

BRITISH MICROMOUNT SOCIETY



NEWSLETTER NO. 61 February 2002

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ARSENICAL RAMBLINGS

Malcolm Southwood

Over the past year or so, I have been rationalising and reorganising my mineral collection on the basis of locality suites. I think there comes a time for many of us when we realise that it is just not practical to collect everything. My approach to the problem has been to hang on to all the specimens from parts of the world where I have either lived or worked for a while, and let most of the rest go. I say most of the rest; as I went through the collection there were some specimens - and, indeed, suites of specimens - that I could not bear to part with. The result was that I am almost back to square one - with a smaller than intended reduction in the overall volume of the collection.

But the exercise highlighted a couple of issues. Firstly, it caused me to think a little about how similar suites of minerals from different parts of the world compare with one another, and this, of course, is a fascinating topic. Secondly, I realised that many of the suites of minerals that I am particularly attached to are rich in arsenates: Tsumeb (of course!), Grube Clara, the Caldbecks, and many others.

One of my favourite micromineral localities when I lived in South Africa was an old tin mine by the name of Stavoren in what used to be called the Northern Transvaal. On one occasion I collected there with Jon Gliddon (now another BMS member), and I remember his observation at the time that the mineral assemblage is remarkably similar to Wheal Gorland. A third locality with close similarities also springs to mind, and that is Majuba Hill, in Nevada. So as I went through the specimens in my collection from these three widely separated localities, I found myself making some comparisons, aided by some of the excellent literature on these three occurrences.

Three Disused Tin Mines

Starting with the basics, all three of these localities are disused tin mines.

Stavoren is located some 20km north of the small town of Marble Hall, and is part of the Stavoren-Mutue Fides tin field (Cairncross and Dixon, 1995). The deposit is hosted by a granite/granophyre suite of Proterozoic age, associated with the final stages of intrusion of the Bushveld Complex, and the mineralisation occurs as "replacements and vug-fillings in pipes, veins and sheet-like bodies of feldspar-rich pegmatites" (Cairncross and Dixon, op.cit.). Tin, tungsten, and arsenic have all been recovered from the Mutue Fides mine, but at the adjacent Stavoren mine, it seems that tin recovery was very much subordinate to arsenic, for which a small smelter was established on the site in 1918/19 (Coetzee, 1976).

For most of us, Wheal Gorland needs little introduction. Located in the parish of Gwennap, just north of St Day, the deposit is hosted by granite of the Carn Marth mass, which is overlain to the east by metamorphosed killas (Dines, 1956). The granite and mineralisation are of Hercynian (upper Palaeozoic) age. There are six major lodes and these have undergone supergene alteration to considerable depth. Smith (1997) writes that "the gossan was responsible for the poor return [on] investment in the early 1790s as Wheal Gorland was still in gossan at a depth of 100fms". It is this gossan, however, that carries the supergene minerals that are of interest to collectors.

Gorland is an old mine with a chequered history because, like Stavoren, the ore was very irregularly distributed. Another similarity is that here, too, tin was not the main metal recovered. The parish of Gwennap was an important tin producer at the start of the 17th century, but from the latter part of the 18th century, to the middle of the 19th, it became Cornwall's chief copper-

producing region (Embrey and Symes, 1987). Between 1815 and 1851, Wheal Gorland produced 40,750 tons of 7.5% copper ore, 15 tons of black tin, and 18 tons of arsenic. Between 1906 and 1909 the mine was dewatered to the 30fm level, and the margins of the old copper stopes, together with some surface dumps, were reworked for tin and tungsten. During this time 164 tons of tungsten (concentrate?) were recovered, together with 18 tons of black tin. Fluorite was also recovered. (Dines op.cit.).

Majuba Hill is located in north-west Nevada, USA, approximately 160km north-east of Reno. Ironically, in view of our comparison with Stavoren, Majuba Hill is named after the famous battle site from the South African Boer War. Mining began at Majuba Hill in 1907, and the deposit delivered 4,000 tons of 12% copper ore during the First World War. Drilling in 1917 led to the discovery of tin ore at depth, and after a period of dormancy, the mine was reactivated and worked for copper and tin during the Second World War (Jensen, 1985).

Geologically, Majuba Hill differs from both Stavoren and Wheal Gorland, in that it is hosted by a sub-volcanic rhyolitic complex intruded into Triassic shales and mudstones during Tertiary times. There is a strong structural control (fault zones) on the mineralisation, with the hydrothermal fluids believed to have been derived from a granitic source at depth.

The Primary Minerals

But from our perspective as collectors, the mineralogical comparisons are the most interesting. In the following notes I have concentrated on the primary ore minerals and their supergene alteration products only.

Comparative Mineralogy 1: Ore Minerals

		Majuba Hill	Stavoren	Wheal Gorland
Prim. Ore Minerals	Cations			
Arsenopyrite	As; Fe	+	+	+
Bismuth	Bi	+	+	
Bismuthinite	Bi	+	+	x
Bornite	Cu; Fe	+	+	+
Cassiterite	Sn	+	+	+
Chalcocite	Cu	+	+	+
Chalcopyrite	Cu; Fe	+	+	+
Copper	Cu	+	+	+
Covellite	Cu	+	+	
Cubanite	Cu; Fe	+		
Digenite	Cu	+		
Galena	Pb		+	+
Glaucodot	Co; As			
Gold	Au			+
Joseite-Beta	Bi; Te		+	
Lollingite	Fe		+	
Magnetite	Fe	+	+	
Molybdenite	Mo	+	+	+
Pyrite	Fe	+	+	+
Pyrrhotite	Fe	+		
Scheelite	Ca		+	
Silver	Ag	+		
Sphalerite	Zn	+	+	+
Stannite	Cu; Fe; Sn	+	+	
Tennantite	Cu; Fe; As			+
Tetrahedrite	Cu; Fe; Sb			+
Wolframite	W		+	+

Notes: X: Bismuthinite occurs at nearby Cathedral Mine, but not at Wheal
Some secondary sulphides are also included in this table.

Data: Cairncross & Dixon (1995); Smith (1997); Jensen (1993)

The first table compares the primary ore mineral assemblages. The primary ore mineral suites are very similar at all three localities.

- Arsenopyrite, pyrite, chalcopyrite, bornite, chalcocite, native copper, sphalerite, molybdenite and, of course, cassiterite, are common to all.
- Tungsten minerals have not been reported from Majuba Hill. Galena is also absent here, which clearly explains the absence of lead-bearing arsenates and other lead secondaries at this locality (see below).
- Bismuth and bismuthinite have not been reported from Wheal Gorland, although bismuthinite occurs at the nearby Cathedral Mine, also in the parish of Gwennap. Joseite (a bismuth tellurium sulphide) is unique to Stavoren.
- Gold has been recorded at Wheal Gorland, though silver only occurs at Majuba Hill.

The Arsenates

As a generalisation, the primary ore minerals at all three localities tend not to form good specimen material, but the above notes and comparisons help to explain the occurrence or absence of certain minerals from the supergene assemblages. The latter are of considerable interest to the collector; the arsenate minerals particularly so.

Comparative Mineralogy 2: Arsenates

		Majuba Hill	Stavoren	Wheal Gorland
	Cations			
Agardite-(Ce)	Cu; Ca; Ce	+		
Agardite-(Y)	Cu; Ca; Y	+		
Arthurite	Cu; Fe	+		
Beaverite	Cu; Fe; Pb		+	
Beudantite	Pb; Fe			+
Carminite	Pb; Fe		+	+
Ceruleite	Cu; Al			+
Chalcophyllite	Cu; Al	+		+
Chenevixite	Cu; Fe	+	+	+
Clinoclase	Cu	+	+	+
Conichalcite	Cu; Ca	+		
Corkite	Pb; Fe		+	
Cornubite	Cu	+		+
Cornwallite	Cu	+	+	+
Goudeyite	Cu; Al; Y	+		
Lavendulan	Cu; Ca; Na	+		
Liroconite	Cu; Al			+
Luetheite	Cu; Al	+		
Metazeunerite	Cu; U	+		+
Mimetite	Pb		+	+
Mixite	Cu; Bi	+		+
Olivenite	Cu	+	+	+
Parnauite	Cu	+		
Pharmacosiderite	Fe; K	+	+	+
Scorodite	Fe	+	+	+
Strashimirite	Cu	+		
Tyrolite	Cu; Ca	+		+
Zeunerite	Cu; U	+		+

Data: Cairncross & Dixon (1995); Smith (1997); Jensen (1993)

- Of the 28 arsenate species recorded from these three deposits, no less than 22 contain copper. Only four of these, however, (chenevixite, clinoclase, cornwallite, and olivenite), are common to all three locations.
 - **Olivenite** occurs in a wide variety of habits at each of these localities and, judging from the nature and number of specimens in my collection, is probably the most abundant arsenate mineral at all three localities. Radiating sprays of acicular prisms occur at all three localities. At Gorland, spherical sprays of hair-like crystals become so compressed that they form a banded structure resembling sectioned timber. This habit known as "wood olivenite" occurs only at Wheal Gorland to the best of my knowledge. Majuba Hill olivenite is notable for the size of crystals that occur. Crystals "of amazing perfection reach lengths of up to 1cm" according to Jensen (1985), and crystals to 2.5cm have been recorded. One specimen in my collection comprises gemmy, flattened blade-like crystals to 4mm in length, unlike anything from the other two localities. The white, fibrous variety of olivenite (known by the varietal name of leucochalcite) also occurs at Majuba, and is closely related to the "wood olivenite" habit recorded at Gorland. One unique occurrence at the Nevada locality consists of chalcocite pseudomorphs after olivenite, which are in turn coated by small pharmacosiderite crystals (Jensen, 1985). The olivenite specimens in my possession from Stavoren, are typically of tapering, multi-terminated groups of acicular crystals growing in cavities in gossan. Clinoclase is sometimes associated with this habit and appears to post-date the olivenite, forming attractive crystal aggregates growing on the

olivinite spears themselves. Moss-like aggregates of olivinite crystals are also found, again investing selected surfaces of gossan matrix.

- **Clinoclase** is one of my favourite minerals. Superb specimens occur at all three localities, but Majuba Hill arguably has the edge in terms of both quality and quantity. The specimens I have from Stavoren demonstrate two distinct habits for clinoclase. The first consists of radiating aggregates of acicular crystals to less than 1mm, perched on an iron-rich gossan matrix. The second comprises platy crystals with slightly curved faces, again to less than 1mm, in cavities in a pale yellow matrix that also hosts azurite and cornwallite. Both the acicular and platy habits are well developed at Wheal Gorland, but I also have a few specimens with aggregates of more equant prismatic crystals in random alignment. My favourite specimen consists of curved platy aggregates (resembling small acorns) to 8mm across, and associated with lironite. But for sheer aesthetic beauty, its hard to beat the small, open bundles of acicular prisms from Majuba Hill. Typically they sit on (rather than in) a contrasting yellow matrix and, under the microscope the slender individual prisms are euhedral and gemmy. The perfection of the Majuba Hill crystals and, in particular, the availability of crystals without curved faces, enabled Palache and Berry (1946) to perform accurate goniometric measurements for the first time, thereby redefining the crystallographic elements of this species (Jensen, 1985). Of course, platy and prismatic habits are also well represented at the Nevada location.
- **Cornwallite** occurs at all three localities as olive green, botryoidal crusts.
- **Chenevixite** occurs as yellowish green, olive green, or greenish brown coatings at all three localities. The association with green metazeunerite plates at Majuba Hill is of interest.

- Some of the other copper arsenates are also highly sought-after by collectors:
 - **Arthurite** does not occur at Wheal Gorland, although the type locality is only a few tens of miles to the north-east at Hingston Downs. However, the arthurite from Majuba Hill surpasses anything that has been found in Cornwall. I have two Majuba arthurites in my collection, one of which comprises several radiating hemispherical tufts, of discreet, apple-green prisms, set on an apparently kaolinised matrix. In the second specimen these same tufts are perched attractively on scorodite and pharmacosiderite.
 - **Ceruleite** is found only at Wheal Gorland. This rare copper-aluminium arsenate occurs as pale blue botryoidal crusts that consist of minute acicular crystals, typically on a friable, gossanous matrix. Its presence at the Cornish locality may indicate that the activity of aluminium ions in the supergene environment was higher than at Majuba Hill and Stavoren. Or perhaps conditions at those two deposits were simply unsuitable for ceruleite to form.
 - **Liroconite** also occurs only at Wheal Gorland. It is another of my favourite minerals and I only wish I had a better specimen in my collection! Unfortunately, though, even a moderate example costs an arm and a leg these days. The colour of liroconite varies from an intense sky-blue, through turquoise, to green. The blue variety is the most sought-after, and the wonderful example in the Truro Museum (illustrated on the back of the dust-jacket of "Minerals of Cornwall and Devon" (Embrey and Symes 1987) has to be one of the finest British mineral specimens of any species. The crystals are typically in shallow pyramidal or pseudo-octahedral forms. One of the specimens in my collection is intimately associated with clinoclase, while the others consist of liroconite only in vugs and fractures in gossanous matrix. As I suggested for ceruleite, perhaps the absence of liroconite at Stavoren and Majuba Hill is telling us that aluminium ions were not mobilised at these deposits to the same extent as at Gorland. Alternatively, conditions at the overseas locations may have lain outside of the stability range of the two copper-aluminium arsenates.
 - **Chalcophyllite** occurs at Majuba Hill and Wheal Gorland, but not at Stavoren. Unfortunately I do not have an example from Majuba, but the literature describes "superb, blue-green, lustrous, hexagonal plates to 3mm" in small vugs in altered rhyolite (Jensen, 1985). Azurite, brochantite and spangolite are common associates, which must make for extremely attractive specimens. Larger crystals occur at Wheal Gorland but, if my specimens are anything to go by, the smaller crystals are the more attractive. These occur as green to blue-green transparent, free-standing, tabular hexagons. Sometimes these are grouped into compact turquoise "roses". Larger crystals and crystal aggregates generally seem to have been more susceptible to dehydration, and have commonly lost their transparency.
 - **Parnauite** is found only at Majuba Hill, where it occurs as microcrystalline crusts that can be difficult to distinguish from malachite.
 - **Goudeyite** was first described from Majuba Hill and, like parnauite, has not been reported from either the British or the South African locality. It seldom occurs as crystals, but rather as yellow-green, massive coatings with a greasy lustre.

- The iron arsenates, scorodite and pharmacosiderite, are also common to all three localities:
 - **Scorodite** is an under-rated mineral, although the classic material recently recovered from Hemerdon by Ian Bruce has gone some way rectifying that situation. At Majuba Hill, scorodite occurs as cluster of sky-blue pyramidal crystals and, more rarely, as orthorhombic prisms to 3mm (Jensen, 1985), typically in altered, chalcocite-rich pods. Pharmacosiderite, and (less commonly) athurite are associated. The specimens from Gorland show considerably more colour variation; green, blue, or colourless.
 - **Pharmacosiderite** is relatively uncommon at Majuba Hill, where it occurs as diagonally striated green cubic crystals to 3mm, sometimes associated with scorodite. The contrast of green pharmacosiderite aggregates perched on gemmy blue scorodite is particularly pleasing. At Wheal Gorland, yellow, or khaki-green pharmacosiderite is characteristic, and again the association with scorodite is very common. Pharmacosiderite is more abundant at the Cornish locality and locally forms substantial crystalline masses in the gossan. At Stavoren, pharmacosiderite occurs as greenish and brownish cubes to 3mm (Cairncross & Dixon, 1995).
- Lead-bearing arsenates occur at Stavoren (beaverite, carminite, corkite, and mimetite) and at Wheal Gorland (beudantite and carminite), but they are absent at Majuba Hill. This is explained by the absence of galena or any other primary lead-bearing phase in the Majuba suite of ore minerals.
- The rare earth-bearing arsenates (agardite-(Ce); agardite-(Y); and goudeyite) occur only at Majuba Hill. The rare earth elements are derived from monazite and xenotime in the host rock. While these minerals are by no means unusual in a granitic paragenesis, they have not been reported in the rock-forming assemblages at Stavoren or Wheal Gorland.

It is of course notable that fine arsenate assemblages occur at a number of other mines in the Gwennap area in addition to Wheal Gorland. These include Wheal Muttrall, Ting Tang, Wheal Unity and, as we learned from the fine selection of material brought to the 2001 BMS Symposium by Rob Selley and Roger Eslick, Cathedral mine.

Other Secondary Minerals

I have also included a comparative table below for the other secondary minerals that occur at these three localities, but with only brief comparative notes.

- A diversity of carbonates, oxides and sulphates occurs at all three localities, although the sulphate assemblage at Stavoren is relatively sparse, and contains no minerals with the hydroxide anion.
- Phosphates occur at both Wheal Gorland and Majuba Hill, but are not found at Stavoren. Also the South African locality has no minerals with halide (chloride or iodide) anions.

Comparative Mineralogy 3: Other Supergene Minerals

		Majuba Hill	Stavoren	Wheal Gorland
	Main Anion			
Azurite	carbonate	+	+	+
Cerussite	carbonate		+	+
Malachite	carbonate	+		+
Chlorargyrite	chloride	+		
Atacamite	chloride/hydroxide	+		
Iodargyrite	iodide	+		
Bismite	oxide		+	
Cuprite	oxide	+	+	+
Hematite	oxide		+	+
Pyrolusite	oxide	+		+
Tenorite	oxide	+	+	+
Tungstite	oxide		+	
Asbolane	oxide/hydroxide			+
Goethite	oxide/hydroxide	+		+
Varlamoffite	oxide/hydroxide			+
Libethenite	phosphate			+
Metatorbernite	phosphate	+		+
Plumbogummite	phosphate			+
Pseudomalachite	phosphate			+
Rhabdophane-(Ce)	phosphate	+		
Torbernite	phosphate	+		+
Vivianite	phosphate			+
Chalcomenite	selenate	+		
Chrysocolla	silicate	+	+	+
Anglesite	sulphate		+	
Chalcanthite	sulphate	+	+	
Thenardite	sulphate	+		
Brochantite	sulphate/hydroxide	+		+
Cyanotrichite	sulphate/hydroxide	+		+
Devilline	sulphate/hydroxide	+		
Jarosite	sulphate/hydroxide	+		
Langite	sulphate/hydroxide	+		+
Posnjakite	sulphate/hydroxide	+		
Connellite	sulphate/hydroxide/chloride	+		+
Spangolite	sulphate/hydroxide/chloride	+		+
Cuprotungstite	tungstate/hydroxide		+	+

Data: Cairncross & Dixon (1995); Smith (1997); Jensen (1993)

Conclusion

In conclusion, there are some remarkable similarities - and differences - between these three localities.

- Tin, arsenic, and granitic source rocks are themes common to all, yet tin production was subordinate to copper at both Wheal Gorland and Majuba Hill, and to arsenic at Stavoren.
- The three deposits are of very different ages, spanning more than two billion years, from the Proterozoic rocks of Stavoren, to the Tertiary volcanics at Majuba Hill. Wheal Gorland is of intermediate, upper Palaeozoic age.
- The mineralisation is structurally controlled at Gorland and Majuba Hill, but includes at least some replacement-type ore occurrences and pegmatite bodies at Stavoren.
- The primary ore mineral suites are very similar at all three localities. Copper, tin, arsenic, molybdenum, iron, and zinc sulphides are common to all.

- Clearly all three deposits have complex supergene mineral assemblages, with diverse arsenate suites. A total of 28 arsenate species have been recorded from the three localities, of which no less than 22 contain copper.
- However, only three copper arsenate species chenevixite, cornwallite, and olivenite, and the two iron arsenates, scorodite and pharmacosiderite, occur at all three localities.
- Many of the arsenates and other secondary minerals occur in specimen-quality associations, and while fine hand specimens have been available from each of the locations, the continuing discovery of excellent micro material at all of these old mines offers the best potential for modern collectors.

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WEBSITES! Roy Starkey

Max Wirth has written to me with reference to additions to various websites. He suggests that members should be encouraged to enter data to sites such as mindat.org, *providing such data comes only from the member's own contributions to the BMS reference collection*. This seems to be an entirely reasonable suggestion which avoids disclosure of data provided by others who may not be happy about it being put on the Internet.

CHAIRMAN'S NOTES

Roy Starkey

More Material Required

It is planned to produce a special 21st Anniversary Edition Symposium Booklet. This will take the form of a "History of the BMS", including colour illustrations, anecdotes, reminiscences, a review of Society activities etc.

Several people have responded as a result of the request in the last Newsletter - more material is still required. Please sit down and send me your favourite funny story about the BMS, or a nostalgic account of an early field trip - or whatever !

All contributions gratefully received - send to Roy Starkey, 15 Warwick Ave, Bromsgrove, Worcs. B60 2AH. email would be even better - to roystarkey1@cs.com

I look forward to hearing from you.

International Mineralogical Association 18th General Meeting

This prestigious event will be held in Edinburgh from 1 - 6 September this year. A full conference programme is supported by various Field Excursions and other activities and events. The scientific sessions will take place in the Edinburgh International Conference Centre. Full details can be found at

<http://www.minersoc.org/IMA2002>

Registration is £275 up to the end of March, and £325 after 31st March. Whilst this is not cheap, and does not include accommodation, the Meeting should be an event to remember, and will be a notable gathering of many prominent figures in mineralogy.

If you fancy combining a trip to the Edinburgh Festival with the IMA Meeting, then this is entirely possible and would make a great combined holiday.

Silver from Atlantis ?

A fascinating story is unfolding about a possible fraud in the mineral world concerning "wire silvers". These most sought after of mineral specimens - typically from Kongsberg, Norway, and Freiberg, Saxony typically cost thousands of pounds for a cabinet specimen. Doubt has been cast upon the authenticity of some specimens, an interesting summary of the situation is available on the following web site:-

<http://mineralnews.de>

Please note that this has no connection with the recently launched Mineral News website run by Bill Bolton in the UK.

Return of the Jedi

Some members may have received a circular letter from Sam Weller - who has re-entered the Mineral Dealing market again ! Sam's amusing letter was headed "Return of the Jedi" - which for anyone unaware of this phenomenon is one of the Star Wars films. Anyway, Sam is apparently

clearing out his "personal collection", featuring mineral specimens, artefacts and mining memorabilia. You can see what he has to offer at <http://www.investmentcollectables.com> , or ask him to email you details by contacting him at MauriceGWeller@aol.com , or by post at Dr.M.G.Weller, 3 Trythogga Hill, Gulval, nr Penzance, Cornwall. TR18 3NB.

My 12 year old son remarked that we must remember to celebrate the 4th of May this year ! When I enquired why, he said - "it's a Jedi Festival - 'may the fourth be with you!' "

Rashleigh Original for Sale

I recently received a copy of William Patrick Watson's booklist. Item 107 is an original copy of Rashleigh's Specimens of British Minerals selected from the cabinet of Phillip Rashleigh ... 1797-1802. The provenance of this copy is described in an accompanying letter dated 17 December 1942, from Commonwood, Looe, Cornwall, addressed to E.H.Pascoe (Director of the Geological Survey of India, Calcutta 1926) saying that the writer had purchased several copies of Rashleigh at the "Menabilly Sale" (the Rashleigh Estate) and that he had given one copy to the Royal Institution and was sending the present copy to Pascoe as a Christmas present in memory of "the pleasure to me to be associated with you in the numerous fossicking efforts we have embarked upon".

The asking price if you want it ... £7,000.

Members may be interested to know that the BMS has available for loan a facsimile reprint of Rashleigh, published by the Mineralogical Record. Please contact Alan Edwards if you would like to borrow it.

90 Second Mining Tales - No.1

(A new occasional series for which contributions are invited !)

Whilst browsing through my old Field Notebooks over Christmas I was reminded of the following story, which took place in September 1979 whilst Mary & I were on a Northern Mine Research Society Field Meeting, based at Hollows Camp Site, Grange in Cumbria. We had parked at "Ellers", near Manesty on Derwentwater, and had obtained permission from the landowner to explore the old workings on the Borrowdale Copper Lode. One of the open levels was wet, but looked as if it might "go", so one of our party, Harry Houghton, was duly despatched to investigate whilst the remainder waited outside, seeking reassurance that it was worth the soaking before proceeding further. Minutes passed, some considerable time in fact, but no sound and no sign of Harry. "Do you think we had better go after him" asked another member. "Ah, wait a bit longer" said another. Well, still no Harry so another brave volunteer waded into the knee/waist deep water and disappeared around the bend in the adit and out of sight into the darkness.

Another prolonged wait - no news. "It must go" says another, "I'm going to go in". First, one then another, then several more made their way into the inky blackness and disappeared from sight only to find the group just round the corner, stifling fits of giggles against a blind heading and wondering how many more they can lure into getting wet for no reason - save for idle curiosity !"

If you have an amusing tale to relate, which you would like to share in no more than 250 words (90 seconds reading time), please let Mike Dannatt have it for inclusion in a future issue of the Newsletter.

BRANCH NEWS

Midland

Eight members attended the November meeting for a practical session on the use of chemical analysis for mineral identification organised by Doug Morgan. Doug provided a detailed set of instructions, chemicals and specimens and led us through the steps needed to test for a number of minerals including lead, vanadium, copper, arsenic and magnesium. Rusty Waughman brought along his TV projection system so that we were able to observe reactions and compare them with our own tests. It was a most informative afternoon, thoroughly enjoyed by everyone, thanks to the time and effort Doug put into the preparation.

Dates of further meetings in 2002 are available from Dick Smith.

Northern

Meetings are held in the New Hall in Bawtry - please check with Mick Wolfe for date of the next meeting.

At the two most recent meetings a number of new finds were available for inspection including some fine anatase from Cwmorthin Quarry collected by David Green who generously shared these with members.

South East

The branch was pleased to welcome Shirley Adrian to the November meeting on her way back to Scotland from the Sussex Show. Peter Wallace's report of "What's on the tables" read as follows:

"Specimens were few and far between at this meeting, nevertheless they were very interesting.

Jean Terry, having received her 'barrel' of self-collected minerals from Namibia, showed a selection of species from the Berg Aukus Mine. This material was extremely attractive, but the difficulty is in identifying the different species. What at this meeting was thought to be wulfenite, was later identified as descloizite, a lead zinc vanadate, a species for which this locality is well known.

Peter Wallace showed chalcocite, (collected by Pam Wallace) a copper selenium mineral from Skip Shaft, Wheal Cock, Botallack, Cornwall. The blue orthorhombic crystals richly covering the rock matrix. Peter also had some nice fluorapatite, variety 'francolite', and rather unusual blocky hematite from the same site. A tired old locality like Wheal Cock can still turn up some 'goodies' with a little effort.

Still in Cornwall, Peter had collected an excellent mixite specimen from Penberthy Croft. Good specimens are hard to come by nowadays at Penberthy."

ROCKWATCH

(Many members will have read Austin Lockwood's article concerning the troubled Rockwatch organisation which appeared in the current Russell Society newsletter. Rockwatch is one of the few means available in this country to encourage young people to develop their interests in geology, mineralogy and related subjects. Rather than reproduce Austin's article in full, it seems that it may help to publish his proposed programmes for 2002 for his two branches. If you feel that you can help, I am sure that Austin would be delighted to hear from you. Ed.)

CRYSTAL PALACE PARK

13 April	Landslides and other geological hazards
11 May	Microfossils - make your own slides
8 June	How to become a mineral detective
13 July	Tsunamis - cause and effect
10 August	Early mining and the use of metals
14 September	Microminerals - make your own slides
12 October	Soil formation and types
9 November	How fossils form and get preserved
14 December	How to read a geological map

Meetings held in the Crystal Palace Park Information Centre, Thicket Road, Penge, SE20 8UT on the second Saturday of each month from 10.00 a.m. to midday.

HIGH ELMS COUNTRY PARK

23 March	Minerals and how they form
27 April	Ammonites and their ecology
25 May	Sharks - what we can learn from their fossil remains?
22 June	Plate tectonics - the active forces beneath the Earth's crust
27 July	The Ice Ages and sea level changes
24 August	Four fabulous fossils
28 September	Landslides and other geological hazards
26 October	Microfossils - make your own slides
23 November	How to become a mineral detective

Meetings are held in the Nature Study Lecture Room of the High Elms Country Park, Farnborough, Kent on the fourth Saturday of each month from 10.00 a.m. to midday.

The Annual Fossil Hunt on the Isle of Sheppey will be held on Sunday 1 September 2002. Meet at 12.30 p.m. near the Site Shop in Fourth Avenue, Eastchurch, Isle of Sheppey.

ROCKWATCH in Bromley and South East London is sponsored and organised by the Ravensbourne Geological Society. Enquiries to Austin Lockwood - Tel: 020 8650 5566.

ULTRASONIC CLEANERS

Mike Dannatt

When I visited Quintin Wight in Ottawa 18 months ago, he and the other micromounters there recommended the use of ultrasonic cleaners on micromineral specimens. On my return I could only track down one member who had such a thing and no-one who actually recommended them. Quintin's visit to the Symposium spurred me to research the subject and I have now been able to track down a supply of Branson ultrasonic cleaners. These are American made and appear to be the up-to-date version of the one recommended to me. Having obtained a half-litre sized Branson 200 and tried it, I have been pleased with the results. Since then I have had enquiries from other members and I have obtained the same model for them. I have now negotiated a price for members of £101 plus delivery at cost - no delivery charge if collected from my home or at a meeting! I can also get hold of larger models if anyone is interested.



The Branson model 200 ultrasonic cleaner - ideal for cleaning spectacles to give an idea of its size - is also sold as a jewelry cleaner.

EDITORS NOTES

Thanks to Malcolm Southwood for taking us overseas in his article - quite apart from the fact that he rescued this issue from oblivion!

Keeping to the international theme for a moment, I see from the January edition of Micro News and Views (South African Micromount Society) that we could all be sitting on (micro-)fortunes. In an article which Horst Windisch came across and reproduced, there is an interesting calculation starting from the purchase of two \$50 micro-specimens. A simple calculation taking into account crystal size and specific gravity suggests that the going price for apound of the particular mineral, haineaultite, is around \$200,000,000.

Now, picking to the other theme above, as the deadline for this edition approached I had virtually nothing to hand and was about to contact all "e-members" (those with e-mail addresses) to beg for contributions. So, when Malcolm's article arrived with an invitation to use any of it as I saw fit, I did exactly that and used the lot! I know that there are lots of topics just waiting to be written up - new finds and interesting trips or maybe even a correction to something you have read in an earlier issue of this newsletter. So, pens to paper, fingers to keyboards, please!

Finally, thanks to Roy Starkey for the colour photographs which come with this issue. The layout was designed as the centre spread for issue 60 but production snags caused me to drop it at the time but, finally, you have it.

Your editor feels that the offering below deserves wider circulation than just Norfolk. So, with permission of all parties, it is reproduced for a wider audience:

AWAY - AGAIN

Bridget Belson

Rocks in the garage, more in the shed,
Some in the garden - and even in bed!
"Do tidy them up, dear," - "I'll do it tomorrow."
I've heard that before, much to my sorrow.

His obsession with rocks, much to my shame -
Was it my fault? Am I to blame?
I took him collecting stones on the shore
And now I don't see him much anymore!

This year has been worse than ever before -
America twice and the Namibian tour.
Cornwall and Sheppey, plus mineral shows
And the rock piles increase wherever he goes.

Minerals from New Jersey and Tsumeb are fine
Some aren't unpacked yet - a few are now mine!
But rocks in the garage and more in the shed,
Were not what I bargained for, when we got wed.

From morning 'til night he ties up the phone,
Annoying? Yes - but at least he's at home.
Cumbria, Scotland and then the South West
And exchanges rock gossip with gusto and zest.

When he's away, I look in his drawer,
My collection is growing - I've pinched a few more.
Carbonates and barytes are what I like best,
So next time he's gone, I'll pinch all the rest!
(And serve him right!)

MEMBERSHIP NEWS

New members

Tony Aldworth	The Orchard, Popes Mill, Roseland, Liskeard, Cornwall, PL14 3PQ	01579 344841
Emmanuel Bravais	11 Shearman Place, Cardiff, CF11 7FA emmanuel.bravais@ukgateway.net	029 20341417
Ian Dossett	Coppice End, Cann Lane, Appleton, Warrington, Cheshire, WA4 5NF IanDossett@aol.com	01925 602962
Geoff Robson	49 Sandown Park, Tunbridge Wells, Kent, TN2 4RH geoff.robson@eezenet.com	01892 822390

Changes of address, telephone or e-mail details:

Member	New or corrected details.
Ashley Bye	The Post House, Ovington, Richmond, Co Durham, DL11 7DA 01833 627231
Tom Cotterell	Department of geology, National Museum and Gallery of Wales, Cathays
Peter Hay	16 Findon Avenue, East Saltdean, East Sussex, BN2 8RF 01273 302550
David Ifold	39 Westacott Meadow, Barnstaple, Devon, EX 8QX davidifold@bigfoot.com
Phillip Morris	New telephone no: 01745 572988
Allan & Elvire Mortimer	Pen-y-bayn, Ford, Shrewsbury, Shropshire, SY5 9LZ 020 8667 0861 (week days) 01743 850616 (weekends)
Nick Peters	85 Ardan Vale, Tillamore, Co Offaly, Eire 00353 506 23901

NEWSLETTER EDITOR

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The deadline for articles for Newsletter 62 will be 1st June 2002. Please let me have contributions as soon as possible. Articles or reports on PC disc are particularly welcome. Articles sent by E-mail can either be "attached" or part of the body of the E-mail message. Clearly *printed* documents are acceptable and can be scanned and read into the PC. Hand-written items should be as clear as possible please paying particular attention to site and mineral names.