BRITISH MICROMOUNT SOCIETY

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NEWSLETTER No. 89 - JULY 2013

Phoenix Silver Lead Mining Co. Ltd. share certificate — see a*ditnow.com* mining library p 28.

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Do we have your up to date contact details - address, telephone and email ?

IF NOT—please contact David Binns without delay.

OBITUARY—JULIE Margaret GREEN

27th March 1968 – 2nd May 2013

David Green

Julie was born at Meriden in Birmingham, the only daughter of Bill and Alice Ballard. The family moved from the city centre to the suburbs as she grew up. Changing schools several times meant Julie made relatively few friends and perhaps contributed to slight difficulties socialising in later years. She loved animals, however, and had a very close relationship with Smoky, her pet cat, about whom she constantly worried.
Julie did well at school and her interest in Natural History led to Reading University where she read Botany and Zoology. She made a small circle of friends there and remembered the first year of study as one of the happiest of her life. She graduated near the top of her year, and was asked to stay on for a PhD, but as luck would have she was offered a job in Weed Science at ICI. It was there she met my brother Andrew.

David & Julie Green at the bottom of Whim Shaft, Whitesmith Mine, Strontian April 2009

We met in 1990 by the most unlikely chance at the ICI Bonfire Night Barn Dance (the only time either of us ever attended such an event). That began a long distance relationship, where we spent holidays and weekends together. As we grew together, Julie took up my passion for mineral collecting and I hers for Natural History. She was fascinated by insects of all sorts, particularly butterflies, and (in common with a number of other mineral collectors) grew carnivorous plants.

Julie loved computers and when the chance came to become a database manager, she took it; it was a job she could do from anywhere. At about the same time I got a dream job curating the mineral collection at Manchester

Museum. In 1996 we found a house together at Birchwood near Warrington.

I have not counted the number of field trips we made, but it exceeds 500. Our first forays, in 1993, were to Coldstones Quarry, an easy journey from Leeds. In the early years we also spent holiday time collecting in the Caldbeck Fells, the Isle of Skye, Cornwall and Ireland. Later, we made several visits to the Tucson Show and collected in Arizona, with memorable nights camping in the desert at Melissa Mine, where wulfenite is common. In 2004 a round the world holiday included a field trip to Broken Hill in new South Wales, where we were looked after by Bernie Day.

Time at home, following redundancy in 2004, allowed Julie to develop her computer skills. She became much more involved with the team at the UK Journal of Mines and Minerals and became its webmaster, designer and database manager. She also helped out correcting photos and producing some diagrams for the Journal of the Russell Society.

Julie loved photography and became expert at combining high magnification digital images, many of which are illustrated in books and journals, but she never wanted any credit for all the hard work. Indeed, she shunned the limelight.

Holidays for many years from 2002 onward focussed on Strontian in Scotland where we stayed with Dot and Donnie Macpherson. Together with Dave McCallum and Peter Briscoe, we uncovered some of the secrets of the abandoned mines. We explored the local hills making the long horseshoe walk to Sgurr Donald several times. The descent of Whim Shaft was one of our most ambitious adventures. At the end of each trip we would have a stream-cooled can of seventy shilling, sitting in the car, watching the sun set.

When Julie's Mum and Dad moved to Burnham on Sea, we had memorable trips to Sidmouth in Devon, often accompanied by Keith Corrie. The cliffs produce beautiful baryte crystals. An out of season trip to Cornwall yielded wonderful botallackite from Cligga Head; probably our best discovery ever. We found excellent quartz and chalcopyrite with Tom Cotterell at Nant Helen Mine in South Wales and ewaldite and paralstonite at Dolyhir Quarry with Peter Todhunter, Neil Hubbard and David Roe. Our last big underground adventure in 2011, was at Wet Grooves Mine in Yorkshire where beautiful baryte and fluorite were seen.

In 2012 we made two memorable trips to the Cairngorms. We saw a glory projected onto the clouds on the great cliff of Ben Avon. The sight of the two of us framed by the light is one I will not forget. Our last trip out, to Boulby Mine, was in early February of this year. In the time we spent together Julie amassed a small mineral collection, much of which was self collected, including some lovely specimens. She had a remarkable ability at spotting specimens and her favourite sort of collecting was wandering around picking things up.

Julie was unwell in February; she was diagnosed with cervical cancer in early March. The news from then on was the worst possible. Through the kindness of the Registrar we were married at home on 21st of April. Julie passed away 11 days later on the 2nd of May aged only 45; she spent just one day in hospital.

Julie is survived by her husband David; mother, Alice; and brother Alan. We had a remarkably close relationship, without a cross word for 20 years. Her untimely death came as a terrible shock. I miss her more than I can say...

THE ROSEMARKIE INLIER IN THE SCOTTISH HIGHLANDS

Paul Monk

The Rosemarkie Inlier is a fault bounded lens of complex metamorphic rocks, 9 km long by 2 km wide, that lies adjacent to the Great Glen Fault on the southern shore of the Black Isle in Easter Ross. It is composed of psammites and semi-pelites, and felsic and mafic gneisses, intruded by amphibolitic bodies, all cut by abundant salmon pink leucogranites and pegmatites. These rocks show affinities with the Moine Supergroup and the Lewisianoid gneisses of the Northern Highlands and are often adjacent to each other at a centimetre scale – a very strange situation.

Leucogranite pegmatite from a foliated granite with psammite, hornblende schist and small amphibolite pods

The mineralogy of the rocks is very complex and all the published reports by the BGS and in academic papers describe the mineralogy from thin rock sections. However, it

seems likely that some of the more interesting minerals might be found in small crystalline specimens suitable for micro mounting. The reported minerals are quartz, "potash feldspar" and plagioclase, muscovite, biotite, garnet, zircon, magnetite, ilmenite, apatite (fluorapatite?), monazite, titanite, chlorite, zoisite, carbonate (probably an igneous calcite) and a sodic amphibole.

The inlier is very well exposed for several km along the shore from Rosemarkie village but is only exposed in one place inland at Learnie Quarry. The coastal exposures and the quarry centre on [NH 740 590]. This is a small quarry that is worked intermittently by Forest Enterprise for rock to make forest roads. It is here that I have found a couple of specimens that have made it into the collection.

The rock in the quarry displays the same complexity as on the shore including some patches of the carbonate mineralisation. I have recovered some poor calcite crystals from rock found in the quarry. Some of the rock has been described as undergoing "Fenitisation" – I suggest you look it up - but it is to do with carbonate in igneous rocks and is quite rare in the British Isles. A lot of the rock is covered by a thin

Rosemarkie shore looking east

veneer of hematite which seems to be a weathering product suggesting that there is a primary source of an iron mineral in the rock. I am at present working on a fist size piece of rock (it is extremely tough to break) that has some small crystal lined cavities. There are pyrite crystals and several very small blue crystals which could be Fluorapatite or fluorite. Fluorapatite is reported as a primary constituent of the rock

but the crystals are from a piece of rock that has been "Fenitised" so there are the components for fluorite in a "mobile" environment in the rock. It is this specimen that convinces me that there is a chance of finding some of the other reported minerals and even other not yet reported minerals, in micro-mount size specimens.

One thing is for certain, I will keep looking, as the Rosemarkie shore is a great place to walk the dog and generally speaking nobody goes to Learnie Quarry.

NOTHING TO WORRY ABOUT

Trevor Bridges

I think you would have had to be living on another planet last year, to have avoided all the media fuss about CERN, the Large Hadron Collider (LHC) and the discovery of the Higgs Boson, the particle thought to give everything mass. The LHC works by whizzing protons (small positively charged particles) around a 27 kilometre ring at enormous speeds and bashing the poor little blighters together to break them up into smaller particles, of which the boson is one. The LHC is currently shut down for an upgrade and the 18th May New Scientist ran an article on this.

One of the devices used to detect the smaller particles is called the Compact Muon Solenoid (CMS). I do not know what the 'Compact' refers to, but it certainly isn't its size. It looks like a huge doughnut, big enough for a human to walk into. Apparently it contains crystals which emit light of different frequencies when hit by the small particles and they can tell what sort of particle it is from this light. What I found interesting is that the crystals are lead tungstate, known to us as the mineral stolzite, which many of you will have eagerly sought at Brandy Ghyll and Carrock in the Caldbeck Fells.

However, a problem that besets the CERN guys is that the crystals darken as they are clobbered by the small particles and then emit less light. You will be pleased to know that despite the millions of neutrinos and cosmic rays that pass though you and your minerals every second, I do not think you need worry about your nice yellow crystals of stolzite going black anytime soon!

THE MYTHICAL TOWN CENTRE OF TELFORD – A CAUTIONARY TALE

Trevor Devon

It all seemed so simple really. We will nip down to Telford town centre and find a nice pub or restaurant for dinner. Huh!

David Binns decided that after the Symposium last year he wanted to visit the David Austin English Rose Centre in Albrighton, near Telford. As I was travelling to the

Symposium with him I too was going to visit the roses (fortunately a joy for me as it happens). David had kindly booked us for the Sunday night into one of those Lenny Henry motels just off a motorway. By the time David had said his goodbyes to pretty well all the Symposium attendees (individually) we got to the motel early evening and changed for dinner. As we were close to Telford, and Telford is a pretty well-known town, we agreed to drive into the town centre and find somewhere nice to have our dinner.

Telford, it would appear, employed the same town planner as Milton Keynes, that well known collection of roundabouts! At each of the roundabouts there was indeed a road sign for "Town Centre" that we followed religiously, until after the sixth, seventh or maybe eighth, we found ourselves back at the first roundabout. Convinced we had made some silly error, we started around again, only to become increasingly aware that *we* had not made the error. As it happens we had noticed a pub near one of the roundabouts, but had not seen the entrance, so we tracked back to it, only to confirm that there was no visible entrance from the roundabout!

Never mind said we, lets go out into the country and find a village pub. Several miles later, down some narrow lanes and over a bridge we eventually found a pub – which proudly declared "Good Food served here". In we went. "Sorry sirs, we only do Sunday lunch". "OK – do you have any recommendations for pubs or restaurants" we said. "Well, the nearest is the pub on the roundabout in Telford" came back the bright reply. How do we get into it we asked – "Ah, you need to drive down a lane off the roundabout and go into the Council Offices car park and through the other side to the pub" Obviously!

So we followed this advice, arriving at the pub at 9.10pm: "Sorry, buffet closed at 9.00pm". "So where could we find food now?" we asked feebly. "In the centre" – "what, the town centre?". "No, the shopping centre: there is no town centre". So we went into the shopping mall where everything was closed except for a Frankie and Benny's Italian American restaurant, complete with 60's music. Dinner was never so well enjoyed!

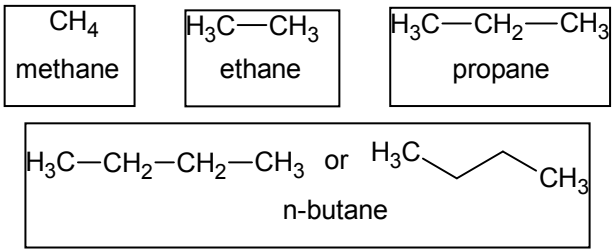
IN PRAISE OF "VILE STICKY BLACK HYDROCARBONS"

Frank Ince

In Newsletter 86 (p.15) Roy was really only interested in getting rid of 'hydrocarbons' so that he could see what might lurk beneath the "vile sticky black hydrocarbons"; we've all been there, done that and got the grubby fingers. In Newsletter 88 (p.9) Trevor reminded us that 'hydrocarbons' have their place in the mineral paragenesis; but was prepared to remove them if appropriate. In this note I would like to point out that these "vile sticky black hydrocarbons" are amazingly interesting and important to life, the universe and (almost) everything; needless to say, this includes mineralogy!

'Hydrocarbons' has been used so far and this is the organic chemist in me exerting its influence. By definition hydrocarbons contain only carbon and hydrogen (C_xH_y); however, the naturally occurring substances that are commonly referred to as 'hydrocarbons' are mixtures of hydrocarbons (*sensu stricto*) and their derivatives (see below). Bearing this in mind, these 'hydrocarbons' are better described generically as hydrocarbon-containing materials or mixtures (HCMs). HCMs contain a variety of biologically-derived (biogenic) chemicals with other compounds; though they may also be produced by abiogenic processes (whether naturally occurring HCMs were formed by biogenic or abiogenic processes was a serious controversy that was only resolved in the second half of the 20th century). Whilst some of the biogenic HCMs are almost pure hydrocarbons (C_xH_y), others contain various proportions of chemically modified hydrocarbons that incorporate other elements, e.g., nitrogen and/or oxygen and/or sulphur ($C_xH_yR_z$ where R = N/O/S), together with various dissolved gases and/or liquids and also some inorganic compounds. Given this heterogeneity, it is understandable that the nomenclature of the HCMs is rather ill-defined; although, there are a few well-defined organic or organometallic compounds that are recognised mineral species (see below). The plethora of names that have been given to various HCMs has been listed by several authors and will not be repeated here; see: Greg and Lettsom (1858, pp. 8-19), Dana and Ford (1932, pp. 775-779) and Read (1984, pp. 341-348). Most HCMs have not been subjected to detailed chemical analysis; consequently, for the purposes of this note, they will be divided into the three broad classes: gas, oil, bitumen (coal, jet, etc., will be ignored for the time being).

Gas: Mixtures of chemicals that are gases at room temperature and atmospheric pressure; they are mainly hydrocarbons (C_xH_y) mixed with other gaseous compounds (e.g. water vapour, nitrogen, hydrogen sulphide, carbon dioxide). Only the simple hydrocarbons (e.g. methane, ethane, propane and the butanes) are gases at room temperature and atmospheric pressure. Organic chemists use chemical 'shorthand': not every carbon atom in a linear or a cyclic structure is identified with a 'C'; also attached hydrogen atoms can be omitted (unless they are required to ensure that the structure is unambiguous).

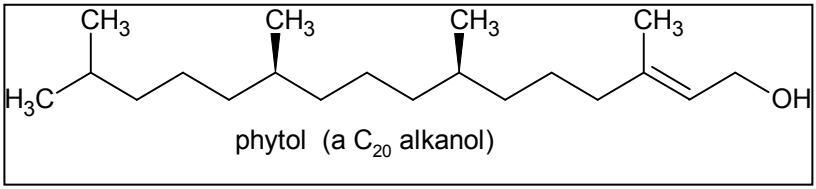


Methane can be formed from carbon in the mantle; consequently, methane and some of the simple alkanes can be produced by abiogenic processes.

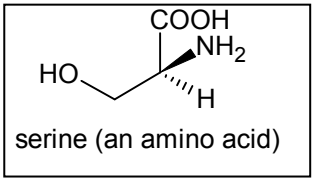
Oil (including the materials termed petroleum or naphtha): Mixtures of chemicals that are free-flowing liquids at room temperature and atmospheric pressure; they are mainly hydrocarbons (C_xH_y), together with some modified hydrocarbons ($C_xH_yR_z$), and they usually contain other liquid compounds (e.g., water, brine) and various dissolved gases (e.g. hydrocarbons, nitrogen, hydrogen sulphide, carbon dioxide).

Bitumen (including the materials termed pyrobitumen, asphalt, asphaltite, asphaltum, naphthenate or mineral pitch): These viscous to solid, tar- to pitch-like mixtures of chemicals will be referred to as bitumen (this appears to be the term used in the geosciences; other sciences sometimes use the term asphalt). Bitumen contains a greater proportion of higher molecular weight hydrocarbons and modified hydrocarbons ($C_xH_yR_z$) and these are usually mixed with volatile components, non-bituminous organic matter and small amounts of inorganic material. Samples of bitumen can be highly viscous liquids; others vary in consistency from plastic to brittle solids. On exposure to air and at room temperature and atmospheric pressure, any dissolved volatile components contained in the more mobile samples of bitumen are gradually released and the more reactive compounds may be oxidised; both of these processes produce samples of bitumen that become less-mobile. In general it is bitumen that we are talking about when we encounter black sticky stuff coating mineral specimens and, assuming that you have to remove it (and I agree with Trevor that there has to be a good reason), I have found that the best method is with dichloromethane (CH_2Cl_2, also known as methylene chloride); although, in these days of increased H&S restrictions, obtaining it could be difficult.

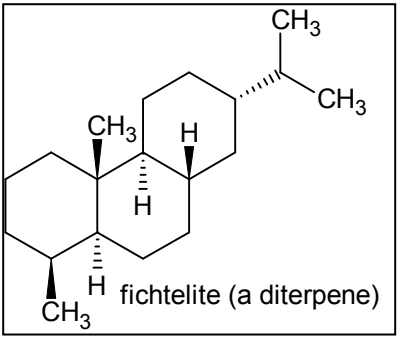
If you thought that bitumen is a mineralogical nuisance and only good for making tarmac, think again; it (and oil) can contain hundreds, probably thousands, of distinct chemical compounds; see below (bold wedges indicate that the carbon, hydrogen or nitrogen atom is above the plane of the paper and dashed wedges that it is below).



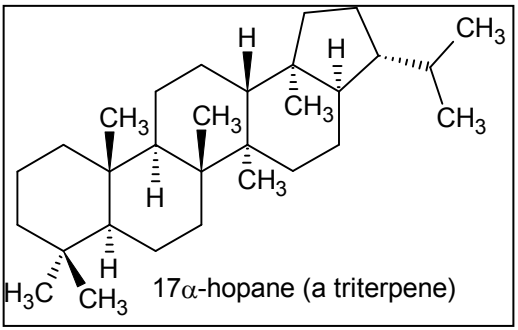
phytol (a C_{20} alkanol)



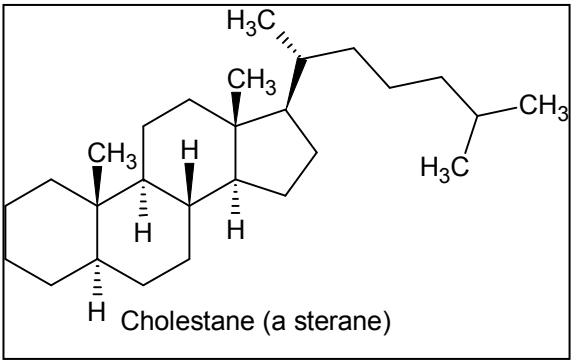
serine (an amino acid)

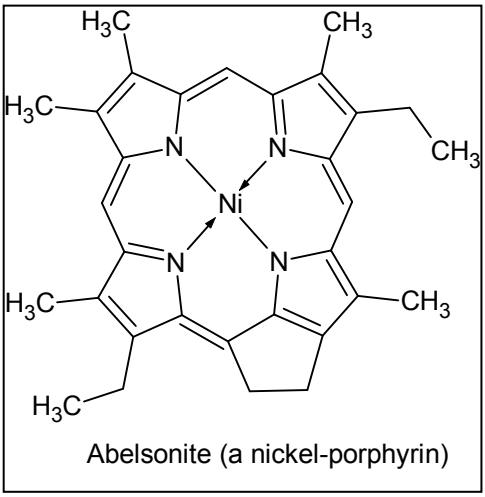


fichtelite (a diterpene)



17α-hopane (a triterpene)





Abelsonite (a nickel-porphyrin)

Fichtelite ($C_{19}H_{34}$) is a recognised mineral species; first found on fossilised wood from the Fichtelgebirge region of Bavaria. Ablesonite ($C_{31}H_{32}N_4Ni$) is also a recognised mineral species; first found in the oil shales of the Green River Formation, Utah. The identification of such compounds (usually known as biomarkers) has provided evidence that the vast majority of the earth's gas, oil and bitumen is of biogenic origin; formed by a complex series of chemical reactions following the decomposition and burial of carbon-rich material derived from microorganisms, plants and animals.

Whilst its organic chemistry is fascinating, the example of abelsonite shows that bitumen has another, perhaps rather more surprising, attribute: it can contain significant amounts of a variety of inorganic materials, including various metals: copper, cobalt, vanadium, nickel (as in abelsonite), several of the lanthanide-group elements and uranium. Some of these metals can be in the form of organometallic complexes, e.g. as metalloporphyrins; although uranium can also occur as discrete grains of uraninite. The bitumen from the Great Orme mines, Conwy can contain up to 9700 ppm copper, the bitumen from Cloud Hill Quarry, Leicestershire can contain up to 3930 ppm vanadium and 2200 ppm samarium (one of the lanthanide-group elements) and the bitumen from the Laxey mines, Isle of Man can contain over 9% uranium. It is interesting to speculate whether this association between bitumen and various metals is an important factor in the formation of various mineral species.

After reading this note I hope that you will take a more sympathetic view of bitumen (and oil); although this is unlikely to make it look any more appealing. Should your little grey cells be stimulated into further action on this topic, you might like to look at a couple of references:

Gaines, S.M., Eglinton, G. and Rullkötter, J. (2009). *Echoes of life: what fossil molecules reveal about earth history*. Oxford University Press. 355 pp.

Parnell, J. (1988). Metal enrichments in solid bitumen: A review. *Mineralium Deposita*, **23**, 191-199.

Other references:
Dana, E.S. and Ford, W.E. (1932). *A textbook of mineralogy with an extended treatise on crystallography and physical mineralogy* (4th Edition). John Wiley, New York; 831 pp.
Greg, R.P. and Lettsom, W.G. (1858). *Manual of the mineralogy of Great Britain and Ireland*. London. Reprinted by Lapidary Publications, 1977; 474 pp.
Read, H.H. (1984). *Rutley's elements of mineralogy* (26th Edition). George, Allen and Unwin, London; 560 pp.

Editor's Note: OK, I give in.
Members may also like to know that you can order an "I love hydrocarbons" car sticker here:-

http://www.cafepress.co.uk/mf/8715395/i-love-hydrocarbons-rectangle_sticker

BMS REFERENCE COLLECTION FOREIGN SPECIMENS

Trevor Devon

It was agreed at the AGM last year that the foreign specimens in the BMS Reference Collection should be disposed of as there was no interest expressed by members in maintaining this sub-collection. To this end I shall be bringing these couple of hundred specimens to the Symposium in Leicester this September. However, as these specimens have been donated by members, I have published an Excel spreadsheet on the BMS website listing the specimens by donor. This will give donors a chance to check the list and request that their specimens be returned to them by contacting me (by email if possible) and I will set those specimens aside. My email address is trevordevon@madasafish.com.

MORE THOUGHTS FROM INSIDE A BLACK BOX

David Roe

Down in deepest Devon we - that's me and my bipolar *doppelganger* (always wanted to use that word) - have continued to crack, peer, glue, paint and then label a procession of lovely little things from the micro mounting marvels we are blessed with. Pyromorphite from "Wheal Bungalow", gorgeous greens from Bampfylde, azurites from Coed-y-Brenin, langite from Hingston Down (that last Russell Society trip there was a corker) and, as always, just a few little Cambrian quartz.

Some of these have called for determined cleaning. I am always very nervous of the energy unleashed by ultrasonic cleaning baths and felt that there is a great potential for my precious babies to be abraided by each other – so I have been delighted to find a use for those ubiquitous plastic net bags that often come attached to oranges, onions and associated green groceries. Snip off the end of the package and remove the oranges/onions/ associated green groceries and place the specimens individually into a bag. Vibrate well until clean – I usually dangle them from a length of dowelling to keep them from touching each other or the sides of the cleaner. This seems to be giving very good results as it allows the debris to fall out of the vughs as well as giving access to the cleaning fluids.

The Hingston langites responded well – I never understand how such a close cousin of common or garden copper sulphate can be so resilient in water – the wonders of hydration chemistry.

I have long been an enthusiast for Vitamin C as a gentle iron stain remover – it can have remarkable effects on pyromorphite, pharmacosiderite, quartz and rutile (although with the last one has to be careful – for example the rutile from Lanterdan is delivered up as a golden pile of needles – unfortunately it is the manganese and iron oxides that have secured them in position on the matrix. I was pondering the effect of Vitamin C (since its chemical name is actually ascorbic acid) on more acid phobic materials such as malachite and azurite and decided to see what would happen with azurite from Coed-y-Brenin. The azurite is pretty small (perhaps 1 mm) but pleasantly glistening when it condescends to be uncoated by iron oxides. Dilute Vitamin C appears to work minor miracles with no impact on the appearance of the azurite faces – nor could any adverse effect be detected on malachite sprays – and the staining is removed in less than 20 minutes.

Embolded by this I spent no little time battling with the awful micaceous hematite clay coatings that infest specimens from the Bampfylde and Heasley Mill mines. This can be removed by patient washing with a soft bristle brush in soapy water, but it never is entirely removed, and I suspect it does not improve the surface of the malachite and pseudo malachite underneath. I have started going in for heavy duty ultrasonic cleaning with a little of Jim Wooldridge's magic potion (aka Calgon – a hard water treatment which I suspect is phosphate based). I gave one specimen an 8 hour session – the minerals looked undamaged but there were still minor residues of brown. I wondered if a dash of Vitamin C would help the ultrasound by loosening the iron content of the clay – it does - but it also begins to attack the ends of any malachite sprays. Use with extreme caution; especially if Trevor Bridges is in the vicinity.

In the last BMS newsletter I asked for advice on suitable tweezers for removing black boxes from storage trays. A curious case of serendipity – the day after I emailed off the article I walked into my local hardware shop – and there was the answer. I should have been looking for fish bone tweezers – apparently all the posh people in Modbury

use these when they are having their sea food dinner parties – works a treat on micro mount boxes too! And then within minutes of publication Quinton Wright provides me with another solution – hinged hair grips – but rather than try and describe them perhaps it is better to show his excellent diagram.

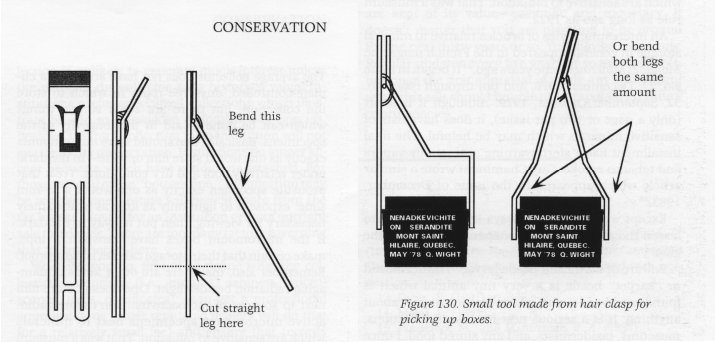


Figure 130. Small tool made from hair clasp for picking up boxes.

And more new locations for anatase – my cup runneth over! According to astronomer Vivian Parmentier the exoplanet HD 209458b is the place to be for freshly minted anatase crystals. On the side facing its sun the temperature gets to 2000 degree C while on the shady side it drops to 500 degree. As a result of the complex atmospheric meteorology movements the titanium oxide boils on the hot side and this then "snows" as black titanium oxide on the cool side. Can't wait to get there.

MOROCCAN MAGIC: IT'S ALL IN A NAME

John Pearce

In April 2013 12 members of the Sussex Mineral and Lapidary Society went on a week's collecting trip to Morocco. This provided an opportunity to refresh our memories about some of the classic Moroccan mineral locations and minerals: Touissit, Bou Azzer and Mibladen
Imiter, El Hammen, Sidi Rahal
and Taouz


Overview of the basaltic cliff at Tirrhist (P. Moore photo)

and the superb minerals such as azurite and malachite, anglesite, apatite, wulfenite, vanadinite and endlichite, silver, proustite, erythrite, roselite, cobaltocalcite, skutterudite… However what particularly appealed to me were some of the lesser known minerals, often only available as micros. I discovered these as a result of Trevor Devon purchasing a number of back numbers of

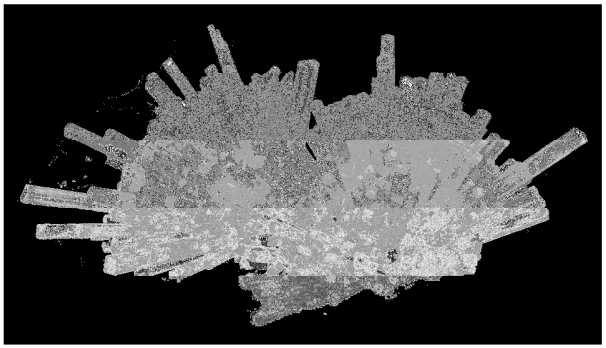
the French Micromount Society's journals at the Saint Marie aux Mines show. They are superbly produced, very well illustrated and contain several comprehensive reports on various Moroccan locations. It was through these articles that I learned of the existence of:

Marokite $CaMn_2O_4$ – found near Ouarzazate, named to honour the country, Morocco (Fr: *Maroc*).
Imiterite Ag_2HgS_2 type locality, the Imiter Silver Mine.
Bouazzerite A basic magnesium, cobalt, iron arsenate $(Mg,Co)_{11}Fe_{14}(AsO_4)_{18}(OH)_4O_{12}.86H_2O$ type locality, the cobalt, silver Bou Azzer Mine.

Magic! I have to confess that I found none of these three minerals while in Morocco, but I have passed on my wish list to the French dealer, Pierre Clavel, who acted as our guide.

John White opening up the Shakespeare Pocket (P. Moore photo)

One of the magic moments of the trip occurred high up in the High Atlas mountains in the isolated village of Tirrhist, near Imilchil. The whole village turned out to welcome us and they took us across a river to a basaltic cliff which appeared to contain some very unpromising, powdery zeolites. However, one of our group, John White, opened up a large vug of good quality, crystal clear mesolite/natrolites and we extracted over 50 exceptional specimens. As it was April 23rd (Shakespeare's birthday) we named it the **Shakespeare Pocket**. Our guide, Pierre, keen to show off his knowledge of English, immediately quipped: ***"To pocket or not to pocket? That is the question."***



Natrolite / mesolite (crystals 1-2cm) from the Shakespeare pocket, Tirrhist (M. White Photo)

GROW YOUR OWN MICROMOUNTS - MINERALOGY IN A BOTTLE

Stephen Plant

There are innumerable ways to synthesise minerals in the laboratory, many involving elaborate and expensive equipment. I have figured below some images of minerals made in the laboratory over the last year or so. They were made by heating aqueous solutions in pyrex bottles of 100 ml capacity in a constant-temperature oven at temperatures of 90°C or less. The bottle was fitted with a loosely fitting lid to minimise evaporation and prevent any build up of pressure. By way of an example, the synthesis of libethenite will be described, further details will be published elsewhere.

Disodium hydrogen phosphate (1.42 g) was pre-dissolved in 45 mls water and added with stirring to a solution of copper sulphate pentahydrate (2.5 g) pre-dissolved in 45 mls water. An immediate sky-blue precipitate formed. The lid was loosely attached and the partially sealed bottle was placed in an oven at 90oC. Within a day or so green needles of libethenite started to form (Figure 1).

Fig. 1 Formation of green libethenite in the presence of original colloidal precipitate of blue basic copper phosphates

If small amounts of calcium chloride are initially added, much larger crystals formed, but take up to two weeks to fully grow. After 7-8 days all the blue colloidal precipitate had disappeared leaving deep-green euhedral crystals of libethenite up to 7mm in length (Figure 2). The final pH was 2.9. A scanning electron microscope image (SEM) is shown in (Figure 3).

Fig. 2 Green needles of libethenite up to 7 mm long.

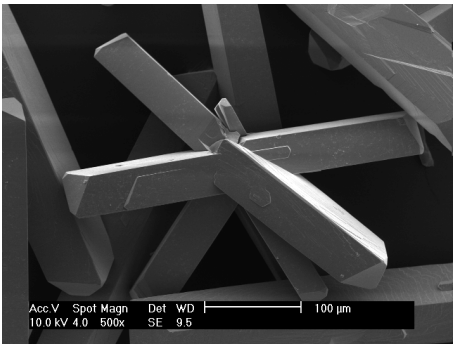


Fig. 3 Scanning electron microscope image of libethenite crystals.

Further SEM images show synthetic crystals of paratacamite (Figure 4), phosgenite (Figure 5), susannite (Figure 6), olivenite (Figure 7), posnjakite (Figure 8). All crystals have been authenticated by XRD analysis. By preparing synthetic crystals in the laboratory one is able to gain an insight into mineral formation and the chemical conditions in which they form in nature.

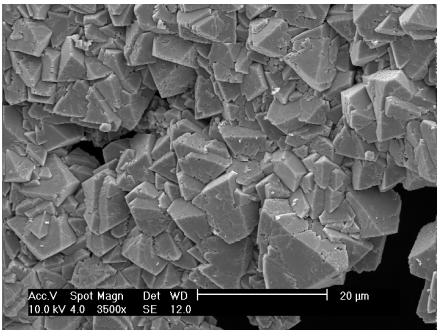


Fig. 4 Paratacamite

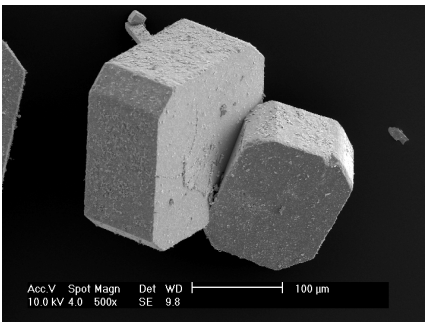


Fig. 5 Phosgenite

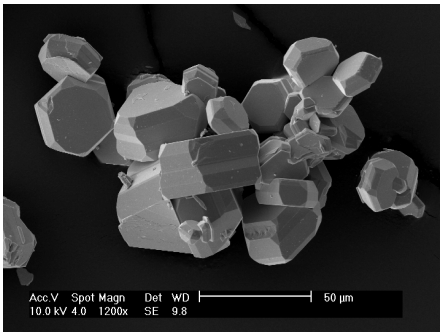


Fig. 6 Susannite

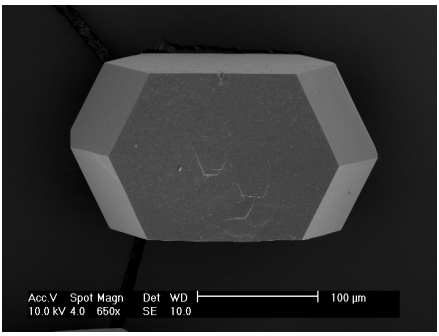


Fig. 7 Olivenite

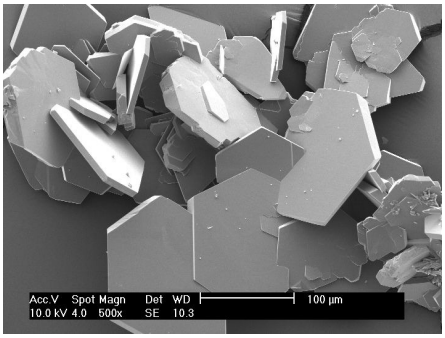


Fig. 8 Posnjakite

Acknowledgments go to Carole Allaway Martin for financial support with the SEM work, Peter Fisher of the department of earth sciences at Cardiff University for performing the SEM work and to Tom Cotterell of the National Museum of Wales for performing the XRD analyses.

JOURNALS FOR SALE

I need to free up some shelf space and I have available the following:-

UK Journal of Mines and Minerals
Nos 15, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29 and 30
£5.75 each P&P Free

Mineral Realm
Complete set (14 Journals) + Gems & Mineral Realm (Vol 16 No 1)
£45 the Lot P&P Free

Russell Society
A complete set from Vol 1 to 11 with 4.2 missing. 20 Journals.
£40 the Lot P&P Free

BMS Newsletters
Complete set Nos 1 – 88 plus Directories, Membership Lists and Reference Collection (1 – 2000)
£25 the Lot P&P Free

Further info available from David R Neal (Tregaron) 01974 821213 or dgmail22-nmrs@yahoo.co.uk

UK VIRTUAL MICROSCOPE AVAILABLE

Roy Starkey

Many members will already know of Andy Tindle's on-going project to develop the "Virtual Microscope". The excellent website has now been updated and The UK virtual microscope is now available on-line with the first ~80 samples of British rocks at http://www.virtualmicroscope.org/content/ukvm
Do take a look (and let Andy have any feedback—he'll be delighted to hear from you).

MINCO NORTH PENNINES PROJECT

Roy Starkey

From: http://www.minco.ie/newsReleases/2013/MIO%20(Recommencement%20of%20Drilling)20130621.pdf

Irish-based Minco released a press report on 21st June 2013 confirming that the company was to recommence drilling operations at its North Pennines Exploration Project on June 24th. It had not been anticipated or previously agreed that exploration activity would continue during the summer months due to environmental factors. However, in cooperation with regulatory authorities and local landowners, Minco has now agreed upon methods of operation and suitable locations to ensure that

exploration can continue during this sensitive season.

The new exploration drilling will focus on extending Minco's understanding of the pervasive zinc and lead mineralisation discovered in all of the first phase drill holes. The programme will recommence with the drilling of three new exploration holes located in Cumbria for a total of 750 metres of drilling. Additional holes will be proposed based on the results of the initial three exploration holes.

A total of 2,221 metres of drilling were completed during Minco's first phase of drilling in four (4) exploration drill holes completed by Irish Drilling Limited under contract with Minco Mining Limited, a wholly owned UK subsidiary of Minco plc.

Widespread, generally low grade, zinc-lead-pyrite mineralization was consistently encountered in all four holes at a vertical depth of approximately 400 metres below surface, in close proximity to and associated with geological units both above and below the Whin Sill intrusive.

Commenting on the resumption of exploration drilling, John Kearney, Chief Executive Officer of Minco said, "We are very pleased to be able to resume drilling on this exciting project. We originally believed we would only have access during the winter months, however with the cooperation of landowners and local County Councils we have found solutions to ensure on-going exploration activity."

The phased preliminary exploration programme is designed to test Minco's conceptual model that zinc-lead mineralization may exist beneath the historical underground mine workings in the geological succession structures that lie beneath the Great Limestone geological formation.

SOUTH CROFTY UPDATE

Roy Starkey

The future of South Crofty continues to be uncertain following the announcement in early June that Canadian firm Celeste Mining Corporation had decided to "*review and evaluate cost cutting measures including, but not limited to, temporarily halting its exploration and development activities at the South Crofty Mine.*"

Coverage in the *Falmouth Packet,* and *West Briton* heralded the later announcement that the mine had gone into administration on 26th June 2013. (Thanks to David Moulding for sending me some relevant newspaper cuttings).

According to BBC news http://www.bbc.co.uk/news/uk-england-cornwall-23070326

Owner Western United Mines (WUM) blamed a failure to receive promised investment cash and said the move had been carried out to safeguard assets.

WUM said a "*number of employees*" would be made redundant. About 50 people work at the site near Camborne. The company added it was looking for more investors because it still had "*production and economic revival firmly in our sights*".

South Crofty has been under redevelopment for the past 10 years. Mining ended in 1998 amid more than a decade of falling tin prices, but for the past few years the price of the metal has been rising. WUM had also planned to extract other metals, including zinc and copper, with the hope of creating at least 220 jobs. Last October, metal yet to be extracted was valued at about $2.4bn (£1.5bn) in an independent mining expert's report. The valuation was made by comparing the quantity of tin believed to be in the mine, about 7.95 million tonnes, with then current markets.

The latest comment on the WUM website reads as follows:- "*Celeste's failure to meet its financial responsibilities has been a major blow for us in terms of being able to continue with the exploration and development work that has been yielding such hugely positive results*," said Alan Shoesmith, WUM's Chief Executive Officer.

"We have faced endless challenges since buying the mine in 2001 – the most recent being UNESCO's highly publicised objections to mining operations taking place within Cornwall's World Heritage Site. Each of the battles we have fought has had a considerable impact on our financial resources and on our attractiveness as an investment opportunity but, through it all, we have remained confident and optimistic about the huge potential that South Crofty has to offer.

That optimism and confidence has not been diminished. We have appointed an administrator to protect the mine whilst we stop to take breath and consolidate our position. A number of employees will be made redundant whilst we move to a care and maintenance basis, however we still have production and economic revival firmly in our sights.

Our aim is to reform and obtain new finance to replace what we have lost from Celeste and, judging by the interest being shown, we are very hopeful that we can ultimately finish the job started twelve years ago and get the mine back into production.

In the last year analysis of historical sampling data has identified exploration targets of between 8 and 16 million tonnes of ore at depth at grades between 1.2 and 1.8% tin, in addition to substantial polymetallic resources closer to surface. We are now reassessing the data and will shortly be restating the project's resource base. An independent international mining consultancy has also positively reviewed our strategic plans to sequentially dewater Dolcoath and eventually South Crofty. Given the substantial resource and that South Crofty is fully permitted for both development and operations we fully anticipate achieving the investment to unlock the Mine's potential." The story continues ….

SCOTGOLD – CONONISH UPDATE

Roy Starkey

In Scotland, efforts continue to bring the planned Cononish mine into production, but the latest comment is not encouraging. The Minesite.com website reported (2nd May 2013) that whilst Scotgold had confirmed the economic potential at Cononish, it had shelved its immediate funding plans in response to tough market conditions. "On the sweet side, there was confirmation that at US$1,428 per ounce - the spot gold price when the press release was being compiled - Cononish will throw off plenty of cash. Nearly £40 million all told, over the minimum six year mine life, which isn't a sum to be sniffed at. Even using the base case gold price assumption of US$1,300 gold, the project still throws off over £26 million in pre-tax cashflow on average operating cash costs of less than US$700 per ounce.

"The project is robust in terms of opex and capex", says Scotgold's chairman John Bentley, when Minesite catches up with him on the telephone a couple of days later. But then comes the bitter part of the bitter-sweet equation. "It's just", continues John, "that it's very, very leveraged to the gold price". With that in mind, the recent gold price volatility has been distinctly unhelpful, to the point where Scotgold's immediate financing plans for Cononish have been shelved.

Scotgold's shares haven't exactly outperformed lately, sliding from over 5p this time last year to the current 1.42p. At that price the company is valued at around £4 million, and bringing in the £22 million that will be needed to get Cononish built at these levels would represent an enlargement in the share capital by several orders of magnitude, whatever mixture of debt and equity could be attained.

Perhaps not surprisingly, given that the net present value (NPV) is less than £11 million under the base case scenario, appetite amongst potential investors is somewhat muted.

But it's not just the way the numbers add up that's the issue. It's the volatility. "The advice we have is that the institutions are spooked by the volatility in the gold price", says John. And you can't legislate against that. So while the project looks robust at the current price, it's being undermined by uncertainty, and somewhat reluctantly Scotgold has for the time being at least put its fundraising efforts on hold.

So for the time being, Scotgold has breathing space while it waits for markets to improve, or for the second alternative that was spelled out in the development study update: for a partner to come in and help with the heavy lifting.

"It's a small mine, but it's a profitable mine which can be in production fairly quickly", says John. "For some companies, 20,000 ounces for six or seven years is significant."

There are also some attractions on the upside. Extensions to the east at Cononish are highly likely, and could add significantly to the amount of mineable ounces in due course. And there's also the prospect that regional exploration could deliver further interesting prospects.

"There's no way that Cononish is the only high grade quartz vein in the Grampians", says John. So there's clearly value on offer.

The portal at Cononish mine

The question is: who will step in and claim it? Will better markets provide better economics and returns, and bring investors and lenders back in in a big way? Or will a partner step up to the plate instead, minimise dilution, but also reduce the overall returns? It's an interesting dynamic, and a tricky balancing act. But no one ever said life as a junior miner was easy."

You can read the full account here:-
http://minesite.com/news/scotgold-confirms-the-economic-potential-at-cononish-but-shelves-its-immediate-funding-plans-in-response-to-tough-market-conditions

The company has also posted an interesting and informative report, dated May 2013, on its website, and is available for download here:-
http://clients2.weblink.com.au/clients/scotgold/article.asp?asx=SGZ&view=6636061

Watch this space……...

KENNECOTT LANDSLIDE UPDATE

Roy Starkey

Further to the piece in Newsletter 88, problems continue for the troubled Bingham Canyon open pit copper mine. The major landslide which occurred just prior to N/L 88 going to press, has developed into a serious on-going business problem for the mine's operator Kennecott Copper Corporation.

Further information and images have emerged in the intervening months, and you can read several interesting reports on Dave Petley's landslide blog, here:

http://blogs.agu.org/landslideblog/2013/04/26/an-update-on-the-bingham-canyon-mine-landslide/

The incident on 10th April is thought to have been the largest landslide ever recorded in North America, which saw 165 million tons of earth dropping more than a half mile at the Utah copper mine. Mining production has been cut in half for the foreseeable future. The landslide started at the mine's north-eastern corner and then plummeted to very bottom of the mine, some six-tenths of a mile down. Miraculously, there were no injuries.

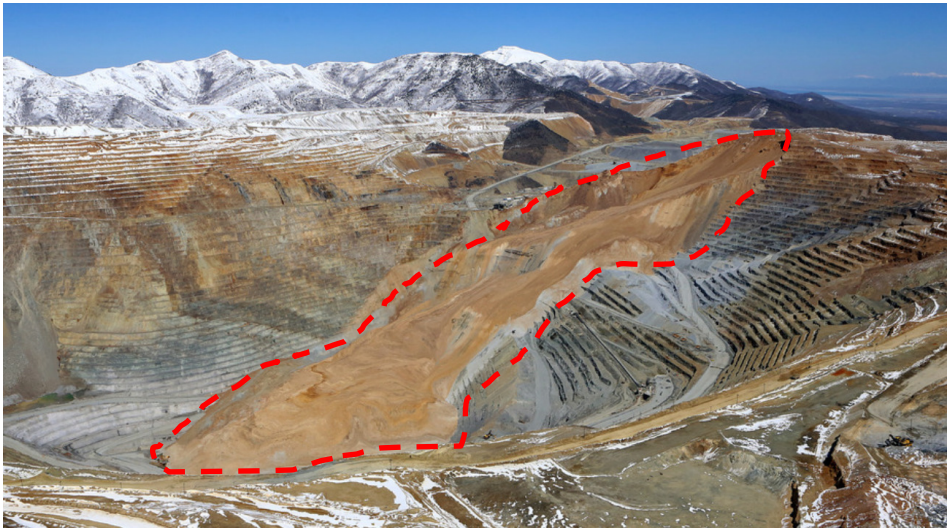


Photo from *Salt Lake City Tribune* website (see below). I have outlined the area of the massive landslip with a dotted red line.

In an effort to reduce costs at the mine, Kennecott has offered 270 workers in their 50s or older a $20,000 early retirement bonus in addition to pension and health insurance benefits. About a third of these workers are planning on taking the retirement, Union officials told the Associated Press on 31st May.

It is estimated that around 85 million to 92 million cubic yards of rock and dirt, along with copper, gold, silver and molybdenum were moved. It has been said that this amount of earth would fill 21 Great Pyramids of Giza, or if it were spread out over New York City's Central Park, it would be 65 feet deep. And it's going to take a lot for the company to clean it up. 150 million tons of waste is almost two-thirds of what the mine moves in a year, according to reporting in the *Salt Lake City Tribune* http://www.sltrib.com/sltrib/money/56254837-79/mine-kennecott-company-april.html.csp
Difficult times ahead.

NW BMS MEETING 18th MAY 2013

SHOW AND TELL AFTERNOON

Harry Critchley

Oneta brought some zeolites from the Garron Cliff, Northern Ireland which had been collected following a very convenient rock fall in the area a couple of years ago. Garronite, chabazite and thomsonite were identified on several pieces and temporary labels made.

There was also material from the Lake District showing pink barytes. Oneta also passed on news of Beryl Taylor who is now staying with her son, David, in the area rather than being on her own up in Scotland. Beryl, Oneta, John V, Harry and Christine had attended the memorial service for Philip Taylor's mother, 20th April.

Harry had sorted material from Mid Wales to look at and some specimens from Europe, which had been swapped during a previous BMS Symposium Weekend. The most memorable 'find' being wulfenite – lost on the specimen until Keith pointed out several small but colourful crystals in one of the vugs. Richard had two boxes of specimens from the Clara Mine, Germany which he had acquired at the Saint Marie Aux Mines show. These were 'shown' and Richard was able to 'tell' a story about most, Fleischer adding to this information.

Keith had an assortment of specimens from the West Country and these were passed round for all to see. David H came with tales of a trip to East Lothian, Oneta asking if he'd found any zeolites on the beaches in the area. Not this time as this had been a holiday not a collecting trip.

Following the description of a fantastic B&B in Gifford which David and Margaret frequent when in the area, there was quite a lot of discussion about 'places to stay' and 'places to avoid'. Jeanette also passed on information about 'deals' at Travelodge which enable rooms to be had at under £10 a night on occasions! It was suggested that an article on this type of information – Gem B&Bs which BMS members have found – would prove very useful for future trips. After nibbles and further discussions the meeting closed at 4:30. Seven attendees and lots completed during the afternoon.

SUSSEX BRANCH

John Hall

The next meeting (with the theme being "Lead Minerals") will be on Friday 18th October from 7pm to 10pm at the Redwood Centre, Perrymount Road in Haywards Heath. This is the same building that is used for talks at the Sussex Mineral Show each year and is on the north side of Clair Hall (the Show venue). For further information please contact John Hall on 01444 415066 or at jahall116@gmail.com.

BOBKINGITE — MINDAT PHOTO OF THE DAY

Roy Starkey

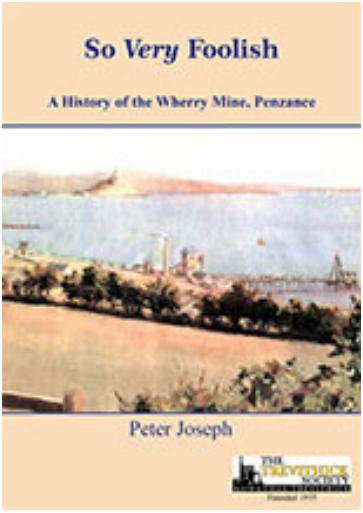
The Mindat Photo of the Day for 26th June 2013 was a fabulous photo of bobkingite from La Cena del Depósito concession, Cerro Minado Mines, Cuesta Alta, Huércal-Overa, Almería, Andalusia, Spain, by Christian Rewitzer.
See: http://www.mindat.org/photo-451881.html

Bobkingite $Cu_5Cl_2(OH)_8(H_2O)_2$ from La Cena del Depósito concession, Cerro Minado Mines, Cuesta Alta, Huércal-Overa, Almería, Andalusia, Spain. Picture width 0.8 mm. Collection and photograph Christian Rewitzer (reproduced with permission).

The mineral was first discovered by BMS Member Neil Hubbard from New Cliffe Hill Quarry, Stanton-under-Bardon, Leicestershire. It was named for Robert (Bob) King, formerly of the Department of Geology, Leicester University, prominent mineral collector and founder of the Russell Society.

SO VERY FOOLISH: THE HISTORY OF THE WHERRY MINE, PENZANCE

Roy Starkey



One of Cornwall's most remarkable mines was the Wherry Mine at Penzance. Its shafts were 200 yards offshore and linked to the machinery on dry land by a timber trestle. Although its workings were short-lived, its unique situation attracted visitors, many of whom wrote of their experiences.

Despite this, no history of the mine has so far been published but Peter Joseph, Penwith mining historian, has now remedied this and tells the story of the Wherry Mine, including the exploratory drilling which took place there in the 1960s. This interesting little booklet sells at £4.99 and is available from local outlets in Cornwall, from specialist mining booksellers or from Tormark Press.
ISBN: ISBN 978 0 904040 95 1
Publisher: The Trevithick Society, Camborne, 2012.
(Thanks to Chris Jewson for bringing this to my attention whilst I was down in the SW).

HALTCLIFFE SMELTER

Martin Stolworthy

The following notes are reproduced from http://list.english-heritage.org.uk/resultsingle.aspx?uid=1019957

Summary of Monument

Despite demolition of all buildings, the site of Haltcliffe copper smelter and its associated leat, wheelpit, slag debris, spoil heaps and dressing waste survives reasonably well. The monument is a rare example of a 19th century copper smelter in north west England, and together with buried remains of the smelting house and associated features it also retains abundant copper processing residues which contain significant technological information.

Details

The monument [NY 3511 3504] includes the earthworks and buried remains of Haltcliffe 19th century copper smelter and an associated leat east of High Wath Ford. It is located on the southern side of Carrock Beck and includes a leat, wheelpit, slag debris, spoil heaps, dressing waste and the buried remains of the smelting house. The precise dates when the smelter was built and when it ceased working are unknown; it

is known to have been in use in 1866, however, it was not shown on maps of 1900 which suggest that it had been demolished by this date. Recent analysis of minerals found here indicate that the smelter served both the nearby Carrock End and Carrock Fell mines. A leat, which provided water power for the reprocessing of slags, survives as a narrow channel commencing a short distance downstream of High Wath Ford. This leat runs east for approximately 150 m before terminating immediately above the narrow flood plain of Carrock Beck. At this point a gorse-filled hollow is considered to represent a wheel pit which housed the waterwheel used to power machinery at the smelter. On the Beck's flood plain there are numerous features including traces of a short section of cobbled road or floor, areas of slag debris from the smelting process, and remains of a stone wall dividing two large areas of slag. A number of mounds and hollows at the southern edge of the flood plain represent a combination of spoil heaps and dumps of brick and slate from demolished buildings. Examination of the slag debris reveals that two of the areas of debris are heavily mineralised whilst two other areas show little, if any, mineralisation, indicating that varied smelting processes have taken place here.

NOTE: The site is scheduled under the Ancient Monuments and Archaeological Areas Act 1979, as amended. Any intending visitors must therefore familiarise themselves with the appropriate designations and legislation and note that special permission may be required to undertake fieldwork at the site.

ADIT NOW MINING LIBRARY

Roy Starkey

Many members will already be familiar with the Adit Now website, but may not be aware that the site now hosts a very extensive and potentially useful library of electronic documents http://www.aditnow.co.uk/library/mining-library.aspx

Examples include :-

A plan and survey of the Cwmystwyth Mine site http://www.aditnow.co.uk/documents/Cwmystwyth-Lead-Mine/Cwmystwyth-workings.pdf
A leaflet and geological trail for the Allenheads area http://www.aditnow.co.uk/documents/Allenheads-Lead-Mine/Geology-and-landscape-around-Allenheads.pdf
A hand-drawn section and survey of Nantymwyn Mine http://www.aditnow.co.uk/documents/Nantymwyn-Lead-Mine/explorations.pdf
A 3D visualisation of the workings at Coniston Copper mines http://www.aditnow.co.uk/documents/Coniston-Copper-Mine/ALL-1.pdf

There is also a selection of old mining share certificates—for example Phoenix Mine (see front cover illustration) http://www.aditnow.co.uk/documents/PHOENIX-Lead-Mine-3/phoenix-lead-mine.PDF

BRITISH MICROMOUNT SYMPOSIUM
20-22 SEPTEMBER 2013

Just a reminder that this year's BMS Symposium will take place at the Stoneycroft Hotel, Leicester starting from 2pm on Friday 20 September. The usual information pack and booking forms have been mailed out and should have been returned by those wishing to attend. If you have not finalised your booking, please get in touch with Martin Gale **IMMEDIATELY**.

WANTED — NEWSLETTER EDITOR

Roy Starkey

I have once again stepped in to provide cover as "stand-in Newsletter Editor" for the past two issues. I need to hand the baton to someone who would like to take the helm for a few years (I suggest a minimum term of three years), so that I can focus on my book about the minerals of the Cairngorms. The role provides the opportunity to interact with all of the membership, soliciting articles, helping communication, and highlighting topics of interest.

If you think you might be interested, or would like to learn more about the role, please give me a call (without any obligation) on 01527 874101.

RECENT PAPERS IN THE MINERALOGICAL MAGAZINE OF POTENTIAL INTEREST TO MEMBERS

Roy Starkey

Moxon, T., Petrone, C.M., Reed, S.J.B. (2013) Characterization and genesis of horizontal banding in Brazilian agate: an X-ray diffraction, thermogravimetric and electron microprobe study. pp. 227-248.

Grey, I.E., Scarlett, N.V.Y., Brand, H.E.A. (2013) Crystal chemistry and formation mechanism of non-stoichiometric monoclinic K-jarosites. pp. 249-268.

Bindi, L., Zaccarini, F., Garuti, G., Angeli, N. (2013) The solid solution between platinum and palladium in nature. pp. 269-274.

Ohnishi, M., Shimobayashi, N., Nishio-Hamane, D., Shinoda, K., Momma, K., Ikeda, T. (2013) Minohlite, a new copper-zinc sulfate mineral from Minoh, Osaka, Japan. pp. 335-342.

Breiter, K., Gardenová, N., Vaculovič, T., Kanický, V. (2013) Topaz as an important host for Ge in granites and greisens. pp. 403-417.

DO YOU HAVE A (MINERALOGICALLY INTERESTING**) TWIN TOWN?**
Droitwich—Twinned with Bad Ems
Roy Starkey

I suppose that I should have been aware of this, but for some reason it had passed me by. Only recently, I noticed that Droitwich, the well-known Spa Town a few miles from my home in Bromsgrove, has Bad Ems as its twin town.

In Roman times, a castle was built at Bad Ems as part of the Upper Germanic Limes, but today not much of the structure remains. In the woods around the town, however, there are distinct traces of the former Roman border.

The town was first mentioned in official documents in 880 and received its town charter in 1324. The Counts of Nassau and the Counts of Katzenelnbogen rebuilt the bath. The high noble Counts loved to use it inviting friends. Days in the bath were often days with musicians and all kinds of food even swimming in the pool. In the 17th and 18th centuries it was considered one of Germany's most famous bathing resorts.

A superb pyromorphite from Bad Ems offered for sale at the Sainte Marie aux Mines Show in 2012. Wendell Minerals specimen,. Roy Starkey

Of more interest to readers however is the long and distinguished mining history of the area around the town. In the 19th and 20th centuries mining for lead, silver, zinc and copper was a major industry. The Romans had already dug for ores using open cast mining, which continued throughout the Middle Ages.

The many indentations on Blöskopf Hill bear witness to this period of history. As time went by, the method changed from open cast mining to underground mining with tunnels and shafts. Mining of this kind is first mentioned in a document dated 1158, and it continued on into the 18th century, although with long interruptions.

The advent of the Industrial Revolution led to the expansion of the mine, which from 1871 operated under the name of "Emser Blei- und Silberwerk AG" (Bad Ems Lead

and Silver Works, Inc.). In 1909 the company was taken over by what later became the 'Stolberger Zink AG" (Stolberg Zinc Inc.) and mining continued until the end of the Second World War brought things to a halt in 1945. After the war, the mine no longer received any subsidies, but until 1959, stockpiled ore and ore from other mines were sorted at the central preparation plant in Silberau. Today, the mine is still known as "Mercur", the collective name for various individual pits.

In 1996 the mine was established as a museum, with four exhibition rooms covering; pre-industrial mining, the industrial period of mining, the social history of mining in Bad Ems, and a collection of minerals and different types of ore. [Source Wikipedia].

HERODSFOOT MINE & LISKEARD MUSEUM

Roy Starkey

Liskeard Museum recently hosted a special event on Saturday 15th June with the headline "*Mining the Past*". The idea was to encourage members of the public to bring in specimens for identification, and to encourage interest in local history, mining and minerals and genealogical research. Activities included a guided walk "The Industrial History of Moorswater" led by Iain Rowe; a "*Meet the Experts*" session; Trevithick Society Information and Bookstall; and a demonstration "Getting Started in Family History". The event was opened by Sheryll Murray MP and the Mayoress of Liskeard.

On hand to answer questions about minerals, and Herodsfoot Mine in particular, were Richard Humphrey and Andy Robb.

Richard Humphrey chatting with Sheryll Murray MP and the Mayoress of Liskeard

You can follow Richard's exploits as he seeks to unravel the history and mysteries of North Herodsfoot mine on his blog at http://www.northherodsfootmine.co.uk/

AND FINALLY ……. This edition will hopefully reach you during July, helping to put things back roughly on-track.

I have again compiled this in the capacity of stand-in Editor, and I hope that we can find a suitable full-time replacement Editor in time for the next Newsletter. Please give me a call if you might be interested in taking on the role. Please **let me** have any contributions and ideas for articles or features for the next issue as soon as possible (see below).

Roy Starkey
Stand-in Editor

Could your article or photo have filled this space (or even more)?

If so …..

Let's be having it for the next issue!

Thank you to everyone who has contributed material.

Please send all contributions for the next Newsletter - preferably in electronic format by e-mail, to roy.starkey@gmail.com
(WORD, RTF, WORKS, OpenOffice.org, MS Publisher or plain text) with photos attached as separate jpeg files.

The next BMS Newsletter should be issued in October 2013. All contributions gratefully received - so please get writing! Deadline for contributions for that issue is **30th September 2013.**

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