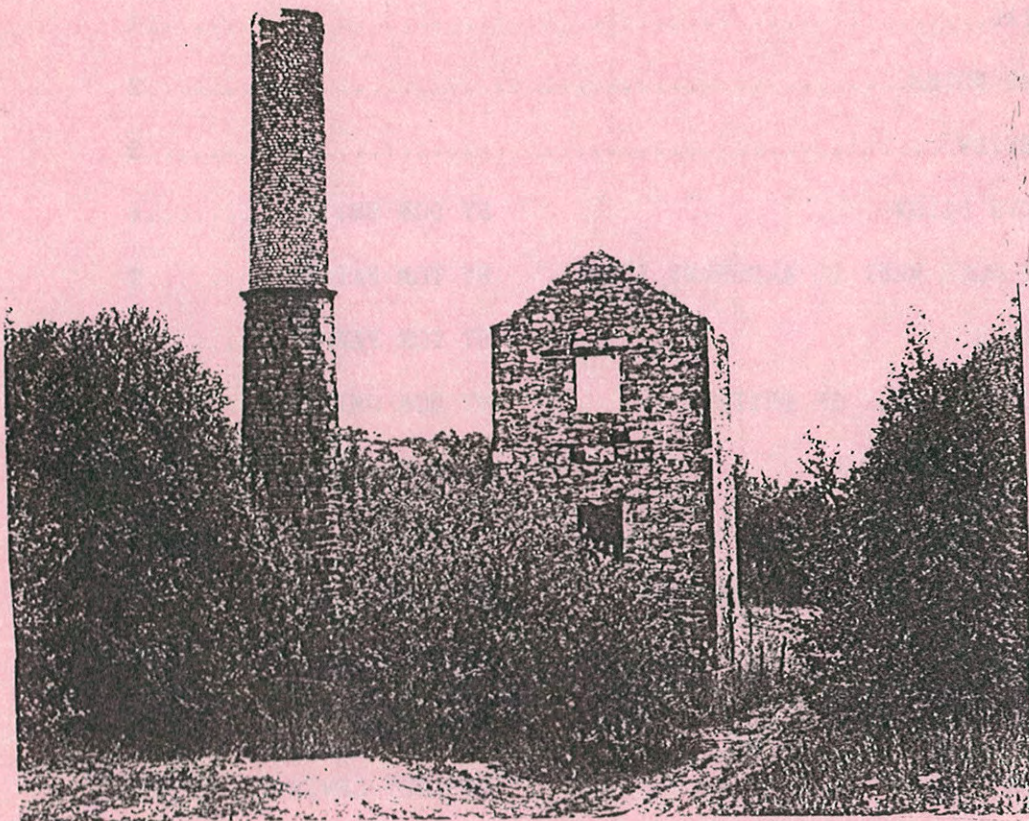




THE JOURNAL OF THE GREAT ORME EXPLORATION SOCIETY



JANUARY 1990

No 1



EDITORIAL



If it is not too late by the time this edition gets distributed happy new year to all members and a special welcome to associate members who are now joining in some numbers.

In the past Newsletters mainly consisted of articles by members and for this reason we have decided to publish these in a Journal that will also contain updated society news. The frequency of Journals depends on several factors not the least of which is a growing membership. This means our present production arrangements with Tony Hammond will need to be reviewed and consideration given to printing Journals. No doubt this will have been debated at the A.G.M due to be held in February, but if membership grows so will the problem of trying to produce large numbers of Journals on a photocopier. As ever I have to record thanks to Tony for his assistance and use of facilities in producing this JOURNAL.

Dave Smith

CARBON DATING

Since carbon dating figures so prominently in the investigations into the old workings a note about how the carbon clock works.

Cosmic radiation from outer space is constantly bombarding the earth and in so doing converting a proportion of the atmospheric Nitrogen into radio active Carbon 14. The rate of radio active decay back to stable Carbon 12 is known thus the fixing of Carbon by plants provides a clock whose time of incorporation can be read by analysing the ratio of ^{14}C to ^{12}C . What the charcoal dating tells us is the time the original Carbon was fixed which to all intents and purposes corresponds to when the wood was burnt.

The method works well but in about 1967 it was realised that dates older than about 1000 BC became inaccurate. This came about through the science of Dendrochronology which uses tree growth rings to establish a past calendar and it became possible to sample Carbon from a particular growth ring whose absolute date was already known. It became clear that past fluctuations in cosmic radiation had produced corresponding variations in atmospheric ^{14}C . Clearly this meant inaccuracies were introduced but since these can now be quantified a calibration chart is used to correct results and give fairly reliable readings.

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NEWS & NOTES

1989 HIGHLIGHTS

We ended the year with the standing and reputation of GOES at an all time high. This came about in several ways and the first event of note was the official launch of Don Smiths book at the Llandudno library. This did much to enhance the reputation of the society and attracted media attention regarding the proposed tourist mine details of which are released at the same time. Generally the proposals were well received with little opposition except for Council concern about vehicular traffic on the Orme. At one stage it looked as though this would produce a long delay in obtaining planning permission but the issue was resolved later in the year.

The display mounted for the Extravaganza was the most successful ever with much interest in the Societies work. We also raised a record amount of money through sales of Newsletters, photos etc, and of course Dons book. I said in reporting the launch of the book in an earlier Newsletter that Dons Energy and enthusiasm would be missed while he was in Canada. I lied! having seriously under estimated Don and anybody reading this and past Newsletters will appreciate from the range of material he submits that a mere 3000 miles or so cannot quell his enthusiasm.

Exploration and investigations of the early workings continued with the Early Mines Group being prominent. Carbon dating continued to show beyond doubt that extensive Bronze Age working was carried out on the Orme. These dates were obtained from below surface workings but Gwynedd Archeological Trust also obtained a surface sample in the Vivians area. This sample further confirmed what has been found below surface and the oldest Carbon date stands at 1600BC. Much favourable publicity in local and national press occurred ranging from general items on the discoveries and the tourist mine to papers published in Journals such as Archeology Today and Window on Wales etc. Much of the latter was the results of the Early Mines Group ie Messrs Dutton Lewis and Jenkins. Andy Lewis also presented a paper to the Early Mines Workshop held at Plas Tan y Bwlch in November. During the year visitors to the mines included Wynn Roberts MP, Tom Parry, Phil Smith, Chris Jowett and several other groups were given trips. These included Crewe Mountaineering and Caving club, Shropshire Cave and Mine Exploration Society. The latter visit resulted in Andy Lewis being invited to the groups annual dinner for which he had to give an after dinner talk. The West Cumbrian Mines Research Group also visited and provided a laboratory analysis of Bitumen obtained during their trip. From this result Don Smiths Dragons have become much more plausible. A further notable visit was by a group from Lancaster University who carried out an exercise in under ground radio location which with pin point accuracy located the near surface workings to the east of the summit road. As described else where in this edition another notable event was the fire setting experiment held on the Orme in October. A small 19th century surface trial located above the Marine Drive was used. The results exceeded most peoples expectations.

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There is every reason to believe that the standing of GOES will continue to improve during 1990. This year should see a modest opening of the tourist mine and no doubt this will attract much local attention.

To round off it is appropriate to record thanks to Barry and his wife for the splendid Christmas dinner for which there was a record attendance. I for one will be sorry if our growing member ship means The Wedgewood cannot cater for future functions. A final note is that Huw Tudno was absent from most of our meetings and events through ill health and all members will wish to join in hoping that 1990 will be a better year and that we shall see more of him. It is also pleasing to record that Les Smith is now fully recovered from his accident injuries. I suppose it goes to show just how tough these Brummies are.

As expected I've been totally underwhelmed by people wanting to write or otherwise contribute to the proposed information sheets. Its five months to the extravaganza with its opportunity to sell these to the public. To reiterate the list of subject areas given in the last Newsletter are History of the Ty Gwyn mine, Geology of the Orme, Smelting Technologies, Mineralisation on Great Ormes Head, Mine Machinery, Bronze Age Mining and Folk Law.

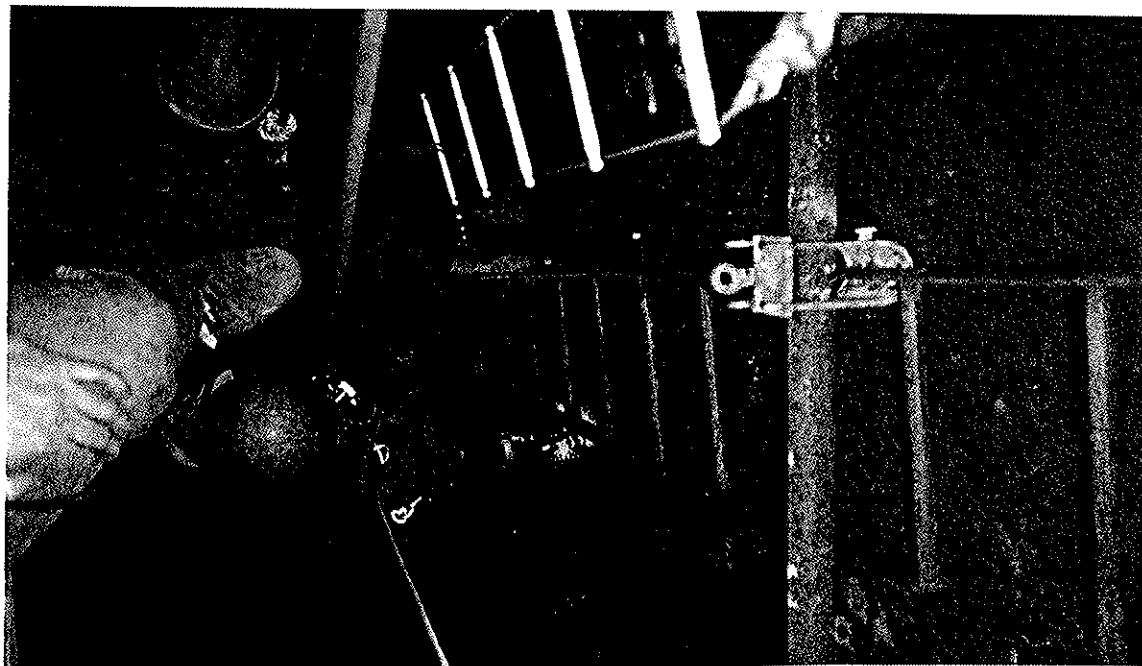
BOOK REVIEW

The Cornish Beam Engine by D.E. Barton Published by Cornwall Books ISBN 1-871060-08-7
Available in Hard Or Softback Version.

The industrial revolution owed a great deal to the harnessing of steam power and most of the early impetus came from the Cornish tin mines where the need to pump water from ever increasing depths led to the perfection of the steam engine.

As John Taylor said in 1829 this history of mining is indeed intimately connected with that of the steam engine and deep mining could never have developed but for the bringing to perfection of the steam engine as a means of raising water.

Every aspect of the beam engines history is explored in this book and there is a wealth of old drawings to enrich the text including one of Simms compound engines. This book is one of the standard works on the subject and to any one interested I would say "dont hesitate go get it".



More, Down Below

If you ever see the 'Hatter', down below,
It doesn't really matter, down below,
We're all a bit past caring,
What headgear folk are wearing,
Ignore his witless chatter, down below.

If you need a Jacques Cousteau, down below,
Then Christopher will go, down below,
He'll dive anywhere you care,
And come up over there,
His helmet's all aglow, down below.

When ascending from the dark, down below,
Oh it isn't half a lark, down below,
But one thing that is certain,
Don't follow Richard Burton,
You'll wait there in the dark, down below .

We're looking for the way, down below,
From grass to out the bay, down below,
This route's a real exceller,
Try the Mostyn Arms cellar,
You wouldn't have to pay, down below.

D'yer hear we'll get a winch, down below,
To descend will be a cinch, down below,
Coming up will be the thing,
Upon that steely string,
One day we'll get that winch, down below.

Next when you set a fire, down below,
Before you light the pyre, down below,
Ensure a draught of air,
And set the wood with care,
Then farm the chalco-pyr', down below.

Tom Kendrick had a place, down below,
He wanted lots more space, down below,
When pulling out some stones,
He found some ancient bones,
But of copper not a trace, down below.

If you want to find a Smith, down below,
It pays to be explith', down below,
Of Jones, we have but one,
Of Lloyds, were sporting none,
The Smiths, they rule 'Am Byth', down below.

Don Smith, December 1989, London, Ontario

The Day GOES went to Alderley Edge.

The Great Orme Exploration Society invariably manages to arrange interesting trips to other mining areas. Whether this is because of, or in spite of, the organisers is never clear. The visit to Alderley Edge on Sunday 28th. January was no exception. The Little Dragon turned up promptly at eight a.m. and parked opposite the Snowdon. By eight thirty seventeen GOES members clutching a strange collection of plastic bags, sacks, packages, lamps, helmets, flasks and other strange and bizarre paraphernalia were ready to move off. The weather outlook was far from promising. The whole of North Wales had been swept by a blizzard, and the radio announcer was dolefully reciting a catalogue of impassable roads. Those who heard him mention the conditions over Rhualt pretended they hadn't. Once again we were fortunate to have the services of Dave Williams who piloted the Clogau trip. The weather forecast proved to be over pessimistic and we made good time towards England.

Frank Jowett kindly provided the travellers with a handout which explained that,

"Alderley Edge forms a prominent escarpment of resistant Keuper sandstone and conglomerates resting on softer Upper Mottled Sandstone of the Bunter and rises from the Cheshire plain fourteen miles south of Manchester. . ."

At least we now had some idea of where we were going !

Apparently Little Chefs do not serve coach parties, so a refreshment stop was made at a wayside caravan snack bar near Frodsham which operated a hooligan friendly policy.

As we motored into Alderley Edge Richard Burton was appointed official guide but nevertheless we made it to the rendezvous in plenty of time. Here we met up with members of the Early Mines Group and were able to renew old acquaintances.

The morning was spent on a tour of the surface workings led by David Gale. The Engine Vein provoked great interest and many comparisons were made with the surface workings at Vivian's Shaft. From there the party moved on to the Pillar Mine, so called because it once had a pillar, since removed, at its entrance. Here members engaged in some pleasant fossicking amongst the waste tips and the weather began to show a distinct improvement. Our guide explained that maul stones had been discovered in both these areas and also at Stormy Point, pointing to the possibility of prehistoric mining in the area. To date no mauls had been recovered from the underground workings.

A break for lunch was taken at a nearby tavern serving excellent bar food and Boddington's Ales. The mild drinkers in the party, at the instigation of the Chairman, seriously considered forming a, "Surface Only", branch of GOES and spending the afternoon there, but were eventually prevailed upon to continue with the planned programme.

Members of the Derbyshire Caving Club who control the workings at Alderley Edge had kindly arranged to conduct two parties through the Wood Mine. Compared to our usual grovels, Wood Mine was subterranean luxury. The workings excavated into the local sandstone were both spacious and dry. Our guides, Nigel Dibben and Dave Wagstaff were authorities on the layout and history and both possessed the ability to transmit their own enthusiasm and dedication to the visitors. The workings were nineteenth century copper mines and a spiral route was taken down to three levels. Surprisingly no tools had been found during the explorations. The club had undertaken much clearance and construction work and the immediate impression was one of hard graft and efficient organisation. On a lighter note we were told of a folk night held in one of the larger chambers at about eighty feet below attended by upwards of two hundred thirsty mine explorers !

After two hours we returned to grass and walked across the fields, to our Little Dragon. An invitation was immediately extended to our guides to pay a visit to the Orme and after expressing our appreciation for the trip we embarked on the journey home.

Initially the coach resembled the lounge at Plas y Dre as the tired explorers drove the zeds in a snoring cacophony, but gradually they surfaced and discussed the day. Much interest was expressed in the history of trespass and vandalism prevalent in the workings during the immediate post war years. One horrendous tale told of the mine entrance which had been bricked up following a fatality being blown open with a Mills grenade. Another mentioned the unfortunate custodian of a prohibited mine entrance being stoned by angry grockles incensed that they were being deprived of the right to trespass in the danger of the old workings. In the late sixties and early seventies the Derbyshire Caving Club and the mine owners co-operated to manage the mine entrances which are now strictly controlled and supervised.

The trip ended as it had began, outside the Snowdon. A good time was had by all wasn't it ?

For a serious account of the Alderley Edge Mines why not read, "The Alderley Edge Mines", by Chris J. Carlon, published by John Sherratt and Sons, Altringham. 1979.

Tom Parry, January 90.

OGOF LLECH.

On the Great Orme there are many strange and mysterious places, but none more extraordinary than Ogof Llech. On a windswept wave lashed limestone pavement below the lighthouse there exists a natural cave lined with formal ashlar masonry, a semicircular bench and, the remains of a round stone table mounted on a stone pedestal. Who constructed this strange edifice, why was it built, when was it built? Over the years many writers have attempted to furnish the answers, but the mystery remains.

One of the more comprehensive accounts was written by the Reverend Owen Jones,

"On the Northern side of Pen Gogarth, almost under the lighthouse, there is a sort of cave, called "Ogof Llech" by the natives. Its shape is a half octagon, and at the entrance there are two columns of masonry, one on each side of the opening. The back of the cave and the benches are of similar construction. Some years ago there was a carved stone table in the middle, but now only the pedestal remains. At the side of the entrance there was also a stone watertrough constantly filled with the purest sweetest water, which was conveyed to it along a channel ingeniously carved in the rock; the same water filled a basin skilfully carved in the rock below the cave. This cave or "cell", measured about six foot six inches across both ways and about ten feet in height. The water trough mentioned above measured about sixteen inches internally and about twenty two inches externally, with a depth of about eight or nine inches, but this has been stolen from here since many years. Some consider this to have been the old primitive cell of Saint Tudno, where he retreated to seek communion with God in quiet isolation, prior to building the church on the mountainside as a house of prayer for the people. Others consider it to have been a sort of pleasure house built by the ancestors of the old Mostyn family, who would visit here for refreshment when hunting on the mountain. Perhaps both theories are correct, that this was the retreat of Saint Tudno originally, and that the holiness, which in the Dark Ages was considered to affect such places gave it some distinction so that it became the retreat of many religious hermits for ages after his time : and that the old nobility of Gloddaeth made it a sort of summer house which they occasionally visited. Careful inspection of the rock face above, "Ogof Llech" will reveal the forms of an Owl, a Swan, and a Man's face carved in the rock ; but the constant lashing of the waves driven by the winds has made them unclear at times. There used to be a safe path down from the mountain to the cave, but its edges have been ravaged by the storms , and it is now too dangerous to venture this way, and those who wish to see the old cell must now hire a boat to convey them there from Llandudno."

(Translated from, "Cymru, yn Hanesyddol, Parthedegol a Swygraffyddol", by the Reverend Owen Jones, 1875.)

Many writers refer to the dangerous nature of the path or maintain that it no longer exists. The majority of members of the Llandudno Field Club on a visit in 1906 declined to visit the actual cave site,

"After tea the party proceeded to the Monk's Cave, by way of the narrow zigzag path near the Lighthouse, but only two of them ventured to get round the somewhat dangerous buttress of rock which has to be passed before one can reach the cave proper. This is a semi-octagonal cave with a stone-seating, and stone table and font mentioned in the Guide Books. The table top has been destroyed long ago, and now only the pedestal remains. The soil in the immediate vicinity is composed of loose earth mixed with boulders of all sizes, through which a considerable quantity of water percolates, and there is every appearance that at some time in the near future there will be a considerable landslip, which will almost certainly obliterate this most interesting cave."

(Proceedings of the Llandudno and District Field Club, 1906/7.)

The path along the boulder clay cliff is in a constant state of change, large overhanging sections regularly fall onto, or slide from under it. Huge boulders are constantly visible poised above ready to fall. This state of affairs led one of Llandudno's leading citizens, the Reverend Spintner James, at the conclusion of an article to appeal to Lord Mostyn,

".....and the place is well worth visiting. But the approach by either land or sea is difficult and dangerous. It is, in fact, prohibitive; and therefore it deprives visitors of the pleasure of viewing the most interesting relics in Llandudno.

I wish most respectfully to call Lord Mostyn's attention to this matter; assuring his Lordship that a safe access to Ogo Llech would be an improvement appreciated by thousands.

SPINTNER.

(Llandudno Advertiser. Oct. 14th. 1913".)

His Lordship fortunately ignored this appeal and Ogof L]lech remains to this day one of the Orme's secret places. It is interesting to speculate for how long it will be accessible. In 1906 it was considered that a 'considerable landslip' would soon obliterate it. Will it survive the nineties?

Tom Parry. January 1990.

CARAUSIUS, EMPEROR OF BRITAIN

In 1907 a hoard of about 700 Roman coins was discovered in the Craigsides area¹. The find was not intact having been disturbed by workmen and parts of the hoard identified on the Mostyn Broadway where excavated material had been dumped. Some of the coins were probably never recovered by the Coroner's officer for the treasure trove inquest, others may have been lost in the dirt and more may remain in Craigsides where the remains of a metal casket were found.

Dr Willoughby Gardner described the find² and relayed details to the Numismatic Department of the British Museum. The coins were third brass, antoniniani, and all from the reign of the Emperor Carausius which was somewhat unusual. In addition, this is still the largest recorded hoard of coins relating to Carausius.

Who was Carausius? Well, he wasn't just another Emperor of Rome, in fact, he was Emperor of Britain between 286 and 293 AD. He was of humble birth, a Menapian, and had served as a ship's pilot prior to military service. He had distinguished himself in the wars against the Begaudae under the command of Valerius Maximianus and had been given a naval command in Boulogne, or Gessoriacum as the Romans knew it.

His task was to defend the neighbouring seas against pirates which he did, but only after they had done their raiding and were on their way home, loaded down to the gunnels with swag. Rather than return the goods to their rightful owners he had pocketed the lot, which did not impress Valerius Maximianus when he heard about it. Well perhaps it did impress him, but not favourably, because he ordered his arrest and execution.

Carausius got wind of his impending fate and embarked for Britain with his fleet, sailing down channel and north up the Irish Sea. He landed and held talks with the Scots and Picts with whom he came to a deal, their cooperation in exchange for some territorial advantage. Thus reinforced, he went inland and met the army of the Roman Governor of Britain, Quintus Bassinianus, in the York area, and defeated the army killing the governor.

Britain was his. He marched to London and won over the remaining Roman forces in the country. Knowing the Roman Empire would not take this affront laying down, he prepared by building a Navy and crewed it with barbarian soldiers, whom he retrained as marines/sailors. He also made contact with Gallic merchants and the barbarians living in the lower Rhine area.

Valerius Maximianus, already Caesar and Filius Augusti (son of

¹ Mattingly, in 'Roman Imperial Coinage' (British Museum), credits this find with 550 coins.

² Archaeologia Cambrensis 1908;116-118

Augustus), was elevated to Augustus and sent to restore the status quo in Britain, but failed when Carausius, now a self proclaimed Augustus and therefore an equal, destroyed the fleet.

At least for the time being, Rome accepted the situation and came to terms with Marcus Aurelius Mausaeus Carausius, to give him his full title. He would remain in control of Britain and the north Gaul coast.

Carausius seems to have been even handed in his dealings with his new allies. He set up three mints in territories in his dominion, one at London, another in Colchester and a third in Rouen which seems to have produced the best coin. Silver and gold was in short supply during his rule so most of the coins are brass, either minted denovo or restruck. The majority of the Llandudno coins appear to have come from the London mint, a few from Colchester and none from Rouen.³

All was going well until about 293 when the Roman Emperor, Diocletian, became more worried about the barbarians on their Rhine flank, on friendly terms with a highly competent hostile Roman officer. They prepared to invade and depose Carausius.

However, before they could act, Allectus, Carausius's finance minister, murdered his superior to cover up his crimes; perhaps he had had his hand in the purse, we don't know. He was not only a poor military commander, he seems to have been 'rather beastly' to the locals and got his just desserts when the Roman invasion force under Flavius Valerius Constantinus, Caesar, landed near Southampton in 296. He was defeated and killed, thus ending ten years of independence from the Roman Empire.

On reoccupation, the Romans went about removing all traces of the British Emperors and removed as much coin as possible from circulation for reminting. The London mint, however, does seem to have remained in operation for some years afterwards.

I think we can be fairly certain that at least one of Carausius's Lieutenants, military or commercial, was in the Llandudno area between the years 286 and 293. Since trade with the Roman Empire was limited at this time, sources of metal would have been scarce.

It is, therefore, highly likely that these men were engaged in the trade of copper with the local people. However, without some positive proof, such as suitable coins, skeletal remains and other artifacts, found in context, in or around the mines, we shall never know.

Don Smith, London, ONT, 14.11.89

³ Mattingly H, in 'Roman Imperial Coinage' (British Museum), pp 448-453.

The Penmorfa Patrol.

The following account draws on extensive and lengthy interviews in the King's Head with esteemed and now senior members of the society. It briefly documents but one trip in a long saga, previously sustained in local folklore by verbal tradition.

* * *

Fortified by brimming mugs of steaming tea, the patrol sallied forth from Tyn y Coed road. The transport was left a discrete distance away and the final approach, 20 yards, to the infiltration point was made on foot. It was a risky business, the natives might spot you, but there was no alternative; Marcus's jeep just wouldn't fit into the adit and Bob was playing elsewhere with the ILB. We joined forces with the advance party, waiting concealed in the bushes, and plunged into the darkness.

Have you ever had the feeling someone, or something, was watching you as you wended your way underground? We certainly did. We followed faint sighs, splashes and distant sounds of falling loose, ever upward, ever northward, passing tramming levels, winzes and through stopes entirely new to us, and not seen since. Up and down we scrambled, crossing and recrossing our trail. On and on we pursued our quarry, whatever it was, for we never quite caught sight of it, but whither it went we followed.

We could not have been far from the north cliffs when we followed fresh spore into a gentle incline leading north. It opened into the auditorium of a miniature subterranean amphitheatre, fashioned from an old stope. Astounded, we began to take it all in and had started to take one of those multiple flash pictures we used to do when, from the far passage, came an extra body to our party.

"OK folks, lights out please, don't move," said our photographer. But someone did move. Our new companion sauntered across the chamber, whistling quietly to himself; the little flickering puddle of light from his cap-candle was the problem. Dressed in the style of a 19th century miner with a well weathered face he watched us with interest. We said hello, and asked if he would stand still, but he didn't seem to take much notice and could not be drawn into conversation.

We gave up and were about to move off, north, following the same passage, but stopped. The way ahead was barred by our companion, standing at the entrance of the passage, with his hand raised, and then finally he spoke.

What did the Knocker say, you ask? "HALT! Huw GOES there?!"
.....Well, we think that's what he said.

Don Smith, London, Ont. November 1989.

Where Seagulls Dare

The north escarpment of the Great Orme bears little evidence of mine trials seen so frequently elsewhere. There are exceptions of course, eg, Badger's cave and related works, Pigeons cave, Porth y Helig and a level in the cliff above the lighthouse.

The seaward slopes have been eroded more than other areas causing loss of previously eroded material at the base of the cliff and erosion of rock. The contours therefore may have changed since the bronze age and evidence that might be available to the keen eye on the summit may have been washed away. Indeed, in recent years part of Llech has been carried away by the raging foaming brine.

In years past the North Wales Caving Club were active in this area and made several surveys around the Great Orme which were reported in their journal by Mervyn Davies; Andy has copies should you be interested in reading them. Little of dramatic import was discovered, however, their survey was far from comprehensive.

There are several accounts from history and folk lore that suggest there may be access, or may have been access, through the north cliffs into or through the Great Orme. In one famous murder/suicide of the last century where a mother threw her children and then herself over the cliffs by the lighthouse, the son survived having slid down a grassy bank into a cavity from which he crawled to safety. This was later investigated by a police officer, who, not being quite the same size or shape, couldn't gain access. Being a limestone area this may have been a dry water course and not man made at all, but who knows? Perhaps more well known are the accounts of passage through the Great Orme by Colonel Mostyn and more recently by Huw Tudno.

Artefacts have been found in the Pigeons cave area. Gold earrings and a bronze palstave were found here underneath a rock by children in the last century. There is ample evidence of habitation at the top of these cliffs consisting of enclosures, hut circles and stone avenues. None of these have been addressed adequately by professional or amateur bodies, indeed some have very recently been abused, by a J.C.B.

The north escarpment remains comparatively inaccessible and requires special skills to tackle it safely and adequately, eg, SRT, survey from seaward or the air. In addition, there are few immediate clues to gratify the investigator. There are higher priorities, nevertheless, I believe we should not ignore this area, but keep an open mind to the possibility that there is more to this area than we now know.

Don Smith, London, Ontario, 17/09/89

LITTLE HOLES FOR LITTLE PEOPLE

PART I - CORKSCREW CAVE, GREAT ORME.

One of the great delights of our area is that it is full of little holes. In no way so dramatic, of course, as the enormous underground workings on the Great Orme that have hit the headlines recently, but nonetheless intriguing, and in some cases productive of nice surprises. And therefore worth recording before they are forgotten - or filled in by some conscientious Clerk of Works in the name of Progress.

So, in the next few Newsletters/Journals, I propose to try and describe some of the more dramatic, or hilarious, or disgusting, of these "little holes" - discovered in most cases by the Troggs of St. David's College (hence the "Little People" in the title of this article) who usually led the way, with shrill cries of triumph and much wallowing in deep mud, while I panted and perspired in their wake.

First in my list comes "Corkscrew Cave" - a small natural cave with two entrances about 17 metres apart, on the South-facing slope of the Great Orme about 100 metres South East of the corner between Anglesey Road and Tyn-y-Coed Road (See Map 1) - Map Ref. SH 773824, - and not to be confused with "Bedding-Plane Cave", slightly higher up and 100 metres or so further West.

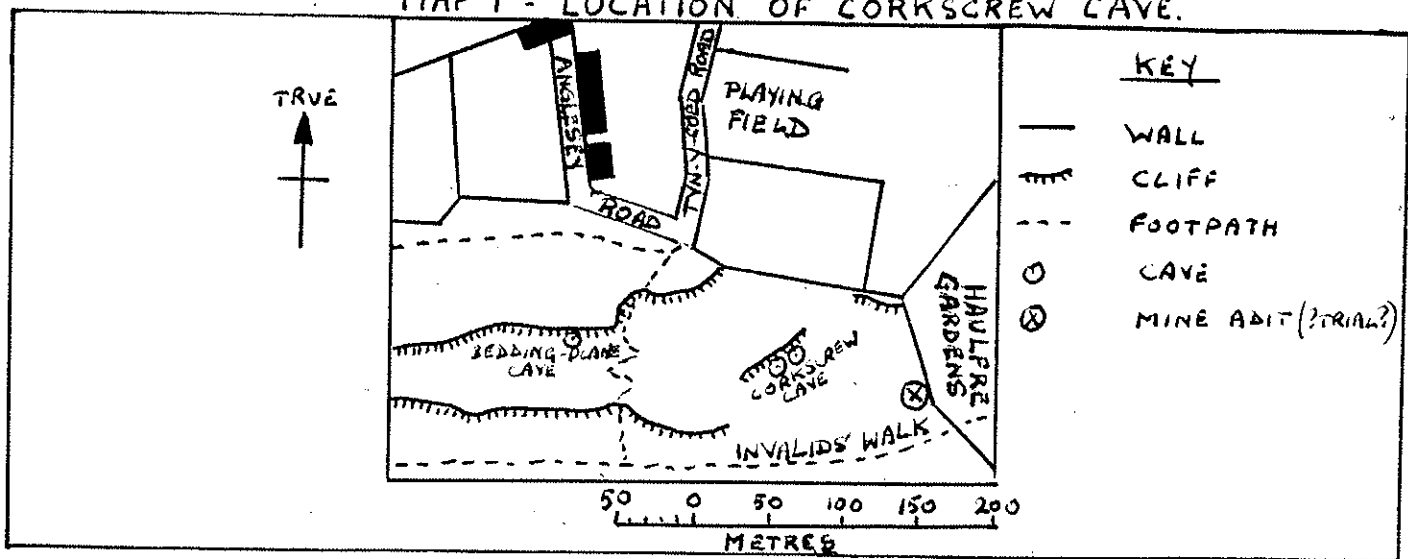
Both entrances of "Corkscrew" are just below the crest of the steep slope above Invalid's Walk, and tucked away at the foot of a little cliff, so they cannot be seen from above. Nor can they be seen from below, as both are at the back of little natural platforms. So it was by pure chance that we found them in November, 1977. I say "found them", but of course they must have been "found" many times before, judging by the rubbish (some of it modern) in both entrances.

Map 2 shows the main features of the cave. I think there can be no doubt that it is a cave rather than a mine: there is no sign of mineralisation (that I could identify) throughout its length, nor any drill holes or pick marks. Also, apart from the 5-metre long chamber at the Western entrance, the passage when we first entered it was too narrow for wielding anything bigger than a trowel. However, as we dug slowly down into the floor - which consisted of packed earth, not clay, - we found the rock walls tended to slope away from the centre of the passage, which thus increased in width from less than 50 cms. to as much as 1.5 metres. On the other hand, the rock surfaces within the cave are surprisingly rough, with none of the smoothing or fluting by water action that one expects to find in a natural cave - but I suppose such features could have been destroyed by frost action long ago, particularly in view of the cave's height above sea level (about 100 metres).

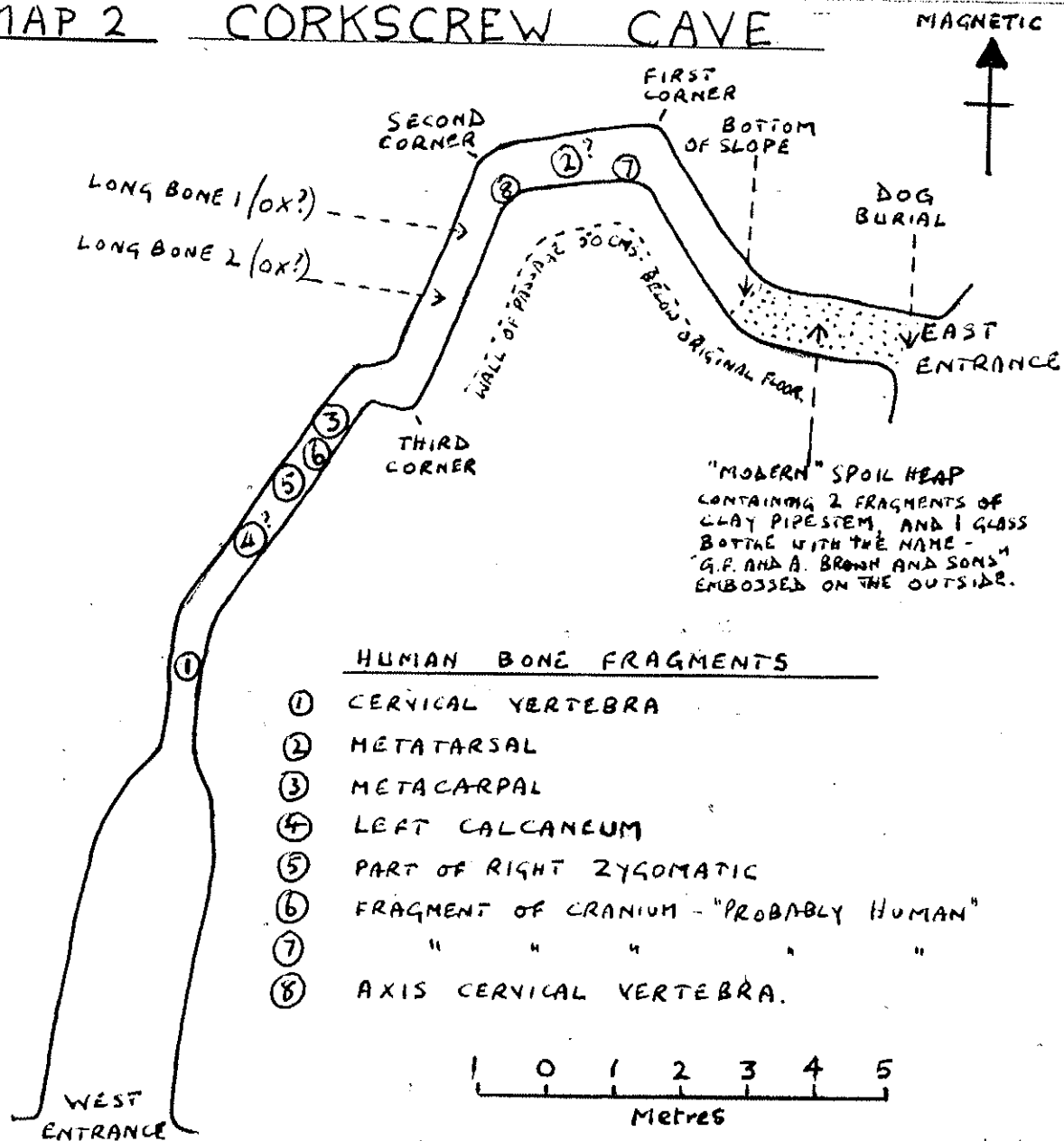
Of much greater interest are the finds of human bone, as shown on Map 2. All of these were seen and identified by Mel Davies on various dates between 1977 and 1985, and then taken by me with some misgivings to Llandudno Police Station. I got some funny looks there when I told the Duty Constable - "Er, excuse me, but I've found some human bones", but about a fortnight later a cheerful Detective Sergeant brought them back to me at St. David's College, saying "You don't need to worry, Sir, - our Laboratory at Menai tells us that they are all at least a thousand years old." So they are probably prehistoric, as burials in caves were apparently common then (ask Tom Stone for details - he has excavated several), and to be on the safe side I also reported the details to the Council for British Archaeology, who published a brief summary in "Archaeology in Wales", No.19 (1979).

Much to our disappointment, we found absolutely no trace of

MAP 1 - LOCATION OF CORKSCREW CAVE.



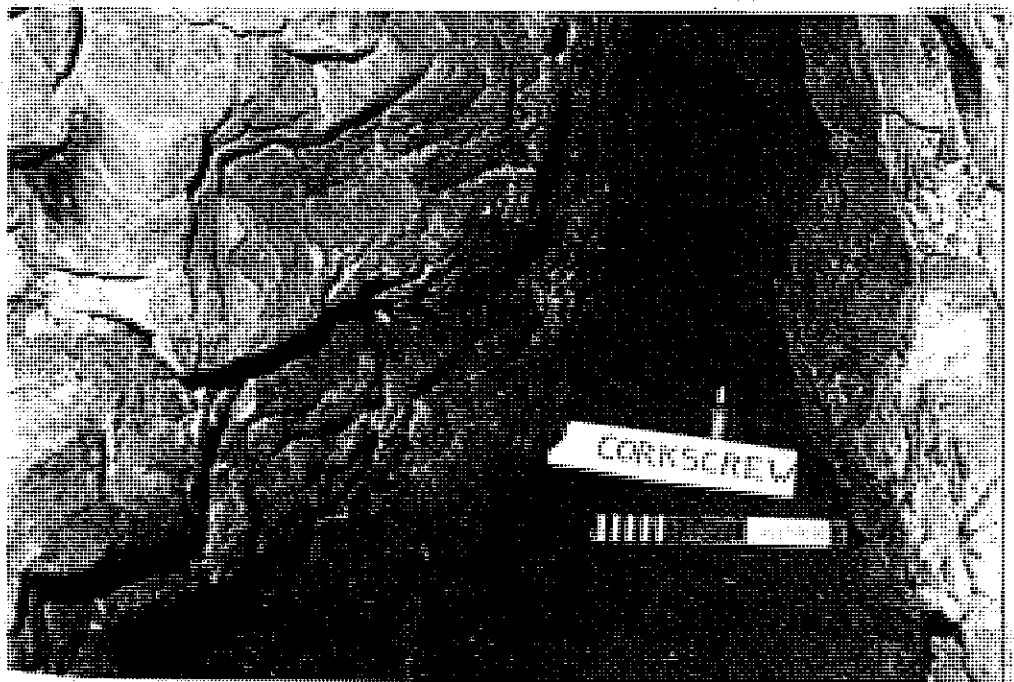
MAP 2 CORKSCREW CAVE



prehistoric artefacts, though we carefully sieved every bucketful of earth as it was brought out - no pottery, no flint implements (but two small flakes of Chert, though these showed no sign of secondary flaking and could have been natural), no Bronze, and - sadly - no Gold. From Map 2 it is easy to see that most of the human bones were found in quite a small area in the Western half of the cave - but scattered haphazardly through the soil, in company with many bones of small animals such as rabbits and rodents. Another oddity is that the bones that we have found come from widely separated parts of the skeleton - for example, the Metatarsal and the Calcaneum are both from the foot, while the Metacarpal is from the hand and the Zygomatic is part of the front of the skull. All this makes me believe that there was a prehistoric human burial, probably just North of the wide chamber at the Western entrance but a good deal deeper than we have dug so far; and that the bone fragments that we have found to date have been detached from the skeleton and brought to the surface by the burrowings of small animals. It is significant that all the time that we were digging, it was through the same sort of dark brown cave earth, and there was no sign of a stalagmite floor - such as the one that Tom Stone and Mel Davies found at the Pant-y-Wenol Cave between the Little Orme and Nant-y-Gamar. There the stalagmite floor was over 20 cms. thick, and all the Neolithic finds were beneath it. So it seems as though we would need to dig a good deal deeper in Corkscrew Cave to get to the Neolithic levels, - though not so deep for the Bronze or Iron Age ones.

I still think it is worth digging further: it is an ideal place for an early occupation site - even earlier than Neolithic, maybe - as it faces South and would be nicely warmed by the morning sun. Also it is a splendid - and quite well concealed - vantage point for spotting herds of wild game - "meat on the hoof" - browsing on the flat plains now occupied by Llandudno. This would surely have been dry land at certain times after the last Ice Age, when the rising sea level (caused by the worldwide melting of the glaciers) had not caught up with the rise of the land once it was relieved of the weight of the ice.

But whoever digs it will not find it an easy option - once inside the cave it is very cramped, and proper scientific excavation becomes difficult when you have to lie full-length on your stomach and only able to move one arm. The photograph below, taken from just inside the West entrance and looking North into the narrow part, gives some idea (the decorated ruler is 30 cms. long) - it gets much tighter further in !



Finally, and most important, "Corkscrew Cave" is now officially "Scheduled" as a prehistoric site. This means that no-one - not even a member of our Society - is allowed to dig in it without the written permission of the appropriate authorities - in this case the Great Orme Country Park and Aberconwy Council, for a start. They are not being spoil-sports: any archaeological dig is a scientific experiment that can never be repeated, and it is unfortunately only too easy for a digger without proper training and experience to dig right through some priceless bit of evidence in the soil, without realising that it is there, so it is lost for ever. And as the science of Archaeology develops, more and more knowledge can be extracted from ever tinier scraps of evidence.

Give the experts a chance, and they may be able to tell us not only whether our buried friend was a He or a She, but also how old He/She was, and also, possibly, whether He/She would have been a suitable candidate for Associate Membership!

G.C.D.
7/1/90



Installation of fixed ladder, Vivians Shaft

A 40 foot steel ladder has now been fitted within Vivians shaft from the grating to the concrete platform. This was installed over a two day period during the Christmas holiday, involving many society members. The ladder was donated by society member Tony Davies, manager of A.R.C. Bricks, Llandulas, to whom we are all greatly indebted. This improved access will make the procedure of visiting the associated working a far simpler and safer exercise, and will provide the opportunity for those people who are not at home on the usual electron ladder to visit this unique site more often.

Firesetting

During a wet and windy weekend in October 1989 a firesetting trial was conducted within a small nineteenth century surface trial near to Hwlfa'r Ceirw, overlooking the Marine drive. Eventhough the weather conditions were poor the experiment went ahead, being well attended over the two days. The aim was to investigate the process of firesetting and try to recreate the conditions, in order to answer just some of the questions Bronze Age man had to contend with using this most ancient method of rock fracturing. Approximately 1 tonne of timber was taken to the site using two sledges consisting of old car bonnets courtesy of Alex Harding. In all three fire's were lit, two of wood, and a third of charcoal and timber situated within a small recess at the back of the open cut. A combination of stone hammers collected from Penmaenmawr beach and a deer antler were used to work the heat affected fractured rock surfaces. Surprisingly the results appeared to be more successful than anyone had imagined, even those sceptics amongst the group were now convinced the process was effective!

In brief the exercise concluded that the at least an equal mass of rock could be removed through the burning of an equal amount of timber. At best a ratio of 1 unit of wood to 3 units removed rock was achieved, indicating the method could be improved upon. With further thought and trial it is likely continued advancements can be attained. A full report on the complete experiment will be published in a later issue of the newsletter.

THE GOES-BUSTERS ARE HERE!

The GOES-BUSTERS are here in Llandudno, and recently visited the Old Mine in search of Knockers. Their famous team of four arrived at Vivian's Shaft car park in their distinctive vehicle just in time for a trip into the mine during the Christmas break.



We were delighted to see them but had to insist they leave their traps in the vehicle lest one or more of our Knockers went missing. They were expecting manifestations, slimings and other weird phenomena, quite unknown among 19th century Knockers, and came prepared. As expected, their instruments failed to register anything unusual, but they promised to return should we report anything new.

Don Smith

ARE YOU QUALIFIED IN THE ART OF 'COURSE GROVELLING'?

Try your hand at this quiz. Failure to cheat, confer and drink beer during the examination will render your paper void and result in instant and permanent ejection from the King's Head examination hall. Answer one option from the MCQs; any or all options may be correct, some more so than others.

- 1 Do you charge your lamp for every trip?
- 2 Have you ever bought any equipment new?
- 3 Underground, do you wear overalls bummed from work?
- 4 Do you meet in the pub?
 - a: before you go underground
 - b: after you go underground
 - c: before and after you go underground
 - d: instead of going underground
- 5 Your favourite excuse for avoiding work underground is
 - a: Lummy, is that the time? I must rush.
 - b: Fred has my gear.
 - c: Uuummmm, Uurgh,.....
 - d: I've been invited to Austria by the university that week.
- 6 Do you believe in knockers?
- 7 Is there a silent P in wading?
- 8 SRT is
 - a: Single rope technique
 - b: Don't know, but I hope there's a cure for it.
- 9 When taking a photograph underground do you,
 - a: make sure you're always in it
 - b: use a Dixon's Instamatic
 - c: use a tripod, a Bronica and yards of film
- 10 What is the longest pitch you ever laddered?
 - a: 5 feet
 - b: 50 feet
 - c: 100 feet
 - d: more than 100 feet
 - e: Bo Derek's stockings
- 11 Cave pearls are
 - a: animal
 - b: vegetable
 - c: mineral
 - d: best told and re-told in the pub

- 12 Do you enjoy wearing black rubber in the adit?
- 13 A figure-of-eight a: reminds you of Dolly Parton
 b: is useful on ropes
- 14 When lost underground do you
 a: blame the compass
 b: mutter incoherently
 c: blame the knockers for moving things
 d: wish you had a Mars bar
- 15 The 'North West Passage'
 a: is between the North-Western and Asda
 b: isn't north-west
 c: started a gold rush
- 16 If rescued underground you would
 a: ask the team to return when you had
 broken the Guinness record
 b: finish your last Mars bar
 c: tell them to get a move on for last
 orders
- 17 Your ideal grovelling companion would be
 a: Bo Derek
 b: Andy Lewis
 c: Joe Brown
- 18 You are knot competent at
 a: Double carrick bend Y or N
 b: Matthew Walker knot Y or N
 c: Bird's nest Y or N
 d: Double bowline on a bight Y or N
- 19 Have you cancelled a trip because
 a: Wales were playing England at the
 Arms Park
 b: an appalling weather forecast
 c: your mate couldn't go
- 20 Your rope a: is hemp, new in 1948
 b: does double duty as an anchor rope
 c: what rope?
 d: came from Caving Supplies

See page for the answers.

ANSWERS

1 Yes; 1 No; 5
 2 Yes; Are you a member of this club? 1 No; 5
 3 Yes; 5 No; You must be a yuppie, 1
 4 a: 5 b: 1 c: 10 d: Do you drink more than
 you're doctor? 2
 5 a: 1 b: Who else would lend gear 5 c: You must do
 better than that -5 d: You must be a 'fine groveller' 1
 6 Yes; 5 No; -5
 7 Yes; 5 No; Liar -5
 8 a: 1 b: 5
 9 a: 10 b: 5 c: 1
 10 a: 10 b: 5 c: 2 d: 1 e: Liar 10
 11 a: 0 b: 0 c: 1 d: Get practising 5
 12 Yes; 5 No; Liar 0
 13 a: 5 b: 1
 14 a: 1 b: 1 c: 5 d: 5
 15 a: 5 b: I know, cos I was there 5 c: 1
 16 a: You must be joking 1 b: 2 c: 5
 17 a: 5 b: Who's he? 1 c: 1
 18 abd Y: 1 N: 5 c: Y:5 N:1
 19 a: 5 b: 1 c: 1
 20 a: Even course grovellers aren't that crazy 0 b: 5
 c: 5 d: 1

If you scored:

115 May your God go with you
 114-80 Welcome to the club
 79-60 I'm sure we can save you
 59-30 Never mind, try again next year
 29- Have you thought of joining another,
 more serious, club?

This paper was set by Professor C. King-Tenure, to whom all queries should be addressed at, The University of Wokabowt, Wallabrawanga Station, Box 157, New South Wales.

A full correspondence course in 'Course Grovelling', with a complementary copy of the recently published book 'The Art of Course Grovelling' by Kal Site, is available from the University, discounted to £5 if the order is accompanied by proof of current GOES membership or 50 Fosters lager ring-pulls.

THE LLANDUDNO WELLS AND SPRINGS

Starting in this issue is a series of articles on the wells and springs of the Great Orme and the immediate district written early this century by Mr. John Roberts, Bryn Celyn. We begin with Ffynnon Galchog which seems rather appropriate in view of the active interest there now is regarding the study of early mining, not only on the Orme but at many other sites including Cwmystwyth and Nantyeira in mid Wales, Parys Mountain, Alderly Edge and various sites in south west Ireland notably Mount Gabriel. Could this well have been used for ore washing in the early-mid Bronze Age? There certainly appears to be more of an argument for this case as opposed to the usual "Roman" interpretation, so read on.

Ffynnon Galchog (Limey Well)

This well is found on the flat ground below Pen-y-mynydd farm to the north east; the water of this well was considered very good, and it was a great favourite among the old villagers, who thought the water was excellent for young children; indeed this water has been carried away in bottles away to other places, believing it was beneficial and helped to develop good teeth and strong bones in children. There is no doubt that this well was used by the Romans as a copper washing place. The Llandudno copper miners carried the water near to the mouth of their shafts in order to wash the copper ore, but the Roman way seems to have been to carry the ores to the well to be washed. On the flat ground near this well many years ago scores of tons of copper slime was carted down the Orme and shipped to the smelting works. This slime was the washings of the copper which was let to run on the surface of the mountain, and being left for a period was formed into a semi-hard material. Distinct traces of this yellow material can be seen unto this day. This well was never known to go dry even on occasion of great droughts.

There is an old story connected with the well. A maiden and her brother from the village went to Ffynnon Galchog for water - it was winter - and in the twilight of the evening they had filled their cans and were retracing their steps home again. All at once they both observed what they believed to be a man coming to meet them; he was dressed in the garb of a gentleman of those days: grey breeches, swallow-tail coat, high collar, red waistcoat, high blutcher boots with red tops. They both stared for some time, when suddenly he commenced to whirl around; he then took the form of a pack of hay, it whirled and rolled until at last it rolled over the Orme into the sea. Some time after a great fish was caught in the bay and a roll of hay found inside. It was believed that it was the same pack of hay that was seen rolling down the Orme from Ffynnon Galchog.

GOING DOWN THE MINE?

If you have never explored a disused mine before, remember that it can be **EXCITING** if done properly, but **LETHAL** if you do not know what you are doing.

Here are 12 basic rules for your survival.

1. JOIN A MINING HISTORY GROUP.

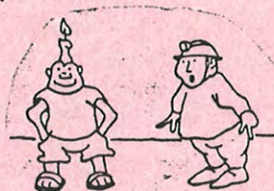
There are 20 principal groups, which cover the whole of the country. Unless you are attending a special course, consider joining one of these, and they will teach you how to be safe underground.

2. GET THE BASIC GEAR.

The basic things that you need are:

Warm clothing and boiler suit.
Strong boots or wellingtons.
Helmet.
Lamp.

For simple mines, a torch is OK, but the best is a miners' electric headlamp. ALWAYS carry spare lighting, and REMEMBER a change of clothes.



3. ALWAYS GET PERMISSION.

Always ask the mine owner for permission to enter. If you don't know the owner, ask the local mining history group. Never break in, or trespass, if permission is refused. Always leave mines safe by replacing gates or lids before you leave.

4. TELL SOMEONE WHERE YOU ARE GOING.

If you have an accident, you want people to know where to locate you! Leave a message with a responsible person, giving the following details:

1. Name and location of the mine.
2. Anticipated time down the mine.
3. Anticipated time out of the mine.
4. Time due back to the person you have told.
5. Details of how to get the rescue service, if needed.

5. NEVER GO UNDERGROUND ALONE OR INCAPABLE.

FOUR is the MINIMUM safe number underground, so that, in case of an accident, 1 can stay with the victim, and 2 can go for help. NEVER take alcohol or drugs before or during a trip, as this will reduce concentration, with potentially lethal results.



6. DO NOT EXCEED YOUR CAPABILITY.

Choose easy trips at first, and leave the more difficult techniques until you are used to moving underground. Ladder climbing, for instance, can be very strenuous at times, and it is always harder climbing out!

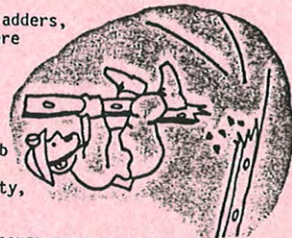
If in doubt, turning back is better than having to be rescued.

7. DO NOT GET LOST.

Some mines are like mazes, and it is very easy to get lost. If there is a plan of the mine (your local mining history group can advise you) take a copy with you. One good idea is to cut small arrows from a bright coloured polythene bag and, whenever you come to a junction, leave one of them pointing towards the entrance. ALWAYS pick them up on the way out.

8. NEVER CLIMB ON LADDERS AND MACHINERY

You may come across ladders, timbers etc. which were used by the miners. NEVER use these, as they are of uncertain age, and probably rotten. Similarly, don't climb on old machinery, as it is probably rusty, and may collapse.



9. NEVER CLIMB ON STACKED ROCK OR WALLS.

For their convenience, the miners often left waste rock in the mine. It was stacked up, and supported by timbers, which have since rotted away, leaving the rock precariously balanced. DON'T TOUCH, or climb on, these features, or you may bring down tons of rock onto yourself and others.



10. NEVER FOOL AROUND WHEN UNDERGROUND.



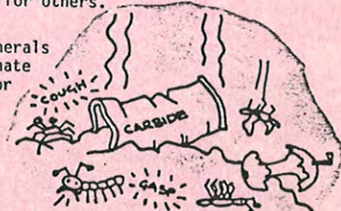
People in groups sometimes do silly things, but, with the dangers underground, practical jokes can have tragic endings. Be a steadying influence on your friends. They may laugh when you say better safe than sorry, but this is a small price to pay for your life and theirs.

11. DO NOT RUIN THE MINE ENVIRONMENT

This is what you have come to see, so leave it in a good condition for others.

Don't: hammer minerals in an indiscriminate manner, destroy or remove artefacts or other archaeological features, interfere with any plant or animal life.

Never leave any litter, as this can destroy the mine life without your realising. Don't leave graffiti.



TAKE only photographs. LEAVE only footprints.

12. KNOW WHAT TO DO IN AN EMERGENCY.

Mines are dangerous places, and accidents can happen to even the most experienced people. If, however, you don't panic, then the victim stands a good chance of surviving. Learn about simple First Aid, so that you can make them comfortable. Exposure is one of the most dangerous things - learn about its symptoms and treatment. Always leave someone with the victim, and send at least two people for help. The area Cave Rescue Organisations are very efficient, and can be called out by dialling 999 and asking for the Police. Tell them what has happened, the location of the mine, and the nature of the victim's injuries.

These 12 rules are the most basic knowledge that you need, but it will take a few years before you are anything like experienced. THE BEST WAY TO GAIN THIS EXPERIENCE IS TO JOIN A RECOGNISED MINING HISTORY GROUP, AND TO GO UNDERGROUND WITH EXPERIENCED PEOPLE. A list of such groups is obtainable from the address below, on receipt of a stamped addressed envelope. The Association's membership provides a national coverage, and, if you indicate which area you are interested in, it will advise you of the appropriate one(s) to approach.

Once you have gained experience, you may wish to take others underground. Remember, that as a leader of a party, you take on extra responsibilities. The Association has drawn up a leaflet giving advice to leaders of such groups, in which are listed all the most likely potential dangers to be met with in a mine. If you should wish to obtain a copy of this leaflet, send a stamped addressed envelope to the address below.

NATIONAL ASSOCIATION OF MINING HISTORY
ORGANISATIONS
c/o Peak District Mining Museum,
The Pavilion,
MATLOCK BATH,
Derbyshire,
DE4 3NR