

Great Orme Exploration Society Newsletter



Feb 1989

GREAT ORME EXPLORATION SOCIETY

FEBRUARY 1989

Welcome to the first newsletter of 1989 filled with articles to inform and entertain (I hope). It is a good point to look back over the past 12 months since these have been most eventful with shafts in Pyllau area being opened and entered for the first time in over 100 years. This in conjunction with the surveying of the new mine workings has resulted in a leap forward in our understanding of the underground system. The most exciting discovery has been the confirmation of late Bronze Age workings which are probably unparalleled in the UK such is their depth and extent. More exciting discoveries will surely follow and confirm the Orme as a major Celtic industrial site (the article in this newsletter on the Ancient Anchor from Porth Felen is of particular interest). Gwynedd Archeological Trust are now involved and have control of the Pyllau area by virtue of licence to undertake archeological investigations. At the moment a team of three are excavating in the Vivians shaft area, a dig that is expected to last at least 4 weeks. The discoveries have brought many eminent persons to the site including Dr Paul Craddock of the British Museum, Peter Crewe of The Snowdonia National Park, Dr David Jenkins of the University College of North Wales Simon Timberlake of the Museum of Geological Science and Danny Dutton of Gwynedd Archeological Trust. Two consequences of the Trusts involvement are that their portacabin now on site can hopefully be used by GOES members and secondly entry under ground is now via the Trusts permission. This presents no problem though such is the excellent relationship that exists.

All GOES members will have received a copy of Don Smiths book with his compliments. No doubt members will make their own thanks to Don but it is entirely appropriate to record our joint thanks to Don through this newsletter. Dons book requires no comment from me except to say that it has attracted the most favourable comments and is a great service to GOES. This issue contains a letter from Don whose energy and enthusiasm are greatly missed so Physician hurry home (Don is in Canada undertaking medical research). The book had a mini launch at the societies Christmas Dinner (thanks to Barry and family for a super evening) but a more formal launch took place on the 2nd February 1989 at the Llandudno Library. The evening was a joint presentation by GOES and Ashton Mining Associates before an invited audience of distinguished guests that included local dignitaries and members of the press. A splendid buffet was laid on by Les Smith with liquid refreshments served by Richard Burton attired in a dinner suit. To mark the launch a commemorative card was presented to Dons mother by Tony Hammond on behalf of GOES. An illustrated talk on the Orme mines by Huw Tudno Williams was followed by a formal unveiling of the proposals for a tourist mine by Tony Hammond. I dont think any of the guests could have failed to be impressed with the presentation or the proposals for the mine. The only exception to this may have been the Weekly News reporter whose article appears in this newsletter and is a travesty of factual reporting. Huw has made strong representations to the News Editor of the NWWN about the article and perhaps they will take note for future coverage although I doubt it. Much better coverage was given by the Daily Post and a particularly good article was published by the Western Mail.

There has also been coverage by the national press of the archeological discoveries and thanks largely to Tom Parry and Huw Tudno some excellent television and radio coverage. Perhaps they will have their own chat shows, a pair of Welsh Wogans such is their fame as broadcasters.

One or two people have expressed reservations about a tourist mine on a site of archeological importance. These two aspects are not necessarily incompatible and from the proposals I do not think there is any thing to fear. Tony Hammond has contributed an article and will also be presenting his scheme at the society meeting on March 3rd 1989 (Les Smith's house). It was always an objective of this society that the underground wonders of the Orme would become a visitor attraction for the Llandudno area and I cannot think of a better way than the present proposal of bringing this about. On a different vein we have been offered and accepted an invitation to exhibit at the Welsh National Eisteddfod to be held in August. This means we have plenty of time to organise a display and it is worth remembering that it is an opportunity to show the work and achievements of the society. Edric also says we have an invitation to show our work at the Anglesey Steam Fair, perhaps we will be able to demand appearance money for such events such is the fame of GOES.

Many thanks to the contributors to this newsletter and articles and other material for inclusion in future issues will be most Welcome. Finally please note the proposed TY-GWYN trip is scheduled for 4th and 5th of March. A late item from Richard Burton who says members requiring caving equipment from Caving Supplies should let him know since he is now back in business.

DAVE SMITH



Book Launch

The Great Orme Copper Mines

Llandudno Library - 2nd February 1989.

On Thursday 2nd February 1989 Don Smiths book was officially launched before an audience of over fifty prominent people. I had hoped that the press reportage of the evening would have been equal to the work put in by the Great Orme Exploration Society members; sadly it was not and in order to redress some of the balance my launch presentation is repeated below:-

Mr. Chairman,

Ladies and Gentlemen,

It is a great honour and a privilege to have been asked by the Society to officially launch Dr. Don Smiths book

'The Great Orme Copper Mines'

The book was not only written by Don, many of the photographs are his own and he printed and published the book at his own expense. Many of you here will know Don, but for those that do not let me give you one small example of the sort of person he is.

When I was completing the feasibility study on the re-opening of the mines I asked Don if he could help me by lending me a few photographs for inclusion in the study. Don gave up an evening of his own free time to show his slides and allowed me to choose those that were most appropriate. These photographs gave the study a quality which was not possible with the text alone.

Don to me epitomises the "spirit" of the Great Orme Exploration Society, generous, very knowledgable and totally professional. A credit to the town and the area.

Before the official launch I have several very pleasant tasks to perform, firstly to read a letter from Don sent from Canada on the 7th January 1989.

I regret that I cannot be with you today to launch 'The Great Orme Copper Mines' as I would have wished but my employment has taken me to Canada for a while. Much of the credit must go to

(4)

Mr. C.J.Williams who wrote the 'Llandudno Copper Mines' a few years ago and made an excellent list of references from which to start my research. I am grateful to Huw Tudno Williams and Andrew Lewis for their advice on historical and geological detail. Edric Roberts for the loan of an enlarger to do the illustrations. Martin Smith for drawing the diagram of the Orme and mines and Tom Parry for introducing me to the subject. So many of the Great Orme Exploration Society have helped me above and below ground that it is impossible to name all here but without their help, and help from many members of the Llandudno Historical Society, it would not have been possible.

Above all I must thank my mother for putting up with my comings and goings at weekends and reappearances laden with wet muddy kit.

Don Smith.

This leads me very neatly to my second task which is to present this commemorative photograph of Don on behalf of the Great Orme Exploration society to his mother Mrs. Ruby Smith.

- Presentation -

My final task is to get you to buy the book, so if you dont have a copy now is the time to buy one, and if you do have a copy, buy a few more, send them to friends and relatives and keep a few spares.

The society unfortunately does not take credit cards but I understand that Edrick Roberts is prepared to accept an I.O.U. Mr. Chairman, I would like to officially launch Don Smiths book,

'The Great Orme Copper Mines'
and in doing so, remember Don and wish him a safe and speedy return home.

Thankyou.

Tony Hammond
Ashton Mining Associates Ltd.

(5)

(3)

Y DDRAIG GOGARTH

I have read with interest 'The Great Orme Copper Mines' which was featured in a pre Christmas edition of the North Wales Weekly . I must point out that one vital aspect of local history has been completely ignored . and that is the part played by 'Y Ddraig Gogarth' , or 'The Gogarth Dragon' . The dragon . or dragons . have occupied this limestone region since time immemorial and are related to , but are a separate species from , the Welsh Dragon . It is somewhat smaller and is a natural miner . The geology beneath Bryniau Poethion is ideally suited to it's lifestyle , for the rock is well dolomitised and soft , suitable for tunnelling with the claws . perhaps with the addition of a breath of fire to assist decomposition of the rock . This latter feature has been attributed by confused archaeologists to the efforts of primitive man at firesetting , but is not so .

The purpose of this industry was not primarily to find and consume metaliferous ores , but to search out the bitumen deposits which are plentiful below Bryniau Poethion . This hydro-carbon material served as a valuable food substrate for them ; how else could they breathe fire ? Waste rock was cast aside and any metaliferous ores consumed were , after passing through the system , deposited as nuggets of pure metal for the miners to harvest .

With 'Y Ddraig Gogarth' in mind . it is now easy to understand why there are different characteristics to the tunnels beneath Bryniau Poethion . The smaller tunnels were undoubtedly driven by the juveniles , and the larger by the adults . The claw marks from tunneling are still clearly visible . as are the scratches on the walls caused the scales of the beast as it worked it's way along the tunnel . The additional features in the tunnels seen today are those superimposed by man during the 19th century .

It is now clear why Bryniau Poethion (hot hills) is so named . Why else should warm air and steam rise from the shafts on Bryniau Poethion in the winter if not due to the presence of dragons below ground ? Local historians and archaeologists have sought a rational and scientific explanation for all these features . but have found none . Like elephants , their grave yard has never been found and their coprolites are as rare as those from Equinus Pendulum .

Unlike related beasts , there have been no sightings in living memory . Perhaps this is why the mines were forced to close in the latter part of the last century , the dragons had deserted the mine and had failed to expose new and profitable veins upon which the parasitic miners could capitalise ? Perhaps they are in a state of suspended animation awaiting the reopening of the mines . or perhaps they have wandered on to pastures new , following the veins to new mining activity in the west at Parys Mountain , east to Clwyd or even north to the Isle of Mann where the limestone range exposes itself once more ?

Professor Huw G Lyre BS

DON SMITH SPRING 80

3

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RANDOM JOTTINGS FROM CANADA

TROGLODYTE PROFESSOR

During my researching through the literature on the control of respiration I came across a reference from the 1919 volume of the Journal of Physiology . Professor Haldane was investigating the changes in respiratory gases so he conducted the same experiment in three locations , in Oxford not far off sea level , at the summit of Ben Nevis at over 4,400 feet where the pressure in UK is least and finally he went down Dalcoath mine in Cornwall , 2,240 feet below sea level All this to prove that the absolute concentration was not important , only the partial pressure .

GLOBE AND MAIL , TORONTO EDITION , 15.11.88

US SMOKER JAILED FOR BULLYING THE ATTENDANT

LOS ANGELES -- A man was sentenced to 15 days in jail yesturday for bullying flight attendant Pamela Martinez when she ordered him not to light up in a no-smoking section . James Tabacca , 34 , an undertaker , was also placed on two years probation , fined \$500 (US) and ordered to perform 100 hours of community service for causing the disturbance on a TWA flight from Boston to Los Angeles in 1987 .

GLOBE AND MAIL , TORONTO EDITION . 25.11.88

POTTER'S ESCAPIST HANDIWORK EMBARRASSES PRISON OFFICIALS

A diminutive potter proved he did not have feet of clay when he apparently smuggled himself out of a maximum-security prison near Montreal last week . The daring escape by the Houdini-like prisoner , who was serving a 34 year sentence for armed robbery , has embarrassed local prison authorities and sparked a special investigation by the federal corrections department and the Quebec Provincial Police .

Jean Lajeunesse . 38 . is thought to have eluded prison guards by hiding in a box that was handed over to a family member after a visit last Thursday afternoon . An avid potter , the prisoner had obtained permission to give his family a box containing some of his work made over the years , in the penitentiary's arts and crafts shop .

Assistant warden Claude Chevrier of the Archambault maximum security penitentiary in Sainte-Anne-des-Plaines acknowledged that Mr Lajeunesse was an 'astute and ingenious prisoner . I'd give him a medal for this one ; it was a very , very smooth escape , very subtle .' Mr Lajeunesse is still at large , but Mr Chevrier said he is not considered terribly dangerous . Mr Lajeunesse was scheduled to appear in court shortly in connection with another , less spectacular escape two years ago .

DON SMITH
SPRING 1988

(7)
FRIDAY 3rd TO SUNDAY 5th
FEBRUARY (1989) (6)

MUMLINGS FROM THE MUMBLES

It was our South Wales friend, Derek James, who started the ball rolling. Many years ago, when he was a little lad, he said, he had seen an obvious mine entrance just above the beach by the Mumbles Point, just South West of Swansea. At the time, the entrance was bricked up, and he had no "pull" with the local authorities, but now at last he had obtained permission from the local Council to break through the brickwork and explore whatever lay beyond. But first, he would need some helpers, so he got in touch with Andy, and Andy whistled up a varied group of braves from the GOES, boasting a variety of skills, from Rock Climbing to Real Ale.

So, very early on Friday morning, we set out; Force "A", consisting of Andy, Edric, Dave, Steve, and Geoff, all squeezed into Edric's car, followed at a distance by Force "B", consisting of Phil and Paul, in Phil's car. The road was clear, the weather fair(-ish), and Edric had a heavy foot, so the long run from Llandudno to Swansea went surprisingly quickly. On the way, we looked in at the Dolaucothi Gold Mine, started by the Romans, finally closed in the 1930's, and now reopened by the National Trust as a "Show Mine". Unfortunately, it was shut for the Winter - as we had feared it would be - but we saw enough of the site to whet our appetite to go there again once it is open, and the underground trip is operating as advertised.

Then on again, through the wilds of South Wales, stopping for a liquid lunch in a small pub somewhere near Carmarthen, and being greeted in a very friendly fashion by a group of Welsh-speaking locals. We must go there again some time.

Finally, in mid-afternoon, we reached Swansea, and our B & B Hotel at Oystermouth, nicely situated on the seafront, overlooking Swansea Bay. Once debussed and unpacked, we decided on a quick preview of the mine site, so we walked along the beach out to the Mumbles Headland, admiring the rock scenery and the waves. Led on by the rock climbers, we negotiated with care a smooth inclined slab of limestone - probably about "Hard Moderate" in Geriatric Climbing terms, though quite serious for its grade, especially with the light fading, and the drizzle tending to make one's spectacles slip off one's nose. Thence on to the Coastguard Station, but no sign of a mine entrance that we could see. So we turned back, and just as dusk was falling, met Phil's car, with Phil and Paul coming to look for us after a high speed dash from Llandudno and sundry strange adventures on the way.

By this time it was almost completely dark, but walking back towards our hotel along the coast road we could just make out, at the foot of the cliff to our left, a sinister-looking building, half buried in the cliff, with massive wooden gates. Fired by thoughts of discovering a secret Government Nuclear Shelter, or even a Cruise Missile Launching Station, Steve scrambled part-way up the cliff to take a closer look, and paused near to a tall brick-built erection which could have been either a searchlight tower or a machine-gun post. However, it was neither, as Steve's senses quickly told him that this was in fact a ventilator for a Sewage Farm - hence the sinister-looking building below and the massive gates. This was a cruel disappointment, bravely mastered by Steve, who then led the way back towards the Bright Lights of Oystermouth, firmly clutching his nose between tightly-clemched fingers.

Derek James, our guide for the morrow, had arranged to meet us in a nearby pub at 7.30 p.m., so after suitable preparations we foregathered there -

only to find.....P.T.O.

..... only to find that it was packed: barely Drinking Room, let alone Standing Room. So we migrated to the "Oyster Catcher", a few doors along, where we could at least sit down. It was just our bad luck that our week-end coincided with the Wales v Ireland Rugby match at Swansea on Saturday, so all the pubs - and streets - were full of excitable (and thirsty) Rugby supporters. However, we managed to sample a reasonable quantity of the local brews without major disaster - although Steve's canary yellow trousers were a constant incitement to riot - and went to bed contented.

The next morning, after an excellent night's sleep, and an ample breakfast, we foregathered with Derek, and drove off to his mine - which was only about a quarter of a mile beyond the point where we had turned back on our walk the previous evening. It was only a small entrance, about 2 metres high and perhaps 1 metre wide, right next to a prominent vein of white calcite, just above the road. The blocking looked very solid - limestone blocks carefully mortared together - and this we hoped was a good omen. We dressed up in our caving gear, Derek produced his petrol-driven generator and pneumatic drill, and started to demolish the blocking. In only a few minutes he had made a head-sized hole and was able to look through. We all peeped through, and agreed that there certainly was a passage there, its floor dipping gently away from us, but how far it went we could not see. Derek did a bit more demolishing, until the hole was body-sized, then levitated himself sideways through the hole, followed by Andy, Phil, Paul, and Steve. To the few of us left outside the suspense was painful, but only a few minutes later we heard groans of disappointment, and learnt that the passage "went dead" after barely 20 metres. So we all trooped in and joined in the post-mortem. In fact, the passage probably had gone further, originally. At its inner end, the blockage consisted of a nasty-looking mixture of angular boulders and gravel, slightly overhanging - possibly spoil tipped down a shaft which originally came out on top of the ridge above us. Also the floor we were treading on was a mixture of spoil and modern rubbish (including bits of plastic boxes), and at one side we could see that the "hanging wall" went down a good deal further than the existing floor. But we agreed that further digging would take too long, and anyway we did not have the tools, so decided sadly to call it a day. A disappointment, but "you cannot win them all", and at least we had satisfied Derek's curiosity. We had a final look round, grabbed a few samples of the Haematite iron ore lying on the floor, and squirmed our way out. Then, while Derek and Andy and others carefully blocked up our entrance hole, and cemented everything into place, the rest of us took refuge in a nearby cafe - by this time a gale was blowing off the sea, bringing sheets of rain, and it felt decidedly chilly.

After a Council of War in the cafe, we decided to put the rest of the day to good use with a reconnaissance of the Gower peninsula. So off we went, Andy navigating, and our first stop was Port Eynon, two thirds of the way along the South coast. A pretty little place, even in the gloom of midwinter, and after a reasonably energetic hour's walk along the shore, into the Port Eynon Point Cave (very small, but enjoyable scrambling) and back along the top of the limestone cliff, we concentrated on the Inner Man in the "Smuggler's Arms". Then, after a suitable interval, on Westward to the area of Worm's Head, with another good walk, buffeted by the wind, out to the end of the Point, admiring the fine rock scenery (and climbing possibilities) of the Rhossili cliffs.

Then back.....P.T.O.

Then back to Oystermouth for our final evening, enlivened by cheerful Irish Rugby supporters and only slightly less cheerful Welsh ones, in pubs that were if possible evn more crowded than the previous evening.

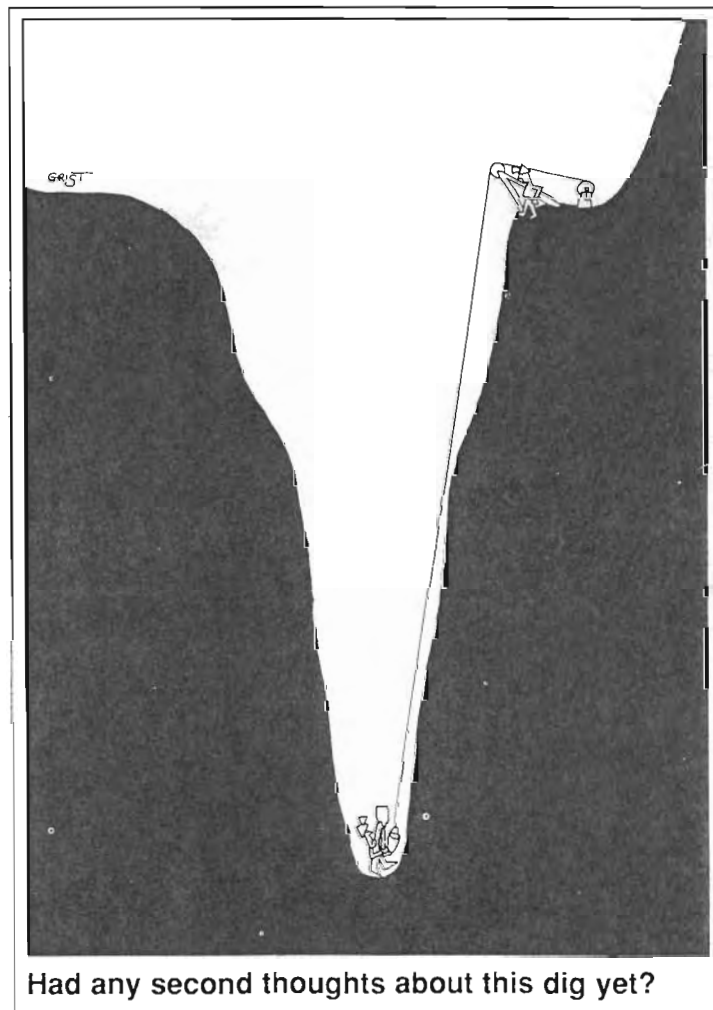
On Sunday we got away, surprisingly, to a reasonably early start, and made our way first to St. David's. Everything was closed, it being Sunday, but we wandered round the outside of the impressive Bishop's Palace - and Phil, Paul, Steve, and Edric managed to find an unlocked entrance and had a free tour of the inside, while we gnashed our teeth at them from outside the fence.

Then on, Northwards, and stopped for another liquid lunch at a rather splendid little sailor's pub at the head of a creek on the South West side of Dinas Head, beyond Bryn Henllan (Pub Map Ref SW 005 399). Here we stayed for an hour, investigating local brews, munching nuts, and watching the antics of the snooker players. Then, after a quick walk along the cliffs to inspect climbing possibilities, back to the cars and on towards Aberystwyth. On the way we deviated for a few miles to look at the prehistoric burial chamber at Pentre Ifan - quite impressive, with its giant capstone precariously perched on the tips of three stone uprights, each taller than a man, still standing firm after at least 4000 years. Then on, AND ON, through Aberystwyth - where we stopped for a very welcome cuppa,-and finally, at last, in the gathering darkness, over the Crimea, down to Betws-y-Coed, and back home.

All in all, an interesting and not unprofitable weekend. We have seen a lot of South Wales, enjoyed the company of Derek James, and laid the foundations for a future visit. Our thanks go to Andy and Derek, who did the organising, and to the two drivers, Edric and Phil, who drove enormous distances without a single (audible) complaint or a single sharp intake of breath (so far as I know) from their passengers.

NJ
GCD
12/2/89

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(11) (9)

The GOES GO's to Rhosydd.

Saturday. 28th. Oct. 1988.

The entry in my diary read. 10.00. CEGB Car Park. Meet GOES members for quarry visit. Rhosydd, Cwmorthin, and maybe Moelwyn.

Saturday dawned, I stretched and yawned, lazily wondering what today held in store and what could I put in my nosebag for today's visit underground. Oh well ! Perhaps the quarryman's, "Brecadan Robin Jolly" (White cheese on red jam in brown bread) would be appropriate. It's quite delicious, nutritious and easy to prepare. So after filling the flask etc., quick check on the lighting equipment. Off to the rendezvous point.

Waiting impatiently at the car park. Time twenty five past ten!! No sign of Tom Parry and gang. I suppose these town dwellers tend to get lost when they come off the dual carriageways into wild country. Then suddenly they appeared in a VW minibus, Tom Parry at the helm looking immaculately groomed, as if he had been freshly shaved (a week last Thursday)

As the motley crew disgorged from the VW, blinking and stretching in the strong sunshine. Yes, the yellow ball in the sky was really belting down today. I tried to ease their disappointment by promising heavy rain for early PM ! ! The preliminary intros were made and as I looked them over I was conscious of comparing them to the remnants of Blackbeard the Pirate's crew. Anyway they were herded back into the VW explaining that the beginning of the walk was some distance away in Cwmorthin.

At Cwmorthin, as my valiant bunch of pirates rummaged in various assortments of TESCO and Quicksave bags, and girded their loins with a quaint assortment of boiler suits, lighting equipment helmets and boots, lo and behold, a gent called Bob Smith donned what became known throughout the rest of the day as, "Summer Wellies" ! Now that everyone was kitted up and ready to go I explained what I had in mind. I smiled as I suddenly thought, "If I was ever waylaid by a mob of soccer hooligans these were the guys I would choose to have with me !"

We set off towards our goal and I was trying to point out some features of interest, but had no need to worry, I was in the company of experienced explorers and "Bysneswrs". Their questions and observations were, interesting, various and numerous. The slate "sculpture" of a climber aroused some interest as did the derelict quarry building and houses. I forgot to mention on the day, but for interests sake, in one of

(12) (10)

the small houses adjacent to the lake one hundred and ten years ago, the first clock was bought and installed, and an educated lady was paid for one week to teach the residents and children to tell the time.

We skirted Cwmorthin lake, and I pointed out the adit entrance to Cwmorthin Quarry, where hopefully, one day I will be pleased to guide my buccaneers ! The near derelict chapel aroused some interest as I explained how at certain times, when the conditions were ideal, the congregation singing on Sunday could be heard as far away as Tangrisiau, some miles away. Once again we detoured to take in a tour of the manager's empty house, with cellar, outside loo etc.

The fairly steep incline from Cwmorthin to Rhosydd was coped with magnificently and as we studied the ruins of where the giant water wheel housing was I saw a pair of Smith's summer wellies disappearing into a water shaft followed by a hollow shout which sounded something like, "Or roit men, eets grite in ear loik !" These words were translated for me by a gentleman, a college fellow with obvious linguistic skill as "I say chaps, this is really excellent". Some of his mates dragged him out protesting, as we made our way onto the plateau of Rhosydd explaining to me that Bob was a Brummie, which did explain a lot.

The landmarks I pointed out, like The Cnicht, (The Welsh Matterhorn) and Cwm Croesor etc were discussed as we now eagerly assembled at the entrance level of the quarry, photos quickly taken, lights checked, and suddenly we were in (for me) the familiar dark and atmosphere and echoing interior of the main tunnel. I could sense that the gang were in their element underground. The going underfoot was wet to say the least and "Summer Wellies" didn't seem such a good idea !

As we entered and explored some of the smaller chambers I tried to explain some of the techniques and methods used by the quarrymen to extract the slate. Most of the old machinery aroused a lot of interest, such as the endless rope method of taking full wagons out and empty wagons in.

By now, tummies were beginning to rumble, so we decided to eat in a large half flooded chamber just like a lakeside picnic at night ! As Tom Parry struggled with his candle Smith disappeared again in mid sandwich to explore the other side of the water, and the air was filled with the sound of crunching raw onion. After lunch I led the gang to Piccadilly Junction, the meeting point where most of the quarry traffic flowed so many years ago. I said at the time, mistakenly, that the quarry was working in the early forties. In fact it ceased to be viable in the late twenties. Sorry lads.

The next slog was up the main incline to the eventual open air and out onto the Moelwyn Mountain Range. I tried to explain

(13) (11)

the system used called, "Y Mochyn", to transport slate for dressing, I hope I succeeded. Once again friend Smith disappeared into another small shaft, obviously enjoying himself, followed by some of his mates.

Soon we were out of the quarry, and blinking in the glorious sunlight, which is so commonplace in Blaenau, and talked about in all the tourist travel brochures of the area ! After a short sharp scramble, we emerged onto a small hollow that lies between Moel yr Hydd 2,124', and Moelwyn Mawr 2,527'.

After a quick assesment of time to spare, fitness etc we all decided not to go for the summit of Moelwyn, but instead took in the glorious views of Blaenau and Llan Ffestiniog, Moel Hebog, the Snowdon Horseshoe, Nantlle Ridge, before following an easier route by old tramway to Bwlch Stwlan looking down on the Ffestiniog Pumped Storage Scheme with massive dam, coastal views of Criccieth and the Llyn Peninsula. Brushing aside the gasps of admiration, I showed the lads a cone shaped hut used to store explosives.

A stroll down to the dam followed, and after crossing the road across the top of the dam it was plain sailing back down to Cwmorthin, and the waiting VW minibus.

At the parking area I was delighted to accept a bottle from my new friends ! In fact it's the first time I've ever had Grants for anything I've done !

Later that evening, as I sipped the amber nectar by the fire, and mused over the day's events, I hoped the lads of GOES had enjoyed their day, perhaps learnt something of quarry conditions, seen something worthwhile, enough perhaps to come again to the forgotten Cwm. Perhaps I would be able to accept their kind invitation to accompany them on or in the Orme.

Thanks for your company lads. Happy Days, Cheers, Delwyn.

Some facts about Rhosydd Quarry which might be of interest.

Quarry started around 1855

Ceased quarrying around 1920

Total of approx 65 years working

Workforce at peak 180 men

Nine depths of levels

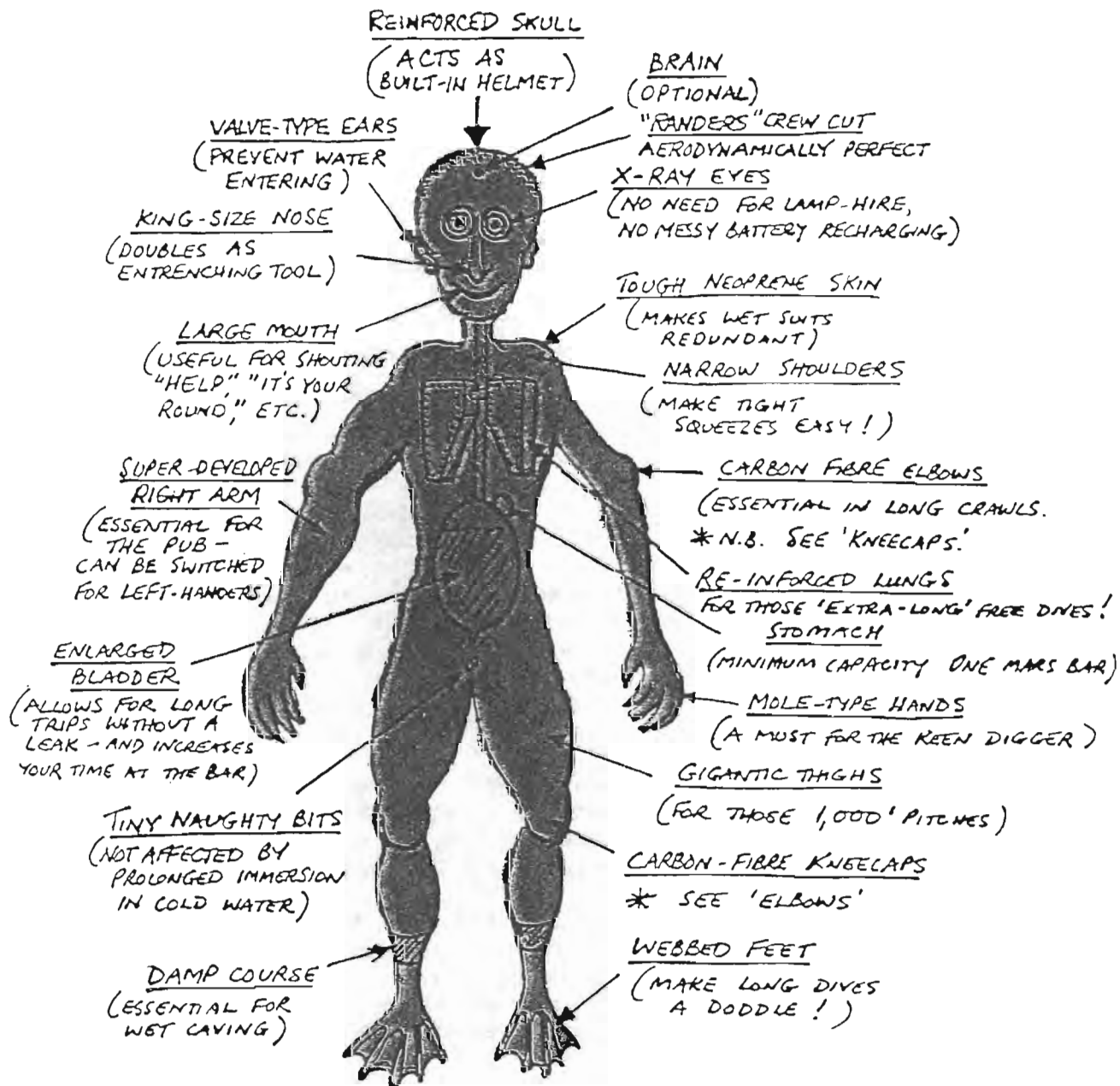
More than 1 mile from Chamber to Chamber (East to West)

Quarry altitude 1,500'

- * The tram lines were peculiar to Rhosydd in that for more than half the distance, only 3 rails were laid. The centre rail being common to empty wagon descending and loaded wagon ascending. Where it was necessary for wagons to pass, Railway branched to double lines. Apart from the space saved, a large amount of capital was economised! *

THE IDEAL CAVER

(HOMO TROGLYDYTUS TETLEY BITTERUS)



Following some of my historical articles in the press in particular the Thomas Kendrick and Roman coins find accounts I was approached by Nigel Berry by telephone and an evening out for a pint was arranged and it was suggested during the evening that a trip down the adit be arranged. A couple of nights later Billy and I met by chance in the London hotel and a trip was arranged, the team comprising of Billy, Keith Griffiths, Phil Quigley, Nigel Berry and myself. The first excursion was made after a meet at the Rhoslas where "William" as usual downed four or five pints half of which later increased the level of the water in the adit !! Several trips down followed and a meeting was arranged with Duncan at the London where Davy Jones also turned up. By now a strange character called Tom Parry had appeared on the scene and although we pretended to like him all the insults slyly thrown at him all evening had no effect so eventually we were stuck with him.

Tom Stone came on the scene soon afterwards and I was with him when he made his first dig at Kendricks where yours truly burrowing into a cavity set himself alight with a carbide lamp, after a little excitement the flames were extinguished and everyone seemed delighted that the carbide lamp was ok.

During February 1978 the Great Orme Cave & Mine Exploration Society was formed with all the individuals mentioned above forming the initial membership. Duncan stipulating however that he was otherwise engaged with his own explorations and studies in the top workings, but would remain a member and would help in any way possible whenever we required him.

following three meetings at 9, Dinas Road the venue was changed and we met regularly at the Victoria, Church Walks, which was then run by Tom Hannon.

Eventually it was decided to approach Aberconwy Borough council for permission to search for the long lost Ty Gwyn mine on the promenade and the following correspondence ensued. I have left out some of the letters between the Mostyns chief agent, George Hiller and myself for reasons of diplomacy. However, a rift developed which held us up for some time also I was taken ill with first a severe back injury and then lung problems which put me out of action for over four years. Nigel Berry also became unavailable so matters came to a halt until one day Peter Hall, Aberconwy Tourism officer contacted me on the phone enquiring about what had happened to the Ty Gwyn project which had been passed by the full council some years previously - note correspondence

Things began to move again and the society dropped the "cave" in 1985/6 and became known as the Great Orme Exploitation Society which gave it more scope.

Negotiations resumed and following a meeting with the Aberconwy Council ~~Raymond~~ Raymond, Billy and I watched his artistry as a dowser and he found both the tunnels which crossed at the exact same spot on the outer wall of the Belmont Hotel. This confirming where my grandfather and Tom Parry had said the workings existed.

arrangements were then made with officials of Aberconwy Technical services and Mr Adams of the parks dept. Andy and I met them on site and arrangements were then made to find the shaft, the dig to be made within the top flower bed on the promenade - we were told that only two attempts could be made and we were not to damage the elm trees. Brummy Bob Smith almost got himself expelled from the outset for butting one of the elm trees after being hit by a butterfly but he was let off after a severe warning.

Following the generosity of cllr Frank Tyldesly in finding us a job and driver free of charge - most of you mad impetuous lot know what happened following the Eldorado find Billy of course was given the honour and privilege of being the first down.

Llandudno's hidden wonderland

AS one gazes or rambles on across the Great Orme admiring its splendour and grandeur, once the haven of the botanist, geologist and entomologist, with its cromlechs, cairns and other ancient monuments and remains, its old church from where the town derived its name and its unrivalled position overlooking panoramic views of sea, mountains and vales, castles and ruins of castle, where once the fiercely proud 'Cymry' fought bitterly and bravely for centuries to maintain freedom, culture and language, little or no thought is spared as to what lies in the interior of its vast expanse.

Incredible

For the first time ever here is a description both written and pictorial, of the incredible and unique underground workings where, for centuries men hacked, dug or blasted, foot by foot, for the green copper, a cruelly hard and dangerous occupation which required exceptional stamina and courage, and which will remain for all time, a monument and reminder of those pioneers who, with dimly lit candles, created this unending warren of tunnels and shafts which wind in all directions.

One hopes that this insight into a world of the past will prove an eye opener to those who have lived here for all of their lives, and to others who have made the town their home and who must be quite unaware of the existence and extent of these workings which would make the famous 'Llechweidd' appear like a tiny backyard in comparison.

Here, if capital was invested and a little foresight conducted, would be a vastly profitable enterprise which would attract annually thousands of people, and once

cleared and drained would provide a massive nuclear shelter capable of holding not only the population of the resort but also those of neighbouring towns.

A handful of individuals have explored parts of the workings but, none have the uncanny knowledge and experience of our five team expedition leader Billy Davies who, for more than fifteen years, has explored and tunnelled his way for miles through the workings and is, in all probability the only person who could lead you in and out of this challenging and dangerous 'underworld labyrinth'.

Before commencing our journey, a short biography of Billy would not be out of place, for this adventurous and dedicated mine explorer has made possible this story, and I have little doubt that in the years to come his efforts will be recognised and appreciated and, perhaps, one day if this area is opened as an amenity and attraction for the town a debt will be owed to this extraordinary character whose sensible and careful exploration has unearthed the vast potential of this hidden wonderland.

Trapped

Billy, nicknamed The Mole, Billy Bones or Billy Cave, began exploring caves as a young boy and eventually concentrated solely on the mine workings. He has lived all of his life only a stones throw away from the old mine workings near the summit of the Orme.

He hit the national headlines when trapped for ten and a half hours in a working leading from near Pigeons Cave to the vicinity of St. Tudno's Church. A group of half a dozen had initially commenced the venture and Keith Griffiths, another now recognised local expert, particularly on shaft exploration

with ladders and ropes, had joined his companion in the attempt to tunnel their way through.

There had been three collapses in the past, the first they had successfully cleared but the second was necessary to make headway through the second fall. Both had been cleared but the third when it came the venture was too much for them. Billy had been crawling back when the second collapse occurred and in once more he was trapped. For three hours fruitless attempts were made to dig him out and, eventually, the Police and local Mountain Rescue team were called in.

They also failed to reach the entombed Billy, so it was decided to call in the famous Wrexham-based Mine Rescue Team. These professional and experienced men made contact after about an hour-and-a-half of strenuous excavating and clearing.

Trapped in an area of about 15 feet, Billy was eventually able to converse with his rescuers and pointed out that their vibrations were disturbing huge slabs of rock directly above him, one in fact having ominously slid several inches.

He was asked to describe the situation and to slowly dig his way towards the rescue team. The ordeal finally ended when enough space had been cleared for him to crawl to safety and, to this day the prowess of that rescue squad is deeply appreciated by the fortunate Billy Davies.

Hazards

As we begin our tour of the mineworkings, I omit to mention the precise location of the entrance for obvious reasons. Children or inexperienced explorers would

find themselves in dire trouble if attempting the journey without expert guides, and even with them the hazards are great.

Entering the tunnel one has to traverse a distance of approximately three-quarters of a mile chest or waist high in water and, at some periods of the year the water is neck high. The height of the tunnel for most of the way is about five foot four to six inches and, in two places probably reaches five foot ten inches. Soon after entering the tunnel one encounters the 'Mud Slide', a phenomena caused by a collapse, and to crawl, slither and slide through this mud filled narrow aperture is an unpleasant experience. Suddenly you drop into about four feet of water and mud and the following 800 yards through first mud and then water is a tough foot slog.

Tunnels

Beneath the water one occasionally treads on the old railway lines which traverse the length of this magnificently constructed tunnel and which took the miners, working around the clock in shifts, almost nine years to complete.

This masterpiece of craftsmanship (ginging or dry stone arch) is of superb quality and a tremendous tribute to their skills.

After the tiring slog the team are relieved to reach the workings proper and rest at the 'Junction', nicknamed thus by Billy.

In its heyday about 300 tons of copper ore was mined per week from this locality and after being sifted and sorted in the outside workshops, shipped out to Amliwch and Woodend.

Completing a short rest, one commences the journey into the workings and is confronted by a maze of tunnels branching in all directions.

The walls are dotted with shot holes where the miners placed their explosives as they laboriously blasted their way through. This is not a place for indifference or casualness, it calls for constant alertness, as several hideous shafts of great and varying depths have to be crossed or bypassed. The pictures accompanying this story will give the reader some idea of the perils involved.

There are several areas of false floors; rickety pit props hold up the roof in parts and great care must be taken to avoid disturbing them as one gingerly crawls or climbs past.

Eventually a point is reached where, looking upwards, can be seen short slagings jutting out at intervals to a height of at least one hundred feet.

From here the ore was once tipped down to the lower level to be transported out by the rail tubs.

Along the route can be seen wooden stemples slotted into the sides of the shafts, which the miners used to use as ladders; they were also used as safety rails at certain heights.

On reaching the 'Ice Bridge', once a false floor of which a section collapsed and, in time was virtually cemented together by nature into a calcite deposit — leaving a narrow ledge which has to be very carefully traversed by crawling upwards and across, it has an uncomfortable looking drop immediately on its right hand side; note in the picture Keith Griffiths leading the team across.

The next obstacle can be quite frightening in particular when one crosses it for the first time and it has been christened by the team 'Fools' Crossing'. It comprises a narrow four inch ledge of calcite with a vast shaft directly by the side of your boots spiralling downwards. One crosses this as hastily as possible. Once negotiated, nature makes further demands as the team scramble or slide down loose spoil, taking great care to keep to the left and immediately to the right lie another yawning chasm.

Here is another rest spot where a cigarette and a drink of orange make a welcome interlude.

Once refreshed the team head for the difficult but impressive 'Stemple Wall', a journey which will be described with some sections of the upper workings in the next issue.

Relics

The exploration described today has taken several hours and still one has hardly touched the vast area of this hidden wonderland, for the tunnels continue to wind their way seemingly endlessly in all directions.

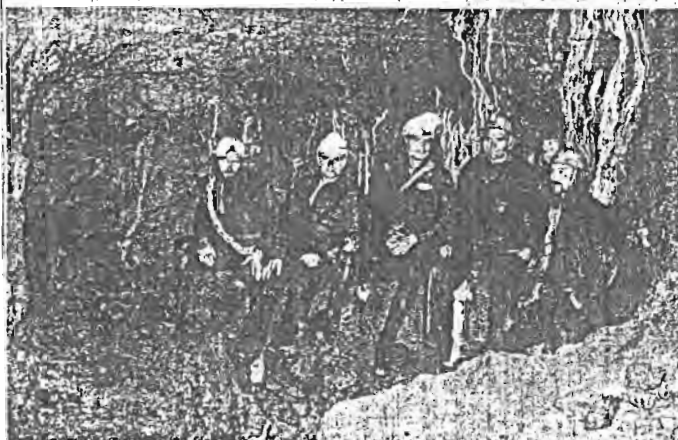
One has already encountered on the way magnificent multi-coloured geological formations of calcite stained with copper salt which present spectacular colour schemes which light the dark workings with eerie splendour.

Old tools and other implements used by the miners are occasionally passed, and, with rare exceptions, are left for those who may follow to inspect and admire.

Relics, such as these, would be ideal for a museum which the town sadly lacks and, one hopes will be purchased or built in the not too distant future.

A collection of the discoveries made in this area throughout the years would make such an institution a popular and interesting visiting place, and, then, perhaps, many of the ancient relics and finds collected through the ages could be returned to their rightful locality instead of being stored in some outlandish site or sites miles from the resort.

The photographs taken by team member, Nigel M. Berry, are of superb quality and this once professional photographer took some at considerable risk to life and limb. Copyright is claimed on both the story and pictures. There are more impressive pictures to come.



Pictured are members of the team resting in one of the caverns. From left to right, they are Keith Griffiths, Nigel Berry, Phillip Quigley, H. T. Williams and Billy Davies. This shot was taken with a timing device. Note the streaks of calcite deposits, stained with copper salt, running down the wall.



Keith Griffiths leads the way over the treacherous Ice Bridge. Note his left leg on the edge of the narrow ledge with a huge drop immediately on the right.



Nigel Berry the team's photographer negotiating the narrow aperture of the Mud Slide. Note the mud collapse on the right hand side, and completely surrounding the small hole.

AFTER checking all equipment, in particular the two carbide and electric modes of lighting carried by the team without which one would be stranded in total darkness, an unhappy experience which Billy and myself found ourselves in when taking a different route from our three colleagues a few weeks ago.

Happily it ended after a very long quarter of an hour, when our cries for assistance finally brought about a welcome reunion.

We then continued steadily upwards towards the Siemple Wall, eventually reaching a wall of "deads," waste rock which the miners used to back fill non productive passages thereby saving the necessity of carting tons of rubble out.

These we encountered in several places during our travels and the artistry and neatness of this boring chore reflects the thoroughness and methodical precision of the workmen.

After negotiating the "deads" and bearing right,

Llandudno from past to present

BY HUW TUDNO WILLIAMS

Llandudno's hidden wonderland—Part 2

routes used by miners. The stemples are made of wood which are fitted into the wall at regular intervals by an ingenious system of cutting a socket on one side of the wall and a notch on the opposite side, the oak timber, cut to a tight fit was then slotted in, they were used for climbing,

lights reflecting in the phosphorescent glow of a calcite formation flowing from a hole high in the wall and cascading into a pool.

To enjoy the full splendour of this unbelievable phenomena of rare beauty a ten foot wall has to be scaled and a cavity entered. One

reach a point where we have to chimney a height of about eight feet, this bringing us to the notorious "Step Across."

At first glance the obstacle appears simple and without problem, but, ducking under a slight overhang one has to place one foot at full stretch in a small hole on the opposite side placing a hand on each side of the wall. Yawning downwards is a fearful drop which one is suspended across until, a concerted push by foot and hands enables two hand or finger grips to be secured on the other side where one hauls oneself up to safety.

I readily admit that this is one place which I cross most reluctantly and only reassuring advice plus calm coaxing by the cool Keith Griffiths whose strong right arm was of invaluable assistance on my last crossing, tempts me to bridge this obstacle.

The photograph of Billy Davies negotiating this hazard makes it look like child's play but I can assure you that this is far from being the case. It is even more difficult on the return journey mainly due to the overhang on the other side.

Veering upwards a short distance and bearing to the right one is confronted by an amazing

spectacle which in itself makes the long trip worthwhile. Preserved in the clay are the imprints of miners' clogs which date back well over a hundred years—found in the rubble by the youngest member of the expedition, Philip Quigley, is part of an old clay pipe one of the few pleasures enjoyed by Llandudno's original industrial workers.

This relic has been included in the superb quality picture of the clogprints by Nigel Berry.

The team leader then conducted us through "The Crawl," a very narrow passageway or aperture which one has to squeeze and worm through for a considerable distance, this leading to the "Semple Shaft" and high workings which we can discuss next week.

To finalise this week's episode and to highlight the narrowness of "The Crawl," team photographer Nigel found himself jammed on the return journey and, traversing on his stomach with his back pack containing his camera and equipment, a decided hindrance, had to be literally hauled out, with Keith strenuously pulling one of his arms and yours truly the other. After heaving for some time Nigel

eventually shot out like a cork from a bottle, to the great amusement of the rest of the team.

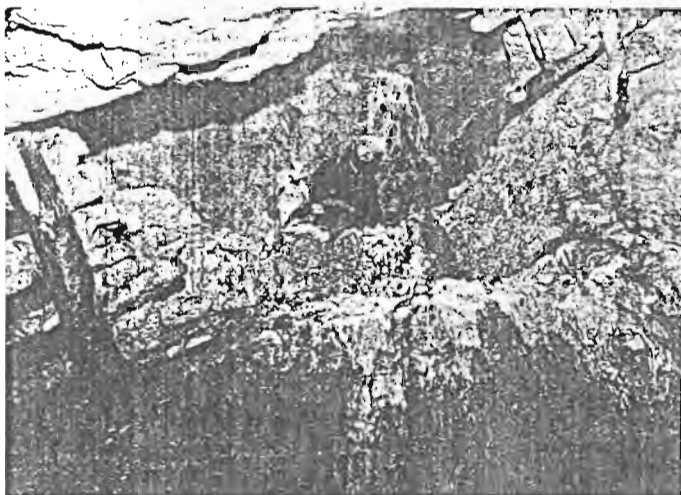
The long trek back can be completed by taking an occasional alternative route emphasising once more the vastness of the terrain.

Included in this week's four photographs is a tremendous view of the long tunnel leading in and out of these impressive workings and described last week as ginging or dry stone arching, the water reflecting wonderfully the roof and sides of this masterpiece constructed over 130 years ago. If ever opened as a tourist attraction one perhaps might visualise, looking at this short stretch of tunnel, train after train carrying countless people into a commercialised and safe cavern of massive dimension, as so aptly noted in last week's editorial, "Hidden Gold."

The town is, without any doubt, sitting on a "gold-mine," and although a lot of money would be needed to clear and develop this vast area, the cost would be recouped in a mere few years, and the annual profit from thereon would be astronomical.

Further more, a declining tourist trade would be given a tremendous boost. The Mostyn Estates, Church Commissioners and Local Authority could perhaps at least get their heads together and explore the possibilities, and, if ever the development is made one would hope the the contract would not go to some outsiders like one or two recent projects. This incalculable profit venture would, I am certain, be wholeheartedly backed by the majority of the towns people.

Next week's photographs will include the impressive Siemple Shaft; an ancient windlass lying in the upper workings; and two dramatic pictures of parts of the cavern, one showing curtains of stalactites hanging from a roof.



Team members Keith Griffiths and Phillip Quigley inside the Cavern, and in front of them is a deep chasm. Note on the left part of the oak shoring supporting a section, while in the right is an access ladder the bottom part of which is obviously missing.

following a passage for some way, one clambers through a "window" connecting one slope to another, or chamber to chamber. Once more a warren of tunnels and passages is encountered and by this time one is totally dependant on Billy and, at this particular point Keith, to select the correct route and guide the team upwards.

A short stretch of tunnel brings one to a steep slope on which you sit and slide your way down to its base. After proceeding along a pleasant high and wide tunnel for some considerable distance we eventually arrive at the Siemple Wall.

This is a sheer rock face and one of the original main

for roof supports and also for gating off shafts.

Attempting to follow this route to higher workings we find that a recent collapse at the top had blocked this avenue. This necessitated a retrace which led us back to the "window."

Noticing a narrow aperture we decided to explore and, crawling on our stomachs for twenty yards or so emerged into a massive chamber containing some weird rock formations and the team split in a search for any relic or item of interest that this imposing cavern might hold.

After regrouping we descend a slope within the cavern and were, to put it mildly, intrigued to find our

wall is almost completely covered with this colourful formation of a turquoise-like shade and, at its base, there are small pools full of calcite flowers and cave pearls seemingly formed into small gardens.

To capture the full effect and magnificence of this spectacle a coloured photograph is essential and a special visit is being arranged to ensure this.

Reluctantly we leave the chamber and follow a circuitous route passing more stemples and, climbing a few steps, can be noticed on the left, safety rails gating off two large pits.

An incline spirals upwards which is traversed until we



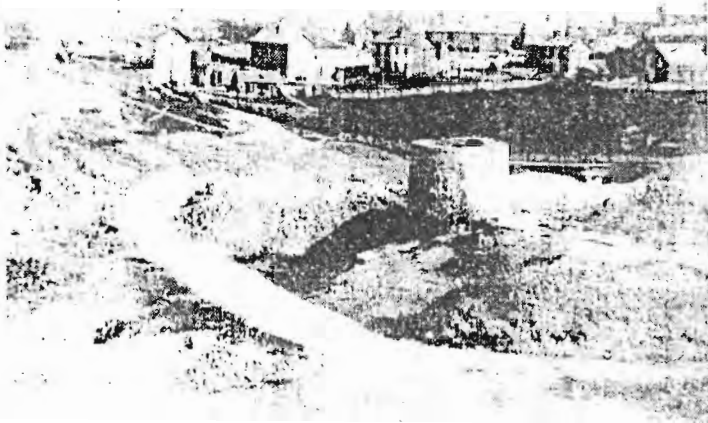
A remarkable picture — impressions of miners' clogs in now hardened clay and still visible after over a hundred years. Note too the piece of old clay pipe in the centre — one of the relics found by the team.



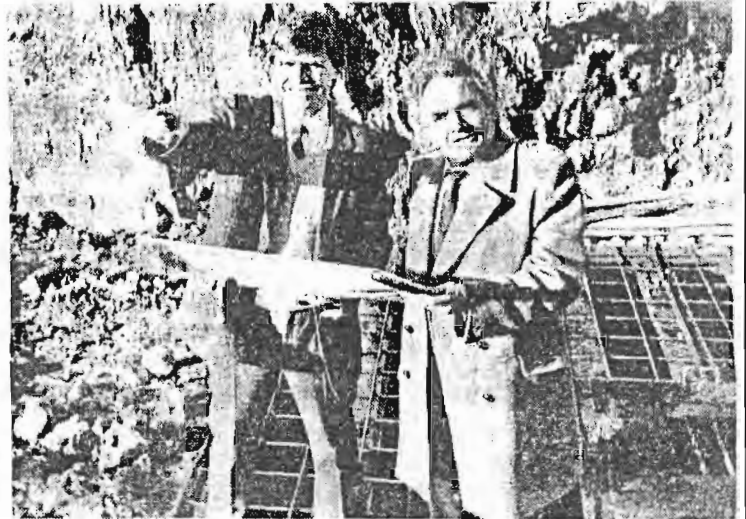
The authority on the workings, the intrepid Billy Davies, makes child's play of negotiating the step across. His left foot is in a small foothold and he prepares to push himself forward with his right leg. There is a tremendous drop below and the author, Mr. Williams, says this makes the crossing a frightening experience.

Articles 3 and 4 will
Be Reproduced in The
next newsletter

Ecl



The scene of the old mine workings on the Great Orme around the year 1900



Tony Hammond (left) and Exploration Society spokesman Hugh Tudno Williams

Mine of information

Ancient workings set for role as top tourist attraction

AN ancient industry that many thought had been consigned forever to the history books could give a North Wales resort an attraction that would rank with the best of its kind in the world.

It is a prime example to all resorts fighting for visitors of how, with a bit of imagination and hard work, a defunct industry can be put to good use for the future - in this case boosting Llandudno's tourist industry.

The ambitious project involves opening up to the public ancient copper mines on Llandudno's historic Great Orme - and the venture has already been hailed as unique.

It looks at the moment as if Llandudno, which already enjoys the benefits of its Victorian heritage, might yet again reap the benefits of another fine gift history has left on its doorstep.

For more than 3,000 years men have toiled and some perished in the cold, dark, labyrinth of caves and tunnels deep beneath Llandudno's Great Orme in the search for copper.

When copper mining finally finished during the 19th century - sunk by cheap imports, labour disputes and the rise of tourism - it looked as if the caves might become the preserve of bats and inquisitive cavers.

But little could generations of miners have imagined that the traces they unwittingly left over thousands of years might one day, according to promoters of the scheme, help put another jewel in the crown of the Queen of the Welsh resorts.

The starting point is set against recent discoveries that have set the archaeological world buzzing and have given the mine a European, and even global, importance, according to world authority Dr Paul Craddock, principal scientific officer at the British Museum.



Story: Ian Lang
Pictures:
Ron Broster

"The research potential is enormous. I can think of no other Bronze Age mine anywhere in the world that is so easily accessible. It is unique," he said.

"The discoveries made there are certainly the most archaeologically exciting in recent years in Britain," he added.

Research

"There is nothing in this country to even remotely compare with the mines in sheer scale and depth. They are unparalleled in Western Europe."

Dr Craddock said the mines could lead the way in long-term research into Bronze Age mining methods which could involve actual reconstructions.

Research into pre-historic mining methods remain the last major area of Bronze Age life to be investigated, he said.

The fact that the mines are so close to a town would make them an ideal research base.

"The sheer scale of the workings certainly justifies the excitement felt by those who have explored the mines so far," said Dr Craddock.

Bronze Age remains have lain undisturbed for thousands of years. Other finds date from Roman times to the 18th and 19th centuries.

Visitors will have the chance to see actual excavations in progress as part of the mine tour.

Plans to exploit the Great Orme's past have already been unveiled and if all goes well work could start next year, with the mine open for business in 1991.

It would involve an interpretative centre built in the style of 19th century mine buildings. There would also be a craft centre with a working smithy.

Visitors will also be able to don mining helmets and walk into the mine, via a shaft recently uncovered where most of the archaeological excitement has centred.

The man leading the venture is mining engineer Mr Tony Hammond of Ashton Mining Associates in Colwyn Bay, who quickly spotted the mine's immense potential.

He has worked closely with members of the Great Orme Exploration Society, who have pioneered work in the caves.

"The concept for the mine development will be to illustrate more than 3,000 years of mining in the actual workings where it took place. This will bring to the Great Orme project the distinction of being absolutely unique," he said.

He envisages at least 200,000 visitors a year and probably more. The mine will prove a particular attraction to schools, colleges and universities, he says. Local businesses and individuals will be given the chance to buy shares in Great Orme Mines Ltd, the company specifically set up to carry out the development.

First estimates for the project put the cost at under £1m, which would be a bargain if the mine lives up to its potential.

Further investment could follow once the attraction is established.



A Great Orme Exploration Society member examines the old mine workings

NEWS ITEMS

CATS

Our two mysterious cats in the Vivians shaft workings have a companion residing in Derbyshire. A recently received letter from Geoff William a member of the Peak District Mines Society gave an account of a cat skeleton which was discovered in a lead mine in Derbyshire. The remains now belong in a glass dome at the Stags Heads public house, situated in the village of Wardlow Mires, east of Tideswell. The pub, a single room dates to the nineteenth century and has changed little since that time.

Hopefully this summer some sort of pilgrimage to visit the beast and sample the local ales will be planned, and then perhaps we may be able to glean a little more about these strange feline occurrences.

PENMORFA DRAINAGE LEVEL

A report on the water flow from the Penmorfa adit was recently submitted to Mostyn Estates and Aberconwy Borough Council. The report highlights four under ground locations that at present or in the future could affect the flow of water into the West shore boating pond. Over the past year certain people have believed that the work for the shaftcapping scheme and carpark at Pyllau may of had some influence on the flow of water in the mine, however it was concluded that this was not the case. Recommendations in the report were to implement a periodic inspections of the mudslide with minor clearance where necessary, also to produce a more detailed study on whether water flows would be increased if the blockage was completely cleared and the lining supported. The final and most important proposal is to provide a scaffolding and hardwood block framework support to the bulging lining 27m from the portal entrance. The surveyed position indicates this area directly underlies the driveway alongside the property Glan-y-don, and so any collapse here might have serious consequences.

A copy of the report is now held by the society secretary and is available to members.

An Ancient Anchor from Porth Felen, Aberdaron

In Chester Museum there is a gravestone of the first century A.D. which commemorates the death by shipwreck of a candidate for a legionary centurionate.¹ Caerleon, the other legionary base concerned with Wales, possesses nothing quite so striking; but excavations on a third-century quay-side provided evidence of a sea-going connexion with south-west Wales in the form of a surfacing of Preseli slate, doubtless taken aboard as ballast at Carnarthen or Milford Haven.² Thirdly, a tile of the Caerleon legion, from the fort at Pennal in the Dyfi estuary, suggests — as is only likely — that heavy goods were very often conveyed by sea to outlying parts:³ one has but to glance at the map of Roman Wales to see that many of the military stations were sited for ease of communication by sea. Corn of Mediterranean origin eked out native supplies at Caerleon towards the year 100,⁴ and wine barrels from the Loire or the Garonne have been excavated at Caernarfon, where they had been re-used as well-linings in the civil settlement outside Segontium fort.⁵ The ubiquitous fragments of large wine- and oil-amphorae, mainly of southern Spanish origin, tell a similar tale. Recently, a copper ingot, beyond much doubt of North Wales origin, has been found at Bubry, near Vannes (Brittany), in the territory of the seafaring race of the Veneti; it is substantial evidence of a return trade,

¹ *Roman Inscriptions of Britain*, I (1967), No. 544².

² G. C. BOOE, *Isca* (1972), pp. 51-2.

³ *ibid.*

⁴ *ibid.*, p. 20.

⁵ G. C. BOOE, *Arch. Camb.* cxxiv (1975), pp. 52-7; also *Caernarvon-Segontium* [guidebook, on sale at the Segontium Museum] (1975), p. 6.

22

and the first such ingot to have been discovered outside the area of production.⁵

Thus it was that when two members of a Stockport sub-aqua club discovered an ancient lead anchor-stock (pl. No. 7) at Porth Felen, near the furthest tip of Llŷn, in July 1974,⁶ it was at first assumed that the vessel to which it had belonged had been on a voyage to or from one of the estuarine forts of north-west Wales; and as the stock was of a Mediterranean pattern, it was further assumed that her cruise had originated in Italy, southern France, or Spain. But research into the rich array of comparative material soon revealed the highly interesting fact that this particular type of stock, with its central box for the reception of the wooden shank of the anchor, and the cross-bar formed by the molten metal flowing through a hole drilled into the shank, was obsolete by the time of the Roman conquest of Wales in the seventies of the first century A.D. The latest known come from one of Caligula's stately pleasure-barges on Lake Nemi, and (with legionary inscriptions) from the Rhine. In the opposite direction, stocks of the same kind can be traced back for several centuries. The earliest known, which lacks the cross-bar by which the stock was firmly united to the shank, belonged to an Etruscan wreck of the sixth century B.C., found off the Cap d'Antibes.⁷

The date of the Porth Felen stock, unique as yet in British waters, can be narrowed down, in all probability, to the latter part of the second or the early part of the first century B.C. by means of its decoration. As one

⁵ P. André, *Bulletin of the Board of Celtic Studies*, xxvii (1976), pp. 148-53.

⁶ The chief parts of an anchor are (1) the stock; (2) the shank; and (3) the arms, nowadays fitted with flukes. The stock is set at right-angles to the arms, so that it may lie flat on the sea-bed, and allow an arm to enter perpendicularly. Anchors of the Porth Felen type had wooden arms (probably sheathed in metal) as well as a wooden shank; the angle of the arms was steep, as required by the joinery; it was not until iron anchors were universally adopted in the first century A.D. that the familiar pick-axe shape was devised, and even so flukes make no appearance until the fourth or fifth century.

⁷ P. N. Davies, *Journ. Nautical Archaeology*, iv (1975), p. 388. By the provisions of the Merchant Shipping Act, 1894, ownerless salvage (whatever its date) has to be lodged with the local Receiver of Wreck; and after a year has to be sold. In this case the stock was bought by the National Museum of Wales, and the sum paid (with a small percentage deducted for office expenses) was handed over to the salvors (i.e., the finders).

⁸ Nemi, G. Ucelli, *Le Navi di Nemi* (1950), figs. 263, 275, 278. Lost in the war. Rhine, Mainzer Zeitschrift, x (1915), p. 115; *Bonner Jahrbücher* 174 (1974), pp. 561-6. Cap d'Antibes, Gallia, xvi (1958), p. 30.

(73)

of the photographs shows, there is on one face a row of four squarish lumps, which looked like halves of walnuts before the corrosion-products were removed. Close inspection will show that these lumps are impressions of knucklebones, made in the mould, arranged each a different way up — the 'Venus' throw of the game. This ornament is known on fourteen other stocks, all from the Mediterranean; and two, from datable wrecks, are of about 140-130 B.C.¹⁰ The purpose of this decoration, as in cases where other devices appear, was magical. It took skill, rather than luck, to throw a 'Venus';¹¹ and from the arrangement of the knucklebones here, we can imagine that they were a tacit prayer that the anchor would fall in such a way as to gain a good hold of the bottom.

With this important find, then, we are brought into the orbit of Graeco-Italic, rather than Imperial Roman, connexions by sea with Wales. Whether we have to do with a vessel engaged in the Cornish tin-trade, blown so far off course; or with a cruise in search of North Wales copper, if that was known to Mediterranean traders, remains a matter for speculation. One thing, however, seems certain. The stock was found in 15 m. of water only 30 m. offshore; and if investigations by the Gwynedd Sub-Aqua Club¹² failed to find the smallest trace of a wreck on a bottom strewn with storm-pounded boulders, there is here no haven or strand, only the cruel cliffs swept by a severe current: the findspot points unequivocally to disaster.

The stock measures 1.18 m. long and weighs 71.5 kg. It is much below the average size, which is in the region of 2 m. and 200 kg. or more. Thus it must have come from a ship of slight tonnage. Three stocks found aboard a vessel of the earlier part of the second century B.C., excavated by a French team on the reef known as La Chrétienne (Dépt. Var), weighed 66, 84 and 104 kg.; the hull had measured about 15.5 m. long, on a keel

¹⁰ These and all other details will be found in my detailed study, 'A Graeco-Roman anchor-stock from North Wales', *Antiquaries Journal*, lvii, 1 (1977), forthcoming.

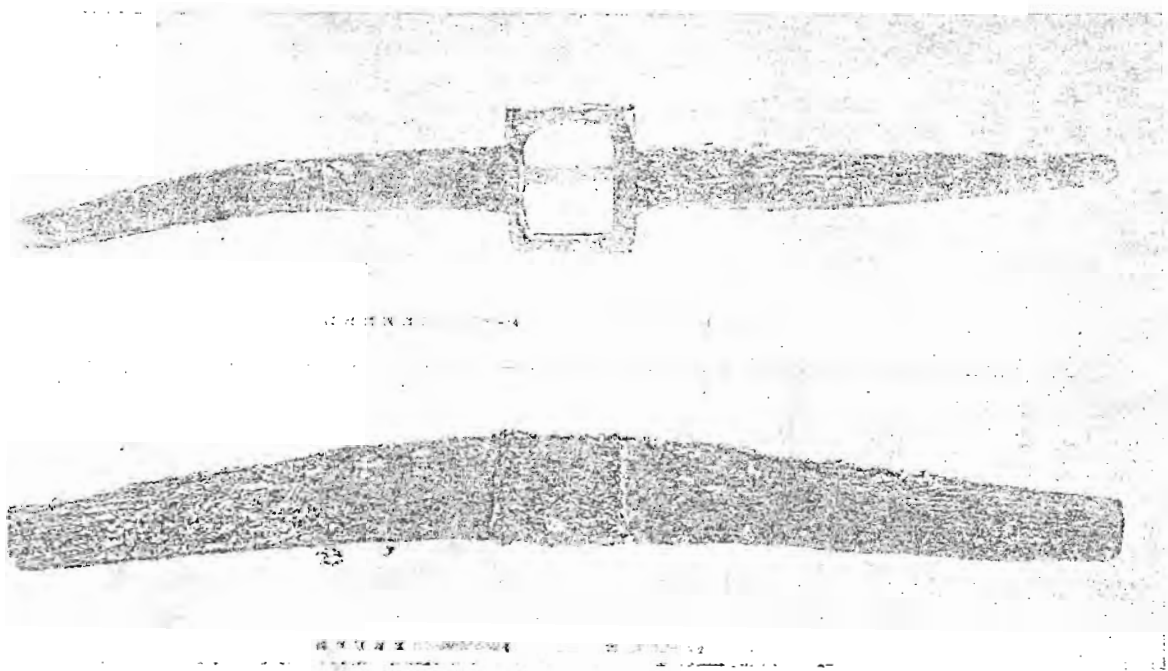
¹¹ The throwing of a 'Venus' is shown on the celebrated monochrome drawing on marble from Herculaneum, see, e.g., B. Maiuri, *Museo Nazionale, Napoli* (1971), pl. 80. Skill: 'it was by obtaining this throw that the king of the feast was appointed among the Romans' — *Smith's Classical Dictionary*; a dinner could not be kept waiting unduly!

¹² I take this opportunity of extending my hearty thanks to these gentlemen, and especially to Dr. D. Cecil Jones of Bangor University College, who took complete charge, and Mr. Sidney Wignall, the well-known sub-aqua archaeologist, who assisted. The site must now be left undisturbed.

of some 9.4 m., and 5.5 m. in beam.¹³ Probably the Porth Felon ship was of much the same size as this; but whether she, too, had been engaged in the wine-trade, only extensive exploration in very hostile and, indeed, dangerous conditions could decide.

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Lead anchor-stock from Porth Felen, Aberdaron, Llŷn, top and side views.
Scale: 40 cm. Photo: National Museum of Wales.