Chihuahua). We were allowed into several mines and given permission to collect. That would be very difficult today.





From the top: Bob in 2003 standing at the front of the North Mesa #5 Mine, Utah, USA, type locality for bobjonesite. Below, Bob with his son Bill collecting bobjonesite and examining specimens on the surface. Bottom: Bobjonesite, field of view 2 mm. M. Scott collection. RRUFF photo.

Wulfenite with mimetite and barite, 10 cm wide. San Francisco Mine, Mexico. One of the major specimens in Evan's Mexican suite. Now in J. and G. Spann collection. B. Swoboda photo.

Evan in The Cave of the Swords (upper photo) and climbing on a giant gypsum crystal in The Cave of Giants, Naica Mine, Mexico in 2001. B. Jones photos.

EJ: Visiting the cave of giant gypsum crystals at Naica was the greatest experience of not just my mineral collecting life, but perhaps of my entire life. My father and I were lucky enough to be invited to the cave with mineral dealer Benny Fenn in 2001 and 2002. The cavern is located 300 meters below the surface and was discovered in 2000 while driving a new ramp to gain access to an ore body. The cave is an underground opening created when limestone was dissolved and the opening filled with

Evan digging for red beryls in Wah Wah Mountains, Utah, USA in 2009.

mineral-rich water from which the large gypsum crystals grew. The main chamber of the cave is 30 m in length and contains the largest free-standing crystals ever discovered, the biggest of which is 12 m long and 4 m wide. The cave is only accessible because constant pumping of groundwater by the mining company keeps it dry. If the pumps were shut off the cave would flood. The gypsum crystals are colorless and very clear, like ice.Upon our arrival at Naica, we were driven many meters down the San Francisco ramp until we reached the cave which was behind a secure, locked steel door. Temperatures in the cavern were in excess of 55°C and humidity near 100%. We could only stay in the cave for 5 minute intervals before taking breaks. This was repeated many times. Despite the deadly heat, the experience was utterly magical and seemed like a different

Evan with his girlfriend Melissa Palermo in the Copper Queen Mine, Bisbee, Arizona, USA in 2008. M. Palermo photo.

planet, an alien world. Who would have thought there existed gypsum crystals the size of huge evergreen trees? Imagine shrinking yourself to the size of an ant and then exploring your favorite mineral specimen. That is what it was like. Even after seeing it in person I still can't believe it's real.

Evan (center) with his business partner Marc Miterman (left) with exeptional azurites from Milpillas, Mexico, during Tucson Show in 2012.

TP: *Evan, how did you start your professional career in minerals?*

EJ: After graduating in 1985 with a Bachelor of Science degree in Geology from Arizona State University (Tempe, Arizona), I was hired by famous mineral dealers Wayne and Dona Leicht (company *Kristalle*) for 6 months in Laguna Beach, California. After that, I was hired

Evan (center left) with his Grateful Dead tribute band, Xtra Ticket, during concert in 2013. M. Rubin photo.

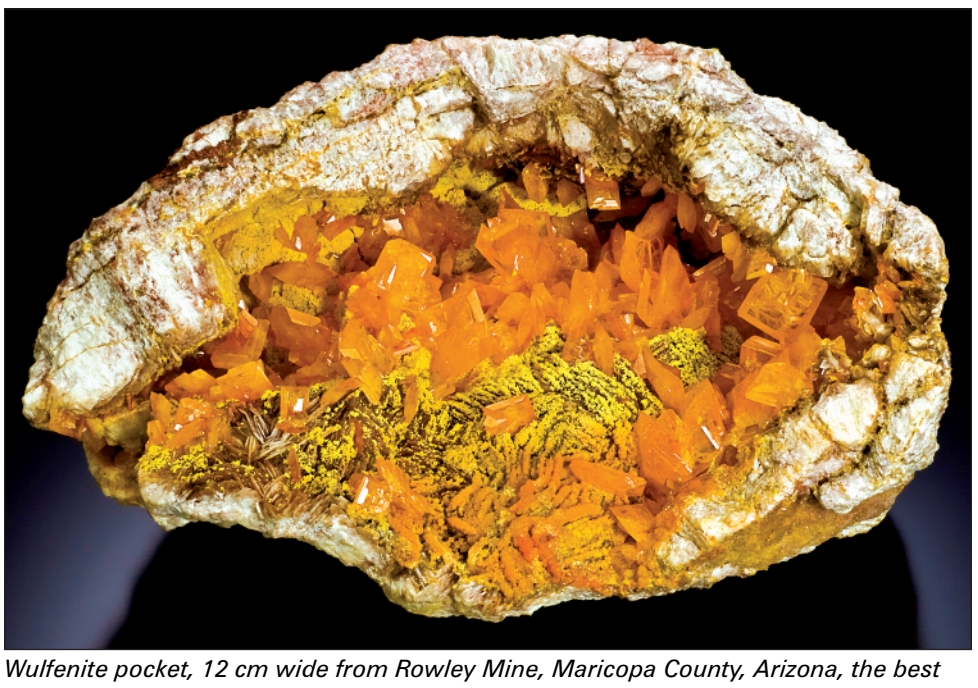
by the mineral wholesaler Bitner's in Phoenix Arizona as their mineral specialist where I worked until 1998. Bitner's sold to many rock and gift shops and also did a lot of shows. Since 1998 I've been selling minerals on my own. In 2012, I formed a new mineral dealership,

*Upper photo: Red Cloud Mine wulfenite case during "*Arizona Mineral Treasures*" exhibition in Tucson in 2012 with several of Evan's specimens. Below case with display of Arizona specimens from Evan's collection in Tucson 2011. W. Wilson photos.*

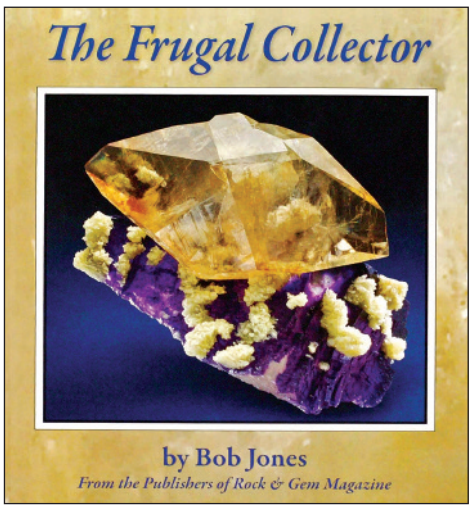
Unique Minerals, which specializes in fine minerals for collectors and you'll find us set up at most major mineral shows.

TP: *For almost 20 years you've worked on your own as a mineral dealer, but you also specialize in field collecting in Arizona. Where do you go to collect most frequently? Have you ever had the luck to collect some high quality specimens?*

EJ: I have actually field collected less than people might think (at least compared to other field collectors) but that being said, I have been fortunate to have the opportunity to dig at several localities in Arizona, Colorado, Mexico, New Mexico, California, Utah and China. But my favorite has always been the Rowley



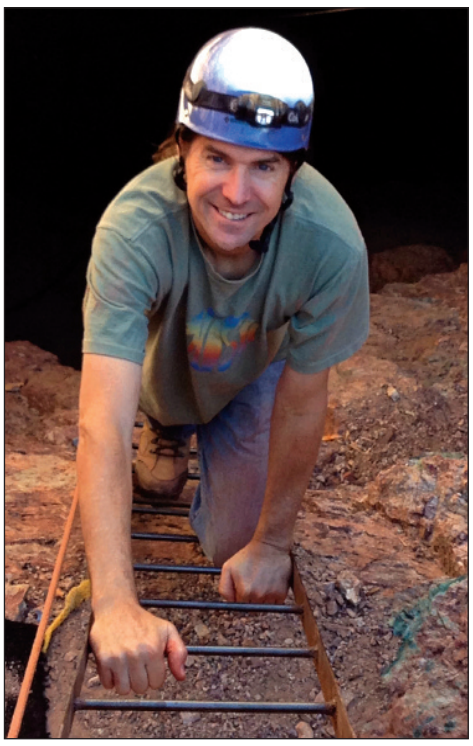
Wulfenite pocket, 12 cm wide from Rowley Mine, Maricopa County, Arizona, the best specimen collected by Evan (in 2004). E. Jones collection. J. Scovil photo.

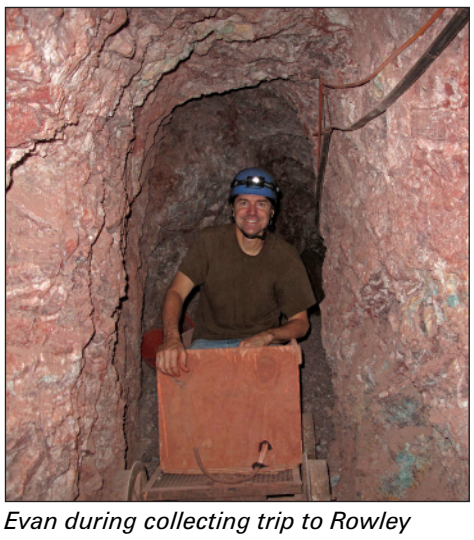


*Bob's newest activity – recently published book cover and screen from the Blue Cap Production movie "*What's Hot in Tucson*" where he is a host (interviewing Evan).*

Mine. It is very difficult to come out of the Rowley finding nothing and I've been lucky to have found some high quality pieces there. The best specimen I collected is a geode-like pocket of barite, 13 cm across, lined with orange mimetite and yellow wulfenite blades to 2.5 cm (see photo on this page).

Another interesting experience was visiting a pyromorphite mine in Guangxi, China in 2009 largely due to its remoteness and the extreme conditions under which the miners dig. Access was by ascending a steep jungle footpath hundreds of meters through bamboo forest and thick wet vegetation.





Evan during collecting trip to Rowley Mine, Arizona, in 2014. J. Scovil photos.

Bob and Evan Jones in front of the cabinets with Arizona collection. E. Jones photos.

TP: *Bob, the last of your collections was given to Evan to curate and expand. After a few years Evan decided to focus the collection on Arizona minerals. Now it is known as one of the best Arizona collections in existence. How did all that happen?*

BJ: When it became clear in the 1980's that Evan was becoming more active than I was in the acquisition of minerals and curation of the collection I decided it was best to simply turn over the whole thing to him. At that time it was a world-wide collection with specimens from everywhere.

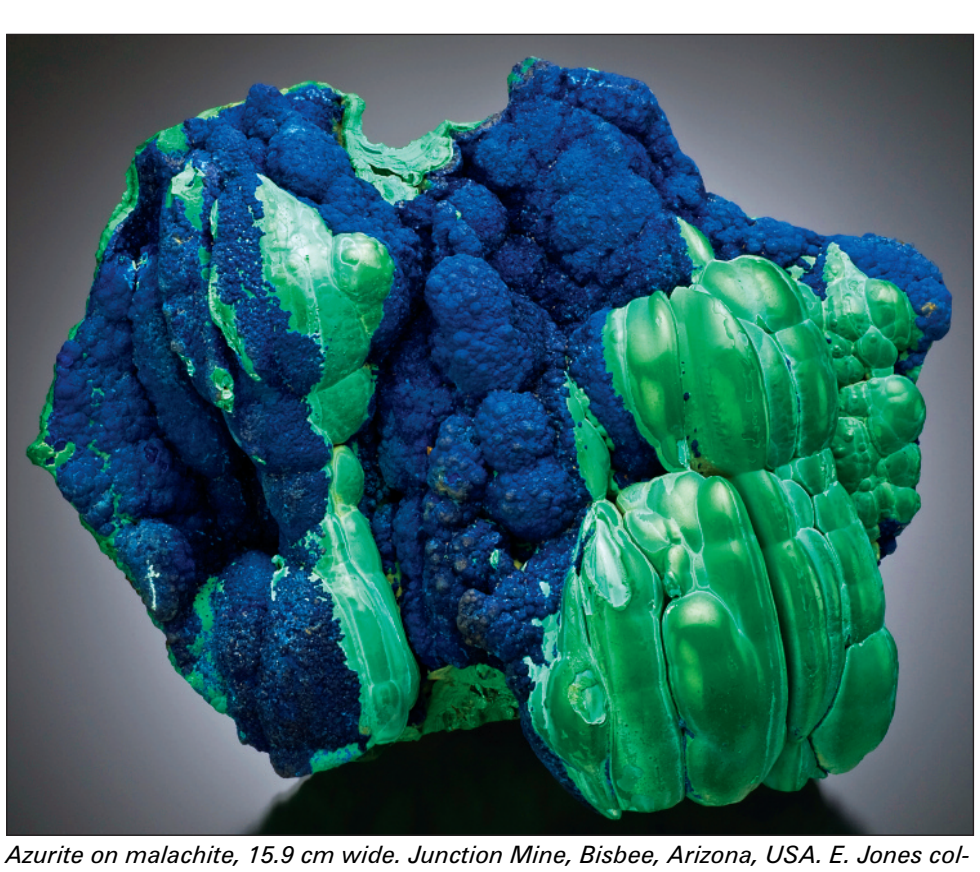
EJ: After taking responsibility for the collection I slowly narrowed its focus, at first dividing it into several sub-collections (including Arizona, Mexico, Colorado, Tsumeb, England, Germany and Australia) until ultimately deciding to collect only Arizona around the year 2000. I decided to do this for a few simple reasons. First, the collection was already very strong in Arizona minerals; second,

Spinel law twinned copper crystals, 13 cm high, Ray Mine, Arizona, USA. One of the best specimens in Evan Jones collection. J. Scovil photo.Scovil photo.

I love copper and lead minerals, both of which are in abundance here, in my home state of Arizona. Finally collecting everything was becoming prohibitively expensive.

TP: *What pieces do you consider the most important in the collection?*

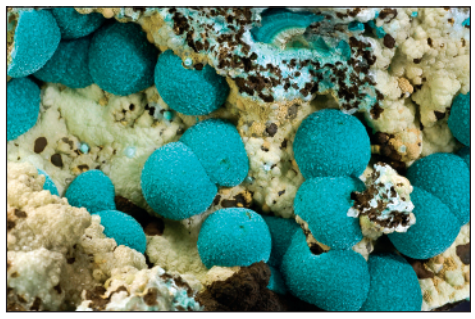
Silver, 7 cm wide, Stonewall Jackson Mine, Arizona, USA. E. Jones collection. J. Scovil photo.



Azurite on malachite, 15.9 cm wide. Junction Mine, Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

Wulfenite, 12 cm wide. Red Cloud Mine, Arizona, USA. E. Jones collection. J. Scovil photo.

EJ: One important specimen is certainly a large spinel twinned copper, 13 cm tall, from the Ray mine (see photo on this page) which is one of the largest and best examples known. Another important piece is a 6 cm aquamarine crystal spray from the Santa Teresa Mountains (see photo on page 21) which is utterly unique, the only known example of free standing aquamarine crystals from Arizona. Lastly, a very rare paramelaconite specimen from the Copper Queen mine in Bisbee (ex W.S.Vaux) (see photo on page 20) is the best known example of this mineral species in private hands.



Rosasite, field of view 5 cm. Silver Bill Mine, Gleeson, Arizona. E. Jones collection. J. Scovil photo.

Gold, 4.5 cm high. Greaterville, Arizona, USA. E. Jones collection. J. Scovil photo.

Fluorite on quartz, 17 cm wide. Santa Teresa Mountains, Arizona. E. Jones collection. J. Scovil photo.

Gem & Mineral Show in which I exhibited over 250 specimens – a monumental task, not recommended for the faint of heart – and organizing the recent supplement to the *Mineralogical Record* magazine entitled "*Mineral Collections of Arizona*".

TP: *Evan, probably the most important minerals you brought to the market were Mexican azurites from the Milpillas Mine. You were one of the very first people who had them. Have you ever visited the mine? What is the situation there? There are a lot of rumors that the mafia controls azurite production there.*

EJ: I first started handling Mipillas azurites in 2007, about one year after the

Copper, 8 cm, Czar Mine, Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

TP: *You are also involved in many projects connected with Arizona mineralogy. Which of them were the most important in recent years?*

EJ: The two projects of which I am most proud were helping to organize the Arizona Centennial exhibition "*Arizona Mineral Treasures*" at the 2012 Tucson

Wulfenite, 4.5 cm wide. North Geronimo Mine, La Paz County, Arizona, USA. E. Jones collection. J. Scovil photo.

Paramelaconite, 2 cm high. Copper Queen Mine, Bisbee, Arizona. Probably the best example of the species in private hands. E. Jones collection. J. Scovil photo.

Azurite on malachite, 7 cm high. Czar Mine, Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

mine opened and I have visited the mine many times. The area is rough and remote. Rumors of cartel control of the minerals are greatly exaggerated but I will say the area surrounding the mine is certainly under some level of cartel control and can be very dangerous. Corruption is still prevalent in Mexico and from this you may draw your own conclusions. As for the minerals themselves, in my opinion Milpillas is now the premier azurite locality in the world for a great number of reasons including superior color, luster, crystal quality, diversity of crystal forms and habits, and the sheer number of specimens produced. It has also produced undoubtedly the finest brochantite in the world, some of the best malachite pseudomorphs ever found, as well as fine examples of the rare copper vanadates, vesignieite and volborthite. The mine is scheduled to close around 2018 when economically viable copper ore will be depleted. Further drilling has revealed no new ore bodies, so now is the time to buy these specimens.

TP: *Bob, in 2000 a new mineral, named after you* - **bobjonesite** - *was discovered. Can you tell us about this find and if you ever had the opportunity to collect it?*

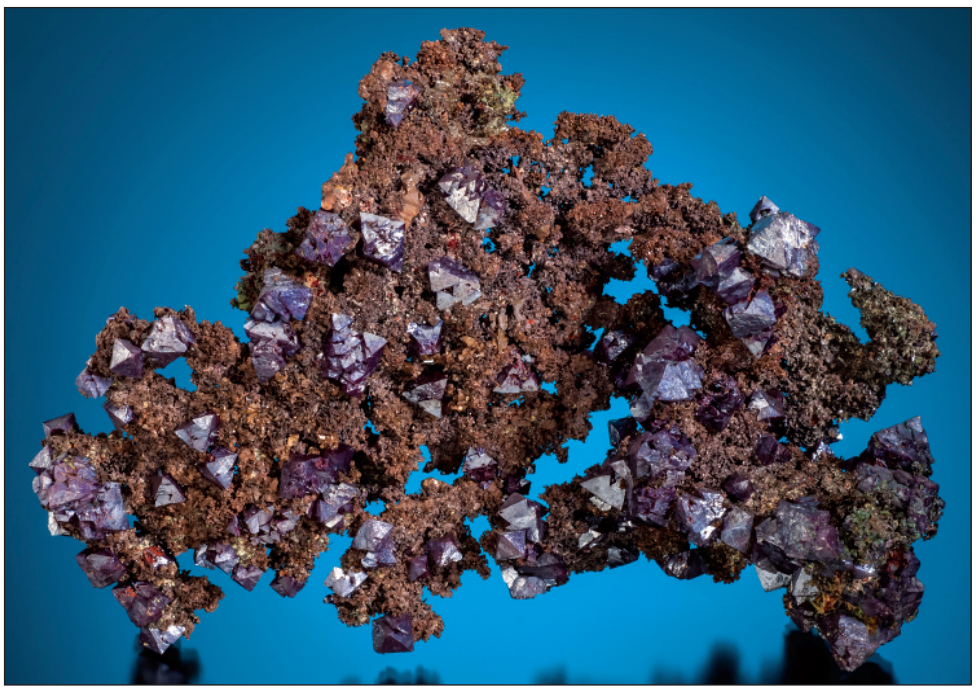
BJ: The mineral was discovered by Pat Haynes in the North Mesa #1 Mine, San Rafael Swell area, Emery County, Utah, an abandoned uranium mine. Bobjonesite was found to occur in a single petrified wood log. It is unstable and will dehydrate easily, so great care must be taken to ensure this does not occur. A few years after its discovery, I was able to collect specimens of bobjonesite at the locality with Pat and my sons Bill and Evan.

Smithsonite, 10 cm high. 79 Mine, Gila County, Arizona, USA. E. Jones collection. J. Scovil photo.

Quartz on malachite pseudomorphose after azurite, 5 cm high. Piedmont Mine, Yavapai County, Arizona, USA. E. Jones collection. J. Scovil photo.

TP: *Bob, you are officially retired, but you are very involved in the collecting community. What are your main activities recently?*

BJ: I lecture about minerals all over the U.S., probably doing 10-12 talks a year. I also co-host Blue Cap Productions' videos "*What's Hot in Tucson*" and "*What's Hot in Munich*". I'm Senior Editor of *Rock & Gem* magazine and the



Exeptional specimen of cuprite on copper, 11 cm wide. Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

Wulfenite, calcite, 8 cm wide. Total Wreck Mine, Pima County, Arizona, USA. E. Jones collection. J. Scovil photo.

Malachite, 6.5 cm high. Czar Mine, Bisbee Arizona, USA. E. Jones collection. J. Scovil photo.

Calcite with malachite inclusions, 12 cm high. Southwest Mine, Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

International Ambassador of Good Will for the American Federation of Mineral Societies. I'm also on the board and last remaining founder of the A.L. Flagg Foundation saluting Arizona's first mineral curator and founder of the Northwest Federation of Mineralogical

Silver, 9 cm high. Mineral Park, Mohave County, Arizona, USA. E. Jones collection. J. Scovil photo.

Copper, 11 cm wide. Sacramento Mine, Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

EJ: My band is called *Xtra Ticket* and we are a *Grateful Dead* tribute band formed in 1994. We faithfully re-create the music and experience of the Grateful Dead, the greatest band (in my opinion) to emerge from San Francisco in the 1960's. Their music is difficult to classify – it's in a class of its own really – but contains elements of rock, country, blues and jazz with plenty of improvisational jamming. Today the genre is known as "Jam Band" music, but in the late '60's was known more properly as psychedelic rock. I sing and play rhythm guitar filling the role of Bob Weir in the band. You can follow us on Facebook at *www.facebook.com/XtraTicket* and

Wulfenite with mimetite, 6 cm high. Rowley Mine, Maricopa County, Arizona, USA. E. Jones collection. J. Scovil photo.

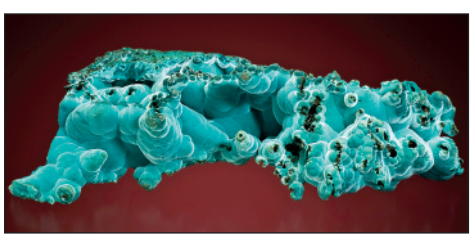
can listen to live recordings that we have uploaded at *www.archive.org/details/XtraTicket*

TP: *Thank you both very much for the interview and we wish you many more mineral adventures together!*

Calcite with cuprite inclusions, 13 cm high. Czar Mine, Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

Societies, and a life member of six different mineral clubs.

TP: *Evan, you are also quite well known as a musician. What is the name of your band, and what instrument do you play and what kind of music?*



Rosasite, 13.1 cm wide. Cole Shaft, Bisbee, Arizona, USA. E. Jones collection. J. Scovil photo.

Cerussite, 11 cm wide. Flux Mine, Arizona, USA. E. Jones collection. B. Jones photo.

Unique for Arizona specimen of free growing beryl var. aquamarine, 6 cm wide. Santa Teresa Mountains, Graham County, Arizona, USA. E. Jones collection. J. Scovil photo.

Journal presentations: Rivista Mineralogica Italiana

Editorial team of the Rivista Mineralogica Italiana. *From left: Paolo Gentile (President of* Gruppo Mineralogico Lombardo – Associazione Italiana di Mineralogia*), Alessandro Guastoni (coordinator of the editorial staff of RMI), Federico Pezzotta (editor of RMI). Photo A. Martaud.*

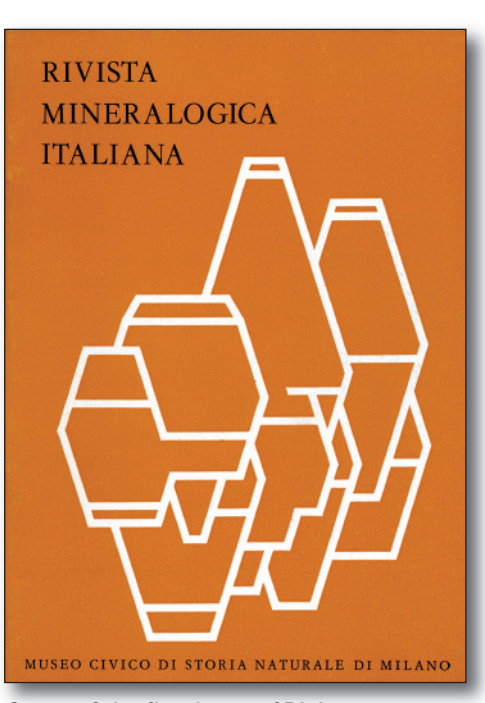
GOAL

Rivista Mineralogica Italiana (RMI) is the journal of *Gruppo Mineralogico Lombardo - Associazione Italiana di Mineralogia* (GML-AIM) (Lombardy Mineral Club – Italian Mineralogical Association), a non-profit

Covers of some recent issues of Rivista Mineralogica Italiana.

and cultural association based at the Natural History Museum of Milan. In this respect RMI is different from other similar journals of popular mineralogy owned by commercial publishers. RMI is distributed to the members of the association every three months, for a total of four issues per year.

The magazine is mostly devoted to Italian mineralogy, catering to the needs of both the hobbyist and the professional. RMI reports simple news such as new mineral finds written about by collectors, detailed studies including laboratory investigations written by or with the collaboration of university researchers, and historical research about classic localities, famous mineralogists and collectors, and historical collections. Topics range from aesthetic minerals to systematic mineralogy to micromounts, with special attention to the quality of the images.



Cover of the first issue of Rivista Mineralogica Italiana *published in 1977.*

QUALITY

RMI is a full-color quarterly publication of 68 pages or more, and is printed on high-quality glossy paper. All articles receive at least two technical reviews by professionals in this field whose names are listed on the masthead. The text is in Italian and each article includes abstracts in English and in German.

HISTORY

The first issue of the predecessor of Rivista Mineralogica Italiana was published in November 1967 by the *Gruppo Mineralogico Lombardo* under the name of *Notizie del Gruppo Mineralogico Lombardo*. Two years later, in 1969, a new format was adopted and the magazine was published with the new title of Notizie. In the following years the Lombardy Mineral Club, helped and inspired by Vincenzo de Michele, at the time Mineralogy Curator of the Milano Natural History Museum, started collaborating with other recently founded mineral clubs in various regions of Italy, with the goal of establishing a national mineralogical magazine, and in 1977 *Notizie* was renamed *Rivista Mineralogica Italiana* (Italian Mineralogical Magazine). Indeed the magazine progressed greatly over the following years, documenting in its pages much valuable information, mostly (but not only) on Italian mineralogy.

In 1980 Erberto Tealdi took the responsibility of director of the editorial staff and started an important new phase in the life of Rivista, promoting new articles and producing special issues about world-wide mineralogical localities; thus the magazine was promoted at a more international level.

Further important changes happened after 1998, with a renewed and extended editorial staff, which included Alessandro Guastoni (Curator of the Mineralogy Museum of the University of Padua), Federico Pezzotta (Mineralogy Curator at the Natural History Museum of Milan, since 2006 Editor of RMI), and graphic designers and photographers Gualtiero Monistier (1998-2003), and Roberto Appiani (2004 to present). At present, further members of the editorial board include Claudio Albertini, Christian Biagioni, Renato Pagano, Pietro Vignola, and Elisabetta Spagnolo.

In 2014, GML-AIM numbers close to 1100 members about one hundred of which are in foreign countries in Europe and North America.

SPECIAL ISSUES

Two general indexes of the RMI have been published, the first one in 1995, covering everything published by the magazine between 1967 and 1994, and the second one in 2010 covering the period 1995-2009. Several monographic issues have been published, such as Franklin (#2-1983), Mont Saint Hilaire (#3-2000), Madagascar (#2-2005), Trentino Alto Adige (#3-2006), Isola d'Elba (#3-2007), Sardegna (#4-2007), Alpe Devero e Monte Cervandone (#1-2009), Alpi Apuane (#1-2010), and Campigliese (#1-2013).

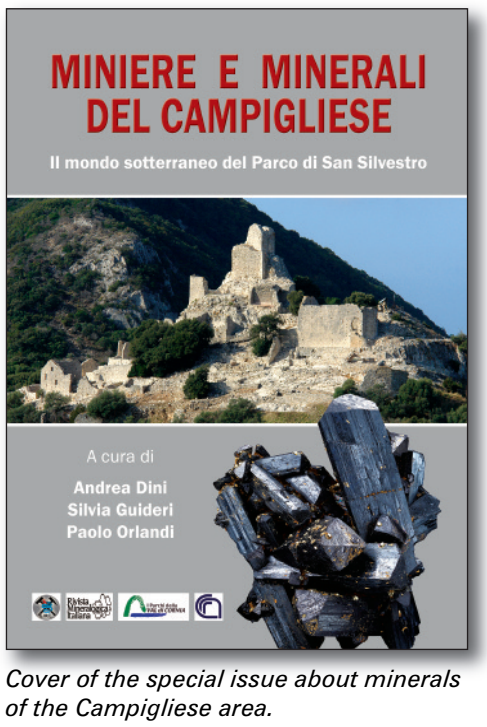
Logo of the Gruppo Mineralogico Lombardo.

INTERNET

Information about each issue is reported in *www.gmlmilano.it*, where it is possible to find the front covers and lists of contents. A more extended webpage is under development, with the goal of reporting abstracts of each article and a photo gallery containing extra images not included in the hard copy. Since last year, a facebook page has also been opened.

SUBSCRIPTION

To receive RMI, it is necessary to be a member of the *Gruppo Mineralogico Lombardo - Associazione Italiana di Mineralogia* (GML-AIM), at an annual cost of 42.00€. Mailing RMI to Europe costs an extra 50.00€ per year, and to USA and Canada USD 69.00 per year. Fees can be paid at the RMI booth at the Munich Show in Germany (last weekend of October of every year), or by international cheque or bank transfer to: Gruppo Mineralogico Lombardo, c/o Banca Popolare di Milano, IBAN: IT70 M055 8401 7300 0000 0042 294, SWIFT: BPMIITMM. Residents of USA and Canada should contact Renato and Adriana Pagano (P. O. Box 37, I-20092 Cinisello, Balsamo (MI), *renpagan@gmail.com*).



Cover of the special issue about minerals of the Campigliese area.

Logo of Rivista Mineralogica Italiana.

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Topaz, 5.9 cm high, from Tribute Pocket, Agnus Dei Claim, Colorado, USA. Spirifer collection. J. Scovil photo.

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