



Website Newsletter of the Cape Town Gem & Mineral Club

MAY 2023



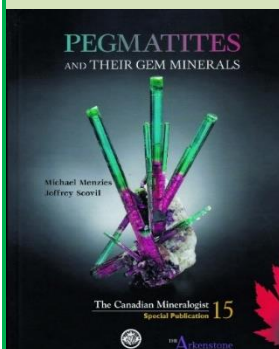
See page 11

DIARY

May	6	10:00–14:00	Open to the Public Day – Rocks, gems, jewellery, mineral specimens to look at, chat about, swap, sell or buy.
	13		To be announced
June	3	10:00–14:00	Open to the Public Day – Rocks, gems, jewellery, mineral specimens to look at, chat about, swap, sell or buy.
	10		To be announced

Letters to the Editor

Have you ever wanted to comment on an article in the Mineral Chatter? Or have a mineral-related issue that you'd like to share with readers? Well, now you can, in this proposed 'Letters to the Editor' section. Send an email to capetowngemmineralclub@gmail.com preferably short (one or two paragraphs), and to the point, and share your thoughts/wisdom with your fellow members. We look forward to hearing from you...



Dear Ed,

NEW BOOK ON PEGMATITES

I have just received a copy of a new book, "Pegmatites and their Gem Minerals," through the Mineralogical Record's bookstore and have to share it with your readers/members. It is a stunning tome, with 548 pages crammed with information, site pictures, pictures of pockets and most of all, eye-candy pictures of gem minerals recovered from pegmatites from all around the World. The text is very accessible for non-specialists and covers concepts and terminology, types of pegmatites, localities, minerals, gemstones and gems, and pegmatite formation. The photography is mainly by one of the World's best mineral specimen photographers, with contributions

from others. The Erongo Mountains, Mount Malosa and Madagascar are covered and explained, plus the usual suspects from Brazil, USA, Afghanistan and Ukraine, and many more.

Check it out on their website - I'm going back to daydreaming...

Yours

Peter Rosewarne

The Most Famous Mineral Finds of all Time: Part I

by
Peter Rosewarne

Introduction



This month's article focusses on the where and the why of some of the greatest mineral finds of all-time rather than the minerals themselves. Some of these finds have featured in previous Minchat articles on "best of" and other subjects but I'll try to emphasise the find aspect rather than regurgitating pictures of the same mineral specimens, beautiful though they may be. The criteria for inclusion here are pretty simple; the find must be of minerals of World-class quality, and more than one World-class specimen, i.e. multiple finds although all may be from a single pocket in one mine. We are looking at individual finds here, not mines *per se*. and not mines that produce a fairly regular supply of World-class specimens over a long period of time. Photographs of actual pockets are therefore reproduced where possible, with

acknowledgement of sources given.

The circumstances of these famous mineral finds vary from being in the course of normal mining operations, e.g. the Easter Pocket at Tsumeb, to dedicated specimen mining, e.g. at the Red Cloud and Sweet Home mines. I've chosen 10 finds to describe here. Four are from the USA, two from Brazil and one each from South Africa, Namibia, Canada and Ukraine. Five are from the 1990s and only one from the 21st century. My 10 "most famous mineral finds of all time", in chronological order, are:

- *Blue-cap tourmalines*, Tourmaline Queen Mine, USA, 1972
- *Grossular garnet* var. hessonite, Jeffrey Mine, Canada, 1972
- *Rhodochrosite*, N'Chwaning I Mine, South Africa, 1977
- *Rubellite* tourmaline, Jonas Mine, Brazil, 1978
- *Pyromorphite*, Bunker Hill Mine, USA, 1981
- *Rhodochrosite*, the Rainbow Pocket, Sweet Home Mine, USA, 1992
- *Azurite*, Easter Pocket, Tsumeb Mine, Namibia, 1994
- *Wulfenite*, Red Cloud Mine, USA, 1996
- *Elbaite*, Keke's Pocket, Pederneira Mine, Brazil, 1999
- *Heliodor*, Pegmatite #521, Ukraine, 2017

Here are some details of the finds and photographs of pockets, where possible, and lovely mineral specimens for your edification, which understandably elicited responses such as, "Oh my God!" and probably some unprintable ones as well when originally discovered. The full article was too large for one Minchat edition and so it is presented in two parts.

The Finds

Blue-cap Tourmalines, Tourmaline Queen Mine, USA, 1972

The Tourmaline Queen Mine is located in San Diego County, California, USA and is one of numerous mines in that area exploiting gem pegmatites (see **Figures 1** and **2**). Pala Properties leased the mine in 1971 and proceeded to extend tunneling through alternating promising areas (large *lepidolite*, *cleavelandite* and *quartz* crystals) and barren

areas before hitting a promising pocket with some very nice *rubellite* crystals. Further cleaning of the pocket revealed further areas with large, loose tourmaline crystals of hitherto unknown beauty with rubellite prisms and blue terminations. Many tourmaline, quartz, and in some cases *morganite* crystals were later reattached together after removal from the mine and cleaning. Classic world-class specimens such as the *Candelabra* (**Figure 3**) the *Steamboat* and the *Rabbit's Ears* resulted from this find. A representative of the American Museum of Natural History described the find as follows; "In terms of color and degree of perfection, this is the find of the century." That was the 20th century.

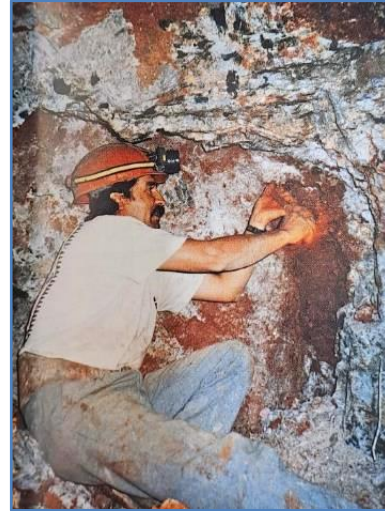


Figure 1: The Himalaya Pegmatite Dyke (Jesse Fisher photo)

Figure 2: Working-out a clay-filled Gem Pocket, Tourmaline Queen Mine, 1998 (courtesy of The Mineralogical Record)



Figure 3: The Candelabra (courtesy of the Smithsonian Institution)

Grossular Garnet (var. Hessonite), Jeffrey Mine, Canada, 1972

In 1972 a shovel working on a *syenite* dyke in the Jeffrey Mine (*asbestos*) uncovered a zone particularly rich in orange *grossular* of top quality and size. As luck would have it, instead of the find being swept away in ongoing mining operations, the shovel broke down and was out of service for two weeks. During this time miners and a couple of lucky tour groups managed to rescue numerous World-class specimens on a matrix of white *albite* or light green *diopside*. These top specimens are considered by connoisseurs to be the 'best of' for the species. The mine and some collectors are shown in **Figure 4** while a modest example is shown in **Figure 5**.

Figure 4: Jeffrey Mine Images



4a: Open Pit 2011



4b Collecting at a Dyke 2007



Figure 5: Hessonite Garnets on Albite (Rosey Collection)

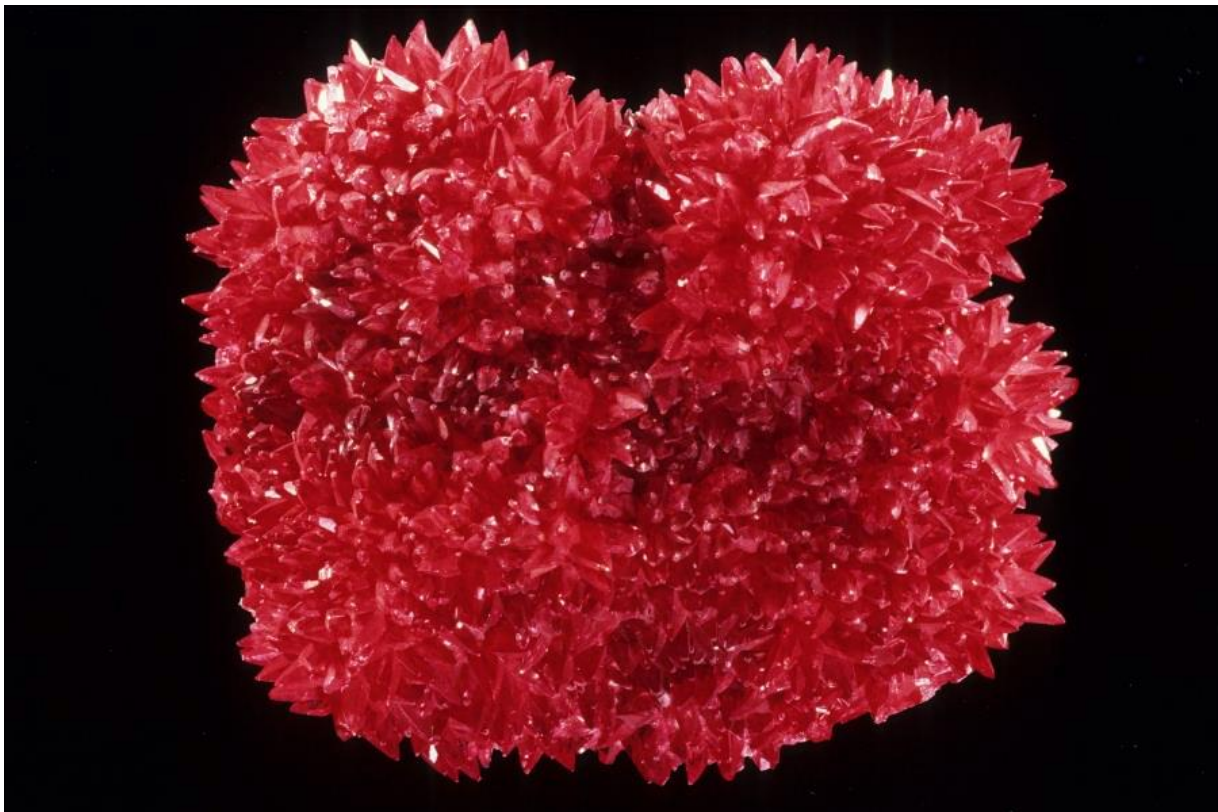
Rhodochrosite N'Chwaning I Mine, South Africa, 1977

The N'Chwaning I Mine is located in the Northern Cape Province of South Africa and is one of numerous mines exploiting the largest *manganese* deposit in the World. The discovery of several pockets of *rhodochrosite* at N'Chwaning I mine in late 1977 was literally a red-letter day in the annals of South African mineral collecting and indeed the World. This was before the Sweet Home Mine and Chinese rhodochrosite discoveries and many of the specimens recovered were in the 'best of' league for this species. The find and recovery of specimens is documented by Desmond Sacco in *The Mineral Record* (2017) and the bright red rhodochrosite pockets contrasting with the black manganese ore must have been an awesome sight, one which is unfortunately only recorded in Des's memory as he didn't have a camera in those days. As there are no photographs of the pocket(s) some images of the typical scalenohedron crystal groups are shown in **Figure 6**. Other habits included 'wheatsheaf' and botryoids/balls. The specimen in **6c** is 16 × 14 cm and is one of the best specimens from the 1978 find. Check out *The Manganese Adventure* and *The Desmond Sacco Collection* for stunning images of rhodochrosite (see References).

Figure 6: N'Chwaning I Rhodochrosite Specimens



6a: Scalenohedron Cluster (courtesy of Heritage Auctions) **6b: Scalenohedron Group** (courtesy of John Betts Fine Minerals)



6c: (courtesy of Prof. Bruce Cairncross, private collection)

Rubellite, Jonas Mine, Brazil, 1978

Brazil is well known for gem minerals and in particular, colourful tourmalines from complex pegmatites. The state of Minas Gerais is well endowed with such occurrences and famous mines such as Pederneira, Cruzeiro and Paraiba. However, one discovery at a small mine in 1978 was to set the mineral world alight, first with rumour and then gradually with mineral specimens of the highest order from one of the all-time greatest mineral pockets ever discovered anywhere.

The discovery of the rubellite-bearing pocket at the Jonas Mine in 1978 is the stuff of legend and one of the most spectacular finds in the history of mining/mineral collecting. After weeks of unproductivity driving an adit towards the target pegmatite a small pocket was encountered filled with mud and water. The presence of so much water suggested to the mine owner that there could be another pocket above this one. Exploring gingerly upwards they discovered a pocket and on inserting his hand inside, one of the miners withdrew a large and perfect, gemmy rubellite crystal. Widening the opening the miners were stunned to enter a 2.5 × 3 × 3 m pocket free of mud and with rubellite crystals scattered on the floor and numerous enormous crystals still in place on the sides and ceiling of the pocket within a matrix of cleavelandite (white platy albite) and quartz. These tourmalines are known as the “cranberry” tourmalines.



Wendell Wilson produced an artistic reproduction of the pocket which was called the Bambúro (loosely translated as “Lucky Break or “Jackpot”) Pocket and is shown in **Figure 7**. The largest of the crystals/crystal clusters were named and entered the ranks of the World's best. These included the *Joninha* (110 cm, 352 kg), *Foguete* (the Rocket, 85 cm and 82 kg), *Tarugo* and *Flor de Lis*. It is estimated that 200 kg of gem-grade rubellite was extracted from this pocket. Although the pocket was so free of clay that specimens didn't need cleaning, many of the larger crystals were in pieces and needed reconstructing, e.g. The Rocket was in three pieces. A cute example is shown in **Figure 8**.

Figure 7: Cranberry Tourmaline Pocket Reproduction (courtesy of Wendell Wilson)

Figure 8: Cranberry Tourmaline and Lepidolite (ex Rosey Collection)



Pyromorphite, Bunker Hill Mine, USA, 1991

The Bunker Hill Mine operated from 1887 to 1981 and produced 4.5 million t of silver, >2.6 million t of lead and 1.3 million t of zinc, and the most significant finds of pyromorphite the World has ever seen. A pocket was hit in July 1981 that yielded the first batch of superb specimens and three pockets were opened that summer. The third pocket was described as one of the most spectacular mineral-finds ever in the USA. From 1994 into 1996 further pockets of superb pyromorphites were discovered during specimen mining by Bob Hopper, appropriately named seeing as the main crystal habit is hexagonal and hopped. These are yellow to green in colour plus lustrous orange botryoidal masses also occurred. Some examples are shown in **Figure 9**, not World-class but pretty?



9a



9b



9c

Figure 9: Pyromorphite a) Crystals; b & c) Botryoidal (Rosey Collection)

Rhodochrosite, Sweet Home Mine, the Rainbow Pocket, 1992

The Sweet Home Mine was established in 1873 and exploited silver ore until closing in 1967. In 1991 it was re-opened, not as a silver mine, but for specimen mining for rhodochrosite. Investors put up working capital of \$200 000, commissioned a detailed geological map of the mine and bought new machinery, rehabilitated the mine and then set about exploring for specimens (**Figure 10**). In August 1992 a pocket measuring 1.5 m deep and 5–15 cm wide was discovered, named the Rainbow Pocket. Collected over three weeks, the pocket yielded more than 1 000 specimens,

among them the famous *Alma King* (Figure 11) and *Alma Rose*. Many further pockets were discovered in the following 14 years, yielding World-class rhodochrosite specimens, until it was decided to close the mine in 2004.

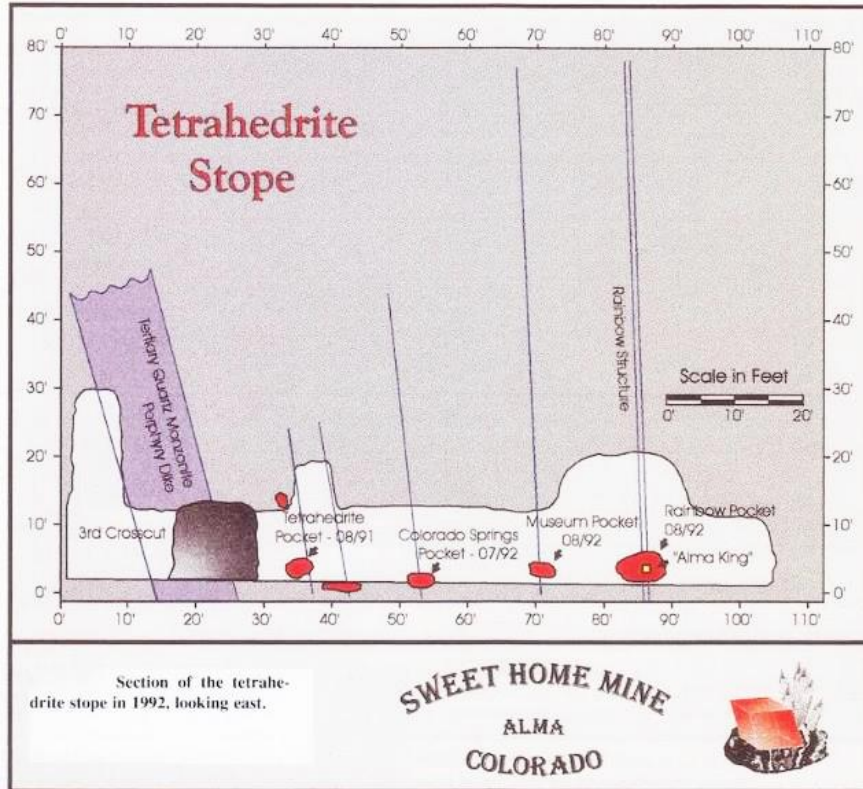


Figure 10: Mine Plan (courtesy of Collector's Edge)



Figure 11: The *Alma King* *in-situ* and being carefully removed (photos courtesy of Collector's Edge)

Azurite, Easter Pocket, Tsumeb Mine, Namibia, 1994

A pocket measuring 80 cm wide and 2 m in length was opened-up on the 8th level in the Tsumeb Mine around Easter 1994 and not surprisingly is known as the Easter Pocket (Figure 12). It is also known as one of the best azurite finds of all time and was the best until the finds at the Milpillas Mine in Morocco started challenging Tsumeb's pre-eminent position as the source of the best azurites. Interestingly, the pocket was missed by a few centimetres in earlier mining at that level in the 1920s.

The pocket is fairly unique in that free crystal growth had been possible, resulting in a unique platy habit similar to wulfenite and in that specimens could be 'picked' out of the pocket almost like picking apples off of a tree. Clusters of undamaged, platy, translucent crystals to 5 cm on a matrix of cerussite and/or malachite were recovered. The example in Figure 13 is from a private collection and measures 15.5 × 14.0 cm (poor quality of the image is my fault).



Figure 12 left: The Easter Pocket (courtesy of GG Publishing)

Figure 13 right: Bladed Azurite Crystals, (original image Prof. Bruce Cairncross, private collection)

Wulfenite, Red Cloud Mine, USA, 1996

The Red Cloud Mine in the Silver District of Arizona, USA, exploited a lead/silver deposit in a fault and was discovered in 1878. The wulfenite from this mine is widely recognised as the 'best of' for the species due to its intense red, red-orange colour, large crystals and translucence. In 1995 Wayne Thompson and James Horner purchased the mine and started specimen mining in 1996. In April of that year the miners broke into an unusually large pocket in the so-called Jersey Vein measuring 10 cm by 1 m by 4 m. From this one pocket they recovered over \$1 million in wulfenite specimens with wonderful large red translucent crystal groups on matrix. Good specimens were recovered intermittently over the following years but nothing to match this pocket and the mine is now inaccessible. *In situ* crystals are shown in Figure 14 and a World-class specimen in Figure 15.



Figure 14: Wulfenite Crystals *in situ* at the Red Cloud Mine
(original photo Chris Whitney-Smith)



Figure 15: Wulfenite Crystal Group (courtesy of Treasure Mineral Mountain)

To be continued...

From the Cabinet of Curiosities



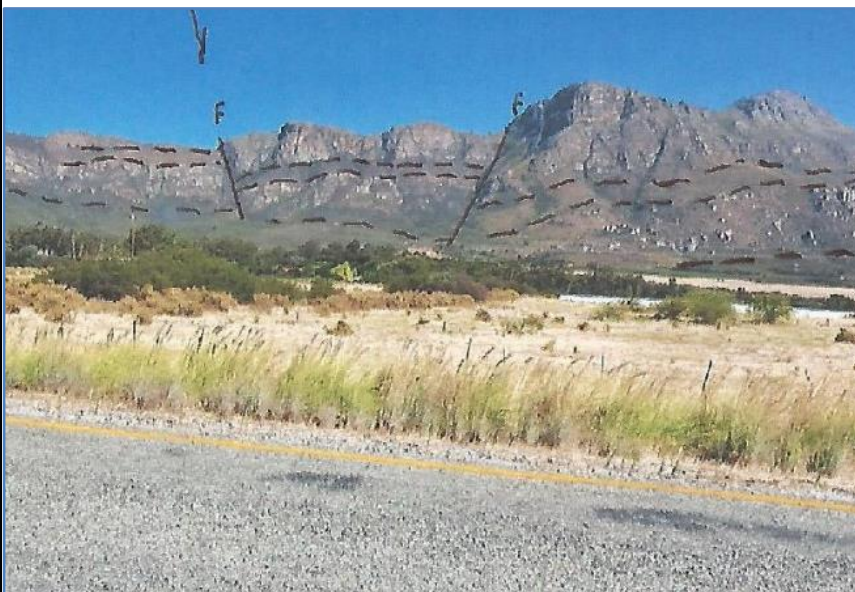
This month's *Curiosity* involves the Table Mountain Group (TMG) near Piketberg. I was driving back from Lambert's Bay via Eland's Bay recently and noticed the prominent Cedarberg Formation shale band in the cliffs of grey sandstones of the TMG and stopped along the R365 for a look (**Figure 1**). The shale band is a prominent marker horizon in the TMG and you can see examples of it all over the outcrop area of the TMG where its smooth green slopes contrast markedly with the rugged grey outcrops of sandstone and quartzite. On closer inspection I noticed that the shale band was displaced in a couple of places by faults and **Figure 2** is an annotated version of **Figure 1** pointing out the salient features. The view encompasses >100 million years of depositional history, with the TMG resting unconformably on the metasediments of the Malmesbury Group. The TMG sandstones form a major aquifer in the Western Cape and you may soon be drinking groundwater derived from a wellfield near Steenbras Dam and perhaps you already are.



Figure 1: View of the Piketberg from the R365 Looking West

Fault (normal)

Fault (reverse)



Nardouw Subgroup	} TM Group
Cedarberg Formation	
Peninsula Formation	
Malmesbury Group	

Figure 2: Same View with Annotations

LAPIDARY

The Billy Millen Legacy

At our club we never say “no” to the offer of a rock-related donation! Sometimes we are given specimens, sometimes books, or even a monster flat lap. Our most recent donation was a lapidary’s dream.



As we steadily unpacked the old ice-cream boxes and other heavy bags, we discovered two “Omnivisors”, two “Dremel” motor tools, a rock hammer, and lots of interesting lapidary rough, especially tigers-eye. Further digging revealed polished stone objects, and then... the most beautiful, perfectly worked cabochons.



And finally, lying flat in the bottom of the last box was a whole fistful of prize-winning ribbons from past FOSAGAMS National Shows, including the Cape Town Show of 1973.



Who was this person? We had to find out. When thanking Tracey, the donor, we asked her who her father was and how he had come to do such lovely work? This is her reply:

"... his name was Billy Millen and his job was Chief Diamond Valuator for De Beers Consolidated Mines in Kimberley for his whole working life.

I have been going through old photos and found so many where he entered competitions and did very well with his cutting and polishing.

As a child, going on Rock Hunts was what we did often... and attending the Gemboree...

I remember the bigwig when my dad was at the lapidary club was a man called Horst Windisch

I think he would have been so impressed with the energy I found at your club when I dropped off the donation. His full name was William Francis Millen."



And in amongst all this was another treasure – a plaque from the 1972 FOSAGAMS tour. You don't see them anymore!

This collection is going to become a worthy and historical display in our clubhouse, and hopefully will serve as an inspiration to members.

Thank you so much again Tracey.

FACETIPS



Pale pink kunzite (spodumene) 5.28 ct oval & 7.26 ct pair, with some needle inclusions, completed recently by Duncan.

"FACETIPS – A Gem Cutter's Notebook" by Duncan Miller. The faceting articles published over the past few years in the Mineral Chatter have now been compiled into a single 128-page document. The pdf file is available for download from <http://ctminsoc.org.za/articles.php> for those interested in having all the articles together.

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