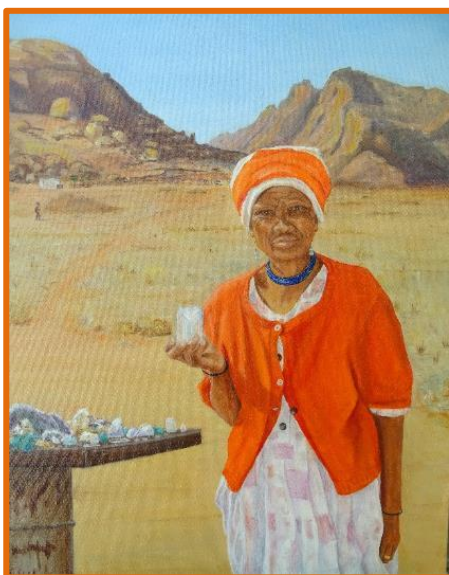




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# AUGUST 2024



The Topaz Seller, oil on canvas, 75 × 60cm – see page 8

## DIARY

<b>August</b>	<b>3</b>	<b>10:00–14:00</b>	<b>Open to the Public Day – Rocks, gems, jewellery, mineral specimens to look at, chat about, swap, sell or buy.</b>
<b>September</b>	<b>7</b>	<b>10:00–14:00</b>	<b>Open to the Public Day – Rocks, gems, jewellery, mineral specimens to look at, chat about, swap, sell or buy.</b>

## From the Cabinet of Curiosities



This month's Curiosity is an unusual **Calcite** specimen from Wenshan, Yunnan Province, China (where else?). It is offered by Hummingbird Minerals and features an unusual crystal habit with several large flat-topped crystals rising from numerous other rhomboidal calcites. Looks like someone has sliced the top off of the central crystals? Makes a change from the usual scalenohedrons and rhombs? **PR**

Figure 1: Calcite, China 15.5 × 12.5 x 5.5 cm



## In Search of the Green Gold A Gem Hunting Trip to Tanzania

By Mandy Freeman

Reminiscing one evening with our dear friend Rob Smith about his adventurous travels across Africa, we felt the all too familiar urge to plan another gem hunting trip and this time we set our sights on Tanzania and the mining activities around the vibrant city of Arusha.

Our customized private trip was organised by WildGemtz, a young and upcoming Tanzanian tour company with a family history of mining.



**Left: Start of expedition. posing with the WildGemtz team who organised our trip**

**Right: The road ahead. The daunting 4-hour drive to Landanai**

After a quick pose in front of the WildGemtz vehicle to celebrate the start of our expedition, we set off from Arusha with a daunting 4-hour drive to Landanai. This is a tourmaline and ruby mining area located in Naberera. The wide red gravel road turned into a never-ending goat track as we bumped along with the recognisable anticipation as we spotted the little mounds of earth indicating small mining activity. We stopped at a mining village where some tsavorite and chrome tourmaline in small quantities was offered. It was then time to visit the tourmaline mining area, where we took a walk around the fairly deserted area, and were able to enter some of the excavations. It was quite interesting to see how rocks are used to prop up the sides of the diggings for support. We then moved on to a bigger mine being actively worked before reluctantly heading back to the vehicle to face the dreaded return trip, softened only by the picturesque Mount Meru coming ever closer as the hours ticked by and the promise of a cold Kilimanjaro beer.



**Left. A medium-sized tourmaline mine in the Landanai mining area**



**Right. Looking at the rock support structure whilst Len fretted about roof collapses**



Mount Meru in the distance



A well-deserved beer after 8 hours travelling on our first day

One of the highlights of our trip was the visit to Lemshuku, a tsavorite mining area. By then, we were quite comfortable chatting gems with Marcus and Junior, owners of WildGemtz who were guiding us on the trip, exchanging knowledge as we went along. Our first stop was to their own tsavorite mine in Komolo where the more adventurous of the two of us (guess?), clambered down into the mine where they were working a new seam.



Working in very cramped conditions with a lack of ventilation, the small-scale miners work a new tsavorite seam.



Len checking some of the rough from the small scale tsavorite mine



Tsavorite from a seam



**Tsavorite rough Landanai**



**Inspecting rough Landanai**

And then we had the opportunity to stop at a small mining settlement to see what was on offer. With much excitement from the community at the forthcoming feast (or rather fleece) of seldom seen tourists, a table in the shebeen was cleared, Len brought out his scale and equipment and the miners started filing in with their parcels for sale. The bush telegraph works well there too! All was going well. I was keeping occupied by feeding biscuit crumbs to the chicken that wandered in from time to time, and Len was happily checking stones with his torch, when suddenly a stone slipped out of Len's hand and vanished. The mood soured quickly as we frantically searched in the dust, with the ominous growing feeling that the scrawny chicken had snatched it as it landed. OMG, now we had to buy the chicken! As thoughts of how to dispatch the chicken and recover the stone were flashing through my mind, the stone tumbled from Len's jacket, and the sun broke out amongst chuckles from everyone about the lucky escape for the chicken. After that, we were all friends, the "Muzungu prices" that were being demanded, suddenly became more reasonable, the woman of the village took me aside to weave friendship ankle bracelets, and Len resumed his negotiations. After business was concluded, we celebrated with roasted goat and beer. What a lovely community who live with very little, and who were so open and welcoming to us once we worked through the initial reservations.



**Left: Sitting in a shebeen, going through the stones on offer at Lemshuku**

**Right: The innocent chicken who nearly lost its head when a stone dropped**



**Mandy receiving a friendship ankle bracelet from the ladies and children at Lemshuku**

Day 3 was our big visit to at Merelani Mining area at Manyara. WildGemtz is one of the few tour operators allowed into this high security tanzanite mining area. Arriving at the entrance, we were advised of the security protocols, Do's and Don'ts, and we felt quite intimidated entering the vast walled area where the various mines are situated. The wall costing US\$2.2 million was built in 2017 and extends 24 km of enclosed perimeter around the Merelani Mining area at Manyana, complete with surveillance cameras and guard turrets. For our visit inside the walled area, we were assigned a soldier who accompanied us in the vehicle and took his job of overseeing our activities very seriously! We drove past the famous Tanzanite One, and the vast overburden area where the ground was been scoured by the community for tanzanite cobbings. At the Naisinyai dealer buying area, we had the opportunity to sit alongside a Maasai dealer to view and purchase tanzanite cut stones and rough (at top end Muzungu prices). We then headed out to a tsavorite mine where we chatted with the owner, viewed his operation and looked at some of the tanzanite and tsavorite cut stones he had to offer. After lunch, our last visit for the day was a fairly large operation, with impressively clean and well-maintained equipment before heading back to security for our body and vehicle search, the thought of which was actually more stressful than the actual event.



**The security entrance of the Merelani Mining area**

**The area where the community collects tanzanite cobbings near Tanzanite One mine**



**Left: We had the opportunity to work alongside a Maasai stone dealer to see what was on offer in the dealer buying area**  
**Right: A medium-sized tsavorite mine shown to us by the owner**



**Miner at tsavorite mine Merelani**



**Visiting a tanzanite mine in Merelani**

The Gem Market in Arusha is a vibrant, exciting experience if you love rocks, gems and anything to do with stones. It has the usual touts, scammers and opportunists found in every gem market in the world along with an innovative selection of Sprite glass, oiled gravel and stones that looked like they had travelled the world. After looking through the tables, we visited some of the dealers in the area, and were offered a variety and volume of stones of varying quality. We spent many hours wading through an unending supply of stones, most of which were badly cut, and required re-cutting. The “Arusha-cut” was purposefully used to maximize weight and bypass the prohibition of exporting tanzanite rough larger than 2 grams, however we had been advised that this ban was imminently to be abolished. Wandering through the market, we were able to purchase some nice iolite rough and a couple of pieces of tsavorite. We saw sapphire, minuscule rubies, some unusual peridot with a yellow tinge, orange kyanite by the sackful, spinel which is also mined in Tanzania (that visit reserved for a future trip), and we had some laughs at one of the stalls selling epidote as “Happy Dot” and aventurine labelled “Green Adventure”.



Entering the gem market in Arusha where the Maasai sell rough and cut stones

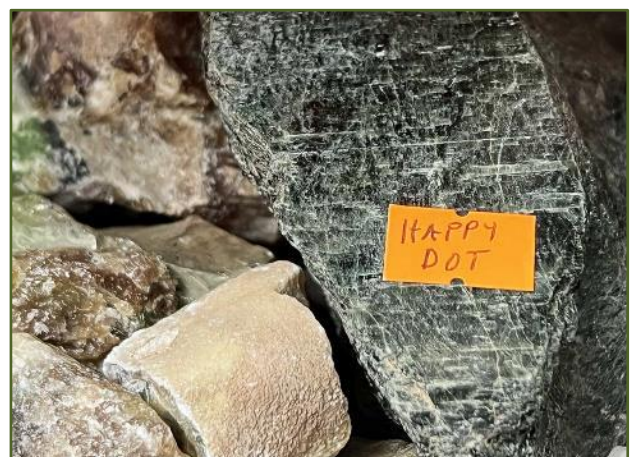


Left: Very small rubies for sale at the gem market

Right: Having a look at tanzanite parcels in a dealer's office alongside the gem market



Corundum and aventurine sold as "Green Adventure".



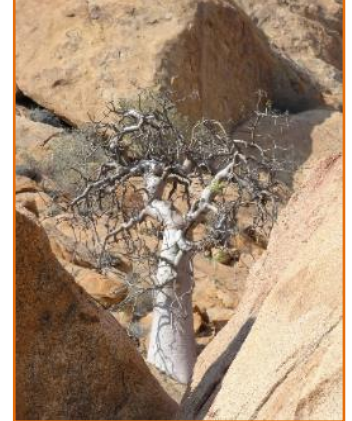
Epidote labelled "Happy Dot"

And that sums up our gem trip perfectly – where we experienced small and medium-sized mining activities, and enjoyed lots of laughing and gem chattering with local rock hounds in search of a Green Adventure in Tanzania.

## The Topaz Seller

Recently Bruce Cairncross wrote an article on Topaz from Southern Africa for the latest issue of Rocks & Minerals, (Volume 99, Issue 4, July-August, 2024).

Klein Spitzkoppe in Namibia is one of the main areas in southern Africa where topaz can be found in granite outcrops or alluvial scree. I have very fond memories of the area, both for its magnificent scenery and for the interesting characters who mine and sell stones alongside the road.



Klein Spitzkoppe views



Typical roadside sales tables in Namibia (Photo at right by Bruce Cairncross)

When there in 2012 I took a photograph and later used it to paint one of these roadside traders, and it has probably become my favourite canvas. I call her "The Topaz Seller". She was beautifully dressed in her own way, with turban, necklace, earrings and a ring, as well as a well-worn dress and cardigan with mismatched buttons. Her colour coordination was impressive. She didn't have topaz for sale the day I was there, and certainly not one the size she is holding in this painting, but one can but dream! My reference photos are below left, and the canvas at right:



After seeing one particular photograph in his recent article, I contacted Bruce as I felt sure the lady pictured there might be the same one. He agreed with me and said he had first taken his photos during a visit to Klein Spitzkoppe in 2014, and forwarded a couple more for me to see. And so an email conversation began...





2021



I told Bruce that the lady’s children had been with her alongside the road in a small hut, and I had photographed and painted them too. Then, among more photos Bruce sent me there was one of that same hut, behind some “sales tables”, with a lady in a coloured turban and pretty dress, along with a close-up photo of her face. These proved it must have been “my” lady, and it was still her trading site. Look at the mountains in this photograph’s background - they match those in my painting, as does the hut.



Her trading site 2014 (Bruce Cairncross photo).

Close up photo 2014 (Bruce Cairncross photo)

The boy in the photograph below in the new Rocks & Minerals article is older but has identical features to the older child seen standing in the shade of his hut further above. This is a photo Bruce took 5 years later in 2017. See below.



Mother and son at their digging site, 2017. (Bruce Cairncross photo)

I love the coincidence that this lady has been recorded for posterity by us both, and can be recognised in the mineral world despite living such a hard and simple life.

Is she still working in the area? Hopefully the incentive is still there, and she is finding topaz. Has she, or will she one day, hold a crystal this size in her hand? I do hope so.

Large topaz, Klein Spitzkoppe, 12.2 cm,  
(Bruce Cairncross collection and photo)

**P.S. Does anyone know her name?**

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All photos by Jo Wicht, unless otherwise indicated.

Reference: Mineralogical Record, Vol. 36, No. 4, 2005



## “If It’s Brown...”

by

Peter Rosewarne

### Introduction

No, please don't follow the City's dictum during the dark days of imminent "Day Zero" but rather marvel at some lovely brown-coloured minerals. We will leave the common-or-garden blues and greens for later. The browns are not all drab but vibrant in their own way. Brown-coloured minerals that come to mind include *sphalerite*, *andradite*, *dravite*, *uvite*, *zircon*, *apatite* and *fluorite* and no doubt others will too. Brown colouration in minerals often means that *iron* (Fe) is present. We'll see as we run through a pantheon of these minerals, from The Rosey Collection unless otherwise credited.



### The Minerals

We'll start with A and andradite, a common brown *garnet*, especially in *skarns*<sup>1</sup>. Andradite is the “and” in the *ugrandite* series of garnets along with *uvarovite* and *grossular*. **Figure 1** is an 11 × 11 cm plate of garnets in a skarn from the famous Dal'negorsk area of Russia. **Figure 2** is a grouping of reddish-brown andradites on a *manganese* matrix typical of the Kalahari Manganese Field. The brown colour comes from our old friend Fe, as in  $\text{Ca}_3\text{Fe}_2(\text{SiO}_4)_3$



Figure 1 left: Andradite Garnets, Dal'negorsk, Russia



Figure 2: Andradite Garnets, KMF, South Africa

Garnets are among my favourite minerals so I'll go a bit overboard here and include some examples of *spessartite*  $\text{Mn}_3\text{Al}_2(\text{SiO}_4)_3$  in **Figure 3, 3a** being an 11 cm wide plate from Tongbei in China (orangey-brown) with two generations of crystals and **3b** being a nice dodecahedral crystal-and-a-bit in matrix, from Pakistan.



Figure 3a: Spessartite, Tongbei, China



Figure 3b: Spessartite, Pakistan

The White Rock Quarry at Clay Center, Ohio, USA is famous for combinations of root beer coloured fluorite cubes with contrasting white *celestite* crystals, as shown in **Figure 4 below**. The brown colour is attributed to microscopic inclusions of hydrocarbons. Cubes of fluorite to 25 cm have been found there.

<sup>1</sup> coarse-grained metamorphic rocks that form by replacement of carbonate-bearing rocks during regional or contact metamorphism and metasomatism.



Figure 4: Fluorite on Celestite, Clay Center, Ohio, USA

Dravite often doesn't look like an obvious candidate to be a member of the *tourmaline* group on account of its brown colour and crystal habit. Indeed, I bought a crystal at one Open Day that was labelled as garnet but was in fact dravite. The example in **Figure 5a** is fairly typical in colour and form respects and is from Yinnietharra, Australia. The crystal in **Figure 5b** is the "garnet" imposter and shows the basal trigonal pyramid and subdued hexagonal prisms. Tourmalines have complex chemical formulae which I won't bore you with here. Suffice to say that they all carry the *borate*  $(BO)_4$  and *hydroxide*  $(OH)_2$  molecules and varying amounts of Na, Mg, Al, Cr, Fe and Li, not all in the same species. The brown colour is caused by  $Fe^{3+}$ .



Figure 5a: Dravite Crystals, Yinnietharra, Australia



Figure 5b: Dravite Crystal

Uvite is also an atypical looking tourmaline, with basal pyramids dominating the crystal form, making groups of crystals look a bit like rhombic dodecahedral garnets. The example in **Figure 6** below illustrates what I mean and is from the Pomba Pit, Bahia, Brazil. Uvite occurs in metamorphosed impure limestones and *magnesite* is a common accessory mineral, as shown in **Figure 6b**.



Figure 6a: Uvite, Brumada, Brazil



Figure 6b: Uvite Crystal with Magnesite, Brazil

*Pyromorphite*, a lead chlorophosphate, from the Bunker Hill Mine, Idaho, USA, is another of my favourite minerals. From this locality it comes in shades of yellow, green, red and brown, the yellow and red varieties being *arsenian*. It also comes in the form of hopped crystals (by coincidence the mine manager/owner was fittingly called Bob Hopper) and botryoidal masses. A lustrous brown example of the latter is shown in **Figure 7a**. This was as the specimen was on the dealer's site and valued at \$1 500 but by the time it got to me, via a courier, it was in five pieces which I found impossible to fit back together again; I almost cried. Luckily, I'd traded it for a French pyromorphite and the dealer kindly returned that specimen to me (**Figure 7b**). I think it just passes as olive brown in colour?



Figure 7a: Pyromorphite, Bunker Hill Mine, USA



Figure 7b: Pyromorphite, Les Farges, France



*Vanadinite* usually comes in shades of bright red and reddish brown and the example in **Figure 8** is a group of typical hexagonal crystals, 6 cm in width, of an attractive deep reddish-brown colour, from Mibladen, Morocco.

Figure 8: Vanadinite, Morocco

The miniature-sized specimen of octahedral *scheelite* in **Figure 9** comes from the Yaogangxian Mine, Hunan Province, China and is an unusual shade of brown. It measures 4.1 × 4.2 × 3 cm.

**Figure 9: Scheelite on Quartz, Yaogangxian Mine, China**



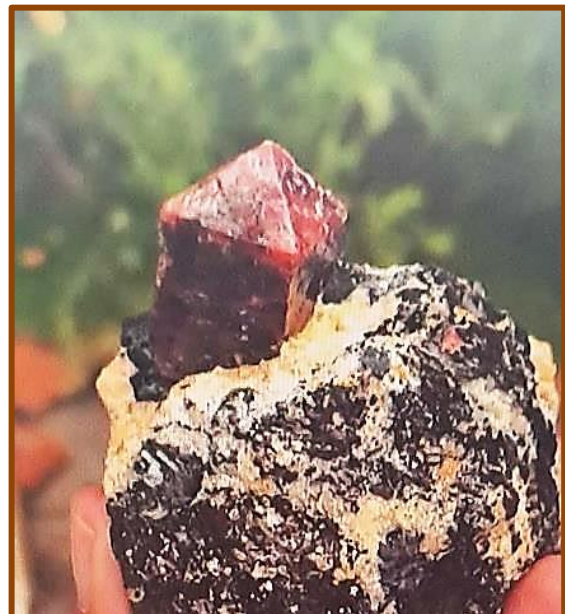
**Figure 10** is of a 6 cm long greenish-brown apatite, or *fluorapatite* as it is officially known now, crystal in *calcite* from the Otter Lake area of Quebec, Canada. I think the brown colour is due to the usual suspect, traces of  $Fe^{3+}$ .

**Figure 10: Fluorapatite in Calcite, Otter Lake, Quebec, Canada**

We'll finish, appropriately, on Z. Zircon ( $ZrSiO_4$ ) is a common accessory mineral in igneous rocks, especially *granites*, *diorites* and *syenites* and I remember finding some nice crystals in a road cutting in southern Norway way back in 1973 on a university overland trip, but they are long gone. The crystal in **Figure 11a** is quite aesthetic and is from Gilgit, Pakistan, although it is also gone, but only fairly recently in this case. A recent replacement from the same area is shown in **Figure 11b** (please excuse the poor image quality).



**Figure 11a: Zircon, Gilgit, Pakistan**



**Figure 11b: Zircon**

**Concluding Remarks**

So much for flushing down all that is brown; some worthy minerals come in that hue! And finally, do you get brown *diamonds*, our usual final mineral of these colour-theme articles? Yes, you do but, unlike all the other colours that diamond comes in, brown ones are mostly only fit for industrial uses and it is the most common colour in mined diamonds. However, marketing campaigns have apparently been launched over the years to promote high quality brown diamonds as gems and these are now referred to in the trade as “*chocolate diamonds*.” Not too shabby?

**“FACETIPS – A Gem Cutter’s Notebook” by Duncan Miller.**

Most of 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 for free from <http://ctminsoc.org.za/articles.php> for those interested in having all the articles together.

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