

JOURNAL OF THE



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COVER PHOTO

The cover photo was published in Descent Magazine (No.153, April/May 2000 edition) under the heading "Images from the past". The caption with it read: "Little is known about this month's image from the past. The picture, from a stereo card, bears a handwritten but mostly unintelligible caption: 'Caves in ??? Head'. From the style of the mount the photograph was published in the 1890's and is evidently British. The 'caves' actually appear to be mines with an incline bearing away down the slope; given the partial caption, perhaps they are on the coast. Does anybody recognise where?" Alison Walton recognised the picture and promptly went to ~~elephants~~ to take this photo.



It was sent to Descent magazine, with some background history...and may appear in their next issue, due out in June.

AGM 2000

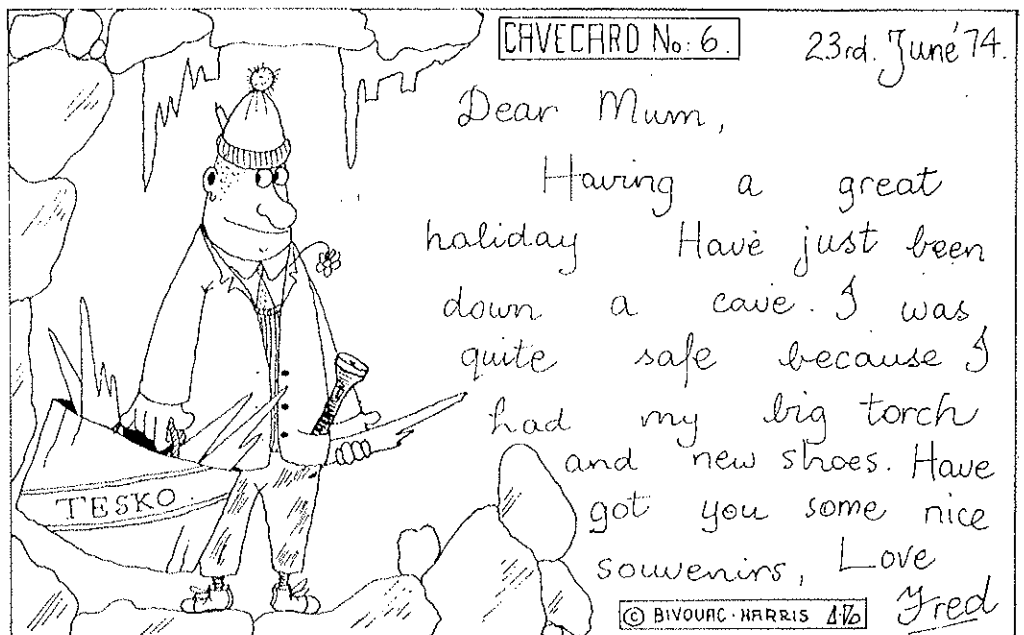
The AGM took place on Saturday April 15th. There was an exceptionally low turnout by members this year with only 12 present.

Thanks go to Queen Elizabeth Court for hosting the event and providing refreshments.

The committee remains virtually unchanged. Alison stepped down as PRO and John Carpenter was voted to take her place.

One of our newest members, John Oddy, has taken on the role of Expedition organiser.

A list of underground trips will be drawn up soon and will include an 'away' trip each month.



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Articles are always wanted! The next journal is due out around October 2000, so please put pen to paper and contact Alison Walton on 01492 877960

GOES on the Web: WWW.alex.phatcatz.net/goes

GOES now has another website, full of interesting photos and information, compiled by Steve Lea. Visit <http://gounder.welshnet.co.uk>

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CHRISTMAS DINNER 1999

On a cold Friday evening at the end of November the members of GOES cast off their sweatshirts, jeans, pit helmets and walking boots, and appeared at the Kings Head in a splendid array of evening finery. Ladies legs were seen again, some for the first time since the last Christmas dinner. The men were not to be outdone by the females. One of our members was very proud of his 'flashing dickie'! What will he think of for next year?

After a few sociable drinks the revellers made their way to the table where they partook of an excellent meal and hospitality. Congratulations to Sylvia and the staff at the Kings Head.

The wine flowed freely, tongues loosened and our chairman, with a little prompting, told of his days in the army and what he got up to. When it came to speech time, his was short and to the point, but someone had pinched his chair while he wasn't looking.



Erik in full flow, meanwhile spot the author making notes!

John presented Ali with a present for all her hard work over the last 12 months. She was delighted with her Snoopy on wheels and happily played with him up and down the table.



Ali, after receiving Snoopy

The evening was finished with an excellent slide show courtesy of Mark depicting what the adventurous members of GOES had been up to for the previous 12 months.

We were sorry that Eve was unable to join us, but can assure her that Tom behaved himself, no matter what his friends might have told her.

Our thanks for Tony and Ali for organising the event, which everyone there agreed was a huge success. See you all again for our next one.

Hilary Edwards, Llandudno, February 2000

POEM FROM THE PAST

Now Billy Davies, as well we know,
Down caves and mines loves to go,
But one Sunday he made a blunder,
As all around him fell asunder.

For he was clearing a tunnel, deep,
And had led the way for a closer peep,
He thought of how the tunnel went afar,
And how he'd tell it, back in the bar.

His mates were following close behind,
"We must watch that roof", he said in his mind,
No sooner thought than came a rumble,
The *@&/?! roof began to crumble.

A mass of rocks blocked Bill from his mates,
He thought he'd come to the Pearly Gates,
He did not know which way to turn,
And for some comfort he did yearn.

The lads all dug and made a hole,
and through it Pob did push a pole,
He said, "The air in there will keep him going",
"I can hear him cursing and so'n soing"!

Thoughts turned now to getting Bill out,
And so the task was set about,
Bill was left to curse in peace,
While Pob decided to call the Police.

Poor Bill thought he had been left to rot,
He thought his mates had him forgot,
But up above all was going well,
As the ranks of rescuers began to swell.

They dug and dug, but the job was tough,
They cleared a lot, but not enough,
Bill was found, stuck in his hole,
He was so stiff he was like the North Pole.

Someone shouted, "I've got some whiskey",
And suddenly Bill seemed more frisky,
As he began to drown his sorrows,
He wondered about all those tomorrows.

The whiskey began to take its toll,
And Bill was more like a newt, than a toad in the hole,
But after hours they got him out,
And everyone joyously did shout.

The cameras of the T.V. and papers,
All re-live Bill's emerging capers,
For as he crawled from the hole, like a skunk,
Our fateful hero was positively drunk.

"I'll go down again", Bill was heard to say,
But we're sure it was the whiskey having its way,
He was glad to be out of his earthbound cell,
And everyone agrees, "DIDN'T HE DO WELL".

Thought to have been written by one of the policemen present, sometime during the mid 1970's.

G.O.E.S. GOES CULTURAL

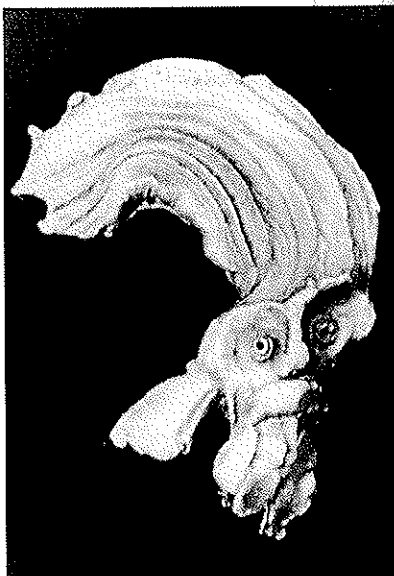
Twenty three years ago, a young boy was exploring with his metal detector, near the Light House. Suddenly he became aware of something beneath the turf. He was certain, even before digging it up, this was no ordinary find. With growing excitement he wiped away the earth of centuries from a piece of metal and there it was, spanning four thousand years, a bronze axe head. As he took it up, its creator 'handed on the fire' to this lad of the twentieth century.

The young boy was David Chapman and this early experience was to change his life. Later, he and his father discovered a roman coin in Abergele, and David was inspired by the beauty of the head of a Roman Emperor impressed upon the coin.

When he grew up, David thought of becoming an Archaeologist, but decided that sculpting would give him greater freedom to bring the archaeology alive. He went on to study sculpture in Bangor and later at the Royal College of Art in London. As a student he experimented with many different techniques, including collage and painting with clay. Sometimes, to escape from the crowded London streets, he walked the mud flats of the River Thames, picking up discarded rubbish as he went. In his studio in Islington, he put his finds to very effective use, as sculptural collages.

When David returned to Deganwy he used the garage of his house as a studio and began in earnest to cast his own work in bronze.

On the 18th February 2000, with two other artists, David held a private view of his work, prior to the opening of an exhibition at the Royal Cambrian Academy in Conwy. (The Exhibition continued until the 19th of March). Several of us were invited by him to attend this viewing. To say the least, we were impressed! Most of his work took the form of large heads. Embedded in certain of the heads were fossils of shells discovered on the Orme, and plants, especially medicinal herbs which would have been growing there in the Bronze Age. Imposed upon the surfaces of others were rock drawings discovered in the Conwy Valley, for example



Flying Head by Dave Chapman

a Viking ship with an oarsman. Many of the heads displayed a marine influence, maybe because most of his ancestors were sailors. The underwater shapes he has seen when diving on wrecks have also affected many of his bronzes. I cannot mention all his exhibits but my own favourite was The Astronomer - a powerful sculpture in bronze showing the head and shoulders of a man looking skyward.

When the Hale-Bopp comet passed over the earth, David and Sue put The Astronomer out in the garden so that he could observe it and memorize. The Astronomer has a far better chance of seeing the return visit of Hale-Bopp than the rest of us! Tom's favourite was Flying Head. He says that the face appeals to him and he 'knows him'.



Some of the larger heads on display at the Royal Cambrian in Conwy



One week later, we once again attended the Royal Cambrian to hear a lecture by David about his bronze casting, sculpting and the excavation, in 1998, of the first prehistoric metal working site in Great Britain, on the cliffs of the Great Orme. He also described Parys Mountain and the wonderful colours to be seen above and below ground. We especially enjoyed his slides and one in particular, which showed a sculpture of a frog, with three nail heads in its back, which David called 'Rivet, Rivet, Rivet!'

David's enthusiasm and enjoyment of his work came across very strongly.

Tom said, afterwards, that although Art and Archaeology were not his particular interests, this was one of the best talks he had ever heard.

Eve Parry, Great Orme, March 2000

IS IT OWENS?

The lower reaches of the Romans system offered numerous possibilities for further discoveries; you could probably dig anywhere and find something new. But it was the hope of pushing into the Owens system just to the west and some 10 meters lower that was keeping us focused. A slightly draughting passage led into very dangerous ground and the removal of rubble from an infilled stope was becoming increasingly difficult, a breakthrough was looking less likely.

During one visit, whilst poking into various corners with John Carpenter I was introduced to the porthole. This feature, discovered two weeks previously by Steve Lea and John, had been hidden behind a pile of rocks at the far end of a tight passageway. The hole was too small to get your head in, but with helmet off and light in hand it was possible to see something of what lay beyond. Across to the right an assortment of loose rocks just inches below roof disappeared into the gloom. Someone had been there, but not through this space. It was a tantalizing glimpse into the unknown that necessitated a return the following week with hammer and chisel.



David Wrenall, hat off, sheer determination

It was possibly one hundred years since metallic ringing had last echoed through the mine. On the 21st of November 1999 it began again. Working in a prone position within the confined space proved awkward and the rock was generally uncompromising. To the left side, however, more shaley strata were easier to remove. The hole grew to head size and then a little bigger. Aching hands pulled rocks from the cavity beyond, which became increasingly more inviting. Surely there was enough space in which to turn round and return if it proved a dead end? After a few more hammer blows optimism took hold. Helmet and caving cell were pushed on ahead followed by an arm, a head and then an exhaling torso. The second arm arrived to reach for the lamp and illuminate the situation better. Flat out, pressed between roof and rocks, head bashing, chin scraping, the tight crawl beckoned ahead. Back in the corridor there was some amazement at the sight of my wellingtons disappearing. "He's gone through!"

With awkward movements rocks were cast left and right, deepening the space ahead. Inching forward, dragging helmet and cell alongside. It was more like swimming than crawling. Steve's face appeared behind me at the squeeze, assessing my predicament.



Erik does it without removing helmet!

"Don't worry I'm fine". Progress was slow and methodical. It was tiring, grubby work. The hammer and chisel started to ring again. Steve anxious to make certain of my return! After 3 meters and half an hour, an ungainly, primitive creature with gashed head, bruised limbs and aching muscles emerged sweating from a slot at floor level to stand in a long lost passageway full of large rocks. Silence and darkness broken for the first time since the last miner left. Perhaps he was smiling at my arrival?

The slot was insignificant and would probably have been overlooked had it been approached from this direction. It was however, my lifeline to friends and the surface, so time was spent widening the exit and deepening the crawl. From a distance Steve inquired as to what I had found. Realizing nobody else was coming I went off to find out.

To the right 10 meters of walking and crawling led to a dead end, but to the left a higher rift was soon reached with some neatly packed deads along one wall. Continuing over broken rocks the way on dropped to a lower level where it ended at a pile of rubble, some 20 meters from where I had emerged.

Returning required a feet first approach and then a tortuous rotation till Steve and I faced each other across the squeeze. The hard uncompromising rock had a more vertical face on my side allowing good chisel placement. Strenuous efforts persuaded it to shatter whilst further blows knocked off the



David Wrenall in the distance

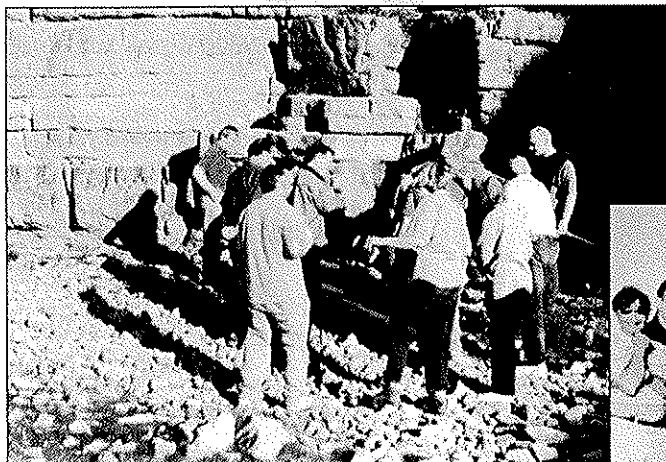
sharp edges. The resulting hole proved more comfortable than the previous encounter although it was still prudent to remove my caving cell.

The new discovery, its orientation and how it may in fact be part of the Owens system were discussed as we climbed up to the final shaft and jumared out. We were soon in the Kings Head, where Tony unrolled the maps. Between beers we added rough estimates of our finds to the survey with a red felt tip. They looked important pushing into the blank spaces. It was a satisfying exercise.

Two weeks later and G.O.E.S. were back. Four went through the squeeze. Erik led the way and soon discovered that last miner's calling card. In a deep pocket, finger marks remained where clay had been clawed out. The clay would have been used to stick candles to the wall. Glyn arrived to take photographs. Dave Flowers and Erik went exploring. The drill marks indicated the passage had been worked from the left. There had to be a way out from that side somewhere. They soon established that the final rubble slope was the result of a minor rockfall and that it was draughting. The area was restrictive and bits of the roof dubious but a few hours digging would probably see us past it. Glyn and I meanwhile found the large rocks at the exit slot were breakable, making it possible to greatly enlarge the opening. The crawl could now be entered head first. All goings on were reported back to Steve, who as self appointed safety officer, waited patiently on the other side, perhaps contemplating a future attempt. Eventually we all struggled back through agreeing that the squeeze should remain as a test piece and needed no further chiseling.

The dig and the unknown beyond still wait. Is this Owens? The passage is running in the right direction and that miner must have got home somehow. We might be tricked of course; a bend or two could see us emerge back into another part of the Roman system. Only time and effort will tell.

David Wrenall, Llanddoged, February 2000



Some GOES members enjoying a walk to Bishops Quarry last summer.



PHOTO FIELD MEET

Descent, the magazine of underground exploration, recently announced that the Cave Radio and Electronics group is organising a cave photography weekend for 10th - 11th June in the Yorkshire Dales. Workshops will be held on the Saturday, with underground work on the Sunday. All are welcome. If you are interested in attending, then contact Richard Rushton, 18 Long Meadow, Skipton, N. Yorks, BD23 1BH or e-mail: richard@yabon.demon.co.uk

SUMMER WALKS 2000

Alison has stepped down from organising the summer evening walks to allow some fresh ideas to take place. This year, Steve Lea has been kind enough to take on the task. All walks start at 7pm and are gentle strolls which last approximately 2 hours. If the weather is poor, it is very likely that the walk will be postponed until a later date.

- 1st June: West Shore/Deganwy Estuary
- 8th June: Pen y Bwlich and Gorsedd Uchaf
- 15th June: Conwy Mountain, Castell Caer Leion & Summit
- 22 June: Marine Drive Smelting Site
- 29th June: Pyllau Area Walk
- 6th July: Brammock Pit Excavation
- 13th July: Brammock Pit Excavation
- 20th July: Brammock Pit Excavation
- 27th July: West Shore Gun Sites
- 3rd August: Conwy Valley
- 10th August: Great Orme Head
- 17th August: St Tudno's Church and Graveyard
- 24th August: Glan Conwy
- 31st August: Haulfre Gardens, Invalids Walk

Please check the community news section of the North Wales Weekly News for confirmation of these walks and the arranged meeting place. Alternatively, contact Steve Lea on 01492 592997

NANT Y CYWARCH MINE

Access:

Many thanks are given by the Society for access to the mine and permission to excavate and drain the lower adit. The mine is on private land just outside Glan Conwy (SH 81256 73771) and must not be accessed without the permission of the landowner at anytime. Erik Sellors or myself can arrange access with prior notice.

Visit One, 25th September 1999:

The first visit to the mine site took place on a wet Saturday afternoon between 2 and 4 pm by just Erik and myself. This was to start the draining of the lower adit to reduce the time necessary on the following day, when the main party would be making the clubs first visit to Nant y Cywarch Mine. It was noted the adit made several 'deep' noises when releasing the water; this was probably caused by air being drawn from the various ceiling voids into others.

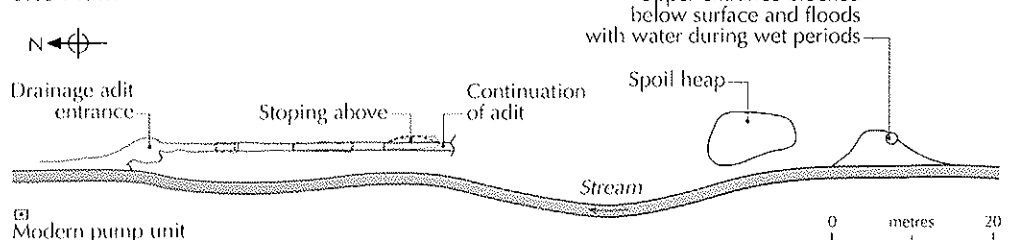
Visit Two, 26th September 1999:

The Sunday morning diggers met 10 am at the Conway Vale Hotel in Glan Conwy ready for the attempt to enter the mine for the first time this century. On arriving at the mine an assessment of the previous day's drainage concluded that a lot more water had to be drained away before access could be gained.

John Carpenter started on the stream floor, whilst most of the others deepened the existing trench to increase the flow. Tony Davies walked up stream to the higher entrance which had been described as dry. Tony reported it as being filled with a loamy soil floor sinking down in the centre, but with no open connection. The digging of the drainage trench continued until lunchtime when it was decided that someone should try to enter to obtain a true impression of the levels.

After much discussion there was a strong insistence that it should be a resident of Glan Conwy who had the honour of the first total immersion in the cold adit water to investigate the internal terrain. Failing any other volunteers, even those with wet suits, I handed Tony all my personal possessions and made my first attempt to go head first into the adit. This soon proved flawed as the ground steeply sloped away. After some consideration there was no option, but feet forward and lie down in the water, sliding myself forward into the adit. The sloping floor soon gave way enough to enable me to stand in the silt and look forward, the next part of the roof dipped towards the water leaving only 150 mm of air space. This I considered to be far enough for the first attempt until we could lower the water a little further.

Site Plan:

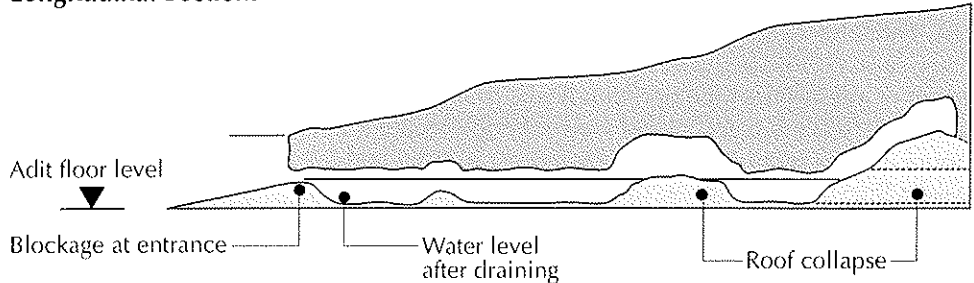


Visit Three, 2nd October 1999:

The third visit to the site saw water levels in the stream higher than previous, with water spilling down over the entrance. Erik swiftly redirected the water above the entrance back into the stream, whilst Dave Wrenall set about separating the stream water from that of the adit with one of his well constructed stone walls.

The entrance was dammed enabling the drainage trench to be deepened a further 225 - 300 mm. This reduced the water to what would appear a possible level for an attempt to be made into the adit again. This time, equipped with wet suits, Erik Sellors and John Carpenter braved the waters. It was John who first entered finding the tunnel leading some 30 metres until a roof fall parted the water briefly then continued the other side for a further 27 metres where a stoping up with a collapse fully blocked the tunnel. Erik could see further on but the area would require digging.

Longitudinal Section:



Visit Four, 7th November 1999:

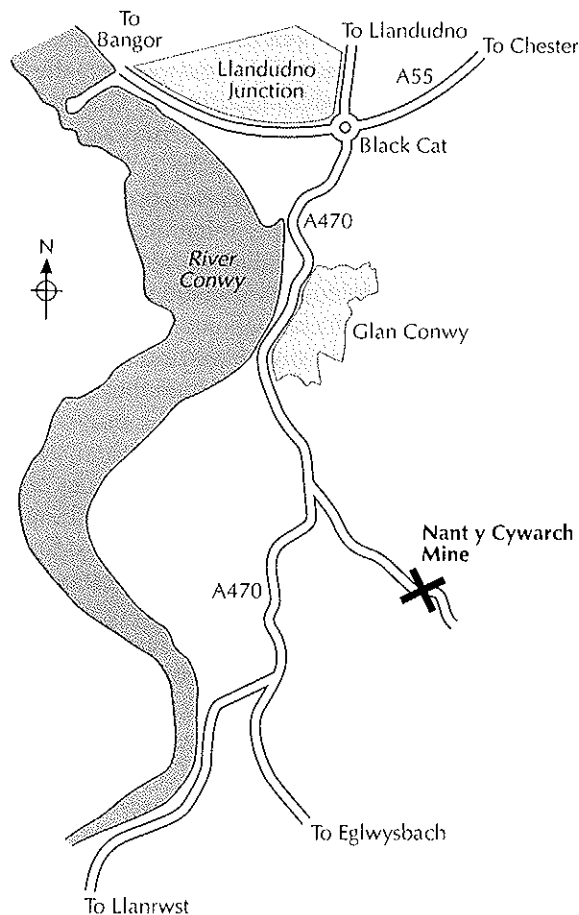
The morning started as usual with everyone meeting at the Conway Vale Hotel, where the assembled group included Geoff David and Edric Roberts also. This last trip was to allow us to survey the workings found and take photographs.

The provision of an additional dry suit by Dave was soon taken up by John, who was now surrounded by a wet suit with a dry suit over it, and was taking no chances with the previously experienced cold water.

Work soon started on an exploratory dig at the end with Dave and John, whilst Ali, Erik and myself set about a basic survey. Edric waited until most of us were inside before climbing into a Red 70's styles dry suit with built in boots (which must have been very fashionable at some previous time).

The adit is dug on a natural plane on the left wall as you enter, the roof of shale being liable to flake away if touched. No artifacts were discovered within the adit, but galena can be found around the spoil tips.

Location:



The mine probably has two levels, this being the drainage adit and the upper entrance leading to some higher workings. If the higher entrance is to be investigated at some further time it should be noted that this floods during times of heavy rainfall.

The entrance is due to be closed again shortly so the mine can provide a water supply for the land owner, and may not be opened again for another century.

Stephen J Lea, Glan Conwy, March 2000

POTENTIAL AND REALIZABLE ORES FROM THE GREAT ORME MINE

Abstract:

Spoil heap and in situ mineralization from the Great Orme Mines have been classified into six mineral associations and by applying mineralogical, mining and beneficiation criteria their potential roles as Bronze Age copper ores are assessed. Major veins and open voids within dolostones are infilled by coarse-grained, saddle dolomite-chalcopyrite-pyrite-calcite-malachite. The tonnage, estimated copper grade of 10% Cu and continuity of the veins plus the coarse grain-size of the copper-bearing minerals, suggest that they were the main Bronze Age copper ore possibly accompanied by a contribution from adjacent void-infilling mineralization. Two minor (and very different) types of mineralization, namely the 'copper ddu ore' - a very fine-grained, friable, limonitic vein infilling, and disseminated, approximately one centimetre diameter, azurite nodules in shales, may have been taken as a by-product of other mining operations (for example mine development).

Neither the fine-grained, disseminated, polymetallic sulphides (Cu-, Pb-, Fe-, Co-, Ni-rich) which are only found in dolostones from the spoil, nor the single, copper-poor, galena-rich assemblage found as a vein infilling, can be considered to be copper ores. These two associations belong to the Mississippi Valley-style lead-zinc mineralization of the Northeast Wales Orefield which is older in age and differently sourced from the copper-dolomite association ores that produced Bronze Age copper metal.

Recognition and sampling of ore, rather than of just mineral specimens from a mine site, have implications for geochemical or isotopic provenance studies that lie far beyond the Great Orme. This is because only run of the mill ores should be treated as having any importance to archaeometallurgists.

Introduction:

The concept of an ore is a sophisticated one. It has more to do with mining, economics and profit/benefit than with geology and mineralization. Nowadays ore is sufficiently important that it has a legal definition that nicely encompasses all of these aspects, and it is unlikely that the role and value of ore could have been any different in the Bronze Age. A useful definition of a metalliferous ore is that of a naturally occurring raw material that can routinely, consistently and economically (in terms of time and resources) be mined, beneficiated and smelted into metal. A profit/benefit (however that was/is perceived) has to be achieved either for an individual or for a community.

For successful, repeatable metal smelting a consistent charge is needed with a high metal content and fixed mineralogy. To meet these two requirements most ores have to be beneficiated - have their metal contents increased by the removal of unwanted minerals (called gangue) and/or the separation and concentration of the metal-bearing ones. Beneficiation, in turn, is most efficient when the metal content, grain size and mineral textures of the ore entering the ore-mill are kept constant, so as literally to produce "run-of-the-mill" ore. These days this consistency is achieved by stockpiling different ores from a mine (or mines) and then blending them before they enter the beneficiation mill. Ore therefore must have both grade (extractable metal content) and tonnage, and so it is ore-as-mined/run-of-the-mill ores rather than exotic and/or heavily mineralized but rare,