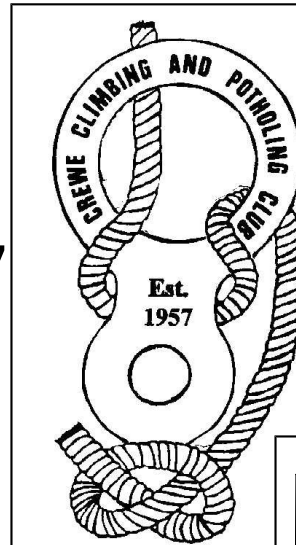


C.C.P.C. Newsletter 87 Winter 2005.

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Cwmorthin Slate Mine.

When we first visited this site estimates were made as to how long the entrance would last before it collapsed. The ranged from 10 minutes to 10 years, although 10 minutes seemed a little pessimistic it was a lot closer than 10 years! In fact it lasted about 8 weeks when two roof falls sealed the entrance. Apparently it is still possible to pass the blockage with fingers tightly crossed!

Following an appeal on the web Darren offered the use of some pipe that was stored at "Eric's". John, Len and Ralph with considerable help from Eric (well his tractor) loaded up 6 1.5 m lengths onto Jims trailer and Brian and Jim delivered them to N Wales the following Sunday.

The group arrived at Tyn – y groes on the Saturday morning and set off to insert the pipes DISASTER. The farmer had got wind of the project and was there to "greet" them. He flatly refused permission for the work to go ahead negotiations continue.

What would you do?

You are caving with a companion and are two rebelay and 30 m above him. You realise something is amiss so decide to abseil down and see what has happened. On the way down the knot on your footloop gets caught in a narrow crack and unable to free it you cut it and leave all but the jammer and krab behind. When you finally arrive he is a few inches from a rebelay and his Croll refuses to disengage from the rope. He is in some discomfort and is complaining about pins and needles in his legs. You attempt to assist in disengaging the Croll but fail. He is 40 m from the floor and there are two rebelay and a deviation below him.

Using the gear that YOU NORMALLY carry how could YOU solve the problem?

Pandora and New Pandora Mines

Betws-y-Coed. Thursday, 10th November 2005

Just for a change, this trip to North Wales was to visit a lead mine, rather than the slate quarries (mines) that we have been exploring recently.

The party comprised: Ralph Johnson, Len Kirkham, Steve Knox, Lionel Parkinson, John Preston, and John Shenton.

Pandora Lead Mine

[SH 76686000]

From Betws-y-Coed, we followed the A5 west, for two miles, then turned off to the right, immediately after crossing over to the north bank of the river. The narrow, unclassified road climbs steeply up into the forest, passing a view-point car park, and a junction with a narrow road joining from the right (the alternative way up from Betws, starting immediately on the left after crossing from the A5, over the river, on the B5106 towards Llanrwst). A short distance further on take the next turn left, by several buildings, heading north-west through the forest. After half a mile the road enters open ground, with obvious spoil and waste tips on the left, and a small, road-side parking area, close to the remains of a huge waterwheel pit just beyond the fence on the left.

Almost opposite the parking place, a public footpath followed the private road towards a house called Ty'n-y-Groes, before swinging right to reach the open fields beyond. At the first gate we turned right, towards an area of spoil tips and opencast workings. The adit entrance was clearly visible as a dark opening at the end of a short cutting.

The heavy rain during the previous week meant that every gully on the surface was brim-full, with water cascading down the slope. Just inside the adit entrance, a pool, more than 'wellie' deep, stretched from wall to wall, and away into the distance. True to form, Ralph managed to find a dry route in, to the far side of the pool, by entering through one of the open workings ! A side passage, on the left of the pool, reaches the base of a daylight stope, then, turning right and right again, returns to the main passage just where it reaches the top of the first internal, shaft. According to the survey, this entrance series is at the '13 fathom level'. Water from the entrance passage, and from the stopes, was spattering down the pitch, but not enough to be a problem. It is possible to pass the shaft along a ledge on the right, leading to the end of a board-walk into dead-end workings on 'Francis Lode' ahead. There are several 'hangers' in place to allow a traverse rope to be rigged here (essential), but we decided to leave it and rig the shaft instead.

Ralph rigged the SRT rope for the 10 metre pitch, using a rope protector and a tackle-sack for the severe rub-point on the lip of the ledge, then descended to the timber platform which was visible below. I joined Ralph on the spray lashed platform, and saw that there was a rusty ladder leading down on one side of the platform, and an aluminium, builder's ladder leading down on the other. The rusty ladder led down a timber wall, to a small chamber and the top of an open shaft, with 'hangers' in the rock above. I climbed back up to Ralph and tried the aluminium ladder route instead. This led to the space under the platform, with a very low, wet connection to the foot of the rusty ladder straight ahead, and a side passage under an archway on the right. The side passage led down a short slope to the timber framework around the top of another shaft, with an original, miners' ladder still in-situ. Three ladders were visible in the shaft, each offset slightly from the one above, with timber platforms at the change-overs. The whole area was very wet, so, once John Shenton had joined me, I rigged a descent rope from two hangers already in place above the shaft, and descended about 10 metres, alongside the ladders. The ladders seemed to be in quite good condition, so the rope was not really necessary except as a safeguard.

A horizontal passage below, the '23 fathom level', led easily to a major chamber, with a number of radiating passages and workings, containing a deep, large-diameter, open shaft in the middle of the floor. There were several large timbers, and several belay anchors, which could have been used to rig the shaft, which apparently drops directly to the '33 fathom level' below. Len and John Shenton had arrived, and, while we

waited for the others we investigated the surrounding workings. In one passage the route passed underneath a continuous line of timber working-platforms fixed between the walls, high up under the roof, with each one carrying a substantial pile (and weight) of rubble ! The framework of a wheel-barrow was still recognisable in one passage, and in many places the walls were heavily mineralised.

The way onwards was almost due north, along 'Goddard's Lode', following a 2 metre high passage with 'wellie' deep standing water on the floor. After a short distance the passage was dry, but became more and more constricted by washed in spoil (from Shaft Number 6), until progress had to be made by squirming along a flat-out section. Ahead I could hear the roar of water, but I could hardly twist my head round far enough to see where the sound came from. Once through the worst part, the spoil floor suddenly dropped, where a substantial stream entering from the left wall had cut it away, then the stream raced off down the passage into the distance. Flat out crawling in the icy torrent was unavoidable, but fortunately, after a short distance the passage became hands and knees height, then finally walking size. With no-one else in sight, I was too cold to hang about for long, so I set off down the passage to find the next pitch. The stream rushed along the easy passage for at least two hundred metres, then poured into a small, open shaft on the right. There was far too much water to make this a possible route, so I went on, and soon came to a second, similar shaft in the floor, but this one was essentially dry, and already had an SRT rope (about 10 mm.) rigged from two hangers in the wall above. As I made my way back to collect my camera bag from the shingle crawl, I met Ralph and John Shenton on their way in. John Preston was still at the other side of the low section, with Len and Lionel, but he crawled through to join me, and we set off back to the rigged pitch together.

Ralph and John Shenton were waiting for us. As we had no idea whether the lower adit entrance would be passable or not, Ralph and John Shenton started back, intending to meet up with Len and Lionel and then to return to the surface via our entry route. John Preston and I had decided to head for the lower entrance, knowing that if we couldn't get through, then we could retrace our route as far as the bottom of the entrance pitch, where we would wait for Ralph to drop a rope, if the others had already gone. John set off down the fixed rope, landing on a sloping wooden platform after about 6 or 7 metres. The rope continued underneath the platform, to another 'Y-hang', and a further 6 or 7 metre pitch. John reached the bottom without difficulty and set off to have a quick look for the way on. After abseiling down the first part of the pitch, I waited at the half-way platform for ten minutes, then, as John had not returned, I descended the rest of the pitch. The lower part of the drop was against vertical timber shuttering, with occasional cross-struts, all made from small diameter, round-section pine logs, and all very wet. I think I was actually descending inside one of the old ore chutes. Despite my best efforts, I think I managed to kick just about every piece of timber on the way down, but it must have been more solid than it looked, as nothing moved !

The pitch ends in a comfortable, walking height passage on the '33 fathom level'. Water (from the wet pitch I assume) was running along the floor so I set off 'downstream' after John. After a short distance there was a partial collapse, but it was easy to get past, and just beyond, I reached a junction and found John's bag. To the right was blocked after a few metres. There must be a shaft to the surface here, as there was a large chunk of 1950's motor car in the dead-end section. I went left, following the water along a major level, and soon reached a cross roads, with other passages to right and left. Surprisingly, much of the floor here was timber boards, just

below water level, with the occasional gap showing a deep, dark, water-filled void below ! At one side, there is a timber work-bench set against the wall. Just as I began to worry that John might have gone for an involuntary swim, I saw his light in the distance, straight ahead, and set off to join him. Apparently there are extensive workings in this area, belonging to the New Pandora part of the mine, which are worth investigating, including a passage to the 'Spion Kop' shaft, with a blocked ladder-way to the surface, and a completely flooded route to lower workings. John and I splashed along the '33 fathom adit level', towards a bright spot of daylight far ahead. There was some kind of obstruction clearly visible, and John had been all the way to the end just to make sure it wasn't a locked grill. It wasn't !! There were many grotesque formations at the junction between walls and roof, where iron-rich water had created orange and red, bulbous stalactites, some additionally coated with thick deposits of sticky red ochre, which also oozed down sections of wall. As we progressed, the water got steadily deeper, until it was over waist deep (on me) for the final 50 metres or so. The obstruction was a few timber beams supporting sheep wire, to keep livestock and tourists out, although I'm sure the water would be effective enough on its own. We scrambled out and splashed along a short cutting which came out alongside the picnic site toilets by the minor road beside Llyn Geirionydd. [SH 7633 6045]

An easy walk up the hill to the cars, then back in through the top entrance, and we were re-united with the others. John Shenton was just emerging into daylight, and Lionel was starting up the first pitch to where Ralph and Len were waiting. Altogether the trip took about three hours, but we could have spent much more time exploring the lower passages if it hadn't been so wet.

Before the trip, I had copied down a basic route description from the internet (thankyou Wirral Caving Group), and Ralph had obtained a survey (produced by Dave Baines and Dave Carlisle), so we had some idea what to expect.

Steve Knox 14th November 2005

DCRO Training Day at Whitehall Outdoor Centre, Buxton 12 Nov 05

There was a good turn-out for this 'refresher and basic-skills' day, despite the freezing weather, with a number of new faces among the old hands. C.C.P.C. was well represented, as usual.

Bill Whitehouse started the day with an excellent over-view of D.C.R.O. today, detailing the responsibilities, background organisation and call-out procedures, which are not always obvious to those of us 'on the fringe'. Bill commented on the general reduction in caver numbers nationally, and the small number of individuals actually involved, on a regular basis, in training, and turning out when needed, for cave rescue. He certainly made the individual contributions made by team members, at whatever level, seem very important indeed. Everyone received a hand-out which covered all the above, and also 'Guidance & Information for Rescue Team Members', in three sections: 'On Being Called Out ...', 'At The Scene ...', and 'Changes in Callout Details ...'. Much of the information about what to take on a call was good common sense, but it was certainly useful to have it set out so clearly. Having spent a few hours, in bitter weather, on the surface at J.H. Mine, I will never need to be reminded to have warm and waterproof surface gear with me, and in future I'll make sure there is a sleeping bag in the car as well ! Driving issues were highlighted, as there is a very real danger that individuals become so keen to get to the incident that normal road-safety matters can be compromised.

We were split into groups and circulated through the various activities during the remainder of the day, with a break for lunch, which was provided.

Stretcher Loading and Handling: This session, led by Janet Miller and Keith Joule, gave an introduction to the types of stretcher, back-splint, and casualty bag which might be used during a call-out. We started indoors, and all had the chance to handle the equipment, and ask questions, before using each of the two stretchers with a 'casualty'. Working on a carpet, in a well-lit room, may not seem too similar to the bottom of the first pitch in P8, but this was a teaching and learning situation, where we could all see and hear what was happening, and we could hopefully gain more than we might have done on an underground practice. Fortunately, we don't have call-outs every weekend, however, that does mean that without regular hands-on training, it is easy to forget how things should be done. I wasn't aware that the back-splint should always be used when the flexible stretcher is in use, even if no back injury is suspected, as otherwise there is insufficient protection for the casualty when the stretcher is rested on uneven ground. The basic sequence would be: Back Splint, Casualty Bag, Stretcher. The casualty must be wearing a harness if any vertical hauls will be used during recovery, and should be wearing a helmet. We spent some time on the different ways hauling and lifeline ropes are attached for lifting the stretcher in either the vertical or horizontal position. (This is one aspect of rescue that I need to spend more time on.) Once safely loaded, we set off on a brief 'carry', over a series of stone blocks close to the outside of the building, just to emphasise the need to work as a team, under the direction of one person at the casualty's head. Information sheets were provided.

First Aid and Casualty Care: Tom Bailey led this session, leaving us all in no doubt that having an accident underground is definitely not to be encouraged, but if you must have one, then make sure Tom is close by ! I can't begin to recount everything that Tom explained (I should have taken a recorder !), but basically it started with keeping yourself safe –you can't help the casualty if you become one too ! Find out what happened –it might indicate, to some degree at least, what might be wrong with the casualty, and check out the quiet ones first. Check breathing –get down and listen, or look for 'steaming' breath. If necessary clear the airway –finger inside the mouth to clear debris, and head back. If necessary give breaths, mouth to mouth, hopefully to get things going. An open airway is vital.

[***It is impossible to maintain mouth to mouth resuscitation and chest compressions underground, in a cave-rescue situation, so don't start

Easier situations to recognise, and start to deal with are bleeding and broken bones. Tom emphasised the need to really check inside the casualty's clothing, as 'furries' and over-suits can conceal all kinds of damage, and even extensive bleeding. Bleeding needs to be stopped by direct pressure, using some kind of pad on the wound, and by elevation if possible – for example if it is an open wound on a limb, binding, using whatever is available, to keep the pad in place. Tom showed us the very basic contents of his everyday caving bag, and they were all items which any caver could (and should ?) have with them –nothing fancy. [His bag for attending to a casualty during a rescue was very comprehensive.] Fractures need to be immobilised and protected – nothing fancy. Back and neck injuries must always be suspected in any falls, and be treated with great care, avoiding any unnecessary movement – typically the casualty will be in the worst possible position, or under a waterfall, or down a rift, or

The casualty might be suffering from Hypothermia due to wet, cold, and exhaustion, and by the time the rescuers arrive it is likely that the casualty's companions will heading the same way – watch out for this, and get them out to the surface as soon as

possible. Throughout, it is vitally important that the casualty is reassured by those attending, both by tone, manner and physical contact, and nothing negative is expressed in the victim's hearing. You just have to learn as much as you can while you have the time, and then do the best you can on the day, praying that a skilled medic, like Tom, will arrive on the scene to take over.

Ropework and Rigging: Ralph Johnson presented this session, thankfully indoors, on a climbing wall. The group members had varying degrees of experience, so Ralph started by explaining the different kinds of artificial anchors which are commonly found underground, and also the way natural anchors can be used. He had set up a 'standard', pitch-head arrangement, for hauling a casualty up a vertical pitch, then caught us all out by asking us to pick out the errors. I must admit, I had assumed it was all correct, but we found several points, which were either hazardous, or could have been better, and Ralph pointed out the ones we all missed ! It just goes to show how important it is to know how the gear should be rigged, and to constantly check that everything is OK and ready for use. There was much discussion of ratios and loading, and various different arrangements were set up, but the basic 'Z' rig seemed to be the easiest to set up and use, with the least chance of getting it wrong. A second rope was rigged as a traverse line and SRT rope on the pitch, to ensure the personal safety of team members operating at the top of the pitch. In addition there would be a safety rope running up the pitch from the stretcher [not rigged, for clarity], with both safety and haul ropes running through pulley-jammer arrangements at the pitch head. Ideally the safety and haul ropes should be different colours. The safety rope would run through an Italian Hitch or Grigri, well back from the pitch-head for belaying or lowering as necessary, and pulleys and jammers should be ready to be attached to the safety rope, so that another 'Z' rig could be set up if there was a problem with the hauling rope. Outside, Ralph showed us how the Quadpod is used, and the way multiple anchors can be set up. Once again, the hauling rope was rigged through a basic 'Z' rig, with a pulley-jammer at the top of the Quadpod. This is yet another area where lots of practice is needed to ensure familiarity with the basic rigging, remembering that every pitch will be different.

Communications: This session was presented by Bill Whitehouse. The hand-out covers six A4 sides, and is essential reading for anyone wanting basic information on all aspects of DCRO's operational communications. The initial four statements are worth repeating here:

- a) Information is essential for planning and implementing successful search and rescue operations.
- b) Good information in the right hands saves time and effort and can save lives.
- c) Communications is about getting information into the right hands correctly and swiftly.
- d) Good communications doesn't just happen – it needs working at.

Bill introduced the different types of equipment available, and their various advantages and drawbacks, some being designed for surface to surface use, and others for surface to underground.

The fundamental units for the surface use Search and Rescue (SAR) frequencies, and comprise the eleven hand-held sets and the two vehicle sets, and there are also Private Mobile Radio (PMR) sets which work on different frequencies. All these radios operate on line of sight (sometimes slightly better than this), over a range of a few kilometres. PMR sets have been effective in 'top to bottom' deep shaft communication, and can be used underground with a co-axial cable (not connected)

and aeriels. Personal mobile phones also have a role to play where SAR and PMR radios will not operate, or when secure transmission is important.

There are six 'Heyphone' sets, which are the main surface to underground, and underground to underground communication system. Their maximum range is about 800 metres, but performance can be seriously affected by local ground conditions or the set-up of the unit and aeriels. Surface locations will also need a SAR or PMR radio to link with other surface units.

The three linked systems discussed were Single Wire Phones –a basic field telephone invented in Australia, Co-axial Cable System –to use with PMR radios, and Talking Rope –a 70 metre rope with an integral cable and waterproof connections, usually for use by divers, through a sump.

Bill explained basic operational procedures and care of equipment during a call-out, and the need for good records to be kept –at least partly because they could be needed for an official investigation later.

The DCRO document: 'Communications Training Notes – November 2005' has all of this, and much more, in great detail.

The final session was given by 'Waker', and gave a brief over-view of the possibility of encountering poisonous or non-breathable atmospheres underground, and the most likely gases that could be involved. The really worrying part seems to be that some of the most hazardous gases have no smell and are invisible, so you don't know they are there until you are in trouble ! A five page hand-out provides very sobering reading, with plenty of examples of tragic events due to the four gases likely to be encountered:

Carbon Dioxide [CO₂], Hydrogen Sulphide [H₂S], Carbon Monoxide [CO], and Methane [CH₄].

Carbon Dioxide is considered in some detail, due to incidents of dangerous concentrations occurring naturally in some caves or mines, including the Knotlow system. The Carbon Dioxide is not poisonous in itself, but it prevents respiration resulting in unconsciousness and then death.

As rescuers, we need to be aware of the possibility of hazardous gases being present if we are asked to enter culverts, or other man-made underground structures, in search of missing persons. Where-ever there is any suspicion of gas-hazards, a multi-gas testing unit should be used by fully trained personnel in protective clothing, using breathing apparatus.

This was an excellent day, and as always, some questions were answered and more were generated. Rescue practice, methods, equipment and organisation continue to evolve, and we have to maintain our individual knowledge and understanding for the day we have to put it into practice.

Thanks to everyone involved in the organisation of the day.

Steve Knox 30th November 2005

Exploring the Welsh Slate Labyrinths, Part 3

Tanygrisiau, Blaenau Ffestiniog. Sunday, 16th October 2005

Back again to the Cwmorthin valley, this time with Ralph, Mark Johnson, and Steve Rintoul (prospective new Club Member).

Wrysgan Slate Quarry

[SH 6780 4575]

Ralph and Mark set off uphill to practise rope-work, while Steve and I entered Wrysgan at the 'Floor 1' adit. At first we followed the route described in Part 2 (above), and reached the 'Floor 3' terrace above the fixed hand-line without difficulty.

From the terrace, we investigated the south-west access passage first, finding that it soon entered a major, worked-out void. We scrambled across the steep slope of huge, shattered blocks and collapse debris and found the way forward apparently buried behind unstable rubble. We chose not to poke around too closely. Back across the terrace, the opposite passage led into the upper section of 'Floor 1', chamber 2, and we turned sharply right (up-slope), following the route used by instructed groups. At the top of an easy climb, a 'step-over' gave access to the 'Floor 4' adit, with collapse debris from a worked chamber to the left, and an easy walk back to the left. This led back to the 'terrace chamber', at a higher level than the terrace, passing a short branch to the same chamber, on the right. Keeping close to the left wall, we climbed a short way up the slope, to a route out of the chamber, up a short climb to the left. The passage ahead branched; right leading into the horizontal, 'Floor 5' adit to daylight, with increasingly deep water (0.5 metres) making progress unpleasant; and left (dry) leading easily into a worked-out chamber with a daylight window above, and a short adit to daylight at the 'drum-house' exit. This was where we met up with Ralph and Mark again, before Mark set off to walk over the surrounding hills.

Ralph, Steve and I re-entered the underground workings at the 'Floor 6' adit, and followed this horizontal route, through the first four chambers with their spectacular windows to daylight, high above. The quarry plan that we were using, shows chamber three linking with workings below, but there was no evidence of this. Chamber four has major collapse debris extending to the right, down into the hillside, and we did not check for a route through this. The last five chambers are linked by short sections of the horizontal access passage, and each has a broad, flat terrace across it, with some worked out space above, and to the left, and enormous voids dropping steeply away on the right. About 15 metres up, at roof level, in the wall of the penultimate chamber, is the opening from the steeply descending ventilation adit described in part 2 (above). It may be possible to reach lower workings by descending into the chambers below from this level, however, the routes seen would need the use of a rope, at least as a hand-line for safety.

Retracing our route, we were soon outside again, and heading off along the hillside towards Rhosydd, showing Steve the hillside views of the daylight windows, and visiting the remaining short adits as we passed.

I was delighted to pick up my gloves outside the final adit, lost on our previous visit ! A faint path led across the hillside, gradually gaining height, until, just beyond a small ruined building, it reached a low saddle with a fence line and gate. We crossed the short stretch of flat moor-land ahead and reached the crumbling brink of an opencast quarry. These open workings are locally known as 'twlls', and at this location there are two, 'East Twll' and 'West Twll' (the one we were about to enter). The East Twll was formed by a massive collapse in the underground chambers below, sometime around the beginning of the twentieth century, and further collapses have taken place during late 1998, resulting in three new surface craters or 'twlls' nearby.

Rhosydd Slate Quarry

[West Twll Entrance: SH 6655 4530]

[Level 9 Adit Entrance: SH 6650 4615]

There was no obvious, easy way down into the West Twll, but with care, we managed to scramble about 15 metres down a broken corner to the sloping expanse of slate rubble below. A paved roadway led to the right, towards the hugely undercut back wall of the quarry, where a steep slope led down into the shadows. Several pillars had been left for support, but clearly, over the years, a vast tonnage of rock has detached itself from the roof, and forms an unstable jumble of jagged blocks below.

At the lowest level of the daylight section, an obvious, horizontal access route runs across, and a pair of timber beams, apparently the remains of a bridge, rest on the rubble surface, though there is no void here for it to span. Following the level to the left led to the lip of a pitch into a large void, and to the right the level ended at a major collapse with no way on, however there were several places where it would be possible to follow the rubble slope down, under the wall. This is actually the top of a huge chamber, now almost filled with tipped waste. At the hole nearest to the collapse on the right, Ralph spotted an arrow formed with stones on a boulder, so I carefully made my way down. After about 15 metres there was a passage on the right (looking down), then, just as the way down became blocked about 10 metres further on, another passage on the right led through into the side of a massive incline (the '5/9 Incline') which dropped away steeply into the darkness. Climbing up the incline (right) I reached the first passage seen, and went back through it to call Ralph and Steve down to join me. Together we set off down, following the remaining rails, sleepers and cables. Another side passage led through to the brink of a sheer drop into a huge chamber, which must have been directly below the rubble slope we had used to reach the incline, and below was the surface of a lake. Continuing down the treacherous slope of the incline, Steve managed to complete a double back-flip with elbow landing, but refused to repeat the performance so we could take an action 'photo !

The incline, following the dip of the 'Old Vein' beds, ends at 'Level 9', with the lake just along the service passage to the left. The lake surface seems to be the current, permanent water-level within the mine, all lower workings being completely flooded. From the shore of the lake we could see the opening to the continuing horizontal passage in the wall opposite, just above water level, but there was no way to reach it. A large chamber at the junction of the incline with Level 9 has the remains of hauling machinery and foundations, and multiple rail tracks, including an intact horizontal cable-tensioning wheel.

In the opposite direction, away from the lake, the service passage passes two workshop areas on the right, then through the bases of several semi-collapsed chambers, with their flooded continuations visible through openings in the lower part of the passage wall on the opposite side. There are a number of well-constructed slate walls in the workshops, with built-in stone shelves and 'cupboards'. As it cuts through the rock, this level passage gives a good view of the slate beds, dipping at an angle of about 22 degrees to the horizontal in this area.

Returning to the major, Level 9 junction we turned right into the main adit, which is a drainage and transport tunnel, running almost perfectly straight for about 670 metres, at a gradient (down) of 1 in 86, to daylight. Initially, at the junction, the draining water is culverted under slate slabs, before being allowed to run away along the side of the passage towards the exit.

We passed a small, well-appointed workshop on the left, and then found horizontal cross-passages, on either side, leading to worked out chambers, first on the line of 'Narrow Vein', and then repeated on the line of 'Back Vein'. At least one of these large, dry chambers has been used for group camping, and is well littered with 'dead' night-lights. Finally, daylight was reached at the mouth of the adit, where it opened into a shallow cutting which led to a large area of disused buildings and preparation yards.

Our day was nearly over, and we set off through the abandoned surface installations

Tanygrisiau, Blaenau Ffestiniog. Tuesday, 15th November 2005

Cwmorthin valley: with Gareth Hind, Ralph Johnson, and John Preston.

Rhosydd Slate Quarry [West Twll Entrance: SH 6655 4530]

[Level 9 Adit Entrance: SH 6650 4615]

There is no easy way to reach Rhosydd Slate Quarry, it is just a long, steady plod uphill from the parking place above Tanygrisiau. The track leads along the south-west side of Lyn Cwmorthin, passing the remains of the Cwm Orthin Slate Quarry barracks block, and further on, the ruined 'Tiberias' Chapel', erected for the Rhosydd workers. The ruin of the Rhosydd manager's house, 'Plas Cwm Orthin', is visible in the trees just to the north.

At one place at the side of the present track, rails and sleepers were still in-situ, marking the line of the original tramway.

Beyond the chapel, the track passes the ruins of the Conglog Slate Quarry buildings, and a row of six Rhosydd cottages, then climbs steadily up the hillside to reach the plateau formed by the top of the Rhosydd Slate Quarry waste-tips. There are substantial masonry remains on the right of the track, at the site of a huge, unfinished, water-wheel pit, next to the outflow from Llyn Clogwyn Brith, out of sight on the hillside above. Across the plateau, almost due south, are the remains of two mills, with wheel pits, and a culvert to carry water away under the waste tips. There are numerous other buildings, and a street of two-storied 'barracks' which were built between 1860 and 1890.

Shallow water flowing from an obvious cutting into the hillside, marks the outlet of the Level 9 Adit. This was the major adit, which was operated with an endless rope haulage system for the movement of trucks, and was also a principle drainage route. Today, all workings below this adit level are completely flooded.

We set off along the passage, visiting the side chambers at North Vein and Back Vein on the way, to the major junction at the foot of the Level 5/Level 9 incline. After another look at the lake chamber, along a passage to the right, we explored the Level 9 access passage through the base of Chambers A, B, C, D, E, F, G, and H (East) to the top of the steeply descending, flooded, link passage down to the lost chambers of Level 12, far below.

We returned to the incline and set off uphill, checking each opening on the right for any possible route into the western workings, and the link to Croesor Slate Quarry, beyond. In several places the route across was blocked with shattered waste from above, which was very precariously balanced on the steep slope. Eventually we entered the final, constricted, sloping void on the right which allowed us to reach daylight at the lowest point of the 'West Twll' open quarry, probably at Level 4. Moving to the west led to the brink of a pitch into Chamber D (West) – I think ! This whole area is very confusing, and it is difficult to identify Levels and Chambers, according to the way they are labelled on the Plan of Workings. I slithered down into the constricted space of the top of Chamber C (West) and traversed down and across the unstable slope to reach a number of large blocks at the end of the Level 6 service passage. While the others waited above, I moved through into the lower part of Chamber D (West), and descended again to the Level 7 service passage. The passage led easily through the base of Chambers E, F, and G to a dead end which helped me to confirm my location on the survey. I returned to the base of Chamber G (West), and climbed an unstable slope for one level to a terrace level in an enormous open space, with the Level 6 service passage (westward) tucked away under an overhang of the

roof, on the right side. This was far enough without the others, and I retraced my route and met them at the large blocks on Level 6.

Together we went back and followed the Level 6 service passage from Chamber G (West), and almost immediately reached the foot of an incline, which rises to Level 6. There was a platform, still in place at the bottom of the track, with two metal turntables which turned easily and made a satisfying booming sound when rocked ! We continued through the base of Chambers H and I (West), then had to turn right, down a sloping ventilation passage with some loose material, to reach a 'T' junction with Floor A of Croesor Slate Mine. To the right, round a couple of bends, the passage ended at a blank face. Turning left at the junction, the remains of two blocking walls were passed through, then we reached a bizarre pile of decaying rubbish, including a badminton racket, a handbag, and a number of plastic toys, which is supposed to be the marker at the end of the difficult trip from Croesor Adit entrance. We all felt it needed clearing out, as it did nothing to enhance the underground experience.

Just beyond the junk pile, the passage stopped at the lip of a pitch (about 5 metres) into Croesor Chamber A18E [- the eighteenth chamber East of the entrance adit, at Floor A level.] Two knotted ropes and one SRT rope were already in place, dropping to the rocky edge of a huge lake which stretched away into the darkness. A bright yellow dinghy floated nearby, attached to a length of cord which was obviously used to pull it backwards and forwards, and there was also a pair of inflated inner-tubes. Suspended over the lake were the remaining supports and parts of timber beams from the original access bridge used to cross the chamber.

We turned back towards daylight, retracing our steps to Chamber G (West), where we found an easier route straight on, keeping to Level 6, until we entered Chamber D (West), where we could see a huge daylight window at the top of the chamber, four levels above. Gareth nobly went downhill and recovered the bags, visible at the bottom of the chamber, then we plodded up the steep slope to exit in the West Twll at Level 2. A simple traverse around the terrace led to an easy climb out of the Twll onto the moor, and a pleasant walk back down to the car, passing through Wrysgan Slate Quarry on the way.

Once back on the main track past Llyn Cwmorthin, we crossed to the north-east side of the stream and walked round to inspect the reported collapse in the Cwmorthin Quarry Lake Adit entrance. Although there had been a roof-fall just inside the entrance, there was still a way through, however the roof is in a terrible state and further falls are inevitable. Local cavers and mine-explorers are already preparing to carry out remedial work to preserve access, using plastic pipe supplied by CCPC.

Other sites mentioned:

<u>Cwm Orthin Slate Quarry</u>	SH 681459	1810 to 1997
<u>Conglog Slate Quarry</u>	SH668467	1874 to 1909
<u>Wrysgan Slate Quarry</u>	SH678456	1830s to 1950s

Steve Knox 24th November 2005

Exploring the Welsh Slate Labyrinths, Part 5

Corris Uchaf, Dovey Forrest. Tuesday, 22nd November 2005

with Ralph Johnson, and a mixed party of Outdoor Education instructors and Mines Inspectors.

Gaewern Slate Quarry

[SH 745 086]

This quarry seems to be a long way from anywhere. We followed the A487 south from Dolgellau towards Machynlleth, and, just beyond the tiny hamlet of Corris Uchaf, we turned up a narrow track on the right (locked gate) and parked at the bottom of the extensive slate waste tips below the quarry. Climbing steeply uphill to the right, we soon reached the brink of a large open stope. With a safety rope rigged, our party traversed along the first part of a narrow ledge to reach a fixed, steel cable which then led into a horizontal adit in the head-wall of the stope. We explored a series of spacious passages which linked worked out voids, crossing some along exposed terraces protected by steel cables bolted to the back wall. In one steeply sloping chamber we followed a route which descended against the left wall (looking down) on unstable slate waste, to reach a lower level.

Again passages linked major voids, often part way up, with substantial drops to lower workings. Passing along one horizontal passage, we used a fixed traverse cable to protect the crossing of the top of a steeply sloping chute (used by instructed groups to reach the next level down, either by abseiling, or by being lowered). We soon reached another steeply sloping chamber with a path down the unstable rubble on the left side of the slope. At the bottom we turned back under our previous route, to pass the bottom opening of the steep chute on the left. A little further on we turned sharply right, down a steeply sloping passage with two decayed timber stemples above the entrance. Steps, probably original, had been cut into the sloping floor, making descent easy, however, about eight metres below, the route turned left onto a narrow ledge above a deep void, and a very poor traverse line led right towards a distant opening. The last few steps and the left-turn were around a seriously fractured rock-corner which showed signs of recent movement. At the end of the ledge, more steps descended into the chamber below, and apparently lead to more chambers and passages at lower levels, with many artefacts still in-situ. We turned back, up the first steps, then followed a series of horizontal passages which led through shallow water to a partially obstructed exit to daylight. Turning left outside, a pathway through woodland led to a well engineered terrace, which was probably the track-bed of a tramway. After a short distance we passed a series of ram-shackle buildings on the slate waste-tips, then turned right, downhill, back to the vehicles. The whole visit lasted for only about two and a half hours, but there was much that we didn't see.

Steve Knox **25th November 2005**

Dinas-Mawddwy, Dovey Forrest. Tuesday, 22nd November 2005

with Ralph Johnson, and a mixed party of Outdoor Education instructors and Mines Inspectors.

Minllyn Slate Quarry

[SH 852 139]

This is another quarry out in the wilds. This time we followed the A470 east, then south from Dolgellau towards Machynlleth. Just through Dinas-Mawddwy we parked in a large lay-by on the right of the main road. A forestry road led steadily uphill, eventually deteriorating into little more than a steep path, and finally reached an area of slate waste tips. Plodding onward up the slope, we reached a flat area with very ruinous mill remains, extensive waste runs, and a ruined boiler house with a standing chimney on the slope above. This is the Main Adit level.

We continued uphill, following the line of an incline, surrounded by slate waste tips, and eventually reached an open quarry with a huge, sloping air-shaft in the bottom. An enormous slab, near the lip of the shaft, provided a suitable belay point for the abseil rope. Water dribbled down the rock, making the descent into the darkness below extremely slippery. The landing was at the top of an enormous rubble slope, which stretched down into a huge chamber below. An large opening on the left, on the way down, gave a view down a vertical pitch into a second large space, with a dark lake stretching over most of the base of the chamber. All passages and chambers below this Main Adit level are flooded.

There are a number of large, open chambers with almost perfectly flat floors, and a network of horizontal linking passages which show evidence of having previously carried rail tracks. In the chambers, lengths of chain hang from the walls and roof, and there are suspended hooks and pulleys in many places. Many passages end at blank walls, but there are several openings visible high up in the walls of the chambers. One of the Mines Inspectors explained the way channelling machines had been used in one of the workings, probably as an experiment.

Back in the lake chamber, we examined the remains of a steam crane, a boiler and pumping equipment, before heading out along the Main Adit, through shallow water to daylight. We exited into the base of a depression, and immediately entered a fine, stone lined tramway tunnel, directly ahead, which led through to the mill area passed through on the way up the hill.

The trip lasted for about two hours.

Steve Knox 25th November 2005

Knotlow Mine, Derbyshire

Saturday, 29th October 2005

Paul Nixon and I visited Knotlow Mine, intending to go as far as the bottom of Waterfall Pitch, water levels permitting.

We descended the first two pitches, then headed off to the climb down at the end of Pearl Chamber, where we immediately became aware of the roar of the waterfall. The sound was coming from the short 'chain passage' which breaks into the side of the '210' shaft (pre-decimal measurement in feet). Once down to the head of Waterfall Pitch, the sound was deafening, and the air was filled with a fine mist of water droplets. In this area there was a distinct smell of oil. We rigged a rope for safety, then took it in turn to lean out to check the state of the pitch below. With careful rigging, and by using the deviation half way down, it would have been possible, but certainly not pleasant, to descend the pitch. We decided to leave it for another time !

The stream here is hidden as it is culverted below the passage floor, and issues onto the pitch about 2.5 metres below the lip. Turning back from the pitch, the passage passes the base of the climb-down, then dips to a blockage, which is normally dry. We found this whole area was coated with fresh, wet mud, which seemed to have been forced up from the blocked passage by the stream which must have flowed up and along the passage to the pitch head during a recent flood. The oil-smell was particularly strong in this area.

We climbed back up to the main passage level above, and turned right towards 'The Bung'. The first crawl was tighter and wetter than I remembered from previous trips, but with harness and lamp removed, and a quantity of gravel and mud scraped out, I was able to wriggle through. A low section with a shallow pool followed, then a hands and knees crawl through water beyond that, so we were both well soaked by the time

we reached the chamber containing the junction with East Level. The Waterfall Pitch stream appears from boulders at the base of the left wall here, and partly disappears into the rubble floor, with the surplus running off into East Level, on the right. We headed on along the continuing, walking-height passage to the final chamber, where the floor sloped up into a lower section ending at 'The Bung' squeeze.

With my harness, lamp and helmet removed, and with one arm stretched ahead, I was able to get well into the tight, oval tube which forms the squeeze, but pushing myself further in would have been foolhardy. Immediately ahead the passage slopes downhill slightly, then widens but remains absolutely flat-out through a shallow pool, with little chance of turning round. Paul provided a welcome pull on my legs to get me back, then had a look himself. He slithered right into the tight section, and was sure that he could have gone through without too much trouble, but the wet section ahead was not appealing, so he backed out. Thinking about this afterwards, I realised that on previous trips through the squeeze I had always been wearing a wet suit, which is clearly smoother and less bulky than a furry suit and oversuit.

We turned back to the entrance to East Level, low down on the left [heading out]. East Level passage is one of the finest hand-picked 'coffin levels' in Derbyshire, running almost level for 150 metres to choked workings on Crimbo Pipe vein. The entrance is less than 1 metre high, and 0.5 metres wide, but we found that there was about 0.3 metres depth of fast flowing water racing away down the narrow passage, making it quite intimidating. As soon as I got down on my hands and knees in the entrance I became aware of the same strong oil-smell that we had experienced back at the top of Waterfall Chamber. The smell was so unpleasant that we decided to head back to the surface, exiting without difficulty.

Note: There is a 'Pollution Log Book' kept in an ammo-box at the foot of the climbing shaft entrance pitch, which we completed with details of our trip, and the places we had experienced the oil smell. Steve Knox.

Reminder: Subs for the 2005-2006 are NOW due. This "year" runs from Oct 05 to Dec 06 so not only are you getting 14 months for the price of 12 there is a reduction as well! Associate members pay £7.50 (which includes all new members) and full members pay £15.00. The insurance is still in a state of flux but as soon as we here so will you.

Stop Press. Negotiations at Cwmorthin are progressing well. The farmer is in favour of keeping the mine open to those with the appropriate insurance BUT he wants the adit restoring to its original condition (before the collapse!). Looks as though the pipes Jim and Brian took out may be on their way back in the near future!

Stop Stop Press. DCA insurance will discontinue 31 Dec and we will be insured through BCA. There are some changes to what is exactly on offer. It does appear that ALL members must be insured, more details when we have them.