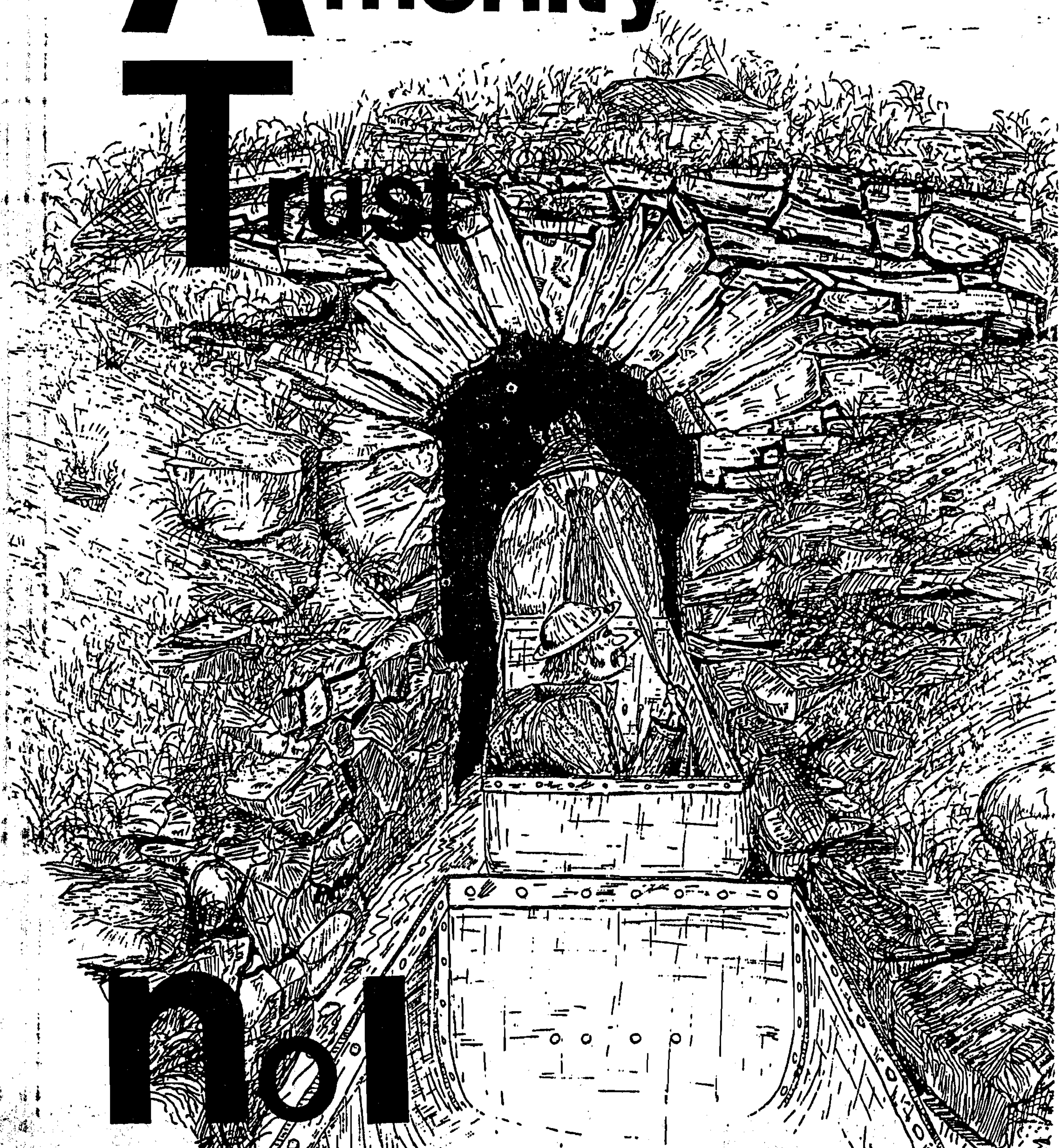
Cumbria Amenity Trust



no1 newsletter

C O N T E N T S

Contributions of articles for publication in future editions of this Newsletter will be gratefully received by the Hon.Sec. Eric G. Holland, Old Stainton Hall, Stainton, Barrow-in-Furness, Cumbria. Further Copies of this edition may be obtained from him at £1.00 including postage.

CHAIRMAN'S REMARKS

It is now just over two years since this Society was formed. It began as a result of a meeting at Stainton Old Hall on 9th October, 1979. From this humble gathering of six people we now have forty-four members. Our programme of excursions is quite varied and often ambitious.

It had become obvious in the preceding years that within our own county of Cumbria serious research and exploration of ancient and more recent mine workings was not being carried out and recorded. As our membership grew so did our pool of equipment and our enthusiasm, with the result that within the two years of our existence we have pioneered fresh exploration, often finding ourselves in deep and long abandoned workings which have not been entered for a hundred years or more, with only the original miners' clog marks on the mud floors, and experienced the excitement of not knowing what may be round the next corner.

Most of our in-depth original exploration has been carried out in the Coniston Copper Mines, where we have bottomed out the new engine shaft and Thriddle Shaft with a through trip linked by Taylor's Level and Fleming's Mine. We used 500 feet of ladder and 700 feet of rope. A full account of this expedition is promised for the next newsletter.

Still at Coniston, another through route was discovered via the old stopes at Levers Water down through the old German workings, Paddy End Shaft and out into daylight at the footbridge at Hospital Level. It took two days of dangerous descent to find the right route, which proved wonderfully rewarding, particularly round the Middle Level Horizon. There are more secrets to be revealed here and a lot remains to be done. A few underground digs could be worthwhile. Again, more on this is promised in our next newsletter.

What else has been done? We unearthed an early wooden buddle and roll crusher at Greenside Mine and this is covered by a report on page 4. We also pioneered the post-closure descent of Greenside Mine, which involves 746 feet of ladderwork. It's a big mine; worth seeing but hard work. We have also been down to survey and photograph the superb Elizabethan Coffin Levels at the back of the Goldscope Mine in Newlands. Other visits were to Force Crag Mines, Carrock Mine, and various mines at Nent Head.

We have enjoyed good publicity in local papers on our activities and also a ten minute spot an T.V's 'Look North', thanks to our P.R.O, Chris Jones. This all helped to boost our membership. I would also thank Eric Holland for editing this newsletter and all those who contributed material. Congratulations are due to Eric for the publication of his book, 'A Field Guide to Coniston Copper Mines'. A long awaited event. I am sure it will be a success. My thanks to all those who helped make our meets a success. We could not have achieved most of it without teamwork, patience and, of course, your equipment.

A meets list for 1982 will be drawn up soon; any suggestions should be sent to our Hon. Sec. Personally I am looking forward to pushing explorations in Coniston Mines further than to date - into the mysterious shafts and tunnels we by-passed last time. My appetite was whetted recently on holiday in China, when we visited the Ming Tombs some 30 miles to the North of Peking, which date from 1403. There are 13 tombs, only one of which has been excavated so far, unearthing many interesting and valuable items. There are plans to open another one in the future providing they can locate the entrances which are cunningly concealed. I would give something to be involved in that. We don't have this problem; here our mine entrances and shafts are obvious and waiting to be explored - so let's get on with it!

Best wishes for 1982. Peter Hewitt 披特

FROM THE HON. SEC.

Well here it is at last.... the 1st Newsletter. It took friendly persuasion, cajolement and finally threats I must admit. However, swamped with material (though very little sent in from members) it will take a further issue to cover from formation to the end of 1981. Our society gathers strength with members in Scotland and Isle of Wight. Our meets and programme is busy and varied and meets are well attended. Our first two annual dinners have been successful and I am sure we all look forward to the next in Dec. 1981.

C.A.T.,short for Cumbria Amenity Trust,was first mooted several years ago with the intention of purchasing Henning Wood near Lindal-in-Furness. The wood is rich in old mining earthworks and our altruistic intention was to jointly contribute moneys to a fund to effect this. Alas we were outbid at the auction. The group of friends and associated continued in their mutual interests but in 1979 it was suggested that a serious attempt be made to form a society and also to use the former name,though we now make it clear that we are a mining history organisation. As a result of the proposal invitations were sent out,to likely individuals, to a meeting to consider this. As a result a working committee was set up consisting of Peter Fleming, Chairman; Alan Westall, Treasurer; Maureen Stone, Membership Sec., and Eric Holland as Secretary. All these offices are of course honorary. At a meeting in December 1980 these were re-elected. Peter Fleming in the meantime drew up a set of rules as a guideline and in due course a fuller Constitution and Rules was drawn up.
We look forward to seeing you at the meets in the 1982 programme and here is wishing you the compliments of the season.

Eric Holland (Editor).

A CHRISTMAS TALE WITH A TWIST.

Eastall, the Mine Captain, a villainous man, bitter towards his fellow men due to a Karma Sutra induced spinal complaint, was in a bad temper (someone had backed into his gig the last night) as he regarded the three new miners from Wales - Dai Bones,Twicker Bach and Blunder Mawr. "Your new fangled methods'll earn thee nowt 'ere.Bloody Welsh upstarts,that's what you are." Resolutely the lads from Llanffairpwhyllgynrobwhyllllantai-Siliogogogogoch clenched their plastic ended clay pipes between their teeth and silently vowed that they would prove the man wrong. And so they did! At the end of their 3 month term they had produced a grand £300 worth of good ore but from this there was to be deducted £9 for dressing costs, said the mine Clerk. Each agreed to pay £3 and the full amount was taken from their wage. However, the Clerk discovered that he had made an error and the dressing charge should have been £7"10"0. Handing over the balance to the Mine Capt.,Eastall,he requested that he give it to the Dai Bones's gang or pare. Now Eastall was in a particularly foul mood - not only had he been proved wrong over the Welshmen's methods but some stupid sod had backed a heavy dray into his parked,newly-repaired gig which he hadleft outside a beer house,while he stepped inside for a quick one, wrecking his horse."I'll show these upstarts", he muttered, and slipped 12s"0d into his own pocket from the £1"10"0 the Clerk had given him, and he handed over 6s. to each of the three. This meant that each miner had paid £2"14"0, and the total paid therefore came to £8/2/0. The wicked Eastall had pocketted 12/- and the amount totalled up to £8/2/0 + 12/- = £8/14/0.

When the dark deed was exposed Eastall was deported to Australia ... he did however repay the 12/-. The Welshmen insisted however, that since they had in fact originally paid £9 for the dressing costs they were still 6/- short and that he must have kept this. He swore that he hadn't, but no-one believed him.

What did HAPPEN TO THE 6 SHILLINGS ?

E.H.

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In the above, any resemblance to persons living or dead, is purely coincidental.

IN THE FIELD with the Peak District lot. We viewed the bunch with misgivings. Were we really to have the responsibility of taking this group onto the fells? Could they stand all of the fresh air that they were likely to get? We couldn't provide them with their normal concentration of sulpur dioxide. How would they stand up to it? We decided to 'do' the Tilberthwaite region first. Here are a lot of smallish mines of different periods and are dotted about the fellside up to a fair altitude. Now the P.D.M.H.S. are used to driving their cars right up to the level mouth. When asked where the mines are, Eric responded with a sweep of the hand which took in Horse Crag, and the mist shrouded flanks of Wetherlam. There were nervous laughs from the band. They took comfort in the fact that Eric was just joking. And so we set off. The first ones we looked at were those around Horse Crag and Penny Rigg Quarry. At the head of the quarry someone asked if that was it? Were there any more? Yes, up there they were informed. Some of them hurriedly started stuffing Mars Bars, chocolate and other energy giving substances into their mouths. Eric stopped for a you know what and became left behind. After a while he met a bunch of people going down - they had it appeared, had had a hard day on the tops. After a few yards, Eric stopped and looked after the receding figures. Funny,he thought, I could have sworn I had seen them in the P.D.group! And there were not quite as many when he caught them up. Ancient levels were investigated about the head of Tilberthwaite Gill and after these came the question .... now which way? They really wanted to hear the word'down', but no such luck. The way was 'up'. After this they just asked "Up?" but later they stopped doing even this,and simply raised their eyebrows. Oddly the numbers seemed to be continually lessening. Once,distant bracken was seen moving .... and it was a windless day. We arrived at Borlase Mine which had become blocked about three years ago. Here we set to with gusto and soon had the place open. This was then explored.The workings at Hawk Rigg, and Hellen's Mine, were looked at and then we headed for Man Arm Mine. It was near the entrance that it was realised that only four p.D.ms men were there. Eric scanned the hanging valley and the bogs.... nothing. Could they have been lying in the marsh sucking air through hollow reeds? After Man Arm the way was down and a new spring was seen in the steps of the stayers. Oddly though they never seemed to hear Eric when he informed them that there were other mines nearby that they hadn't yet seen.

They were camping at Lowick and the Red Lion was just a short walk away. Hartley's Brewery would have been pleased to see the beneficial effect of the XB or Best Bitter. At any rate the party seemed a lot fitter on the next day Sunday. We took them into Deep Level and Hosp. Level and also a wet Elizabethan tunnel. Later more Hartleys. Their next trip was to have been Greenside Mine via the Glencoyne Level. We understand it took two days to locate the entrance. One member even set fire to his tent in a desperate attempt to get away from it all. Anyway they never did do Greenside .... that was to come later. On the Wednesday we decided to take them around Daylight Hole, the large iron mine near Lindal. The water level was quite low in the lower passages but when C.A.T. members looked around - no P.D.ms lot. Where were they? We found them balanced on a boulder..... "We didn't want to get wet", they said. It happened on July 12,13 & 16th. 1980.

It was an enjoyable visit and we hope to see them agin sometime in the region. Perhaps to do some of our 'hard stuff'.

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Haig Colliery at Whitehaven was visited on the 13 Nov. 1980. Ten members turned up and R.Calvin came along too making it a long day for him - he works there as a deputy. Everyone was most impressed with all they saw. The crawl through the avenue of hydraulic props was an experience indeed and the face was a new one ..... the roof had only just begun to drop in the 'goaf'. The rail ride 'Paddy Mail' of about $3\frac{1}{2}$ miles will surely never be forgotten and everyone was made aware of the difficulty of maintaining production from so far out under the Irish Sea (5 miles or so) with something like a 2 hour journey from the top of the 1,350 ft. deep shaft. On the surface the magnificent steam winding engines were admired... then to the baths for a wash, and we

found a meal had been laid on for us. Everyone was very pleased with it all and the manager has been thanked.

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We had a weekend at Greenside Mine on the 25 & 26 May 1980. The object was to dig out a wooden device which Holland had investigated a few years previously,and an iron machine of some sort that Holland,Fleming & Westall had had a go at some time before. The wooden device turned out to be a well made wooden circular convex buddle and it was of quite some age. The machine was 13ft. 2in. in dia. with 17in. high sides. The base which sloped up towards the centre was made of 56 segments of wood, each carefully made to fit though three were missing. The duct through which the dirty water escaped was found and partly cleared out of sand. The area around was cobbled and some of these were replaced. Photos were taken. The County Council archivist was later shown the find and it has been left with him and the Planning Board. The iron machine/s were excavated and found to be two roll crushers or what was left of them. The underground trip was well attended, but we didn't get enough visitors to warrant a trip up into the Low Horse Level.

We will certainly be back at Greenside again..... we want to return to the great stope for some photography. Indeed we havn't explored everything down there yet.

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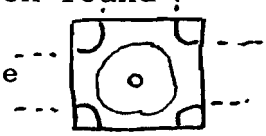
Meets in Wales have always been full of interest. Following reports by various bods we had an Easter Meet 1980 to N.Wales, but there have been others since. Sixteen members and friends turned up, meeting at Mrs. Lloyds camp site at Bonttdu - hot showers and all that.
Fri. saw members visiting the site of the old Clogau or Vigra Mill, the strongly built bridge across the gorge was most impressive. The party went up to Jenny's Adit and found it driven in for some 420 paces with about 28 yds. of side drives. No vein of importance had been cut and the venture was a dead loss obviously.

The Llechfraith Level on the Clogau Lode was entered and obvious signs of working noted (recent) and the tunnel was not followed up to its end. Some of the party had a look at the higher workings on the Clogau Vein including the St.David's Mine, the site of a remarkable gold strike in 1868.
Sat. The Forestry Comm.Visitor Centre was visited and particular interest shown in the re-constructed gold mill on show there. The Gwynfynnyth Mine was then visited and during the exploration photographs were taken in plenty. The timber head frame and hoppers in the shaft chamber (the incline shaft now flooded raised ore from below adit) aroused a deal of interest. The ladders in a shaft above adit were climbed up to the next adit and sub-levels were investigated on the way up.Upon exit a further level on that horizon was followed up and the top level was also explored. So much to see here that one tends to forget what one has seen. Open stopes above the bottom adit were also examined on our way upstream to Princess Marina Mine. Here a number of short workings were looked at;bottom adit still had its rails in situ. A mine car chassis provided fun for certain sillies and there were turning plates at junctions. Gold at 2 oz. to the ton has been found in this level along with lead,zinc and copper.



Certainly the possibilities for exploration, study & etc. are far from exhausted in this region.

That evening a good, though not cheap, dinner was had at the Half-Way House,Bonttdu.

Sun. After coffee & cakes on the lawn, in the sun,at the chalet cafe in Cwm Einion, we went up to the mine Ystrad Einion. Here the object was to see theunderground water-wheel & winch and the pumping arrangements for the,now flooded,underground shaft. Holland and M.Stone had been here the year before and persuaded everyone that it was worth the effort of wading the flooded adit. Consequently all members came in, females too despite wetting their unmentionables. Even without the machine, the

mine is worth a visit. The level was fully investigated to the engine shaft,which drops from the surface, and a passage running in from the side about 25 ft. higher was noted but not entered.The two higher adits outside were also visited and Holland pointed out that the water for the underground wheel was brought into the middle level by a wooden flume to a winze above the wheel though this appears now choked.

After Einion we found Bwlch Glas Mine more by accident than design.The bottom level by the road was partly blocked at mouth, deep in water, and not entered. The level above this was and found quite interesting. A conversation was had with girls in the party who found a shaft on the moor which connected.

Alan McFadzean tells the tale ..... Bwlch Glas. "I can't see the bottom... I think we're going to need the ladder". The voice of Peter Dawes (also known as the Road Runner.Ed.) echoed up the shaft from where he dangled, on the end of a rope, 20 ft. beneath us. We watched his neoprene-covered body bobbing furtively on the lip of an overhang,straining to gaze into the dark void below.

We were deep in the heart of a lead mine somewhere in the wilds of mid-Wales. The mine itself goes by the name of Bwlchglas, which translates into a sensible language as- the green pass or the green gateway, a rather peculiar name for a hole in the ground. Most of the workings are relatively modern, the majority of the work being carried out in the Ist. 20 yrs. of this century and by the Scottish Cardigan Co. who, between the years 1909 & 1916 produced over 1,240 tons of lead ore. Two main adit levels had been driven, the lower of which gave access to the engine shaft but this one had been blasted in; the other, much higher up the fellside, was still open and it was along this that we had set out, thirsty for knowledge, eager to learn the secrets of a Cambrian galena mine, and to further the cause of science.

During the first $\frac{1}{2}$ hr. we lost Alan Westall. Now any self respecting team would have at once launched a search and rescue op. Not so C.A.T. Various opinions were banded about as to any action being taken,(Ed.He was certainly with us until we found the shaft in the floor) and it was mutually agreed that Mr.W. was lying at the bottom of some shaft, or had wandered out of the mine and was picknicking in the sunshine; if there was nothing we could do about it, so we pushed on into the eternal darkness, still concerned about the fate of our treasurer - but in a lighter frame of mind.

We had descended a 75 ft. shaft on wooden ladders, into a low winding passage. At the end of this passage another shaft dropped into the black void of a large chasm, and it was in this daunting hole that member Peter Dawes now dangled like a big rubber spider.

Ed. Peter was as usual festooned with tons of equipment, to combat all emergencies,and occasionally something would detach itself and be heard pinging down into the depths.It has not gone unnoticed either, that Mr. A.McFadzean makes repeated reference to the rubberwear that Peter was wearing!!!!

We uncoiled three lengths of electron ladder, joined them together, belayed one end and let them jingle down the shaft, past the dangling Dawes (Ed.I'm thinking about that one) and on into the darkness. Peter grabbed the ladder and descended over the lip of the overhang. Eventually we heard his excited voice echoing up the shaft; he had found something big and was going off to investigate. The sound of moving rocks and dislodged rubble rumbled through the workings as the eager little man scuttled off into the unknown.

Four of us now remained at the top of the ladder. E.Holland,P.Fleming Dick Wade and myself. Who was going to follow Peter D. down that slender web of wire and alloy (God.Ed.) ? Which brave English heart was ready to rally at the side of a fellow coutryman and show the Taffs a thing or two about mine exploration?

Silence reigned.

After a long, embarrassed pause, which was filled with people coughing and studying rocks which people wouldn't normally have studied, Peter Fleming stepped out of the shadows - sword gleaming,hair flowing in the wind (What there is of it Ed.) - and mumbled something like, "Well we can't let him go by himself ... but I've got my waders on ... and

waders are awkward for climbing in". Eric agreed that they were indeed unsuitable for climbing in and promptly handed him the life-line. (Ed.Ah, how often have I heard Peter protesting about his waders.And if it isnot waders it's Westall's bad back - and we all know how he got that! In fact, on this occasion I was holding myself back in order that others could gain much needed experience). Peter tied himself on, adjusted his helmet and all the rest of his gear painstakingly, and then rattled off down the ladder. Eric followed next and then myself. Dick Wade remained at thetop , alone in the darkness, pensively drumming his fingers on an empty snuff tin, with nothing for company but the slow-dripping water and the ghost of the hapless Westall.

We calculated the pitch to be in the region of 60 ft. deep. Below the overhang the walls disappeared and the ladder dropped into an immense stope. A stope is the part of a mineral vein that has been mined out; this particular one was, in places, over twenty feet wide and 100 ft. high.

On reaching terra firma (actually a wobbley rock on top of a wobbley boulder pile), Eric informed me that the others had made a spectacular discovery and we were all to be famous. Eric was in his element; from the top of the ladder I had seen his little eyes twinkling in the darkness; by the time I had alighted on the wobbley rock he had worked up a grand head of steam, and after helping me off the spinning ladder, he set his course, rattled his tappets and chugged off in the wake of the two Peters.

The floor of the stope was littered with roof debris; large rocks and rotting timbers blocked the way and these had to be climbed over or squirmed under. After a while the stope widened to 30 ft., and there beneath a canopy of corrugated sheets or iron, standing proudly above the sable waters of a flooded shaft was the great discovery. An underground headframe, complete with its two pit wheels - was the great discovery. And there were the two cages with wooden safety gates. Indeed it seemed that only yesterday its rumbling iron wheels had turned to lift those weary Welsh miners up from the last shift.

But now the hour is getting late; it was Sunday night and we would be late for church; so we took some hasty photographs (which came out rather well) and made our way back to the ladder where far above us Dick sat waiting to pull us up.

Ed. I remember that it was Peter D. who made the first ascent using some hitherto unknown climbing technique. We became quite chilled waiting down there and one of us was hit by some of his falling equipment.

Footnote.(by McFadzean) You may be wondering what actually became of Mr.Westall. To tell you the truth no-one really knows. There were some stories circulating through the valleys of Dyfed and tales of a terrible Saxon Taxman who eloped with a colliers daughter and is now living off fiddled tax in Bolivia. Others swear that his bones lie a-mouldering in the depths of Bwlch Glas - yet another victim of the mysterious Abermuda Triangle (ouch). More reliable sources inform me that the man himself was seen striding down from the spoil heaps, dressed in black and shrouded in an eerie mist; and that he stood on a rock and uttered, for all the world to hear, those immortal words: "I'm going for some petrol". But I must not dwell on this unsavoury subject so I will lay down my pen, and the sleeping dogs and I will poke no more; and leave you to ponder the fate of our unfortunate treasurer.

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Inspired, perhaps, by the 1980 visit we made a further trip to Wales at Easter 1981.

Fri. A goodly number turned up, (one failed to appear because the elastic band driving his car snapped) and after settling into the crowded but well appointed Forestry Commission camp site near Beddgelert, we decided on an afternoon visit into Nantlle Valley. We stopped at the first mine we saw and striding over a broken down fence began to investigate spoil heaps on the mountainside. McFadzean A. and Ann stayed at a lower level. Partaking of a snack we suddenly became aware that a drama was being enacted on the lower slopes. Alan Mc &etc. was having a vigorous arm waving confrontation with what turned out to be an irate Welsh farmer. This did not concern agriculture or the weather. It seemed that the man owned it all and was not partial to people going onto his mountainside "destroying

fences"and so on. Ann tried to convince him that we were not like that and that we were responsible people. This appeared to send him into convulsions...."How would we like it if someone came to our houses and climbed our drain-pipes"? Now this one had poor Fadge stumped and far below we saw him, head bowed,return to his clapped out wreck of a car. The farmer seemed to think that there were others up the mountainside, alas the lowing sun was in his eyes and he decided to return to his sheep across the fields stopping every now and again to shade his eyes and peer up towards where he thought we might be. Apparently he had told Alan F. to ask next time. "Just ask" - and his dog snarled in agreement. There were some levels we never entered and we would like to have another look. It is a pity that this little trouble occurred. It wasn't really necessary for the farmer to get so excited but now that we know where he lives we will ask next time. This whole area is most interesting to the mining historian and there is more to see along the valley.

Eveings out were in Beddgelert. The village was crowded (there were some funny people about who appeared very much out of place in the country) and we bumped into a party from P.D.M.H.S. who were camped on the same site. They were going to do similar things to us, but we never saw them again.

Sat. It was to be P.Fleming's day - but we did not realise this at the onset. The gleam in his eyes as he emerged from his tent at the early hour of about 10.30 a.m. ought to have warned us. Also for the last two years or so he had been rambling on about the Brittania Mine on the flanks of Snowdon. "I know where there are some mines", he said. "We can do a round trip and take them in." Take them in....Ha! Little did we know what that meant!

It was Saturday and we firstly had a look at the the mine at Nantgwynant and had a look in a no. of levels. This was the location of a well known film. Chris (I've got a wet suit) Jones, with C.H.,went up the very wet adit and came back with ears full of water and brimming over with tales of the wonderful sights they had seen,(sic). There is,I am given to understand,no truth whatsoever in the rumour the Chris plans to return with Stone Cross pupils to make a film which is to be named 'The Mine of the 6th Happiness'.

We started our walk up the Watkins Path and were v. much impressed by the conservation work, (and the size of the stone slabs) carried out on this old miners' track - and by volunteers we believe.

The 'Walk'(sic.), took us up along Craig-ddu, up and over Y Lliwedd, down to the lake Llyn Llydaw, skirting the E.end, then up to the lake or tarn Glaslyn, (where we witnessed a helicopter rescue - a fallen walker - there were millions of them). Other casualties were the scouts whose gear was blasted into the tarn by the rotors' air-downcurrent. On we pressed up the the 3,560 ft. summit of Snowdon,(I never ever wanted to climb Snowdon by any other manner than the mountain railway!). Some of the party were glassy eyed and passed unseeing past the Brittania Mine. One thing that kept us going was the thought of the cool refreshing drinks to be had at the summit cafe - it was shut that day! Still the view from the top was grand, rarely it seems, do we have such clear skies. We came down through Cwm Caregog, looking at some old slate quarries on the way.

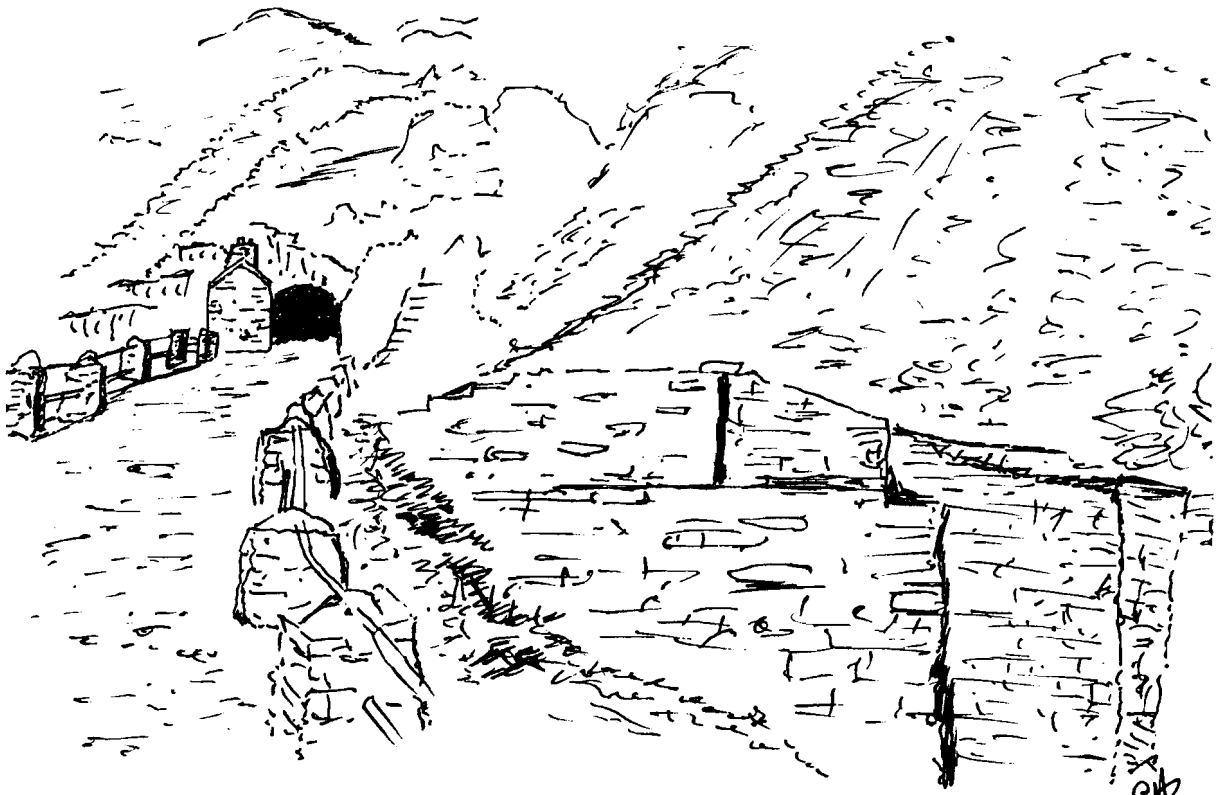
Thank you Peter.

Sunday saw us at Glodfa Ganol the slate mining museum at Blaenau Festetc. It was the first time for some of us,and for those who had been before, there wre new things to see. The 'do it yourself', helmets provided, underground walk, had been considerably extended. Access is via Lefel Fawr or , wait for it, Holland's Main Tunnel on Floor Five. This is one of the 30 floors of the great Oakley Slate Mine and the walk takes one deep into the mountain to the deep workings on the New Vein. Well worth the effort. The place is lit.

Mr.Williams the owner told us that the pumps had been stopped in the recently abandoned explosives store in the Croesor Slate Mine,and gave us permission to visit the place.

Firstly we went up into Cwmorthin, a valley above Blaenau F. Slate works abound here and we passed many by for our intention was to reach the

Rhosydd Quarries past the lake and up at the head of the valley. What an impressive walk. Rows of ruined workers' houses, slate bounded enclosures, railways,chapel, officials house. We were sure that the ruined house had been used for rifle practice! After a stiff climb at the head of the valley, passing a most remarkable water-wheel pit, we arrived at further ruins on the site of the quarry. We soon found the adit, a spacious, possibly half-mile level in which there had been rope haulage. The tunnel arrives at a wide junction, or station, from which very large chambers can be entered. Turning R. here brings one to the foot of a great incline and at the foot of this was the unusual off-loading wheeled platform,and incline trolley still attached to its wire rope. Ahead,a short passage led into a huge flooded chamber. There was an entrance in the far wall but none of us felt like swimming.



THE CAUSEWAY ACROSS TO HOLLANDS MAIN LEVEL

The incline led steeply upwards,affording glimpses from side windows, into monstrous'caverns', and we were to find that the sheaved brake wheel was still in position whilst to one end of the wire rope which ran the full length, was an enormous iron counterweight. From here there is access into more huge chambers opening out into a large open quarry. It was possible to climb out here and thus do a through trip.

Despite mutinous females we went on over the moor to the Croesor workings. Scrap men appear to have been at work here, but the level was unlocked and ran for a great distance to,once again, a station or siding. From this an incline disappeared down into blackness,and continued upwards beyond the reach of our lights.Down the incline we came onto a level, or working horizon, which took us to immense chambers in which the explosives had been stored. They were cleared of debris and gravelled and this made them appear even larger than they might have done. Girder and wood bridges spanned frightful chasms with the slowly rising water gleaming evilly far below. We noticed that wooden hand-rails, on which one might lean, were almost cut through in places and left - did someone really want to kill some unknown visitor?

The water was rising very slowly and obviously the place had been pumped by electric pump but probably in earlier times it was done by water powered mechanical device. At any rate the whole place was filling up. Certain other old parts of the mine were entered though in places this meant balancing on wooden joists,being all that remained of wooden bridges - all of the thinner wood having decayed away;or on 'intact'

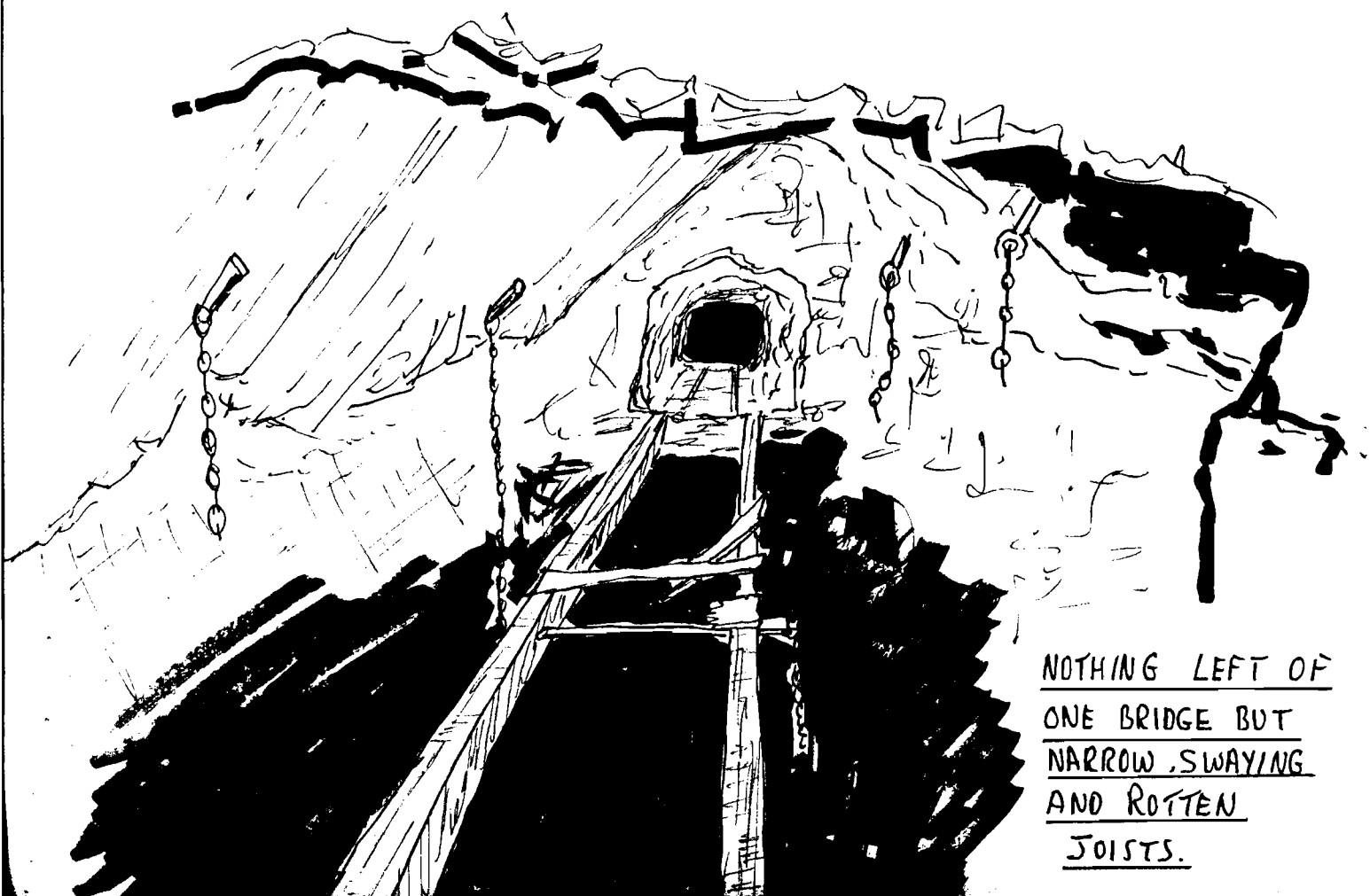
ROTTEN TIMBER BRIDGES WERE CROSSED. OVER FEARFUL CHASMS.

wooden bridges were one had to gingerly step on completely decayed planks keeping directly above the hidden joists to avoid going through.

These stretched over jagged blocks or greeny blue water of no known depth.

Some of the little visited chambers reached this way were breathtaking in their immensity. Clearly all this was to be lost - how regrettable.

Croesor Mine was electrified in 1904 with 220 V. o.h. wires supplying a home-made loco, said to be the first electric mine loco in Britain. Electric lighting was installed in places. Current was supplied by water - turbine powered generators.



NOTHING LEFT OF ONE BRIDGE BUT NARROW, SWAYING AND ROTTEN JOISTS.

Monday, another blazing day and we set off to look at the mines up along the Afon Dylif (to the east of Croesor Cwm). Signs of the mill, buddles and other concrete work, were noted behind the new car park at about 443.607. As we progressed up the valley, remains of the aerial flight were spotted lying on the ground, but higher up we found several towers, and the end turn-around wheel arrangement, still standing. Two quite interesting adits were explored but nothing of any great extent. Monday also saw several of the group return home.

Tuesday found E.H. P.F. & M.W. at the N.Wales Quarry Museum just outside Llanberis. A must for the I.A. student the museum is located in the extensive workshops of the Dinorwick Quarry which are virtually intact and complete with their equipment. The visitor will be surprised at the scope of work, including iron founding, carried out here. There is a short trail which involves the Vivian Quarry, and a steam railway, (as quaint as these Welsh lines can be) to Port Dinorwick - complimenting perhaps, the Snowdon Mountain Railway.

The mammoth workings for the C.E.G.B. power station are all underground here and when the scheme is completed few will realise its presence. No way were we going to get into the place but visitors will be taken around after completion. They did have an interesting indoor exhibition though - a bit of P.R.

Our trip took us on to Parys Mountain Mine in Anglesey. Here we bumped into A.W. & P.B. and we had a good look around this great openworks for copper....a huge deposit which controlled the worlds copper price for much of the 18th. C. The port of Amlwch, from which the copper was shipped, was also looked at.

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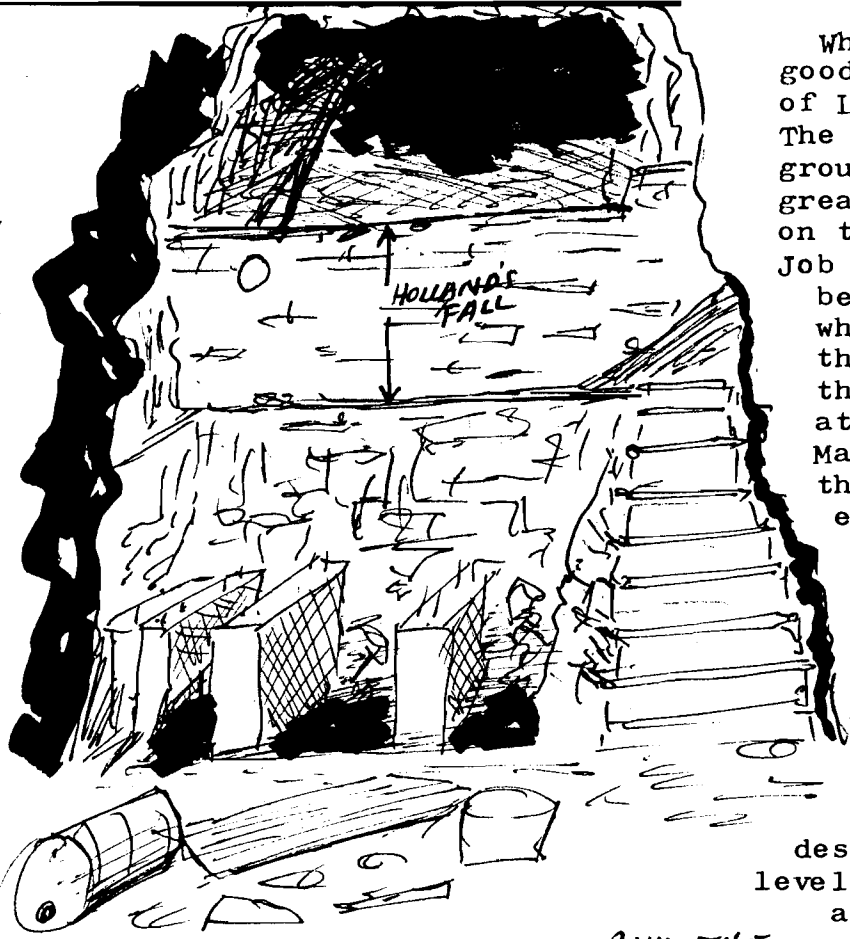
Later in the year E.H. & M.W. paid another visit to Welsh Wales. First stop was the large Parc Mine (lead) nr. Llanwrst. This is sited in Forestry Commission plantation and it seems that they now own the mine! What a most interesting system this is and we certainly never completed the job. Another visit is a MUST. We were not challenged but another party later on, was. It is hoped that the matter will be resolved in a satisfactory manner. Unfortunately one is dealing with British bureaucracy.

A wonderful Zinc Mine below Llyn y Parc was got into through a most unlikely drain sized entrance. Here again is a must for a future meet! This is an extensive mine on several levels and there is no description for this newsletter .... thing is the place hasn't yet been ruined by the 'cowboys'. It was in the great Cathedral Stope that M.W. began to act somewhat strangely but to avoid embarrassing him I won't go into that. Nevertheless several of us do find ourselves glancing at him, from the corner of our eyes, especially when he is doing anything strenuous. But take heart Mark - it will pass.

We again visited the Croesor Quarry. The object was to take better photos; alas my lousy flashgun decreed otherwise! The water had risen quite a lot and we reckoned that after winter of 1981 the 1st level to be reached from the incline will be submerged. There will be a period however, when there will be sufficient depth of water in the level to enable one to canoe through the system - mind boggling really, but eventually the water will reach the roof of the passages and prevent entry into the chambers. On reflection though, by using ladders from certain 'windows' in other parts of the mine it may be possible to enter some of these chambers above water level. The best stuff will be lost forever however.

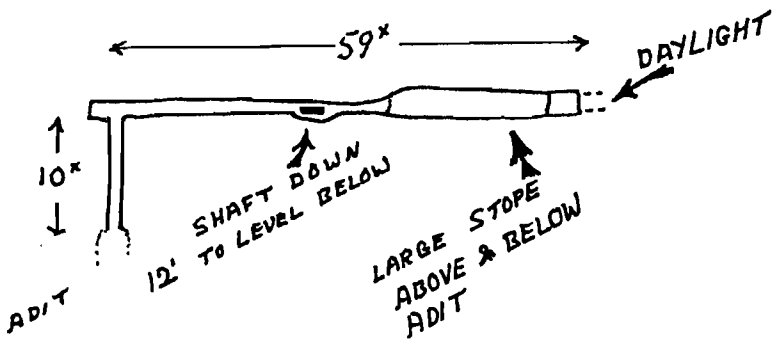
We climbed up the incline (there is a dam at the bottom with a rather awkward climb up its wall) from the adit, and were stopped at the top by strong security bars of iron - the place has been an explosives store remember. Behind the grid, we were able to look up a wet deep shaft to day. This probably served as a shaft for power and also for ventilation. The walls around here were coated with what appeared to be a carbon slime. Side entrances into the top of a great chamber were noted. Self had a nasty experience at the bottom when starting over the dam wall. An iron pipe being used as a hold, snapped off (completely rusted) cart-wheeling me down onto the ledge below where I miraculously avoided falling down onto the engine beds below in which case it would have been impossible to avoid injury.



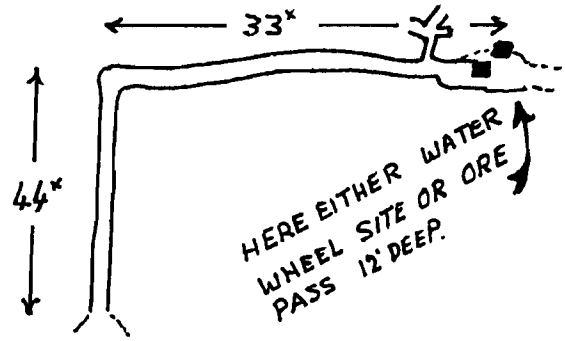
LOOKING UP THE INCLINE FROM THE ADIT IN CROESOR.

Whilst in the region, we had a good look at the surface remains of Llanwrst Mine, Cyffti and Pandora. The last two offer very good below ground trips. Cyffti Mine has had a great deal of restoration work done on the surface remains. This was by Job Creation labour we are led to believe and instigated by the F.C. who own a great amount of land in the area. We also went high up onto the moors above Festiniog to look at slate workings around about Manod Mawr. We found so much, that this area too must have a field excursion as well. Just too much to describe here. There is also a strange mystery - but best not to be written about!!

We also had a look at a mine at Rhyd, on the Garreg/Tan y bwlch Road. The yellow spoil heap is clearly seen amongst the firs - or what are left of them for there was a disastrous fire here in 1980 destroying acres of woodland. The level is quite a long one but without any side passages. There are some small stopes. I suppose it isworth a look in passing. There are the ruins of a small mill here and a lower buried adit.



TOP LEVEL YSTRAD EINION



MIDDLE LEVEL - YSTRAD EINION

— SKETCH PLANS —

HAS WATER DUCTS IN FLOOR.

Visit to Plumbago Mines, 18-2-80.

The fallen walls of the old guard house lay in a weather worn pile of broken stone. Two hundred years had passed since the Red Coats, chilled to the marrow in their lofty outpost, gazed out across the wilder reaches of Borrowdale to the flanks of Glaramara, cold and unfriendly in her shroud of snow and mist. (Phew Ed.)

The guard house, built around the deep level adit of the Borrowdale Plumbago mines, had once housed soldiers whose duties it was to search the unfortunate miners, worn and weary after a hard days graft, for traces

of 'wad', almost pure graphite, which in those far off times could fetch as much as £5 per lb.

On a cold Wet February morning in the not so distant past, another troop of amitious young people were observed marching single file up the long steep drag past the guard house and even higher up the fell. Four hundred feet above Seathwaite Farm they finally arrived at the entrance level which they had set out to explore.

Ten C.A.T. members and three guests assembled inside the entrance whilst Peter Dawes rigged a handline across the top of a large shaft which was encountered almost immediately. With the team safely across Peter Fleming pioneered the way along the low winding level beneath several ore shoots to where it came to an abrupt end three hundred ft. into the fell side. It was decided that the best direction in which to proceed was 'up'. The nearest ore shoot was scaled and a knotted rope lowered to aid the less agile members.

At the top of the shaft a level branched off in two directions, one of which was explored to where the water became sufficiently deep as to deter further exploration and so the main effort was was concentrated on ascending even higher. Mr.Holland abandoned an attempt to scramble up a rather steep ore chute while Peter Dawes and Mike Mitchel climbed an adjoining shaft which from the bottom seemed rather wet and draughty. While the ascent was progressing Messrs. Holland and McFadzean set out along the remaining level. Iron rails on wooden sleepers were soon encountered, laying in short lengths of heavy angle bar, still in situ, andin remarkably good condition considering their age. Several deep shafts in the floor were traversed and a rabbit warren of passages and ore shoots leading off in all directions were discovered.

Sixteen ft. above the sticky brown mud of the tunnel floor, a large chamber could be seen through a hole in the roof. Several attempts were made to reach the hole but the wall proved too steep and the mud too slippery. By this time the rest of the team had arrived and one of the climbers succeeded in struggling through the hole and lowered a rope. The chamber proved to be a worked out ore body and another level could be seen emerging from a hanging wall some 30 ft. above the floor. This too was eventually reached by the more acrobatic members and the greasy rope again belayed and lowered. (Rope greasy not because of cooking oil but because of the graphite -Ed.)

ONE OF THE CLIMBERS SUCCEEDED....

It is worth mentioning that at this particular point in time the members and guests of the C.A.T. were treated to a rare display of aerial gymnastics by a man in a yellow cagoule. Stuart Cole (for reasons unbeknown to us) decided that a less orthodox route up the wall was called for and duly entertained those gathered below with his impression of a human yo-yo. This was the first of many such incidents of the day.

The level at the top of the pitch proved to be a gold mine. The remains of an old hand winch and kibble were discovered and other artifacts such as rusted spades were uncovered. Of special interest was an old leather jerkin, complete with brass buttons, still strong and supple after 200 years in damp conditions.

The level continued for about 40 ft. before becoming blocked with deads. This was excavated by Pete Fleming, Mark Wickenden and Alan Westall, who after a ten minute bout of digging broke through to the top of a shaft where the roof was adorned with dozens of stalactites, the longest being five inches. (Wow! Ed.) During the course of the dig Mr.Westall came across another spade, the blade of which boasted fine iron crystals.

The group descended back into the chamber via the greasy rope, through the hole and into the muddy level. The hollow thud of a body hitting

wooden staging resounded strangely through the workings as Mr.Mitchel proved he was every bit as agile as Mr.Cole and didn't need the aid of a rope to break his fall. Unfortunately this incident was witnessed only by Jill Aldersley.

Two more shafts were traversed while Mr.Holland explored what he thought to be the Grand Pipe, the main worked out plumbago deposit in the mine. It turned out to be a very large ore shoot which required some rather dangerous manoevres on Eric's part but the ascent was finally abandoned due to lack of gear.

Mike Mitchel discovered that one of the shafts in the floor gave access to the adit level so it was mutually agreed to return that way. The descent was comprised of two pitches. The first a thirty foot vertical shaft and the second a fifty foot inclined shaft. The former was descended by a variety of methods, the first few people being lowered by Peter Dawes onto a stance between the pitches. Mr.McFadzean employed a 'figure of eight descender while Messrs. Wickenden and Westall abseiled with karabiners. Mr.Dawes demonstrated his (now famous) 'Free Fall Technique', a method not widely used due to its unsociable qualities and general disregard for life and limb. It is a simple but effective means of descent and the only equipment necessary is a greasy rope.

The speed of the fall is controlled by the participant banging his body against the vertical walls, thus causing friction - it also has the added effect of scattering any bystanders gathered at the shaft's foot. Miss Aldersley descended with the charm and grace of a ballerina (Eh? - Ed) and was hotly pursued by Eric (my God I've burst a main artery) Holland, perfecting the Peter Dawes Free Fall Technique. It seems some folks won't learn by the mistakes of others.

A pulley was used in the inclined shaft and the team reached the adit level at a controlled rate thus effectively curtailing the days outbreak of manufesting bodies accumulating in dark corners. (Ed.- this appears to be plain gibberish). After a short walk the team emerged from the wad mine onto the cold eastern slope of Grey Knotts. Dark clouds rolled across the wintry sky as night approached. To the fireside go now ye men of the earth, hot broth, cold beer and a reet good crack. Who could ask for anything more?

Members present.
J.Aldersley
Stuart Cole
P.Dawes
P.Fleming
E.Holland
S.James
A.McFadzean *
F.Riley
A.Westall
M.Wickenden

Guests
D.Mitchel
M.Mitchel
J.Smith

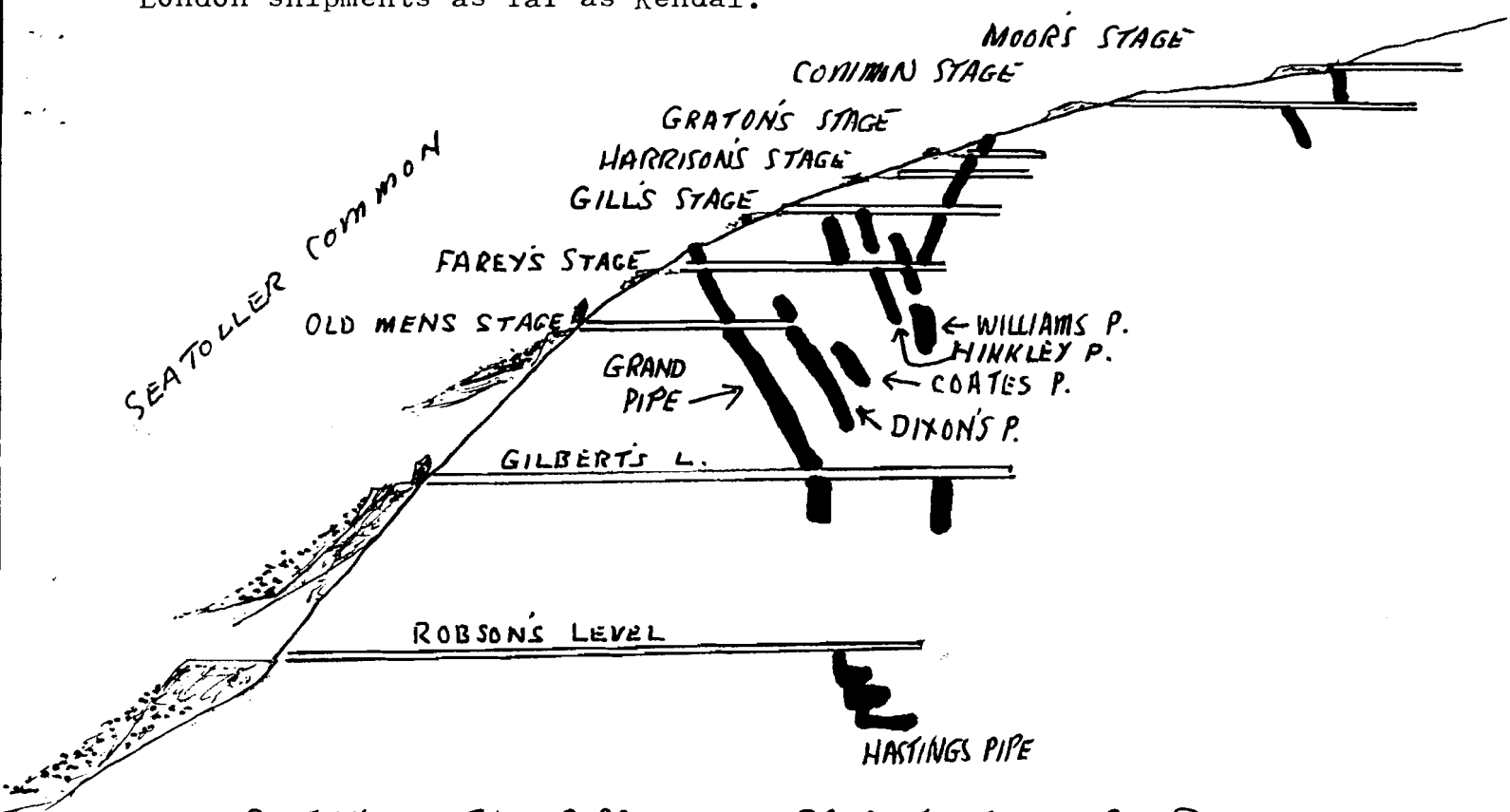
Sidenote. (It was supposed to be a footnote..Ed.) An interesting conversation took place outside the adit between the first members out - what had the miners themselves talked about as they sat on the warm grass eating their bait, perched high above the sleeping valley of Borrowdale. Beer? women? farming? What had they thought of the mine itself, the wad, the tunnels and the many coloured minerals. Was it to them a source of wonder and achievement, did they ever stop to ponder over the complexity of their underground workplace, or was it simply -

"Nowt burra dirty girt hooal".

THE FREE FALL METHOD OF DESCENT

Editor writes.... A further trip was made in 1981 and the intention was to make an abseiling down-trip down the Grand Pipe into Gilbert's Level a couple of hundred feet or so below. Some of the party were new to the place whilst others saw parts of the mine they hadn't visited previously. I think that we started in Gill's Stage and descended winzes and ore passes down to Farey's Stage and on down to Old Mens' Stage. The shaft yawned wide and deep - and wet. Alas, Fleming, Dawes & Mitchel discovered that our rope lengths were too short for the bolted pitches, and they were hoisted back up to Old Mens' Stage. The workings here are quite interesting being hand chiselled . In fact a very corroded chisel was found in a, 18in. high 'tunnel', and it is clearly very old indeed. Despite the failed objective I think everyone enjoyed the trip and I have no doubt there will be another visit sometime.

Perhaps some notes on the place will be of interest, although it is well written up by Postlethwaite and also by Molly Lefebure.
The mine originally belonged to the monks of Furness Abbey - The Abbey of St.Mary .... one of those destroyed by Cromwell at which time it fell to the Crown. Granted by James 1 to William Whitmore and Jonas Verdon and about 1614 it passed into the family of Sir John Banks. The graphite was of great purity and was considered to be of such import to merit a special Act of Parliamnet for its protection ... 25th George 11. The material was found of value for casting bomb-shells, round shot, and cannon balls. It became a felony to unlawfully enter the mine "or wad-hole of wad or black cawke, commonly called black lead, or unlawfully taking or carrying away any wad, &c., therefrom, or buying or receiving the same, knowing it to be unlawfully taken". Still, an illegal trade was carried out and it is said that secret sales were made at the George Hotel in Keswick. In 1800 a guard house was built over the mouth of at least one level and armed men were kept there during the night. The miners were stripped and searched on leaving their work. Obviously there were many opportunities to get the stuff out and hide it - it was always possible to sneak back after dark. An armed escort accompanied the London shipments as far as Kendal.



SECTION OF THE BORROWDALE GRAPHITE MINE BASED ON POSTLETHWAITE.

It is said that the graphite was first found between Farey's Stage and Gill's Stage where the Grand Pipe comes to surface. An ash tree, uprooted by a storm, revealed all! As far back as 1778 the best stuff fetched 30/- a lb. In 1833 the price reached 45/- per lb.

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Pseuds Corner

Estimating the Depth of Pitches, Shafts etc.

This is sent in by Chris. Jones to whom no blame, claims for new helmets, broken bones etc. can be made.... should the formula fail!

(so he says ...Ed.)

This is a simple way of estimating the depth of a pitch. It will only work for drops in which nothing intervenes, i.e. stemples, platforms etc.

Method. Choose a stone of 200 - 300 grams (8-10 oz) and drop (not throw) it down the shaft. Then count or use your watch to measure the amount of seconds it takes to reach the bottom. The equation is $P=35+(t-3)$ where P= the distance to be measured (why not say depth? Ed.) and t=time. Here is a table which you may care to draw on your tackle bag, back of your hand, back of Mark's helmet etc.

time (secs)	pitch (metres)
2.5	25
3.0	35
3.5	50
4.0	60
4.5	75
5.0	85

Clearly this pseudo-intellectual has failed to take into account the possibility of the stone landing upon a bat on the wing, or a cave swallow. Its rate of fall would be quite altered and a false reading would be provided from which a hairy situation might develop. Ed.

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SEWER TUNNEL. Eric your Editor took another party up the level at Martin..... what a wet night! It was a pleasure to get underground. Actually it was very noticable that most of the members were not there! Mark Wickenden came. Peter Fleming was given the opportunity to cancel his China holiday so as to be on this trip - he declined, his weak excuse being that he had been in before! As Chris said, "Some people have got their priorities all mixed up".

The tunnel in fact is quite interesting geologically and might merit an article in a future newsletter.

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ANNOUNCING A MAJOR NEW BOOK ON CORNISH MINING HISTORY ... 'CORNWALL'S CENTRAL MINES: THE NORTHERN DISTRICT, 1810-1895. This is the biggest book on the subject and the first to break new ground (no pun intended) for 6 or 7 years. This book by Tom Morrison will be of great interest to all those interested in this the home of hard rock deep mining. A companion vol. on the southern district is under preparation. The price is £9.50 incs.p&p from ALISON HODGE, 5, Chapel Street, Penzance, C'wall.

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THE BELOW ARTICLE SPEAKS FOR ITSELF!

Forestry Commission stops dumping of weed killer drums

By a Staff Reporter

The Forestry Commission has stopped dumping chemical containers down disused mine shafts because of public concern over the threat to water supplies. The order, announced this weekend, follows inquiries by the Guardian into the dumping of containers of the highly toxic weed-killer 245-T in North Wales.

The Guardian's story in June revealed that metal drums, supposedly cleaned of the chemical, which is banned in the United States because of alleged links with foetal deformity and miscarriage, were thrown down an old lead mine by foresters until September last year

Checks on samples taken from the mineshaft in Gwydir Forest, Snowdonia, have proved that weedkiller was left in the drums, and small quantities could have seeped into the earth. The mine is in the Snowdonia National Park, three miles from reservoirs serving Betws-y-Coed and Llanrwst and 20 miles from a third feeding water to Liverpool. But the Welsh Water Authority and the Forestry Commission say that water supplies are safe.

A commission spokesman said: "We have had an assurance from the occupational health medical officer that the cans present no threat to water supplies. The nearest reservoir is fed by streams on higher ground to the north."

According to head forester Mr Bill Taylor, some of the 22 gallon and five gallon drums taken out of the old lead mine last June were perforated. Their contents were sent to BP for analysis and, although there are more canisters in the pit, the commission says it would be dangerous to remove them because of a risk of rock-falls.

But the spokesman added: "In view of public concern we will not be placing any cans down pit shafts in the future."

Last April a farmer, Mr Shaun Scheltinga, of Tun-y-Groes, Llanrhychwyn, went down the mine of a rope. He said' "I handled three of the drums. Two had about a pint of brown fluid in each, and the third about a gallon. The smell was similar to rotting flesh. I became aware of a burning pain in my throat and I could feel is spreading downwards into my lungs. I decided to leave the shaft at once and did so with some difficulty."

Mr Scheltinga alerted council officials, who ordered tests on a 7.7 litre sample found in drums brought out of the mine two months later. BP's analysis, which the commission accepts, showed the sample contained about a pint of 245-T.

According to manufacturers' instructions, used cans should be washed out in kerosine, crushed, and buried under three feet of earth. None of the 245-Tcanisters found in the mine had been crushed.

Dr H. H. Crann, chief executive of the Welsh Water Authority, said: "We are perfectly happy about all public supplies. We can't see any possibility of seepage over that kind of distance and the local geology is impervious."

The danger of dumping poisons down old mines is pretty obvious. The mine will probably have a drainage adit and the water will obviously run into a stream or a lake. The danger to the mine researcher is alsoclear enough. As a result of this publicity the unions have forbidden their members to use the stuff which is highly poisonous and the long term effect of exposure to the chemical is not known. Is this the ingredient in the American 'AGENT ORANGE'? The U.S. govt. it seems is being mightily sued by military personnel who handled the stuff and who are now in trouble. Hard luck, of course, on the poor devils who were sprayed by the stuff. But it now seems that American planes dumped a lot of it over their own camps. Keep your eye on the newspapers.

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Discovering slate and copper

Eleven Cumbria Amenity Trust members met in a variety of waterproof clothing, on Sunday to investigate and explore the ancient Penny Rigg slate workings at Tilberthwaite.

Led by the secretary, Mr E. G. Holland, the party were shown features relating to the winning of slate in the more labour intensive days.

The layout of the old Penny Rigg Copper Mill was explained by Mr Holland and the feed-water channels which brought the water to the water wheels, from a considerable distance, were followed.

The old Horse Crag Level, driven during the 1800s for some 3,000 ft. at a cost of about £10,000, was explored to a collapse in disordered ground at which point members were about under the bed of the Tilberthwaite Gill.

The ore, it was explained, was brought out of the level to the mill. The old underground slate quarry along this level was closely examined.

It was much drier underground and a species of bat and several types of moth were observed in hibernation.

The party next 'hibernated' to the Three Shires Inn, and after refreshments, the workings in Atkinson Coppice—including the Cathedral Cavern—were walked through and it was noted that even below ground one cannot get away from graffiti, scribblers.

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TRIPS TO HODGE CLOSE AREA. Well it is all slate hereabouts but a lot of the working has been underground and most of it is open. Quite tame, and some say boring. We had a trip in Sept. 1981 which included an abseil or ladder pitch down to the floor of the Parrock Quarry Mine. We were able to get up through the rocks at the end of the level and so emerge into the quarry itself but it is rather hairy. It is not the first time we have been in this area however. It is remarkable just how much quarrying/mining has gone on in this relatively small area. The Cathedral Cavern, so called, provides several splendid abseiling/laddering practice pitches. perhaps it is about time that we had a further practice meet there.

ANOTHER NEW BOOK. At last! It's out - Eric Holland's latest. Called CONISTON COPPER MINES-A FIELD GUIDE and that is just what it is.Get it from your book shop at £1.95 or a signed copy from me at £1.90 which includes the postage. It is hoped that it will not be too long before the *HISTORY* of these mines is published. Although written, Eric is busy(or will be when he gets this newsletter out of the way) cleaning up the manuscript. So it will be next winter with a bit of luck. Not surprisingly the guide is selling like hot cakes at the moment, but doubtless it will slow down.

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FENCING OFF MINESHAFTS 'IMPRACTICAL'

RENEWED calls for old Lakeland mine workings to be fenced off or capped as a safety precaution are doomed to failure, it was claimed this week.

No matter how many people are killed or injured by falling into old open shafts, it is unlikely anything will ever be done. For the problems surrounding any operation aimed at closing the mines are virtually insurmountable.

Safety calls doomed to failure, claim

So said Mr Michael Taylor, chief officer of the Lake District Planning Board which owns thousands of acres of land in the National Park — and therefore hundreds of old mines.

He told the Gazette: "We are obviously concerned about the mines but the fact is it would be quite impracticable to safeguard them all.

"What we have done is to carry out a substantial programme of fencing around the more dangerous ones but despite this, and despite warning notices on the fences, people will still try to go inside.

"They simply seem to think it's fun to lark about near the mines and don't realise it can lead to trouble."

Unharmed

The calls for greater safety measures have come following the accident in which a Yorkshire postal worker had a miraculous escape from a mine shaft near Coniston two weeks ago.

Forty-year-old Mr Brian Winrow fell 25 feet down a mine while exploring but was pulled out almost unharmed two days later when his cries for help were heard by a passing group of schoolchildren.

Mr Taylor said: "It is fine for people to say we should do more to make the fells safe, but what can we do in these circumstances. No-one even knows how many old shafts there are, even less where they are.

"And if you try to imagine the problems that carrying great loads of concrete and building materials up to great heights on the fells in order to cap old mines would bring, then you can see the dilemma. It would be very, very costly indeed."

He added that fell walking was meant to be an adventurous pasttime in which people could get away from the pressures of everyday life, but if warning notices were stuck up on every corner and regulations brought in to control where people could go, then a great deal of the adventure and fun would be spoiled.

Army

"We couldn't justify spending so much money and spoiling the enjoyment of so many people just because odd people happen to get themselves into trouble from time to time."

And Mr Nigel Sale, Regional Information Officer of the National Trust — Lakeland's other large landowner—agreed: "The numbers of them are just so vast that unless we had an absolute army of people and machines to fill them in there would be no chance of doing anything."

He said the Trust had been co-operating with the Planning Board to fence off the most easily accessible mines to discourage people from going near them, but it was going to be a long time before many more were fenced — if ever.

"I wonder whether we should even be expected to do this." went on Mr Sales. "In my opinion it is a bit like saying we should ban all cars from the National Park because they can sometimes be dangerous.

"What I mean is that there must be a point when people have to be held responsible for their own actions, and if we have tried our best by fencing off some areas and posting warning notices everywhere else I think we have reached that point."

This little lot appeared in the Westmorland Gazette of Fri.Aug.1st.'80. A man on his own went up into the Thriddle Shaft Day Level, up at the top of Thriddle Incline.He did not think he needed a light! Falling 20 ft. or so onto the balance-bob platform he was there for two days until found by chance by a party of passing school children who heard his cries. At one end of the platform there is the very deep Thriddle Shaft itself. If he had fallen into that it is likely he would never

have been found - his body, that is. A few years ago, below here, an American boy was hauled out of the fenced off stopes after a 10 hour rescue involving some 80 persons, overnight. He was 'lucky' he at least survived. He spent about 18 months in hospital - he had fallen about 165 ft. How did this happen? He had climbed over the fence, and despite the entreaties of his friends, he jumped over the open stope. He cleared it but slipped back in. More recently in almost the same place a man, who had climbed over the fence, was standing on the very edge of this fissure when the bank gave way. He did not survive.

How do you prevent this sort of thing from happening? Can it ever be prevented? The fells are crowded out with fools we regularly come into contact with them. They are brought or carried off in their hundreds every year. Some die. Of course not all of these people are fools, accidents will always take place but those incidents at the mine need not have happened. It is publicity we need like a hole in the top of our heads. Michael Taylor, was on the ball in the foregoing news paper article. Meanwhile we have to sit back fingers crossed that there will be no more nasties but at the same time knowing that there will and that it is just a matter of waiting.

CLIMBERS CRITICISED

INEXPERIENCED explorers who ignore warnings and wander off alone and ill-equipped into disused mines were criticised by conservationists this week.

Following serious accidents in the Coniston Copper Mine, members of the Cumbria Amenity Trust have suggested that chains be put across dangerous shafts and warning signs erected.

There have been several incidents of people being trapped or hurt in the mine, the most recent in July when a man was trapped down a shaft for two days.

In most cases people got into difficulties after they climbed over fences, ignored warnings and were not properly equipped.

Precautions

"Accidents happen to the best of people despite precautions, but we cannot be sympathetic to people who injure themselves and risk other people's lives," said Mr Eric Holland, secretary of the Cumbria Amenity Trust.

"When people have to be rescued with monotonous regularity from another tunnel with a 25 feet drop onto a ledge, friends and I put up an iron warning notice and chains across the brink of the hole.

"This was in the late 1960s and since then there have been no accidents."

The Lake District Special Planing Board agrees with the Trust that the solution is more fences but says "the idea is impractical.

Mr Holland plans to publish a guide book of Coniston Mine next year which will pin-point which tunnels are dangerous and which can be regarded as safe.

The Trust of which he is secretary, aims to preserve any unique remains above and below ground for students and historians.

We wrote to the press on the suject →

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UNNATURAL PHENOMENA. Some of us on the Easter '81 trip to Wales were mightily puzzled when Alan McFadzean (or someone who looked like him) and his lady friend Ann, seemed one moment to be there, and next not to be there! In fact they seemed to quite disappear into thin air! There were those amongst us who swore that they had been around, and those who insisted that they hadn't. There were one or two who said that they "thought" that they had been with the party when it went up into Cwm-orthin, again there were those who were sure they hadn't. Eventually it was decided that they hadn't been there at all and that it was another couple sprawled far below on the mountain grass when we did the epic Snowdon trip. But it was all answered by a gnarled old Welsh soothsayer who happened to pass while we were all standing around examining the place where we "thought" their tent had been pitched. We were, he informed us, the latest victims of a playful spirit which haunts the fir forests in these parts ... the BEDDGELERT BOGGLE which apparently enjoys the consternation caused by its plasmic manifestations. It is we were assured, quite harmless and is best ignored.

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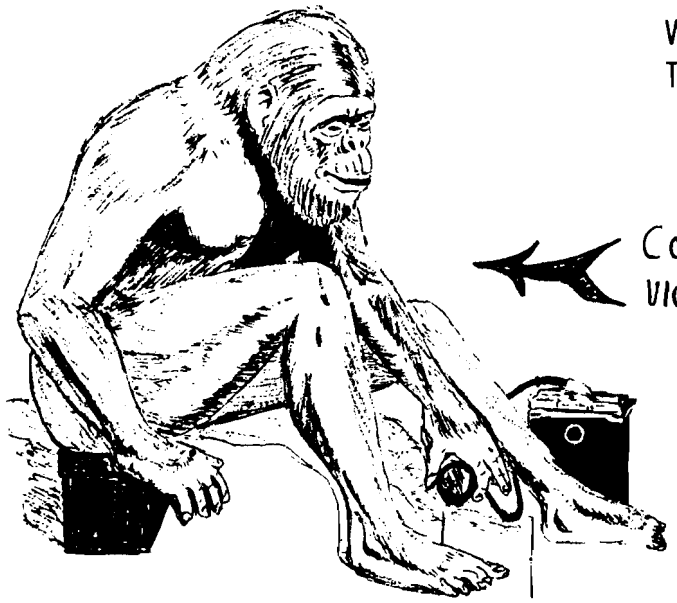
BEWARE OF ACID. We all know the results of having battery acid on our skin or clothing... or come to that caustic soda or potash which is used in alcaline lamps. I expect most of us have experienced leakage from our lamps. I expect most of us have seen other peoples leaking lamps thrown into the same bags as tackle. Acid will damage artificial fibre ropes. Apart from the cost in money, the cost to your personal safety is far more serious! Transport your batteries in poly bags and not in contact with slings, harnesses or ropes or wire sided ladders. Remember... you are very much on your own when you are abseiling it down a shaft .... there isn't the security of a lifeline.

A NEW DISEASE has been reported which can strike with suddenness :-

WICKENDEN'S SYNDROME

SYMPTOMS: The victim will be seem behaving at variance with safe practice, e.g. hugging decaying pitprops. Swaying about, and making incoherent mouth noises. He will insist that he will never be able to make it to the surface. He will insist upon a rest every 20 ft. or so. He can thus be left behind inadvertently. The victim will complain of a shortness of breath, chest and stomach pains, and an irregular heart rythm. He will insist repeatedly that it is not indigestion and that he has not strained himself lately. He will have a ghastly pallor and suggest that there is bad air in the mine.

CURE. It is essential that the afflicted be got out of the mine with all haste and to the nearest pub that sells real ale. The cure can be as swift as the onset of the complaint.



Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

CONSEQUENCE OF NOT REMOVING THE VICTIM FROM THE MINE WITHIN 4 HRS.

In Salzburg there is a Spa and health centre extolling the virtues of a new type of treatment in the "radio-active thermal tunnel". Herein is radon gas with an average concentration of 4.1 curies per ltr. of air in the "therapy area" and temperatures rising to 42 deg. C., (approx. 108 deg.F.) with a humidity of 97%. The mine is described as the only existing natural hot air emanatorium in the world and the radon is said to be passed out of the body in a matter of hrs. without any of the after effects there being no danger of radiation in the course of treatment!

How very pleasant - and yet in the early part of 1980, certain events revolving about radon in South Crofty tin mine in Cornwall, were prominent in the media at that time.

These are summed up in the following article from the Metal Bulletin.

Cancer strikes South Crofty

25.3.80

MINERS at the South Crofty tin mine in Cornwall, owned by St Piran, stopped work last week because they believe that high concentrations of the radioactive gas radon, in the mine may have caused deaths from cancer of some of their colleagues.

There have been five cases of cancer at the mine in the last four years, according to officials of the Transport and General Workers Union. There is also the possibility of 15 more cases of cancer among men, no longer working at the mine, who show symptoms of cancer.

Although radon gas is present in all tin mines to some extent, parts of the South Crofty mine have concentrations of the gas which are up to four times greater than the limit recommended by the Health and Safety Commission. Poor ventilation in the affected parts of the mine and seepage of radon gas from adjacent abandoned workings appear to be the causes of the higher levels of gas.

The miners have refused to go back to work unless they are given special helmets as a temporary measure. These helmets are designed to filter the air around the wearer, but according to a spokesman for the Health and Safety Commission, they are not effective against radon, whose particles are too fine.

According to the spokesman, there is no legislation regulating acceptable levels of radiation, although the EEC is negotiating limits at the moment. The National Radiological Protection Board at present makes recommendations on acceptable levels. There is dispute as to what constitutes an acceptable level.

The spokesman also said that better ventilation is probably the solution for the South Crofty mine. Spokesmen for St Piran were not available for comment.

● This is not the best of times for St Piran. The full executive of the Takeover Panel was due to meet all the parties involved in the share-owning controversy surrounding the troubled St Piran (MB Jan 29), on Friday of last week.

SO WHAT REALLY IS THE POSITION ??????????????

Radon gas is released by certain types of rock, but yet it appears that radon itself is not the real danger! It is the 'radon daughters' i.e. the fine particulate solids into which the gas decomposes and which may be trapped in the lungs where they continue to emit alpha particles. Yet the radon hazard should be kept in proportion ..... current statistics indicate that when compared with typical miners' diseases the risk to the worker

underground in most metal mines due to exposure from radon is relatively small.

At first, radon was thought to be present only in uranium rich mines. Then it was discovered in clay & shale mines and in other metalliferous mines. It is now known to exist in caves and almost all below-ground excavations.

The below letter may be of interest.....

Let radiation danger fly out of the window

IF HILARY Bacon is as concerned about the dangers of radiation as she appears to be, then rather than winding up her car windows as she passes the Winfrith Atomic Energy Establishment she should make sure the windows of her cottage are left open as much as possible.

According to new figures published recently by the National Radiological Protection Board, the biggest source of radiation exposure in Britain is from radon gas trapped in houses and other buildings. It comes from radioactivity in the soil and building materials.

Radon accounts for a third of the average annual radiation dose to which the population is exposed; nuclear power for a tenth of 1 per cent! — Yours faithfully,

P. N. Vey,
Director of Information Services,
United Kingdom Atomic Energy Authority,
11 Charles II Street,
London SW1.

U.K. regulations regarding the control of exposure to radon in mines have been, and possibly still are, indecisive. Limits adopted are, or will be, probably based on U.S.A. requirements. In that case the worst mines may have to introduce measures to limit the exposure of underground workers.

The issue of radiation in caves is at present excercising the minds of the American N.C.A. The director of the Ozark Underground Laboratory, in a letter to Caving International, No2. Jan.1979, makes certain observations - but these are more of a rule-of-thumb nature. Apparently, spending 6000 hours in caves may increase the lifetime risk of lung cancer by about one chance in 1000. At the same time, however,

dollar research we couldn't even establish whether or not alpha radiation, as encountered in caves, does increase the likelehood of cancer. Radon concentrations are related to the presence of the gas and the ventilation of the system. This also depends on the seasons & weather variations.

The gas, radon, results from natural decay in the Uranium 238 series. This decay is a process where an atom of a heavy radioactive element breaks-up producing a new type of element and releasing energy in the form of an alpha or beta particle or a gamma ray. Uranium is present in most igneous rocks at a level of about 4 parts per 1,000,000. As a result of the U238 long half-life... ($t\frac{1}{2}$) of 4.56×10^9 years the gas concentration remains fairly stable. It has been estimated that on average each square kilometre of the earth contains 4.5 tons of uranium and 7 tonnes of thorium - within .5 metres of the surface.

All the decay products of the uranium series are solids, with the exception of radon, so that all solid products before radon will be entrapped in the strata unless released by mining or erosion. When radon is produced it is able either to directly find its way into mine/cave atmospheres along fissures or in water. An example (near home) of the latter is in the end of No 1 Level at Force Crag Mines where a high concentration was recorded, brought there, it is assumed, by a spring of water cut, long ago, by the level. The end has now been sealed off.

The half-life of the gas itself is 3.8 days which means that it will remain in the atmosphere for a relatively long period. The half-life is the time taken for half of the original number of atoms of the nuclide to decay to the daughter products. It means that the probability of decay within the respiratory tract is quite small. The decay products of radon are solids and the first 5 have quite short half-lives. Being ionic they adhere to dust particles in the atmosphere. When inhaled some of this dust becomes lodged within the lungs and the ions cling to the lung tissue. Once inside the body further decay takes place releasing radiation and causing tissue damage. It is thus the radon daughters which pose the threat, not the gas itself.

The unit which has been adopted for the measurement of the level of radiation due to radon daughters is the 'Working Level' (W.L.). This unit is defined as any combination of daughters in one litre of air which will release 1.3×10^5 MeV (Megaelectron Volts) of energy during decay to Pb_{210} (RaD). The unit may be related to the Curie (Ci) by stating that at equilibrium 1 W.L. is equivalent to a radon conc. of 100×10^{-12} Ci/litre (1 Ci is equivalent to 3.7×10^{10} disintegrations/sec.

In the U.S.A. the dosage allowable came to be based on a 170 hr. working month. This unit can be used to specify the max. cumulative dose of radiation permitted in any one year. For example, if the max. dosage permitted is 6 W.L.M., an individual may work a full 12 months at a W.L. of 0.5; or for 6 months at a W.L. of 1.0 and for the next 6 months in a radon 'free' area. The max. permitted level, current in the U.S.A. and now the U.K. is 4.0 W.L.M.

Prof.P.A.Young of the Dept. of Mining at Leeds University, informs that they operate a teaching mine at Greenhow and are required by the Mines Inspectorate to keep a check on staff and student. In the warmer months ventilation is from inside the mine to outside and stagnant gas is drawn from old workings (and natural fissures as we can expect). It seems that they have had staff members who in 40 hrs. have clocked-up doses of .2 W.L.M. Prof. Young states that at 1.0 W.L.M. in a year it is recommended that medical supervision is necessary. In 1979 they were playing safe and carrying out blood tests in any event.

P.A.Young cites investigation into cancer deaths in the Swedish iron mining regions. In the general pop. these are statistically below aver - age but "much above average in und - erground workers". However he states that "with a cumulative exposure of between 2 and 36 W.L.M. during the total period underground there is some evidence of an increase in annual mortality (from about 1 per 10,000 to 2 per 10,000). At cumula - tive levels in excess of 170 W.L.M. annual mortality rises to 21 per 10,000". He adds that "activities of 1 W.L. may commonly be found in unventilated areas, so that a few months exposure even at this level may have a statistically significant effect (particularly if we bear in mind possible synergisms with surface atmospheric pollution, smoking and/ etc.)."

Holland, compiler of this article, is given to understand that large amounts of radon are emitted from coal-burning power stations and presumably

from coal burning domestic grates & factories. Presumably the gas is given off in foundries, iron and steel works, and brick works (oil refineries?).

It is clear that good ventilation is required to keep the radon level in mines and caves to an acceptable low level. At the same time it is prudent to point out that significant build-ups can develop in unventila - ted cellars and basements, catacombs etc. The rate of emission however, in many of these places is not likely to be constant for there are too many variables. Radon brought into mines by water will have been dissolved under vary - ing degrees of hydrostatic pressure and will be at once released upon entry into the lower pressure of the mine and/or cave. Further release can be expected with the evaporation of the water in the mine/cave. In a mine such water would be better ducted out of the workings or to a pumping sump. Grouting and thus stopping the inflow might be undesirable in that the water could well discharge from other points in the mine, possibly in situations where control might be difficult e.g. in a back-filled old stope, or a collapsed working.

The gas, and its daughter products, present as they are in various amounts in different rocks, are released during mining rock and mineral. In 1981 the gas was detected in considerable amounts in a section of the Carrock wolfram mine which section was then closed off until better ventilation was achieved. It follows that significant amounts of the gas and its products can accumulate in disused mines (and caves) where the ventilation has been reduced or brought to a halt by the collapse of some part of the workings. There is usually at least a little air movement in such conditions but in <u>once ventilated</u> blind internal shafts and blind headings in such workings then the build-up might be quite appreciable. Barometric/seasonal changes can cause the gas to emerge from innaccessible parts of the old workings. The air flow/air exchange rate varies in any mine throughout the year and differs from mine to mine. It will also differ from rock type to rock type for some strata is permeable and fissured and other solid.

The whole thing has been described as a 'Pandora's Box of problems. As for the cave/mine explorer how much of his life is spent underground? And how much of that is exposure to radon? And at what levels of conce - ntration? There are so many variables that no answer may be forthcoming. Presumably any research would need to be prolonged for many years and be quite impossible without total co-operation of evryone engaged in our dangerous pursuit and even then results, if any, might be totally non-conclusive.

Radon Detection and Radon Daughter Measurement

THE alphaCARD system (offered by alphaNUCLEAR, 6380 Viscount Rd., Mississauga, Ontario, Canada L4V 1H3, Telex 06-983611) is a passive radon detection method which provides a sensitive measure of radon in soil-gas. Inexpensive and re-usable (up to 20 times), the alphaCARDs are primarily used as a uranium exploration tool to collect radon (and thoron) daughters in as little as 12h of soil exposure, after the radon daughters have achieved equilibrium. The alphaCARDs are interpreted on the spot with a microprocessor-based reader (see photo above) which can also give soil gas thoron levels by reading them a second time a few hours later, after the radon daughters have decayed away.

The alphaCARD reader can store up to 127 data sets in memory, where each set consists of time of day, location code, serial number and count data corresponding to a grid or baseline location. The memory contents can be recalled at any later time or printed out on an optional base camp printer. The microprocessor will also monitor for and signal various fault conditions such as battery condition, memory failure and invalid data entries or commands through various error messages.

The system is said to provide a quick, accurate and inexpensive method of uranium exploration where the cost per reading can be below $3.00.

Radon or thoron daughters, once resident in body tissues can pose a health hazard, and in order to guard against it or minimise health risks to workers, for example in uranium mines or plants, alphaNUCLEAR has also developed the alphaDOSIMETER — a personal monitoring device worn by miners which samples the air for its radon and thoron daughter content. Through the use of a central computer readout system, up to 500 dosimeters can be analysed to give individual exposure values directly in health physics units known as Working Level Hours. By this means it is reportedly possible to accurately measure alpha particle exposures due to radon daughters regardless of the location, environment or job of the wearer.

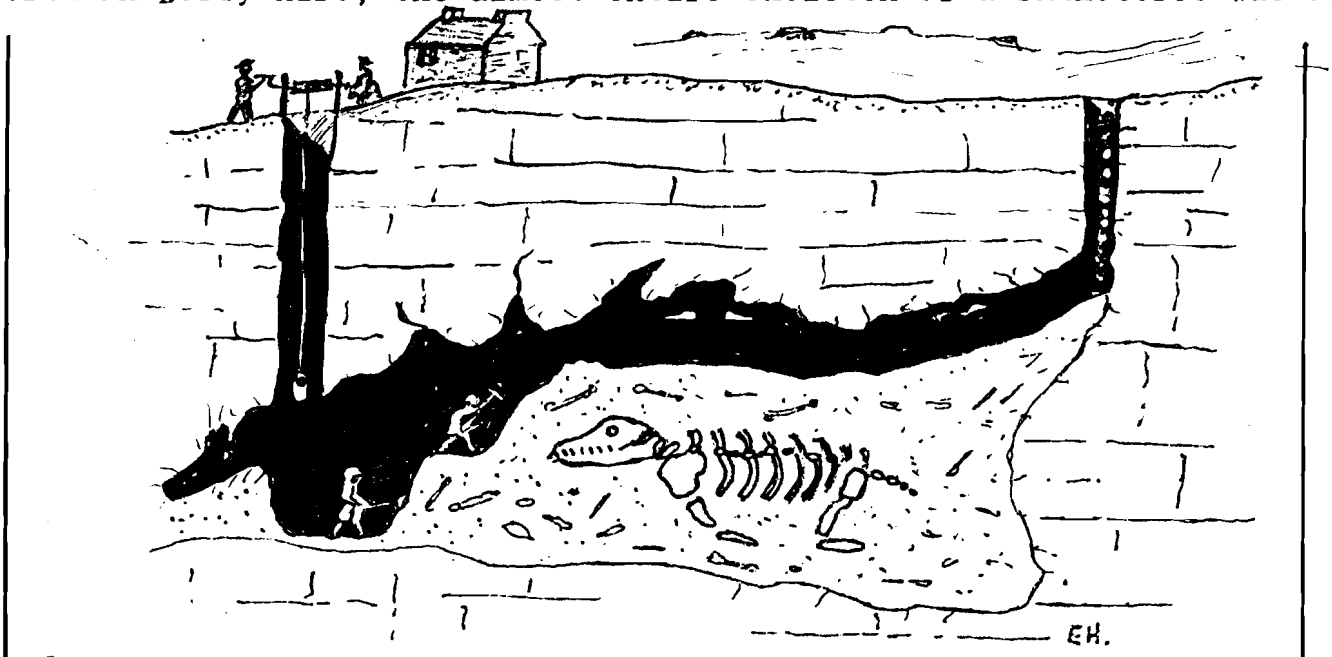
The alphaDOSIMETER (see above) is a compact module which attaches directly to the miner's lamp battery. It samples the air continuously for the entire working shift through the use of a servo-controlled constant flow pump and filter system. Alpha radiation from radon daughters entrapped in the filter is measured by a solid state silicon detector and the resulting counts are stored in memory. At the end of a working shift, the miner's battery pack (with the dosimeter) is plugged into a battery charging rack which is also connected to the dosimeter processing unit for automatic interpretation. Three separate readings are taken at particular time intervals during the changing cycle such that both radon-daughter and thoron-daughter exposure values can be calculated.

The system is said to have excellent sensitivity with a minimum detectable signal of 0.0005 WL with a one hour sampling time. The unit is robust and reliable in order to withstand typical mine working conditions. More details are obtainable from alphaNUCLEAR at the address above.

PRETTY PICTURES.

Eric Holland in addition to his Coniston Mines books has published on his own behalf a series of prints - reconstructions of the copper mines. There are seven so far and these are Old Engine Shaft, New Engine Shaft, Bonsor East Wheel etc.,Upper Mill, Low Mill, John Willie Shaw's Level and Deep Level. He has also brought out two coal mining prints - The Price of Coal and Working in a Thick Seam. To members of the mining fraternity all prints are available at £1.50 each plus 50p for post and packing.

FOUND IN MINES. Odd things have been found in mines. Sometimes totally unexpected minerals have been discovered - completely unexpected in the Coniston Mines for example were magnetite,nickel and cobalt. An old newspaper calcified solid but still readable in parts was found in an old part of a West Cumberland iron mine. There is the old story of a frog or toad found within a block of coal in a mine. It must have been regarded as an ill-omen when a human skull was found in the workings of the Hodbarrow Mine. Human skeletons have been come across too. In the great underground slate quarries in the Old Man of Coniston a ships winch is quietly rusting away - a steam engine,it was worked by comp. air latterly. In a very old,collapsed and filled up tin mine in Malaya, Holland found wooden spades,beating sticks and an opium pipe. We are all familiar with the strange rust crystals sometimes found on iron objects in mines. One of these exploded with a sharp crack causing a ladder climber in Greenside to be quite startled.Curious fungus forms are legion.In a cave at Paviland, Glamorganshire the bones of a primeval elephant were found whilst in a cave in the Dream Lead Mine at Wirksworth in Derbyshire, the almost entire skeleton of a rhinoceros was found!



RHINOCEROS IN CAVE IN DREAM LEAD MINE - WIRKSWORTH.

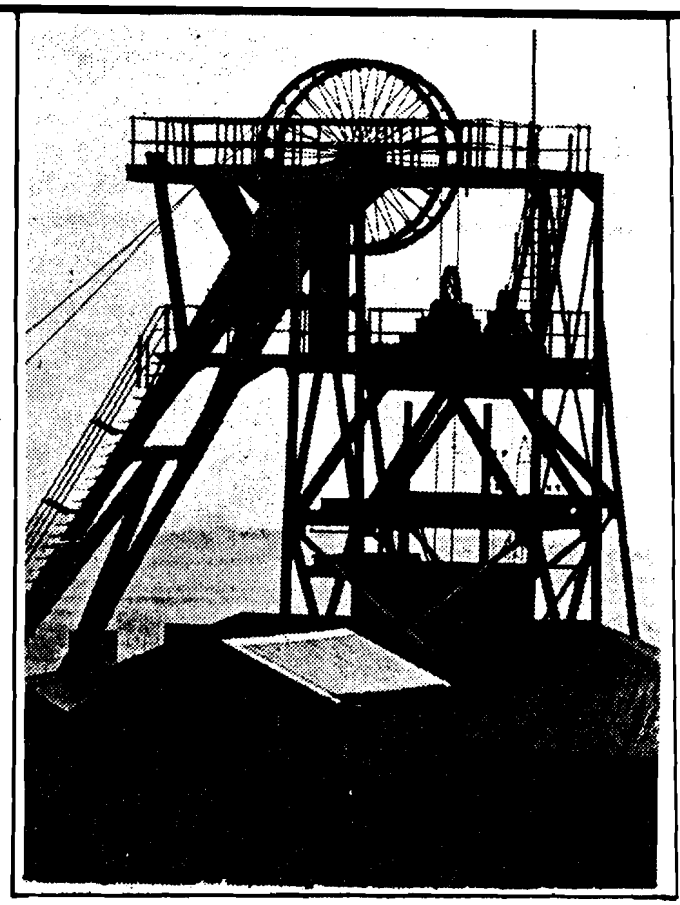
ISSUE No 2 of the NEWSLETTER will cover N.A.M.H.O. in some depth (no pun intended); Our explorations at Coniston Mines; The Biggest Dig in the WORLD .... which can only be DING DONG can't it? Insurance,plus accounts of our latest field trips and general news. There will also be details of Mine Tours Ltd's activities at Nenthead.

LOW MILL CONISTON MINES.

BECKERMET MINE CLOSES.

We were sad to read about the closure of British Steel's haematite mine near Egremont. Understandably it was a serious blow to the workers some 200 of them who were being made redundant in an area of high unemployment. The mine opened in 1903 was one of the deepest in the region. It is also believed to be the last mine of its kind in Europe.

Closure came and the scrap men moved in in with almost indecent haste. Then came rumours that the mine was to re-open by a private company, some said by the mineral owner. To date this has actually happened and the mine has been working ore in a shallow part worked deposit. Alas it now appears that there is a strong possibility of closure... problem is difficulty selling the ore, and water in unexpected quantities. It will be a shame if this private venture comes to naught. If this does happen the miners will indeed be the last of the 'Red Men'.



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A MINE TO CLOSE. It appears that the Carrock wolfram mine is threatened with closure. They have lost a deal of money over the last few years and the problem is low grade ore.... less than ½% tungsten in places so we are informed. Perhaps some new firm might come along with additional finance. It will be a great pity if the mill be dismantled. More exploration might reveal some more ore. The writer has wondered for long why no drilling programme has ever been made to investigate the veins in depth, below adit.

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A MINE TO RE-OPEN. Yes it is our old friend FORCE CRAG. What a chequered history. More money has been obtained and the mill is being re-fitted. We hope to hear more about things here very shortly.

. . . . .

MINING COURSE at Whernside Manor. 20th to 28th August 1982. For details of the Draft Programme write to your Hon. Sec. The fee is £80.00 which includes food, accomodation, transport on excursions, lamps, hard hats and tackle but NOT wetsuits, personal clothing or footwear, towels and soap. A £20 deposit payable to North Yorkshire County Council should be sent to J.D.Carlisle, 2 Florence Terrace, Rosedale East, Pickering, N.Yorks. Maximum No. will be 22 persons. If less than 9 apply, deposits will be refunded. Ideally send your cheques through your Hon.Sec. as requested by the organisers. The course involves two days at a field centre in the N.Pennines.

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THE NEXT NEWSLETTER will include information on the National Assoc. of Mining History Organisations and our Insurance Policy.

. . . . .

Member David (Blunder) Blundell, we understand, is having trouble with his bulbs. We offer our hand in sympathy in this his time of frustration and need.

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Late News Flash .....

Remember the last visit to Wales by Eric H. & Mark W.? We uncovered a mystery, we thought. It was a quarry high up on Manod. A quarry which seemed not to have any production! Plenty of waste - great dumper loads, in fact. All new buildings! Then there were the aerials on the remote moor. It seemed a place where the traditional Welsh hospitality was not going to be found. Anyway we had plenty to look at up there and we certainly found enough to warrant a re-visit. But our curiosity was aroused.

And then .... an article in the October 25 Observer explains much. It is here set out below :-

Bunkers hidden in Welsh hillside

from TONY HEATH
in Denbigh

A DISUSED slate mine deep underground in North Wales is being prepared for a key role in the event of a nuclear war according to labour MP Mr Frank Allaum

The Manod Mountain three miles from the village of Ffestiniog is honeycombed with tunnels carved out when quarrying thrived in the area. The system contains caverns of cathedral-like proportions some more than 70ft high.

According to Mr Allaun the caverns contain two new concrete bunkers. New high-voltage cables are fixed to the side of a tunnel which leads to two large caverns lit by arc lights.

The MP also said that a ship recently unloaded computer parts at Porthmadog nearby on the Cardigan Bay coast. These were destined for the mine, he claimed.

Manod lies at the end of a metalled road that twists and climbs for three miles up Cwm Teigl, a remote valley well off the tourist beat.

Unlike ordinary slate mines the entrance is big enough to take a three-ton truck. A huge metal door protects it and a long pipe protrudes from the mountain.

A green Land-Rover with Department of the Environment markings was parked at the entrance when a photographer arrived to take pictures last week. She was obstructed by a man from a squat concrete building nearby who shouted 'No pictures. You will be reported to the police for taking pictures without my permission.'

He retreated into the building before we could ask who employed him.

No notices indicate that the property is private and although villagers are reluctant to discuss the mine, they confirm that security vans call there. Recently an unmarked van drove up and workmen at a quarry were told to look the other way.

Sir George Young, a junior Minister in the Environment Department, told Mr Allaun: 'The department is not engaged in the work as described by you.'

While the Home Office concedes that the Government is looking for a sub-regional war headquarters it maintains that a location has yet to be chosen.

The Manod would be a front-runner as a secure hide-away. The extraction of slate has left a massive layer of hard rock overhead. It is as tough as reinforced concrete and as much as 100 ft thick.

During the last war treasures including the Crown Jewels, the bronze screen and stalls from the Henry VII Chapel in Westminster Abbey and paintings from the National Gallery were stored in the mountain

Mr Allaun said: 'I suspect that it is not only for art treasures. I suspect important people are going to be sheltered there.'

There is an airfield within 25 miles and the Central Electricity Generating Board is applying for permission to strengthen Porthmadog quay, in anticipation of the arrival of heavy equipment.

The Plot Thickens, what?