

NEWSLETTER NO. 22

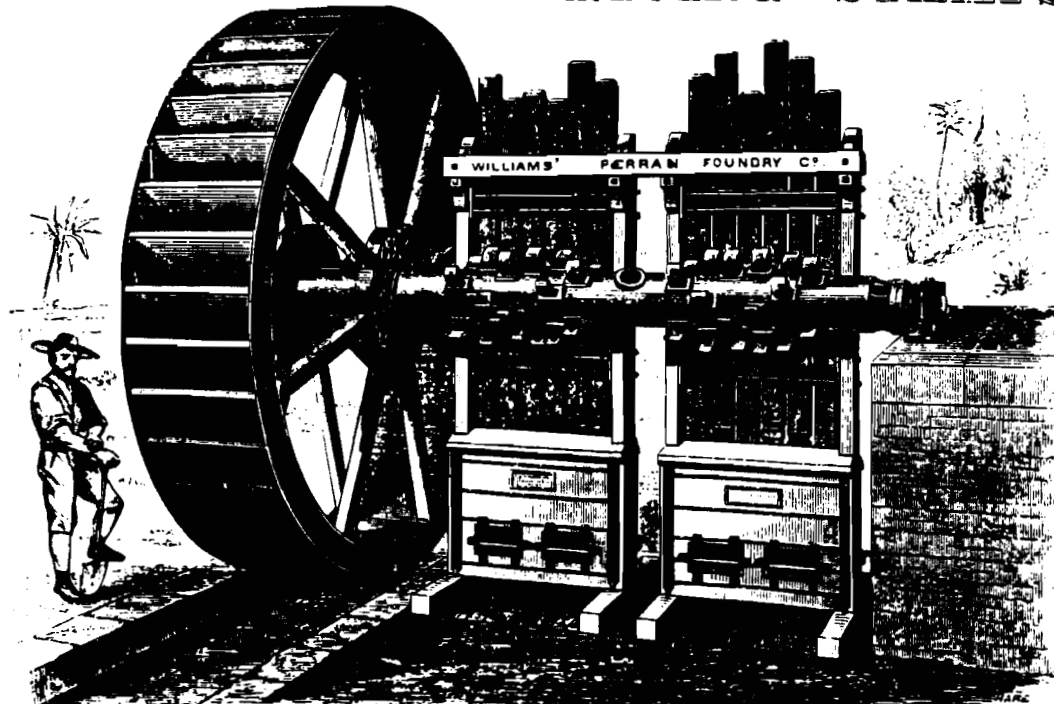
CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY

DECEMBER 88

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WILLIAMS' PERRAN FOUNDRY CO.

WATER WHEEL DRIVING STAMPS,



This illustration shows another arrangement of the Battery, each set consisting of 6 Heads of Stamps. Though from time to time a great many machines for Crushing and Grinding in different ways have been devised, with a view to supersede the Cornish Stamps, nothing has, however, yet been found which does the work either for Gold, Silver, or Tin, in such a cheap and effectual manner.

1 & 2 GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C.

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Many thanks once again to Margaret Fleming for photocopying the newsletter.

Thanks also to all those members who have contributed to the newsletter throughout the year. It certainly made my job alot easier and the newsletter much more interesting.

Editor.

FRONT COVER. from Williams Perran Foundry Co. catalogue reprinted by the
TREVITHICK SOCIETY



A very Merry Christmas
and a Happy New Year



BURNING THROUGH THE 'B' PITS

by McF



The "Whitechapel" discovered earlier in the year, and mentioned in
my last article.
This was a trolley for transporting kibbles underground

It was almost a relief to wake up that grey July morning and hear the rain clattering in the wheat field below Mr Wignall's study window. Leaping stiffly from my sleeping bag I peered out across the green fields of Hoff towards Appleby and the threatening clouds hanging heavily over Dufton. The summer was ending, as only British summers do - wet, early, and contrary to the wishes of the public. Some scientist proclaimed on Radio 4, as I was making toast, that our recent series of wet summers could be accredited to the deterioration of the ozone layer and the gradual melting of the polar icecaps. More importantly, I mused as I hunted through this unfamiliar kitchen for the low-fat margarine, the Ding Dong workings would be filling up and all because of some invisible hole in the atmosphere allowing the sun to frazzle the antarctic wastes. With this in mind I resolved to inspect my beloved crimson country as soon as providence allowed.

September had arrived when at last the opportunity presented itself. As I had feared, the water had risen by a good five feet. The Derby workings were again cut off and we were denied access to what has turned out to be our rapidly expanding mine system. I must admit, this summer's exploratory campaign has revealed more new ground than I ever imagined would be possible. Since I last reported, in the July Newsletter, we have made some remarkable discoveries, the most important of which must surely be the section of the **67yd Level** which links **Ding Dong** directly to the **B30 Pit**, Lindal Moor's most famous and extensive mine. Unfortunately for us, this main drive, with double tramroad and solid limestone roof, was totally under water, though there is every reason to believe that a decent summer, in the mould of 1976 or 1984, would allow us to wade along it to the **B37 Pit** bottom, at least, and, providing there is no obstruction, continue to the shaft station on the **B30 Pit Top**

Height. Earlier this year I would have considered this to have been beyond the realms of credibility. Now I am of the opinion that it is possible - providing we have the right weather.

In my last report I left off with the news of the discovery of the **Derby 68yd Level** main drive, the section I hoped would prove to link the East Stope with a shaft station in the **Derby Pit** engine shaft. The level was flooded to within two inches of the roof, conditions to deter even our band of amphibians.

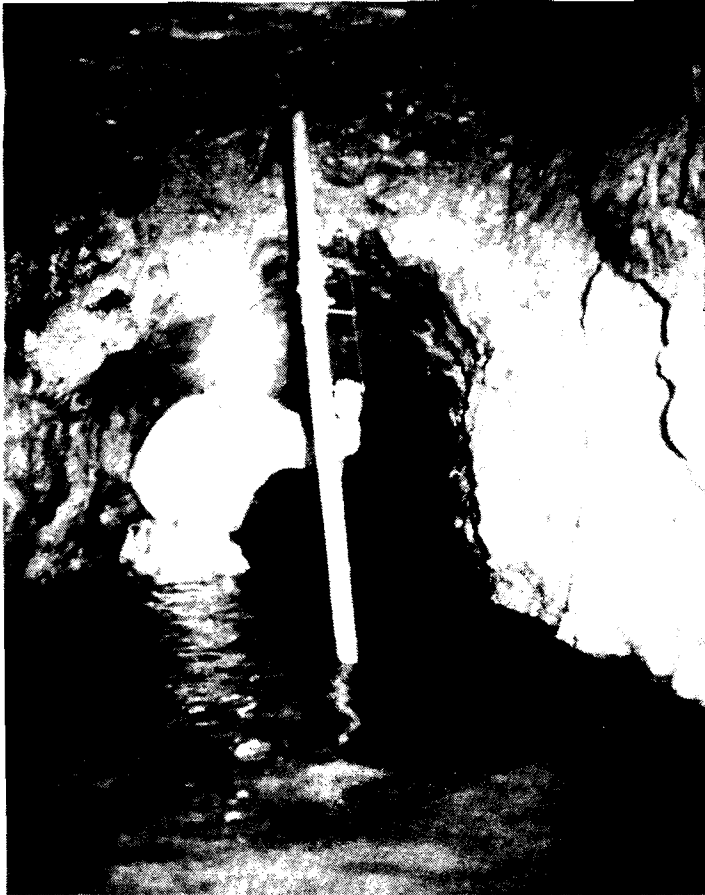
On the 1st of July, Dennis Webb, Bert Wheeler, Neil Pacey, Lee and Anne (surnames unknown), and myself, descended the Ding Dong workings to the 67yd Level, pleasantly surprised to find the water at its lowest level of the summer, an agreeable belly-button depth (depth ruling not applicable in Dennis' case). Fifteen minutes later, in the foot of the Derby workings, we observed that the water had fallen by at least eight inches in the Derby 68yd Level. We hurried through the Black Chamber and the East Stope to the restrictive gap in the jumble of rubble and pit props, through which Jonesy had spied the continuation several days earlier.

Neil and I slipped through the gap and into the water. Almost immediately I could see the shaft station, probably thirty feet away. As we got nearer, and with the water up to our shoulders, I observed something quite unexpected. I had imagined we would find a heap of rubble, possibly pinnel brought down from higher ground, but rubble nevertheless. Instead we were confronted by a terrific mass of tangled timber, great baulks of machined wood and narrower planks. Crushed, splintered and compacted, we saw before us the wooden shaft lining. It was obvious the lining had stripped itself out and come crashing down, followed by the boulder clay and pinnel which resulted in the creation of the steep-sided crater on the surface. There was not one single stone or rock splinter amongst the debris - just great, black, square-cut beams, some smashed, some in good condition; all tangled in an impenetrable mass.



Neil Pacey examining the timber of the Derby Pit engine Shaft
on the Derby 68yd Level

Photographing shaft stations, while standing up to one's shoulders in icy water, is a tricky business. Very satisfying, though, to just lean against those black beams in the quiet of the mine and ponder on the notion that you are the first person to visit the place since the last day of March, 1914, when the Millom Company hauled the dips up for the last time, uncoupled the cages, and dragged the headframe over with the winding engine before the steam pressure dropped. Very satisfying indeed. And there, in the freezing water and the darting reflections, everything began to slide into place. I recalled reading John Rigg's report of the final day. Rigg was the Buccleuch mine inspector though occasionally he visited the Derby Pit out of sheer curiosity. As they were dragging the headgear over he implored them to leave the shaft open for future lessees, rather than fill it in, as was the custom. And so they did! And that is why the shaft lining is at the bottom, crushed and splintered. That is why there is a deep funnel in the field and not a shallow depression where the fill has settled. They took his advise and left it open; the lining eventually burst under the pressure and through lack of maintenance. History unravelling in the dark of the mine. This is what it's all about, this is the very essence of mine exploration.



The Author with the Atkinson scaling pole below the ladder rise in the Derby 68yd Level

Heartened by our discovery we made our way back through the Black Chamber to a ladder-way Bert and I had come across in 1986. This ascended from the main drive of the Derby 68yd Level, seeming to rise about twenty feet. An old ladder was pinned to the cheek though this was rotten and tended to shiver when touched. All six of us struggled in the restrictive tunnel, floundering about in the seething red water as we tried to erect the Atkinson scaling pole and thrust it up the rise. At length, and after Bert had retrieved the pipe connecting clip he dropped in the waste-deep water, we pushed the pole up the hole and very nearly succeeded in flooring Anne with a slab of rock we dislodged in the process. The slab fell among us like a depth charge, drenching those who had managed to keep themselves relatively dry. Neil made his way to the top of the rise, only to find the way on - a level - blocked with fallen deads.

Not risking leaving the pole erected in the level (in case the water rose and we lost it), we dismantled it and hauled it back to a chamber near the head of the Derby Rise. By this time it was getting late so we started out for home and a pint in the New Inn.

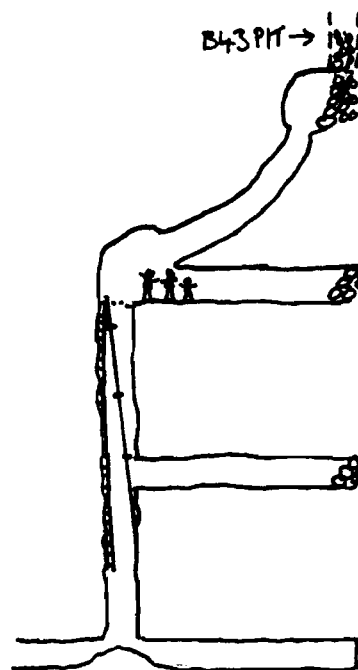
A poor turn out for our trip on the 15th; only me and Neil turned up and he was half an hour late because he wanted to watch Mister Ed. Why should England tremble? Down in the Derby land we hauled our five remaining sections of Atkinson pole (the sixth is permanently employed as a belay) through the workings to a small rise. This Neil managed to free climb, only to discover there was no way on. Picking our poles and tackle up again we made our way to another rise near the **B47 Pit**, one I had high hopes for, reckoning it would give access to the foot of the **Derby No.2 trial Pit**. Pole in position, up we rattled. Alas, another blank. However, Neil found a nest of beautifully white cave pearls which he considered to be adequate compensation. I was not appeased. I wanted ugly chasms ripped out by the greed of man, not nature's niceties.

At this point, and quite frankly knackered with lugging the pole, we decided to cut our losses and go for a poke around the Main Chamber, just to round off the evening. It was in this leisurely frame of mind we happened upon the double tramroad section of the 67yd Level streaking off towards B30. Neil squeezed down between the wall of the chamber and a large rock to find himself in a circular anti-chamber in the centre of which was a deep pool. Beneath the surface we discerned three levels leading off in different directions. I immediately recognised this as being the famous 'Y' Junction, often pointed to while examining old surveys, often alluded to in conversation. "Ah, if only we could find the bloody 'Y' Junction." Here it was, flooded to the gills, one branch leading into the crushed floor of the Main Chamber, another, known to the miners as the **Tewet Mire Road**, heading straight up to **Carkettle Pit** and workings we have not dared to dream about, the third cross-cutting through glorious limestone to the 37 Pit and the Holy Grail in Whitriggs Bottom. That night we made our way back to Ding Dong in a pensive frame of mind. This latest development increased the scope for further exploration to a horizon hitherto undreamt of, and for me it represented the dismantling of an important barrier. Up till now, all our discoveries had been confined to the isolated, though complex, group of workings to the east of Pit Lane. Despite our concerted efforts all our leads had brought us to new ground within that group. Exploration had become an internal affair. Stumbling upon the main B30 artery (alternatively the **37 Height, Top Height, 50yd Level or 67yd Level**, to exhaust its impressive collection of names) had given us the break we needed, the all important link with the extensive ramifications to the west of Pit Lane, the B37 and B30 Pit ground. All we required now was a severe drought.

Our last trip beyond the waters took place during the evening of the 22nd of July. We noted with some concern, Dennis, Neil, and myself, that the water in the 67yd Level between Ding Dong and the Derby Rise - our only means of escape - had risen by five or six inches since our last visit. Soon it would be up to the roof and our crimson country cut off for another year. Once in the Derby workings we dismantled the Atkinson pole where we had abandoned it in the Cave Pearl Rise, transported it through the 47 Pit ground and the Main Chamber, and re-erected it in a tunnel running west below what has become known as the Air-Pipe Rise.

Ah, the Air-Pipe Rise. Long a subject of discussion and conjecture, this fine square-cut shaft had been on our hit list since its discovery by the late Mark Wickenden in 1983. Indeed, Mark had free climbed the first two 20ft stages, though there remained a third stage rising at a steep angle to areas uninvestigated. As our season was fast coming to an end we decided tonight's efforts would be concentrated on getting to the top.

We hauled the pole up to a ledge about twenty feet above the level, jammed its foot in a corner, and ascended the electron to a short tunnel which we followed for about thirty feet to a run-in. The rise ascended in its third stage from the end of this level, though far from being vertical it climbed in a spiral and at an angle of about 45 degrees. Neil picked his way up the muddy slope and found himself at the top after about thirty feet. No way on, he reported. Dennis and I then followed with a rope, just in case the retreat became tricky, and belayed to a convenient spike at the top of the slope. There was a small platform at the top, terminating in an extremely filthy run-in composed of glutinous red mud and sherds of pottery. A shiny piece of glass caught my eye, and rummaging around (as one does at times like these) I pulled from the sludge a bottle embossed with the legend CALIFORNIA SYRUP - SANFRANCISCO CAL. Frantic digging unearthed more bottles, rusty pieces of metal, and an old kettle. Goodness gracious, we had stumbled on a first rate Victorian bottle tip!



The Air-Pipe Rise

The question uppermost in your minds at this precise point in time will probably have something to do with the discovery of an ancient rubbish dump 150ft below a thistle infested meadow on the crown of Lindal Moor. Now it just so happens that I have the answer, for this, after a fashion, is more or less what I had hoped to locate. My diligent delvings into the meticulous reports of the successive Buccleuch mining agents had left me with no doubts that Harrison, Ainslie & Co. had not employed compressed-air boring machines in this area of the Moor, so the eponymous pipe running up the rise had not been installed to deliver power to the headings. Why, then, had the pipe been installed? Some time ago I came across references to water-balance pits operating in this area, in particular the B43, which, Jonesy and I once calculated, was situated in the immediate vicinity of the Air-Pipe Rise. I had even harboured the notion that the rise itself was the foot of the pit, though this theory evaporated when I stumbled on a reference to the pit's depth - too shallow by several fathoms. The bottle tip was the key to the mystery and, as in the case of the compacted shaft lining in the Derby Pit, its discovery allowed my fragmented information to slip perfectly into place. The tip was at the foot of the B43 Pit and was the result of infilling operations on its abandonment. The rise was put up from a drift from the 47 Pit during the 1880s, the plan being to work the 43 Pit ground and the 47 Pit ground from the 67yd Level and raise the ore at B30. The pipe was the drain from the balance mechanism, installed so as not to contaminate ore dumped in the rise for the furnace operators would not accept ore in a wet condition. The fact that the pipe ensured men climbing and working in the rise would also remain dry would not have been a consideration paramount in the minds of the management. Please excuse my cynicism. Twelve weeks of strike action have served only to bolster my opinions and re-affirm my belief that the industrialists of this or any other country exist solely to squeeze the blood and the self respect out anyone who does not possess an American Express card or a silly handshake.

We descended Misnomer Rise, leaving the electron suspended in

mid-air, the Atkinson Pole jammed in the breach, and a length of dubious rope dangling from the bottle tip. It is there now as you read these words, a collection of specialised equipment ready assembled for members interested in Victoriana. Now I come to think about it, I'm sure I saw a cobalt-blue codd bottle up there.

Now, you may be excused for thinking enough activity had taken place for a Friday night before closing time, but our steam was up and our hunger for knowledge insatiable. Darting through the workings to Coke Can Chamber we began to search among the colossal boulders littering the floor for a route down into the Tewet Mire Road, the aforementioned branch of the 67yd Level leading up to various pits at Carkettle. Within minutes Neil pushed a route through the rocks at the southern end of the chamber into a second chamber, as shaky as anything previously observed in mines situated in the northern hemisphere. Measuring perhaps 50ft by 40ft, and in places 20ft high, the Temple of Doom is a fine example of what the miners called "crushed ground". Situated in the B42 and B22 Pit ground, this "openness" has been formed by the roof collapse of a working somewhere below and is, strictly speaking, not a mine working as such. Peering nervously at the great open rents in the buckling bedding plane of its roof, the notion flitted through my racing mind that had Isaac Newton been standing next to me he would have shook his head and formed an alternative theory as to why an apple should fall from a tree.

Back in the relative security of Coke Can Chamber the search resumed. This time it was my turn to find a lead. In the solid limestone of the eastern wall, and about fifteen feet below the boulder on which I was perched, I discerned what appeared to be a level running due east. To gain access would mean slithering down between boulder and wall, a dicey manoeuvre without the tackle to extract oneself. We decided to push it at a later date, knowing, though not admitting, that the later date could be years away.



Chris Jones with the remains of a wheelbarrow
plus cast-iron wheel

Footnote:- A dig to open up a high level route into the crimson country is underway, the purpose being to by-pass the flooded 67yd Level. With the aid of my old friend (despite what they say) Anton C-P-T, we have broken into a ginnel running parallel with the Main Chamber. Much work remains.

Allen McFadzean, November 1988.

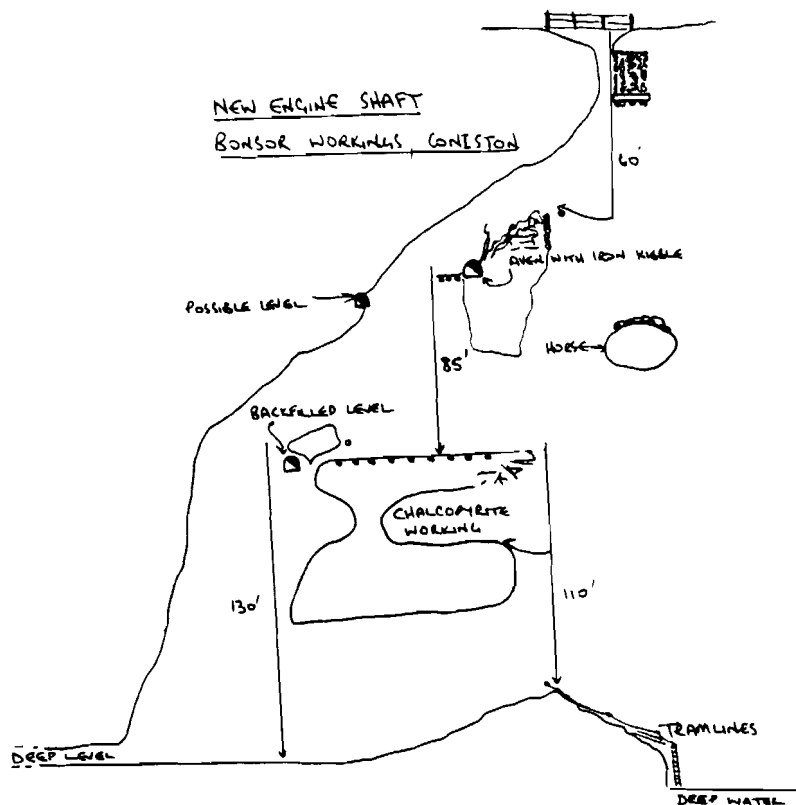
EXPLORATIONS BENEATH THE NEW ENGINE SHAFT

The Bonsor East Shaft meet at Coniston on 2nd October finished early, so Ian Matheson and Mike Mitchell decided to spend a couple of hours on a reconnaissance of the New Engine Shaft. There have been several attempts to penetrate the bottom of the stopes, and CAT groups led by Alen McFadzean first boated then swam along the flooded bottoms and were able to see but not to reach a pair of tramlines protruding from a rubble pile fifteen vertical feet above the water. This was thought to be part of the continuation of Deep Level which comes from Paddy End via the Great Cross Course. More recently a group led by Chris Jones abseiled down a shaft from Taylors Level to view this area obliquely from above, but again failed to reach it. The shaft itself, some 300 feet deep, awaits exploration, although Peter Fleming recalls meeting two cavers sometime around 1980, who claimed to have been down and discovered an anvil in a passage. A section in Posthlewthwaite shows a level between the surface and Taylors Level which extends north west. It was this level that we hoped to find.

Eighty feet of the one hundred and eighty foot rope were used to arrange a belay, and Ian abseiled from the surface through the round masonry lined hole. The stonework is supported by heavy timbers twenty feet down, and below this there is no indication of a shaft, the stope extending in both directions. Directly below is a horse of rock piled with debris. The rope was not quite long enough to reach this, but about sixty feet down and twenty feet to the left is a wall of masonry, with a possible level behind it. Ian failed in his attempts to reach this, gravity getting the better of him each time, but a bolder effort by Mike succeeded. Beyond the wall a short rubble slope led down to the remains of a jack roll and a section of what appears to be wooden air trunking. At the foot of the slope a rather fragile looking false floor gives into a small aven containing a small iron kibble. A peep over the edge of the floor revealed a vertical pitch of about a hundred feet to what looked like a floor. Having no more rope Mike and Ian returned to the surface.

The following Sunday, October 9th, after the conclusion of a Mine Rescue Practice they returned, together with Peter Fleming and Ann Danson, and all four reached the bottom of the hundred foot pitch, noting a possible but very difficult to reach and probably blocked level part way down. At the bottom there is a thirty foot section of false floor supported by jammed boulders, and at the NW end a scramble over large boulders revealed a small backfilled level beneath, which has not yet been explored. The heavy sound of water falling into a pool could be heard in the distance. The stope continues on and down at both this and the south eastern end of the floor, but there was no time to explore further. Speculating on the source of the waterfall whilst driving home, Peter Fleming concluded that it was probably caused by water flowing along the Great Cross Course from Paddy End and falling into the flooded stopes. If this was the case then perhaps the way on was clear!

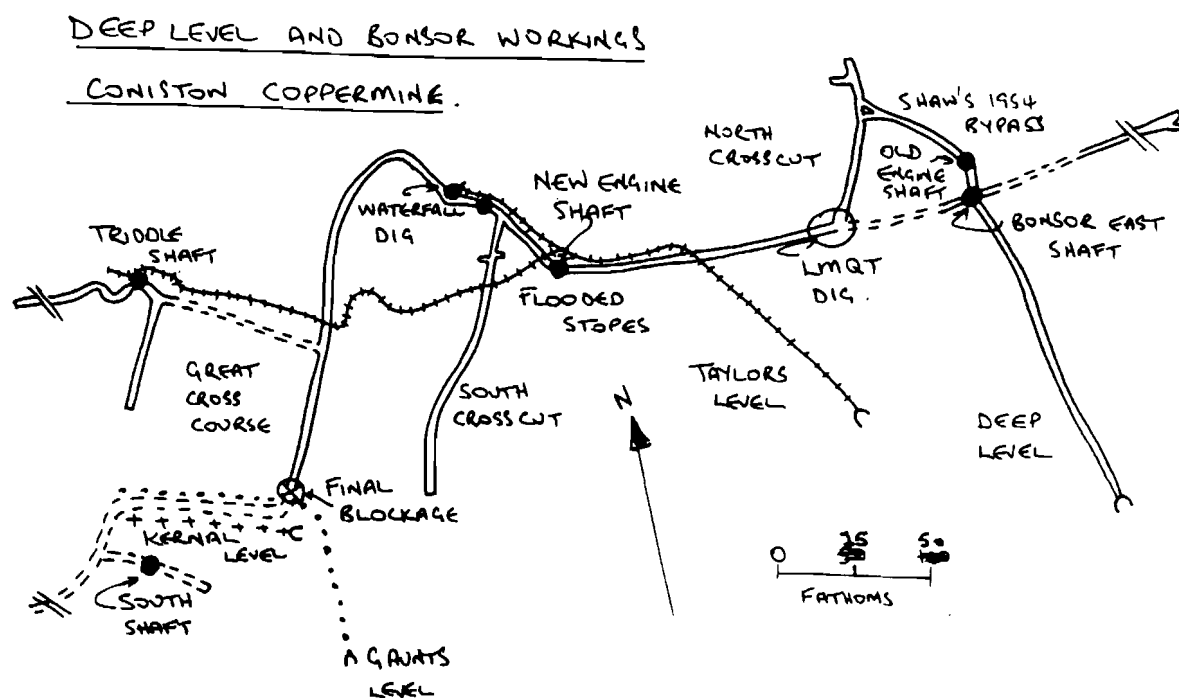
On 23rd October Ian Matheson, Mike Mitchell, Peter Fleming and Dave Bridge returned for a full day of exploration. A problem which had been occupying their minds during the week was the whereabouts of Taylors Level. They calculated that the previous week they had descended to within twenty feet of Taylors horizon, they knew that the level existed, and were familiar with it, and yet there was no sign of it. The problem was solved by reference to the plan in John Adams' book, which shows Taylors Level to divide into two branches. It was concluded that the



present line of descent must pass through the unknown right hand branch, and that it had long ago collapsed into the depths. They descended to the point reached a fortnight earlier, and Mike set about fixing a rope down the stope beyond the north west end of the section of floor, whilst Ian did the same at the other end. There was a considerable amount of stonefall as they cleared away loose material to make the descents safe, and a nearby voice was heard asking what was going on! It was Alen McFadzean, who was making the trip from further along the Red Dell stopes down to Taylors. They were able to communicate, but the two parties did not set eyes on each other until all had left the mine.

Mikes route was the more complex, so Ian reached the bottom first. It is unnecessary to digress here to outline the activities of the LMQT explorers. In 1954 John Willy Shaw drove a bypass on Deep Level from an old trial on Dry Ghyll Vein to the North Crosscut in the hope of reopening part of the mine. He found a collapse at the junction of the North Crosscut and Deep Level and gave up the project. For the last year or so the LMQT group have spent one evening a week digging through this blockage, and last August, after shifting many tons of rock and shoring back a great deal more, they finally won through. CAT members examined this work during an evening meet on 21st September, at which time LMQT had begun to construct a platform just above the water in the flooded stopes beneath the New Engine Shaft. When Ian descended this Shaft to land on the top of a rubble pile, the first thing he saw was a handline bolted to the rock which led down a rubble slope. This discovery was somewhat confusing, but investigation revealed that he had landed on the top of the rubble above the two protruding tramlines, and had therefore finally entered the stope from which the continuation of Deep Level might be reached. The handline led down to the top of an electron ladder which rose out of the water. Subsequent enquiry revealed that one of the diggers had swum the length of the stope and then free climbed out of the water to gain entry to unexplored ground, which the CAT group had now independently entered from above. The CAT team were disappointed not to have been first, but were nevertheless pleased to have succeeded.

Peter followed Ian down, Mike and Dave completed their route shortly after, and all four set off to explore. (See plan.) After a climb down to the sole of the level a chamber was reached in a few yards from which a tunnel extends about two hundred and forty yards to the south. Halfway along it was the broken anvil reported to Peter Fleming by the cavers in 1980. The crosscut ends with no sign of any ore having been discovered. Climbing out of the chamber and continuing north west there is a partially collapsed manway in the middle of the floor which drops straight into deep water. This is marked as a shaft on the mine plans, and it is possible to pass by on a narrow debris strewn rock ledge. The level continues in solid rock to a wider section where there is another rock cut shaft to one side. At this point the level was blocked by grey shale and rock, from which issued a stream of water which plunged down the shaft. Peter's theory was proved to be correct!



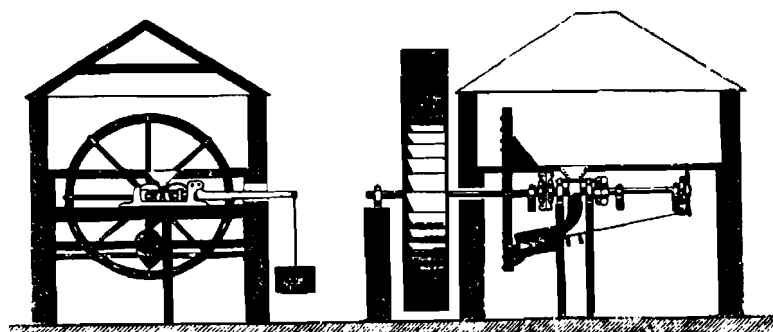
A fourth visit was made by Ian Matheson, Mike Mitchell, Peter Fleming, Ann Danson and Angela Wilson on 30th October, and a direct descent of the New Engine Shaft was envisaged. However, as this would have descended straight into the water at the bottom a deviation was made from a stemple close to the stone wall sixty feet down. This proved to be directly above the eastern end of the floor one hundred and eighty feet below the surface. Just below here Peter Fleming penduled into an interesting small working where there are considerable quantities of chalcopryite visible, both on the walls and in broken rock on the floor. On arrival at Deep Level Chris Jones could be seen the other side of the shorter of the two flooded stopes, having entered via the LMQT route. He reported that a walkway some fifty yards in length had been constructed on angle brackets bolted to the wall of the longer one, just above the water. There was a leaky rubber dinghy which he used to cross the shorter stretch of water in order to join the rest. Some time was spent digging at the blockage by the waterfall shaft, and at

one time there seemed to be a space above. However a heavy run of material blocked it again, and some very large jammed boulders could be seen. When time ran out some left by the very sporting LMQT route, to complete the first through trip via the New Engine Shaft, whilst the others went back up to strip out the ropes.

A couple of weeks later Peter Fleming recieved a phone call from Roy Garner to say that the LMQT group had completed their walkway, and had succeeded in getting through the waterfall dig. He reported that Deep Level continued along the Great Cross Course to a point almost beneath Gaunts Level. A CAT meeting was arranged for the following Wednesday evening to explore this new ground, and it was attended by Peter Fleming, Ian Matheson, Dave Bridge, Angela Wilson, and Sheila and Anton Chenyllle-Proctor-Thomas. The waterfall blockage was found to be a cross course, and the bottom of the stope beyond had been blocked by debris. High above, a hole in the rock roof may have been an ore pass from the northern branch of Taylors Level. One climbs up through the dig and after a few yards one enters water which varies in depth from waist to chest deep (or higher if you are little) for most of the next three hundred yards. The first section is a cross cut, the water does become shallower for a while, and there are two short trials on the right. Then one climbs over a partial blockage and is in deep water again, the level bends to the left and the nature of the rock changes as the Great Cross Course is entered. Here one is in grey shale, brittle, fractured, and jagged. It hades about twenty degrees and there have been occasional collapses of the hanging wall on the left. The branch to Triddle Shaft can just be made out, but it is blocked to the roof. In any case it is known that a hundred yards away, near the foot of Triddle Shaft, there is a heavy fall, so a connection is unlikely. Further along there is a section where timbers, set at an angle, support the roof and seem to have been intended to protect the drainage channel at the expense of access for trammng. There are two places where it is nescessary to climb over a grey clayey collapse and to squeeze between it and the roof to drop down into the water again, and finally one reaches a point where the whole roof has dropped down in sharp angular blocks which completely fill the tunnel. Whilst both water and air pass through it seems unlikely that the way can be cleared, and a more promising route would seem to be from South Shaft, where LMQT are already beginning their next assault.

Ian Matheson.

CRUSHING MILL.



This Engraving represents the end view and side elevation of a Crushing Mill, with water Wheel for working the same; also the Rolls by which the Ore is crushed; the Ore being placed in a Hopper above the Rolls is crushed as they revolve, and passes from thence into a Cylindrical Sieve below, which also revolves, allowing the finer portion of the Ore to pass through on to the floor; whilst any portion not crushed small enough runs through the Sieve (which it will be observed is on an incline) into a Raff Wheel, which raises it up to be again thrown into the Hopper and passed between the Rolls.

NOTES ON THE ALVA, TOMNADASHAN AND CORRIE BUIE MINES.

A recent trip to the Ochill mountains N of Alloa led us to discover the riches of the Alva silver mines. The mines are situated in Silver glen (NO 892976) a very apt place in which to find a silver mine.

According to the mineral resources report of 1921 the vein was discovered in 1711 by Sir John Erskine, who employed miners from leadhills to work the mines.

The ore contained 12ozs of pure metal to 14ozs of ore. Not surprisingly for a short time the mine proved to be a fairly profitable one, the value of the weekly ore output is said to have averaged £400.

After the main vein was exhausted further attempts to find more ore revealed only minor veins of lead and copper. While this development was going on a large deposit of cobalt was discovered, this proved economic to mine. At a later stage the mine dumps were reworked to remove any remaining cobalt.

At the present time the 2 main levels are easily accessible from the E side of the gill, they are not extensive. On the lower level a 20' shaft has been partly filled, this is probably the 60' winze that is mentioned in the memoirs. Neither of the levels shows obvious mineralisation.

An open cut driven along the EW trending vein is also accessible, a level at the bottom of this has been filled (probably to make the open cut less dangerous) 2 further sub levels driven in the hanging wall and footwall of the open cut were not accessible. The main vein material here is pink baryte, with thin strings of pyrite and traces of erythrite (cobalt).

The remaining mine dumps are on the W side of the steep gill below the open cut. Examples of malachite, chalcopryite and erythrite can be found here. A sample taken from the mine dump, opposite the top level and panned in the stream revealed a large amount of pink baryte, small arborescent specimens of native silver and fragments of pink erythrite.

Alva silver mines are certainly worth visiting, the levels are accessible and are in such a superb situation.

The remains of Tomnadashan mine (NN 692378) are situated on the southern side of loch Tay. Tomnadashan is not shown on the 1:50,000 map but is 1 mile SW of the village of Ardtalnaig. This mine has been visited before by a CAT group.

The main opencast mine area is a few hundred mtrs above the road, with easy access to the workings. Large areas of mineralisation in the form of chalcopryite are visible and have been sampled fairly recently, probably by a prospecting company. The host rock is quartzite/granite which is an intrusion into the highland schists.

The mine was discovered by the Marquis of Breadalbane who erected washing, dressing and smelting works on the side of loch Tay, remains of these can still be seen. The mine worked for approx 20 yrs and was never profitable.

The entrance to a level is also visible below the opencast, this has obviously been closed for some time. An infilled shaft can be seen just below the opencast workings.

The most interesting find on our 4 day Scottish trip were the Corrie Buie mines, these are to be found on the western side of Meall nan OIGHREAG (NN 705341) 833mtrs, approx 2½mils SSE of Tomnadashan. It is best to walk up from Ardeonaig village following the footpath up Finglen burn. The mines are not easily seen from the burn, but following the first major gill and taking the left hand fork leads you almost to the spoil heaps. The mine dumps are discrete accumulations of white quartz. We could find no trace of mineral here, someone was obviously very good at their job. The galena that had been mined was found predominantly in the quartz veins underground, and contained a very high percentage of silver 85 - 600 ozs per ton. Reputedly native gold was found here when the ore was being crushed.

We realised that alot of surveying had been going on from the number of survey markers that were lying on the open fell, trenching along many of the old open cut workings had also taken place. The development that interested us most was the fact that the mine had been reopened, many tons of overburden had been removed to gain access to the main level.

The portal is fairly unstable but this leads into more competent rock (quartzite mica/schist) where the mineral veins are visible in a number of places.

The main level goes for about 200mtrs to the forehead with various raises and side drives. The raises possibly once connected with the open cut workings above.

A superb example of a jackroll windlass, still very much intact, was found above a 10mtr shaft 50mtrs from the forehead.

The prospecting company who had gone to the trouble of reopening the mine had made a good job of surveying.

The only other mineral that was evident were very small pyrite cubes in the quartzite walls of the level.

This mine merits the 3 mile walk up to it, the views are superb from Meall nan Oighreag. We had no idea when we set out that we would be able to get underground, luckily we had carried lamps and helmets.

The Scottish trip ended with tea in the Ardeonaig hotel, also well worth a visit.

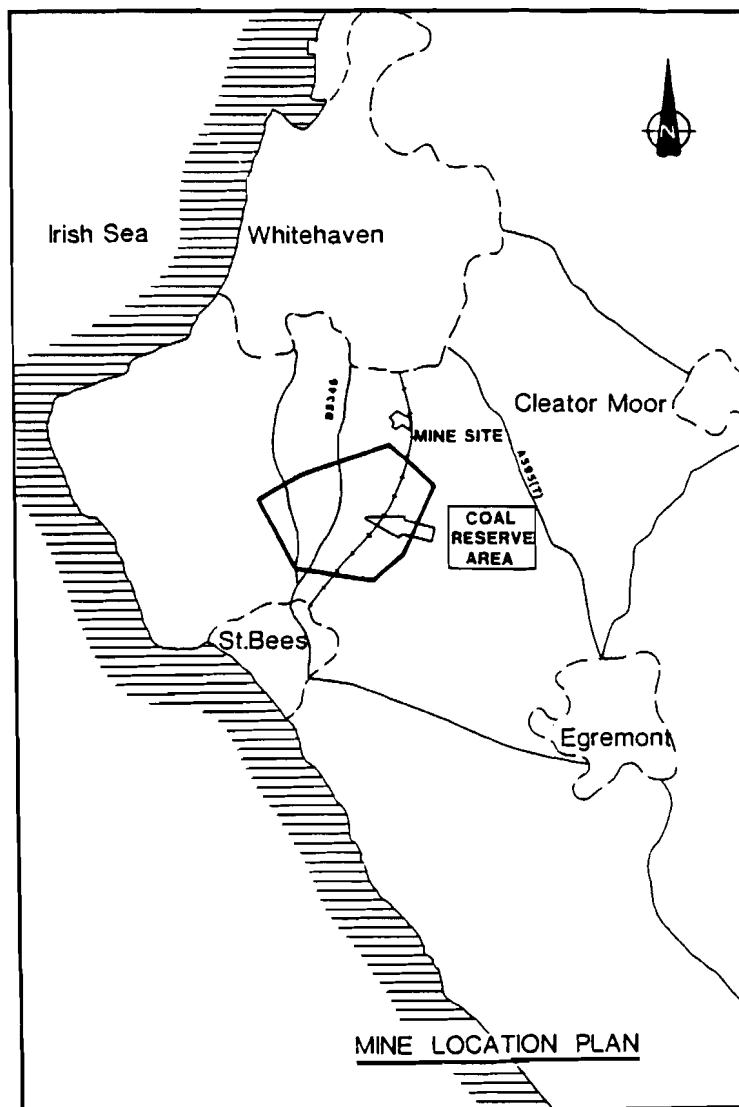
REFERENCES. Special reports on the mineral resources of Great Britain vol XV11. The lead, Zinc, Copper and nickel ores of Scotland by G.V Wilson 1921.

1:50,000 O/S Maps No. 51 & 58

CUMBERIAN COAL - MAINBAND COLLIERY see overpage

Reserve area and mine site.

PLATE I



CUMBRIAN COAL

Geevor plc intend to acquire the Mainband Colliery Co Ltd and develop the Mainband colliery at St Bees. Mainband will be one of the largest private developments in underground coalmining since nationalisation of the coal industry in 1946.

The following is a summary of the mining engineers report prepared by Wardell Armstrong for Geevor plc on the proposed Mainband colliery at St Bees, Cumbria. dated 1/10/88

Wardell Armstrong is one of the countries largest independent mining consultancies and have been aware of the St Bees coal prospect for many years. They were commissioned in 1987 by the Mainband Co to process an application for planning permission from Copeland District Council and to obtain an operating license from British Coal.

The beginning. During the 1970s the NCB carried out test drilling and seismic surveying in the St Bees area. A considerable reserve of coal was confirmed. Later because of international competition and policy changes the NCB decided to sell the geological exploration information and part of the reserves. Mainband acquired this information with an assurance that the NCB would grant a license to operate an underground mine.

Mainband gained planning permission from C.D.C to develop an underground coal mine on 5th August 88 for a period of 30yrs.

British Coal have indicated to the Mainband Co that a license until 31st March 1995 will be granted

The license area is estimated to contain recoverable reserves of over 4 million tonnes, with a production of 100,000 tons a year for a minimum of 10 years. Rights to surface occupation of land and road use for the life of the mine have been negotiated with local land owners.

The reserves. The coal reserves to be worked are known as the Bannock Band and the Mainband. The Bannock band varies in thickness from 2.4m in the N to 3.5m in the SE. The run of mine quality of the seam is expected to be within the range of 29,000 - 30,000kj/kg. High calorific value makes the coal very saleable especially to the CEGB.

The Mainband seam lies 18mtr below the Bannock Band and varies in thickness between 2.7m and 3.2m. The run of mine coal is expected to have a calorific value of 30,000 - 31,000kj/kg.

The total in situ demonstrated reserves have been estimated as 11.983 million tonnes of which 4.879 million tonnes may be recoverable.

Annual production should increase from 40,000 tonnes in year 3 to 100,000 in year 4, with a maximum production of 150,000 tonnes in year 7.

Development. It is proposed that the mine be developed from 2 inclined tunnels driven to intersect the Bannock Band coal seam at a depth of 176 mtrs. Each access tunnel will be 450 mtrs long.

The workforce will build up from 6 in yr 1 to 60 in year 7.

It is intended that development roadways apart from the access inclines are driven within the coal seams. These roadways will be the full height of the seam 2.5 - 3 mtrs

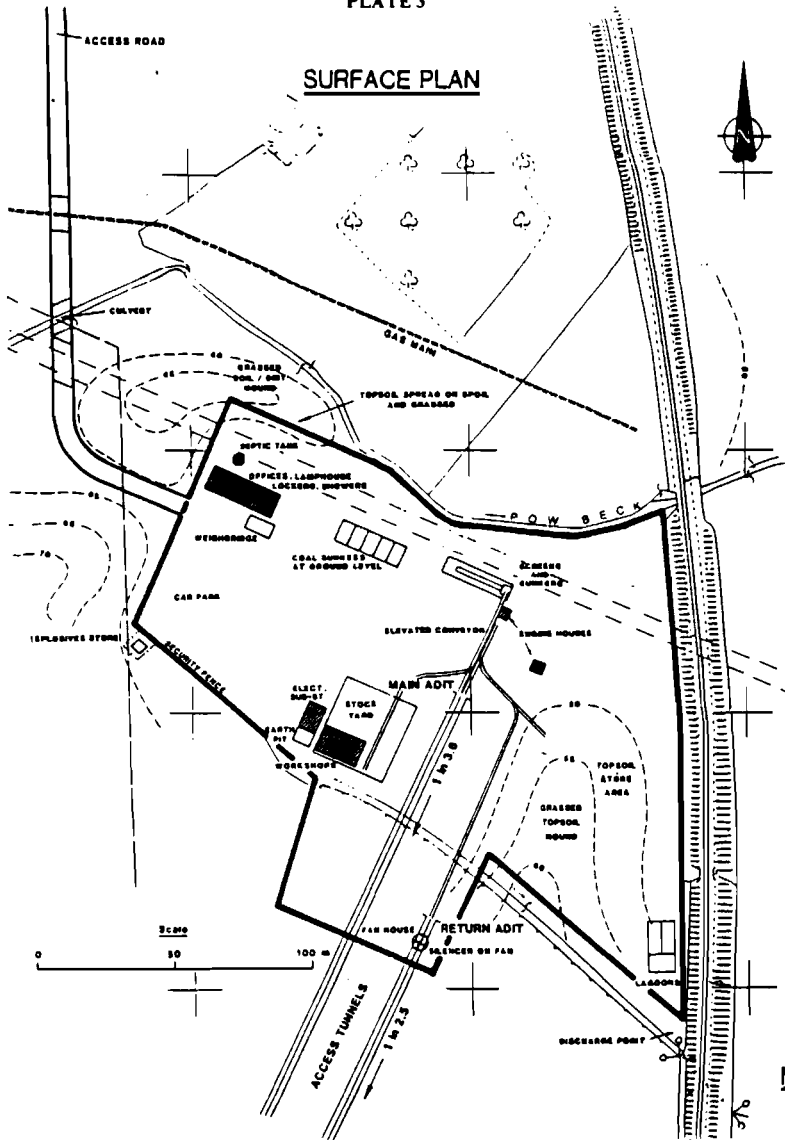
The Chairman and other shareholders of Geevor plc have interests in the Mainband Company, due to this the company has been offered to Geevor plc first. Obviously the directors believe the Mainband Co to be worthy of acquisition and so are proposing to raise the necessary capital to buy and develop the colliery by offering over 11 million shares to investors.

Geevor plc need to raise approx 8 million to acquire the Mainband Colliery Co and start production. The Mainband Co itself is valued at 5 million.

Further articles on coal mining, the working Alston collieries and a review of the Cumbria County Council Plan for coal are required for the next newsletter, anyone prepared to contribute to this please contact the editor.

PLATE 3

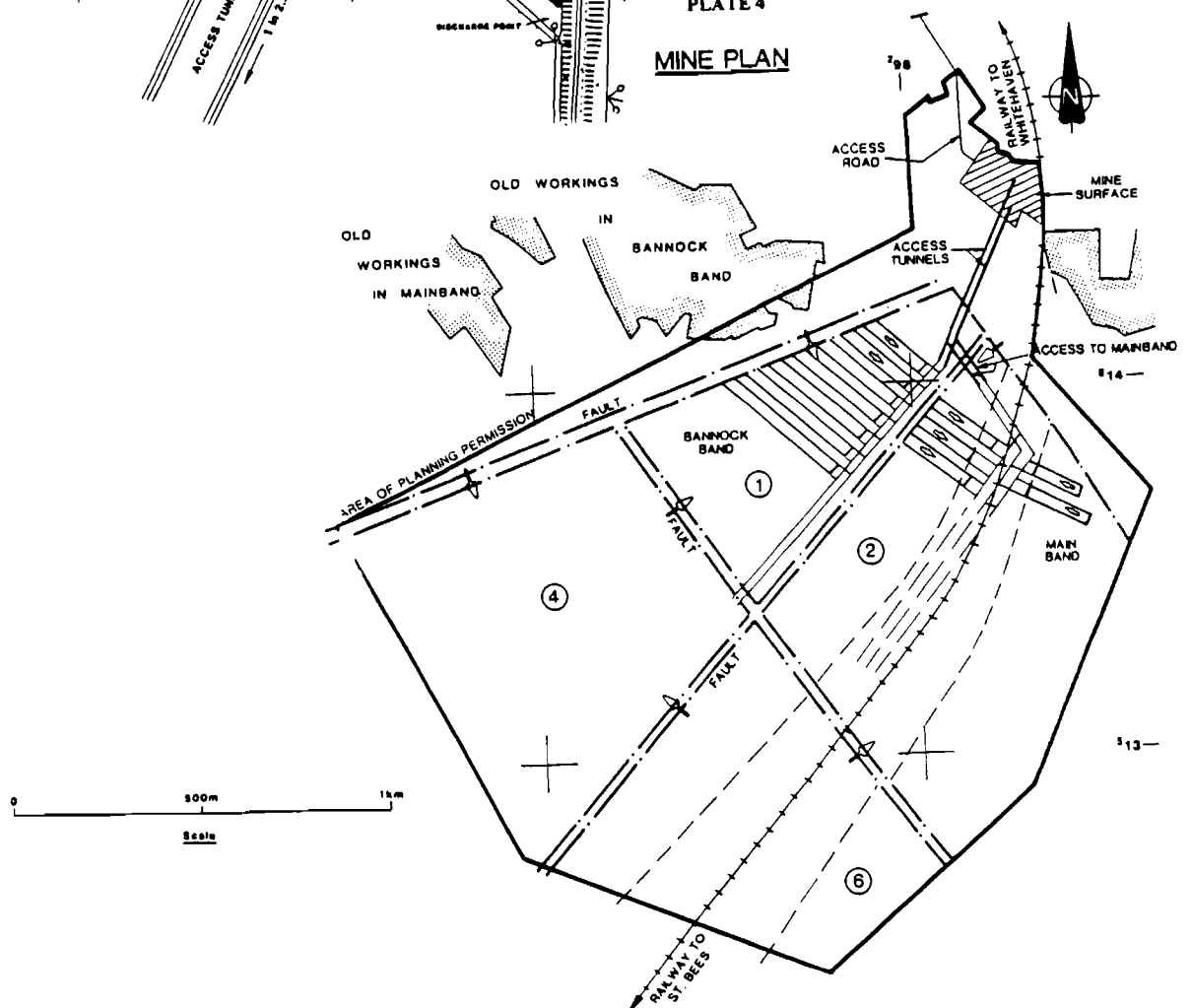
SURFACE PLAN



CUMBRIAN COAL

PLATE 4

MINE PLAN



RESULTS OF RADON TESTING

FORCE CRAG MINE (East-West Vein)

'0' Level Forefield

Geology: Ordovician Skiddaw Slates, Black Shales
Minor Baryte
Airflow: NIL
W.L. = 0.13

'0' Level, 24" Inbye from Spring

Black Shales with 8" wide BaSO_4 Vein
Airflow: NIL
2" Running water on floor of level
W.L. = 0.08

Working Forehead, 50ft above '0' Level

ZnS & minor PbS and FeCO_3 Cementing
Hard Black Shale Breccia, with minor BaSO_4
Airflow: NIL
W.L. = 0.06

No. 1. Level, Sealed Passage

Water running full bore from a 2½" dia. pipe
Black Shales
Readings taken 6ft. from wall
Airflow: induced by water flow = 17½ metres/minute
RADIATION NOT DETECTED.

GREENSIDE MINE, GLENRIDDING (North-South Vein)

22nd October, 1988.

Geology: Middle Strata of the Borrowdale volcanic series, which was
bottomed at 1302ft. below Lucy Tongue level where the Skiddaw
Slates were reached.

Glencoyne Level (Top of Climbing Way)

Airflow: 7 metre/minute up the shaft
RADIATION NOT DETECTED

RADIATION TESTING CONTINUED

Low Horse Level (Top of climbing Way)

Short 25ft. blind level
Readings taken at forefield
W.L. = 0.1

Low Horse Level

Blind X-Cut, 50 yards long adjacent to climbing way
W.L. = 0.13

CONISTON COPPER MINES

23rd October, 1988.

Geology: Borrowdale Volcanic Series

Hospital Level, Grey Crag

Brimfell X-Cut, Forefield
W.L. = 0.2

Belman Hole Vein

4ft. wide Quartz/Breccia vein
W.L. = 0.19

Paddy End Old Vein

$\frac{1}{2}$ " Clay vein
W.L. = 0.19

Deep Level, North Cross-cut

Short level running north at end of X-cut (probably a continuation of
W.T. Shaws 1954 X-cut)
Forefield
RADIATION NOT DETECTED
Filter re-checked outbye
Background: 20 cps
R. Daughters: NIL
Nose Count: NIL

RADIATION TESTING

Results are given in Working Levels(W.L.)

Looking at the table in the last newsletter (Legislation relating to radon) it is easy to see the correlation between W.L., W.L.M and annual dose equivalent i.e Hospital level, Grey Crag W.L = 0.2 the NRPB would designate this a controlled area, and would advise routine monitoring of radon daughter concentrations and personal estimates of the radiation doses received by miners.

In general good ventilation reduces any radon concentration to a negligible amount.

When tests were carried out atmospheric pressure was high, higher emissions would be expected when air pressure is low.

Bronze Age secrets uncovered by caver

FOUR Bronze Age copper mines discovered by a freelance archaeologist in Wales are prompting a rethink of history.

The discoveries, which include unique stone tools, throw fresh light on the life of prehistoric man in Britain.

Until now many archaeologists have doubted whether there was any evidence of mining in Britain before Roman times. This is because mines were often worked at several times in history so that later activity obscured evidence of earlier occupation.

As a result, scholars have argued fiercely over specific sites, with one set of scientists dating the stone hammers found among the rubble to Victorian times, others to Tudor times, still others to the Roman occupation; rival scholars making up the Early Mines Research group, on the other hand, have instinctively believed that the hammers were much older — but they lacked the necessary techniques to prove their arguments.

Only now has radio carbon dating been used in this area — and put the issue beyond doubt.

Early mining used the 'fire setting' technique to break into the rock. Fires lit against the rock face burned for hours, then cold water was thrown over the hot rock to make it cool rapidly and crack. Stone hammers completed the job.

Charcoal remains of the firewood are what the British Museum Research Laboratory is radio carbon dating.

Not all the results are in,

by PETER WATSON

but so far the remains from two mines have been tested and found to date from the second millennium BC — between 1000 BC and 1800 BC (the Bronze Age in Britain ran from about 2300BC to 500 BC).

The mines are at Pary's Mountain, Anglesey; Great Orme's Head, near Llandudno; Nantyreira, three quarters of the way up Plynlimon in central Wales; and at Cwmystyth, Cardigan. The excavations, funded by the National Museum of Wales and the British Museum, will cause a substantial rewriting of British pre-history.

It had been assumed that, in order to fashion the many bronze objects known to have been in use in these islands, copper was imported.

Even more interesting, however, is the size and sophistication of the mine at Great Orme's Head. Three large galleries have been found, each so far below ground that they would have posed serious problems of ventilation and drainage.

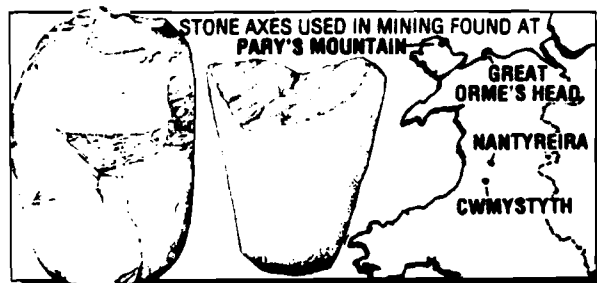
This mine was originally

investigated by Mr Duncan James, a freelance archaeologist and caver who spent months in the area poring over the rubble and remains that clogged the caves. The mine had been operated in Victorian times, and most professional archaeologists doubted that it had been worked much beforehand.

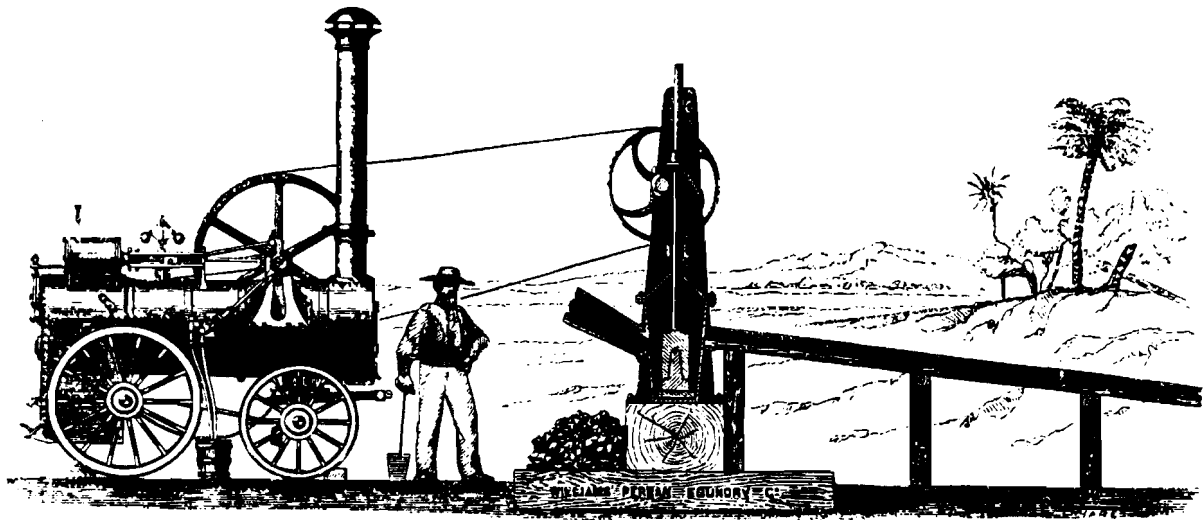
Mr James, however, noticed that whereas some debris in the mine was scarcely covered with travertine (caused by dripping from the ceiling of the cave) other debris was encased under a very thick layer.

He concluded that it had needed centuries for such a layer to accumulate and when he had some of the travertine latter carbon dated his hunch was vindicated.

With carbon dating still not completed it is a little early to draw too many conclusions from the new discoveries. But, as Dr Paul Craddock, principal scientific officer at the British Museum's Research Laboratory, said yesterday: 'Some things are beginning to fall into place. All the dates we have so far are from the second millennium BC, which may mean that these mines were not active later on.'



STAMPS FOR CRUSHING ORES.



This Engraving shows a simple arrangement of Portable Engine Stamps with amalgamating Tables and Sluice Boxes, &c., often used in Australia, California, Colorado, Mexico, &c., &c., for reducing Quartz and other ores, and taking out the Gold, Silver, &c., &c.

BOOK NEWS

HILARY BIRD MINING FACSIMILES

RECORDS OF MINING AND METALLURGY

or Facts and Memoranda for the use of the Mine Agent and Smelter.

J.Arthur Phillips and John Darlington. 1857.

This oft quoted work is a treasure house of contemporary information relating to mining and associated activities. Chapters deal with: Historical notice of mining and metallurgy ♦ Hydraulic machinery ♦ steam machinery ♦ steam boilers ♦ crushing and dressing machinery ♦ assaying ♦ metallurgical processes ♦ boring ♦ mining as an investment ♦ joint stock companies act of 1856 ♦ mining economics ♦ copper statistics and miscellaneous rules and tables. The book, which runs to 304 pages, is illustrated with 20 wood engravings, including a folding plate at the end of the volume. One of the authors was an expert on the design and construction of hydraulic engines. The original is extremely scarce and I am intending to issue a reprint in softback, limited to 100 copies.

It is anticipated that the price per volume will be about £20. + p.& p. If you wish to reserve a copy of this important work, please fill in the order form below and return it as soon as possible.

ORDER FORM.

Please reserve me copy/ies of your forthcoming reprint of PHILLIPS & DARLINGTON'S RECORDS OF MINING AND METALLURGY. 1857.

I understand the price will be about £20. + p.& p. and I will be invoiced for the volume upon publication.

NAME.....

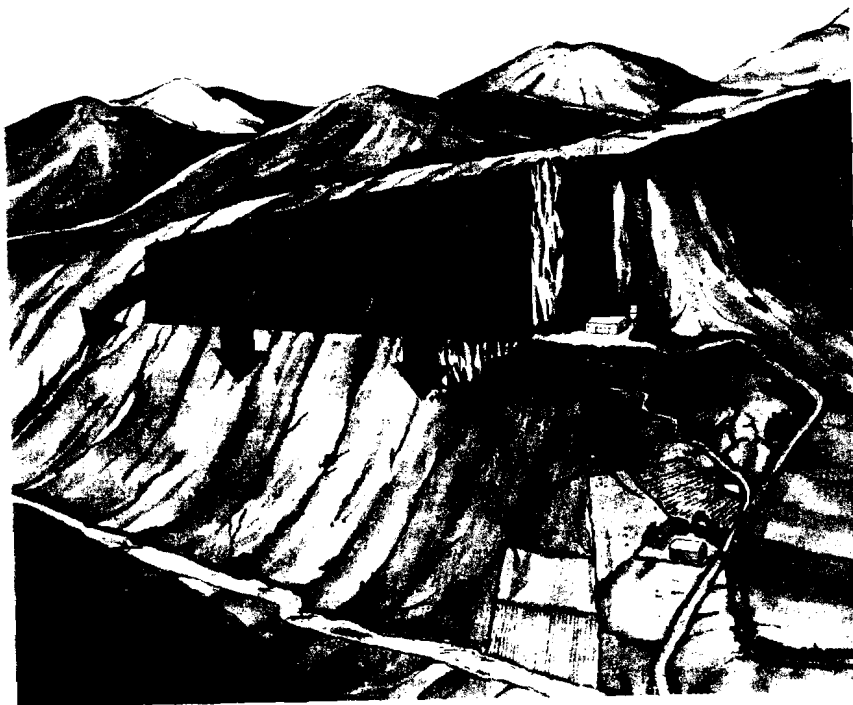
ADDRESS.....

Return to: Hilary Bird, 41, Windsor Walk, South Anston, Sheffield S31 7EL

SCOTLAND.

Ennex International have already constructed a 4mtr wide track above Cononish farm, Tyndrum. This will give vehicular access to the Eas Anie mine workings. Their development adit has already been driven 10mtrs, raising and crosscutting will take place from this main adit, which will be 850m long when finished.

Ore reserves are estimated to be 840,000t grading 9.6g/t gold and 34g/t silver. If these reserves are confirmed a processing mill will be erected on site to provide rapid development of the deposit.



SCHEMATIC ILLUSTRATION OF THE PROPOSED DEVELOPMENT
AND PRESENT DRILLED EXTENT OF CONONISH

Sunday 12th June.

Mike Mitchell Ann Danson John Helme Paul Tideswell
Edd Brown Dave Bowers Paul Whiteridge Don Borthwick

This meet was initially intended to show off the new ground explored by several small 'un-official' groups in the later months of last year. But instead of the hoards of Nenthead devotees intent on having the delights of Carr's level and Prouds sump (& its extension) revealed to them, half the members present were completely new to the site. Anyone failing to guess where we went for the day surely will qualify for some sort of prize at the annual dinner.

It is interesting to note that though the other half of the group had been through the Smallcleugh flats route on the 'odd' occasion before, the journey to Wheel flats was not without one or two minor 'sight-seeing' detours. The famous Ballroom seems to collect more graffiti each time we visit it, all so unnecessary.

After the Ballroom we visited the Longcleugh workings which have been made accessible again within the past year or so by persons unknown. Half the group took the rather more sporting and dry, shaft route, the more pedestrian element (which includes this writer) taking the simpler way and consequently got wet feet. Bad news here, if you have been looking forward to seeing the beautiful 'blackjack' covered wall in Longcleugh then it is too late the collectors have beaten you to it. Litter and peoples scrawling are bad, but this sort of action borders on desecration.

These working having been duely explored we returned again via the flats to a bright sunny afternoon. Smallcleugh is always a little special for those on there first visit but still has a definite charm even on the n'th trip. On some future occasion time will have to found for a more systematic exploration (or re-exploration) of some of the passages of the flats particularly around wheel flat & the Second Sun Vein. A very pleasant social sort of a day, also nice to be able to get ones gear washed and dry before setting off home.

Sunday 17th July

Brewery Shaft - Angela Wilson Dave Bridge Ian Matheson
Phil Merrin Don Borthwick
Seddlings Burn - Barbara Mitchell Mike Mitchell Ann Danson Peter Fleming

After a space of 3 years the mighty Brewery shaft again, this was to be the first time for Angela, Dave & Don & the second for Ian & Phil. At first the good doctor was undecided what to do that day, but made his mind up quickly when he found out that Ian had been down once before & PF twice.

Previous SRT trips had belayed only at the top, it was decided this time to re-belay to speed up progress. (It never ceases to amaze me that some members have done this 80m pitch on electron ladders [savage amusement]). Dave re-belayed twice, firstly beside a level that leaves the shaft at about 35m down & again about 20m from the bottom.

On reaching the bottom it was very much a case of cameras out and explore, there is a such lot to be seen. The air receiver (compressor) at the bottom of the shaft, a workshop (still with a few tools), two pelton wheels, a water wheel, a string of wagons & sundry other artifacts. Trips were also made along the Nentforce & Rampgill Deep levels until deterred by very deep water.

The re-belays were to show their value on the long ascent, allowing more than one person to climb at a time and very significantly reducing the bounce at the bottom of the pitch. Nicely rigged re-belays and a basically free-hanging pitches resulted in an average climbing time of only about twenty minutes per person.

A nice combination of the treasures of the Brewery shaft living up to expectations and the horrors of the climb out not doing so.

Saturday 16th July.

Mike Mitchell Barbara Mitchell Peter Fleming Dave Bridge
Dennis Webb Don Borthwick

This became the Proud's flats, Carr's level meet that had been 'penciled in' for the June 12th. New ground for three members and something old and something new for the others of us who had been involved in last years exploration. The first trip into Prouds had resulted in a through trip with a wet(ish) exit by the Hanginshaws branch of Rampgill, having two climbers in the party allowed us a through trip with the exit via Carr's level.

The trip started by the decent of Proud's sump (off Smallcleugh horse level), a short horizontal section and a second abseil to a junction between two levels. A few interesting artifacts have been laid out here including a double skinned container, its use raising some interesting speculation.

The 'new' workings which were either missed or closed? on the first two visits here had been discovered later by Angela, Dave & Gordon. These were explored first & are quite extensive terminating with drives on three horizons. Another double skinned container resides in the level leading to the stopes, this one containing some whiteish material, stemming?? The 'old men' were not allways as carefull as they could have been with the less benign part of what fills a shot hole, finds such as this should be (& were) treated with some respect.

The rest of Proud's flats where then visited to see the ore trucks, profile gauges, explosive boxes and the wooden floored chamber etc. This completed the party prussicked back to the intermediate section and re-rigged for the short abseil into Carr's level. The squeeze past the big bolder looked no less dangerous than it did last year so the party proceeded outward from here. (The boulder has been crawled past, but fifty yards beyond is a collapse which would require quite a big dig. Difficulty of access and securing the boulder brought last years direct exploration on this horizon to an end. Further exploration on Carr's is likely only if alternative access can be found from above.) Otherwise the level did not seem to have deteriorated since our last visit, the timbering put in place still securing one of the short crawls. Some-way along the level there is a major collapse but a shaft leads up to the extensive workings above Carr's level reported by DGG in newsletter number 18. The valiant Mike climbed this shaft and secured a rope for the rest of the party to prussick up. Time did not allow much exploration on this horizon, a couple of the party having a look at the cave pearls and the hangingshaw's engine shaft though. So it was on past the white wall to another shaft taking us down again to Carr's level, this now has ladders in its upper section (provided by persons unknown) simplifying what had previously been a short free climb.

The previously rather wet weather was to cause us a problem on our way back along the level. One of the roof falls that have to crawled over had run in again, requiring a dig and a tight very dirty slither to return to a grey misty day.

An important meet tying together several separate explorations into an interesting and varied through trip. A new classic Nenthead route?. P.S. A thanks to Dave and Mike for volunteering to go back to Smallcleugh to de-tackle and recover the ropes.

Footnote.

DGG and DB spent a Sunday doing some exploration in the Hangingshaw's branch of Rampgill. It had been hoped to find the bottom of Hangingshaw's Engine Whimsey Shaft as shown on the Critchley/PDMHS plan. Its probable location was found but a collapse or a large amount of shaft debris prevented this being proven. Hopefully a trip down from the surface will get organized next year? During the exploration on Carr's & Proud's horizons Rampgill was always there as an alternative exit. But how much further did it still go? & did it give access via any climbable rises to Carr's or other workings was not known. Unfortunately the answer is a major collapse in chest deep water about 50m beyond Proud's and no more rises.

Saturday 15th October.

Mike Mitchell Barbara Mitchell Don Borthwick

Not the best attended meet of the year! LMQT were also at Nenthead that day I wonder how many more they were able to muster?

The day started with a rather long wait in the hope that someone else would turn up, it was then decided that Mike's original intention of a visit to Scraithole Mine in the West Allen was not appropriate. As the sun was shining (though not for long) it was decided to basically have a surface day a little further a field.

Firstly there was a short stop in Allenheads to look at what may have been a level, then up the Rookhope road with another short stop to look at what may have been a chimney. Corbitmea Dam was visited next and the tops of two capped shafts (one of which will be the Corbitmea shaft on the Allenheads Fawside Level). Neither shaft is accessible though the cappings are still basically sound. While exploring the area along the line of the vein Barbara found a hole, but as we had not brought lights and helmets on this walk we could not explore. Next we had a short look at Frazer's Hush Ironstone quarry, an odd place reminiscent of Greenside's High Horse level dressing floors barroways. Nice to see Grove Rake Mine working again (via an incline to Frazer's Hush).

Next we traveled to Ramshaw via the now totally cleared Redburn mine site. Ramshaw district was first mined for lead around 1525 & continuously worked from mid 17th century until quite recently. Working for lead being superseded by the extraction of the flourspar in which the lead had been found. Whiteheaps mine at the head of the valley was the last to be worked (now looking a little sorry for itself) see page 8 of newsletter 21.

Near Ramshaw village a fence and a sign marked danger attracted our attention this turned out to be a rubbish filled shaft. A waterwheel pit and the remains of a dressing floor were visited before moving on. (This area could probably do with a more detailed investigation, I have learned subsequent to our visit that there is a balance bob somewhere on the site.)

Finally we travelled up the hill to the site of Whitesike mine which features:- A chimney (still in quite good condition) at the end of a long horizontal flue from a smelter situated near Ramshaw. Two reservoirs and an extensive system of leats. A boiler chimney, remains of a boiler house and other buildings, a winch and a large capped shaft top.

A gulley leads from here down to Whiteheaps and Ramshaw below. Following this down there is a level heading toward the shaft top from which rails emerge. The level can be entered and leads via a stone lined then unsupported passage to a short section with curved iron supports reminiscent of colliery practice. This iron supported section carries the level to an intersection with the shaft and it is likely ore though hauled from above was trammed out at this point. A little further down the hill is a waterwheel pit & the remains of a dressing floor. It is thought that this mine was last worked for flourspar in the 1930's.

Sunday 16th October.

Mike Mitchell	Barbara Mitchell	Peter Fleming	Sheila Barker
Angela Wilson	Dave Bridge	Don Borthwick	

A visit to Brownley Hill mine, initially with thoughts of a through trip exiting via Hags level. Brownley Hill though is such a 3 dimensional warren, that, by opting to take a 'little' look at a side passage we left ourselves insufficient time to do this. The day was spent exploring on three horizons above the entrance level, the first was gained from a cross vein into a series of small workings.

The second involved climbing across the side of a shaft (which we were to later prove connected to the main haulage level). Exploration on this level was to reveal among other things a sump leading via a short passage back to the shaft for our return. More interestingly though a rope was found dangling down a rise, a 10m prussick giving access to the chamber above.

This third horizon had a rather wet, ochreous level driven through shale going in one direction and a crawl through broken ground in the other. Angela & Dave followed the shale level for quite some way it eventually terminating at the bottom of a shaft leading up to day. Peter worked his way under a 'tender' roof to a level, this was followed for a distance to a junction.

The afternoon rapidly slipping away it was decided to call a close to the days activities and retrace our steps. Day was regained as dusk approached & another little piece was put into the Brownley Hill puzzle.

CLEVELAND WEEKEND [Hosted by the Cleveland Industrial Archaeology Society]

Mike Mitchell	Barbara Mitchell	John Helme	Joan Helme
Ian Matheson + Family		Don Borthwick	

Saturday 17th September - GREAT AYTON IRONSTONE MINE.

We met our hosts for the weekend early afternoon in station car park at Great Ayton. John Owen has actively researched the extractive industries of Cleveland for more than thirty years, his articles contributing to the very high publishing standards of the Cleveland Industrial Archaeology Society. (His last report has been reprinted twice and is again out of print). Richard Pepper is a teaching geologist also with a major interest in the history of extractive industries, both John and Richard are members of the CIAS committee.

In recent times the Great Ayton mine site has become training track for an 'off the road' driving school. Richard therefore had negotiate permission for our access to the site and to avoid us dodge 'rough-riders?' and landrovers fitted with roll cages.

Though the levels have been sealed access is still possible by what was the fan ventilation airway. So via a short climb we entered a Cleveland ironstone mine (the Matheson family (Meg, Clair and Alistair) helping to make the numbers look a little more respectable). Great Ayton was typical of Cleveland mines except that the vein thickness was only about five feet whereas seven or eight is more typical in this ore field. Firstly we went to look at the furnace that had initially ventilated the mine. (Later an electric fan was used when a power supply became available on site). This is still virtually complete with grate, firebars and bleezer, John explaining its operation and the firemans duties. Moving along to one of the two main haulage ways compressed air supply and water drainage pipes are still in situ, a third small pipe provided 'pure' water for the boiler from a source in the mine strata. We went some way along the other haulage way where the roof is high enough for easy walking, seeing a typical 'board' of the board and pillar system of work, and an automatic axle greasing station.

John always takes a flame safety lamp into ironstone mines and we were to see quite a dramatic demonstration of why. At the greasing station the flame burned brightly at the level it had when lit at our entry to the mine, less than fifty yard further down the level it was virtually out. Though ironstone is a little special in that it is constantly oxidizing and hence depleting the oxygen level it was food for thought and some worries.

Perhaps a flame safety lamp should be part of CAT's equipment for some poorly ventilated workings or where there is a possibility of the accumulation of gases.

We retraced our steps toward the entrance and looked at another roadway, where an arrangement of some very substantial timbers caused some interest & speculation. Generally thought to be a tensioning frame for the haulage rope, its precise mode of operation could not be agreed on (any experts?).

Regaining the surface the site layout was explained then, as we walked back down an incline to our cars John detailed the transport of ore from the mine. How many Haematite mines can you visit and stay clean? Taking our leave from our hosts we then sped off for the Tom Leonard Mining Museum, unfortunately we arrived rather too close to closing time and could not gain admittance. [Shades of Ryhope pumping engine rather than Washington 'F' pit.]

Sunday 18th September - SILL HOWE WHINSTONE MINE and BOULBY ALUM QUARRIES.

As all the members present were staying locally, an earlier than normal start to the day had been arranged with our hosts. Our moor top meeting point lay on the whinsill dyke and evidence of back filled open workings could be seen extending into the distance to both sides of the car park. Formal permission for our visit to the mine had had to been obtained in advance by John Owen from the agent for the Duchy of Lancasters Estate, (an accident disclaimer also being required).

Access to the mine is through an elegant portal and along high roofed level (where there was a need for this level to be lined, good quality dressed stone has been used). The height of the entry level (which is roughly a right angles to the vein) was only a foretaste of things to come as this place is BIG.

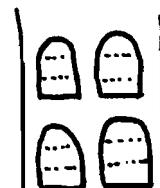
At its widest the whinstone is over 20 metres thick and has been worked in these locations as two parallel drives leaving the central section to support the roof. Each drive is thirty feet high, stone being worked by three ten foot high benches. Drives were made on two and in places three horizons connected by inclines. Our visit was only to the more modern half

of the mine the workings which is about half-a mile in extent. The other half of the mine had been partially sealed off after an accident in the 1920's. Our hosts explained the geology of the mine and the system of 'underground quarrying', though the workings are so extensive little mechanization seems to have been employed.

After about two hours we again returned to daylight the underground part of the meet now over, all very clean and dry by comparison with what we are used to, though Sill Howe did have some viscous ochreous mud which may have made those from the south of Cumbria feel at home.

We then set off toward the coast and the cliff tops (highest in England) nearby the Boulby Potash mine, but taking a short deviation to look at an ironstone outcrop in a deep stream valley near Grossmont?.

The Alum Shales outcrop in the cliffs here with a limestone overburden which had to be removed and was dumped in the sea. The quarried shale the collected into large heaps and burnt, additional fuel was required only start the process the carboniferous material in the shale maintaining combustion. The burnt shale was then leached with water, the resulting liquor being run off along leats to settling tanks where the Alum precipitated out in the form of crystals.



The quarry workings & areas used for burning ore are still evident, as is the remains of the leat system. (Actually our very last visit underground in Cleveland was in a 50m tunneled section, where it follows the cliff edge). Improvements in the production of sulphuric acid & the development of aniline dyes superceeded the use of alum in dying & tanning, & the industry was dead by 1870.

An excellent weekend, good weather, very knowledgable and friendly guides, interesting places to visit.....

MEET REPORT

SEATHWAITE WAD MINE MEET 6/11/88

On a superb autumn day seventeen people arrived to explore the mine. It was decided that in view of such a large party, we should split into two groups. One to be led by M. Mitchell, taking a party of eleven to the upper two stages of the 'wad'. Entering at 'Gill stage' and making an exit via 'Fareys stage'.

The other party of four led by myself, to explore the area below 'Fareys stage'.

The reason for the unbalanced numbers in the parties was because of a recent report of a rock slide in the lower half of the mine.

The small party of four led by myself descended the 'Grand pipe' from 'Fareys'. On proceeding down to the next pitch we passed through a new rockfall by the 'window'. This presents no problem and is easily negotiated. Passing through the window we proceeded down the rubble slope and so on to the next pitch. This is a short 30' pitch (which has recently been re-bolted) down to the head of the final descent.

On reaching the next landing it was easy for me to see the volume of rock that had recently been displaced and is of considerable proportions. I descended 100' to the head of the final pitch. Here much of the debris had collected, although a lot had fallen down the final pitch to land in 'Gilberts level' 90' below.

However there are problems. The infamous perched boulder which used to hover half way down the pitch is now resting on the lip of the shaft. Next to it in a loose pile of rubbish is another large boulder waiting to descend into the shaft below.

In view of the fact that the other party could be below, a clearing operation could not be carried out.

Members of the other party came to inquire if the through trip was feasible, in view of the perched boulders this was not advised and so the party returned to 'Fareys' where some quick exploration was done along the level. A bat was found to be in residence.

The descent was made down to the car park. The majority of the party members having had a full days exploration of the top workings.

It is my intention to return to Seathwaite as soon as possible to clear the problem area and make the mine safe. As soon as this is done you will be advised.

NOTE: An article has been forwarded to the 'Descent' magazine warning of the dangerous state of the lower pitches in the graphite mines.

IAN TYLER. 20/11/88
CARLISLE.

MEET REPORT

GOLDSCOPE - YEWTHWAITE 20/11/88

Seventeen attended the meet. Due to the large number attending and the distance apart of the mines, it was decided to split into two groups. Four people led by P. Fleming assisted by W. Allison went to Yewthwaite.

The other 13 went to Goldscope to explore the wheel pit chamber area and the back copper shaft. Various people disappeared beneath the stacked deads in the wheel pit chamber, and tried to make contact with day via the stope in the back level. After some sustained digging little progess was made. Meanwhile M. Mitchell and others scaled the wheel pit chamber stope and went up the incline. Positive voice contact was made with the other party, who in the meantime had descended the back copper shaft. It is thought possible that a proper work party could make a new through trip?

It should be noted that John Hool was the only one with the nerve to make his exit from the back copper shaft via the 'boulder choke' (which has still not mellowed with time). The other members of the party elected to prussik out. I feel that it should be recorded that whilst A. Sibbald was starting his ascent a stone descended the full height of the shaft striking him on the shoulder. This could have been avoided, this is a clean shaft, the rock was dislodged by members at the shaft top. Fortunately Mr Sibbald was not seriously hurt.

All members of the party returned to Littleton bridge car park at 5.45pm.

The Yewthwaite party had all returned. All had descended the open stope down the 50' pitch to the sub level. Off the sub level an angled shaft descends 30' to a rubble cone, here the pitch descends a further 45' to the main level. The level extends in fairly sound ground north for 150yds, until a major collapse is encountered. South the level extends through very bad ground for 30yds from the point of descent. Beyond this area of dubious ground the level continues for 60yds to twin foreheads. During the exploration P. Fleming found a clay pipe in a back filled drive. All stopes were climbed. It should be made clear that the 45' descent from the rubbish cone down to the main level below, is adjacent to stacked deads on timber for the full length of the descent. These are in a somewhat dubious condition, extra care needed.

IAN TYLER 20/11/88

CARLISLE

CHANGE OF DATE CHANGE OF DATE CHANGE OF DATE!!

The date of the Coniston Exploration Meet scheduled for January 8th and published in the current Meets List has been changed. The Cumbria Ore Mines Rescue Unit (COMRU) holds regular practices on the second Sunday of each month in winter. As many COMRU members are also likely to want to participate in the Coniston Exploration Meet, the date of this meet has been put back a week to Sunday Jan 15th 1989.

Ian Matheson. (Meets Sec)

CAT EUROPEAN EXPEDITION.

Thanks Graeme for the following letter, the Picos de Europa is certainly a very interesting area.

Regarding the suggestion in the Newsletter that CAT might make it to Europe in 89. I was part of a small caving expedition to the Picos de Europa in Northern Spain this summer and can certainly confirm there are plenty of mines in the area.

Many of the mines have been explored by cavers as many run into natural systems. One problem however with a large expedition out in the Picos is the Spanish authorities. The Picos are divided into areas and each area is allocated to a caving group who have sole permission to cave in the area. Cavers without permission have been known to have their gear confiscated. Whether or not it would be possible to get special permission from the authorities to investigate the mines solely I do not know. One possible way round this would be to seek permission from one of the groups out in the Picos to "join" their expedition for the purpose of getting past the authorities. I certainly hope to have permission for the area I was in last year, as we have new caves still going in that area (just N of Fuente De)

There are a number of workings in this area which we explored in order to look for caves. Some of the older workings make the mines in the L. District look stable and the water is alot colder.

Not only is the caving and mine exploration in this part of Spain exceptional (some of the deepest caves in the world, with the exception of the recent Russian and Chinese discoveries are to be found in this area) but the scenery is in itself magnificent.

I look forward to seeing other suggestions for a "CAT in Europe 89" expedition.

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