

JOURNAL OF THE



Issue No. 1, 2010

Visitors

GOES played host to five groups over the period, four to the Ty Gwyn and one to the Penmorfa. Ty Gwyn visitors included members of the Round Table, Snowdonia Society members, and members of Clwb Dringo Porthmadog. The most memorable trip was made up of staff from the Great Orme Tram Company, who were game to visit the mine's 'more awkward places' such as the Sims Shaft and the Inclines - a great bunch of chaps.

The Penmorfa was visited by the North Wales Cave Rescue Organisation. What was originally planned as a rescue practice ended up as a familiarisation trip of the upper workings.

2009 Extravaganza

Once again the GOES gazebo was in its usual spot alongside the Ty Gwyn entrance, and again the weather was kind to us. The open entrance to the mine continued to draw the public like a magnet, proving that people just have to look down an open hole and this served as a great means of breaking the ice, if only to explain that it wasn't a sewer but the modern entrance to the Ty Gwyn!

As in all years interest was high and members were kept busy explaining the history of the mine and copper mining in Victorian times.

2010 Extravaganza

GOES is celebrating its 25th anniversary this year, so the gazebo was treated to a makeover with specially made banners adorning its sides announcing the occasion.

Again, it was a successful event with good weather and a steady stream of visitors. Gaz made a protective perspex lid to cover the hole, and allow safe viewing. It seemed to draw the visitors in, although sadly all they could see when looking down was their own reflection.

The 25 year anniversary was celebrated by David Wrennall, who opted to spend a full 25 hours in the mine. He entered the Ty Gwyn at 1330 on 1st May, with all necessary camping supplies, and emerged again at 1500 on 2nd May - looking remarkably well, considering! (see p20).

Many thanks again to Dave Broomhead for all his hard work in organising this annual event, and to all the other members who helped out on the day.

Rest and Be Thankful

For several months the framed GOES exhibition photos have been on display on the walls of the Rest and Be Thankful, and they proved very popular with visitors calling in for refreshment. The display was taken down recently to allow redecoration of the café, but it is hoped that GOES will have permission to put them up again later on this year.

AGM 2010

This year's Annual General Meeting will take place at 2.30 pm on Sunday 23rd May in the Mine Centre, Great Orme Mines Ltd. Enclosed you will find the Notice of AGM and nomination form.

Billy Davies.....	04
Roaming in Romans - Anniversary and Icing.....	05
Special Times.....	08
Ty Gwyn Mine - Circuit of Parallel Inclines.....	11
Summer Walks 2009.....	12
Ty Gwyn Mine - A Drive into Town.....	13
Lamps - New Life and Light.....	16
Ali Series Connected to D-Day Rift, and more.....	17
Ty Gwyn Sleep Under.....	20
The Caving Code and Committee Members.....	21

The gazebo with its new banners



The new perspex lid



Dave entering the Ty Gwyn at the start of his sleep under





On the 30th December 2009, Bill died suddenly at his home in Cromlech Road. He was sixty nine. A founder member of the Great Orme Exploration Society, he was one of its earliest chairmen. Had it not been for Bill's influence on the early members it is unlikely that GOES would ever have 'happened'.

He started entering the Orme's mines during the early sixties and did a vast amount of exploration, especially in the Penmorfa workings. In those early days it was generally believed that the breakthrough from Penmorfa to Vivian's was imminent! I and many others first experienced mine exploration, following an invitation from Bill, "to see the mines". Had it not been for those early explorations by Bill and his colleagues it is highly unlikely that the history of mining on the Orme from the Bronze Age to the nineteenth century would ever have received the acknowledgement, publicity and tourist potential it now commands. In recognition of this Bill was made a life member of GOES in 2001.

He was born in Llandudno and had lived in the same house in Cromlech Road all his life. He had hitch hiked extensively all over Europe and often recounted his many adventures and experiences. One of my favourites was his account of chatting to some Mormon missionaries outside the Vatican. Three months later they turned up in Cromlech Road to pay him a visit! He possessed the ability to converse with everyone and was tolerant of the views and beliefs of all, without compromising his own.

He was an avid reader with a vast knowledge of the works of such varied authors as Charles Dickens, George Orwell, T.H. Lawrence, Terry Pratchett, Kurt Vonnegut and many more.

His funeral took place at the Crematorium on the fourteenth of January. The chapel was full as friends and colleagues turned up to pay their last respects. Bill had often expressed the wish to have his ashes scattered in the Penmorfa and this was done on Sunday the sixth of February. Once again many of Bill's old friends attended. His relatives, the 'Evans Family', who had willingly taken on the thankless task of making all the necessary funeral and administrative



arrangements, handed over the ashes to nine GOES members. They carried them into the old workings and scattered them in accordance with Bill's wishes.

Although a sad occasion, all those present felt it was a privilege to have been involved in Bill's last Penmorfa trip.

Tom Parry, May 2010



I thought you would all appreciate this photo of Billy and other GOES members from the mid 1980's. From left to right: Richard Burton, Phil Quigley, Phil Smith, Billy, Les Smith, Andy Lewis and Don Smith. After an epic trip underground we had just emerged from Roman's Shaft at night and Billy was there to welcome us out.

The Champagne was supplied by Richard Burton who that night completed the most time consuming ascent of the shaft in history - probably about 20 minutes! He felt so guilty having delayed others getting out, that he disappeared home and returned with the bottle and plastic cups, and we all celebrated. That was a trip to remember. Billy will be missed.

Andy Lewis, January 2010

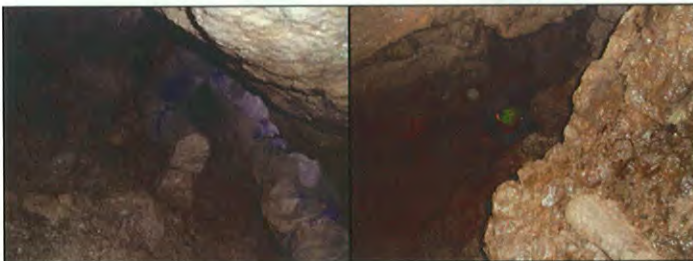
ROAMING IN ROMANS - Anniversary and Icing

Our explorations in 'forgotten' Location 15 were well documented in the last Journal but, as is so often the case, more was to be found. On the 27th of September 2009 a team assembled consisting of Gaz, Les and myself primarily with the aim of pushing the small tunnel heading back north on the 138m level above the 8m shaft. Using a long rake, rubble was easily extracted and a tight crawl was eventually established to the tiny heavily decorated 'Folly Grotto'. It was a nice find, but sadly little new ground.



Folly Grotto

Our disappointment didn't last long. Whilst sat below the smoke writing next to the shaft Gaz became convinced that he could see blackness between some of the large rocks at the side of the passage which had obviously fallen from somewhere above. Digs may take hours and necessitate many days before a breakthrough, if any, is reached, in this instance, it took just a few seconds to roll away a couple of rocks and reveal a dark void.



Gaz Entering Anniversary Chamber

There was an unstable looking wall to the left but a gap was soon engineered through which we could quickly pass to stand up at the base of a slope. Halfway up there was a slightly obscured tunnel running south but it was the empty space above which primarily attracted us. We had discovered a stunning chamber some 12m x 3m and perhaps 5m high. The top couldn't be far from surface, some beams in the roof probably just below the soil. Running northwards past a huge boulder was a passageway leading another 15m to a run-in of mud and rubble through which a way on might be dug in time. Unfortunately the trams weren't running, no doubt they would have made quite a noise and helped us identify our position underground.

We were already highly delighted with what we had unearthed when Gaz called us down to look in the small tunnel which we had passed on the initial slope.

It quickly led to a rich feast for the eyes; a magical 8m of whitened passageway, a roof decorated by stalactites with flowstone covered walls and a calcite river floor adorned by miniature dams and pools. It was an exceptional find further embellished by a scattering of old tools, a shovel stuck fast in flowstone, a metal bucket, a scrapper and some chisels. Even a solitary enigmatic brick provided interest. Naturally we attempted to place our feet carefully to minimise our impact on such a fragile environment. The tunnel even ended with a final flourish, a flooded winze, its water totally hidden by a thin skim of calcite.



Stalactites and a calcited river



Scraping tool

Chisels



Calcited brick



Calcited shovel



Metal bucket

In stepping across the winze to look for a possible way on a few pieces of grit must have been dislodged and fallen onto the 'iced' pool. This began a chain of events that eventually saw the whole veneer break up into sections and flutter into the depths. It took a few minutes, time to take some photographs.



Flooded winze

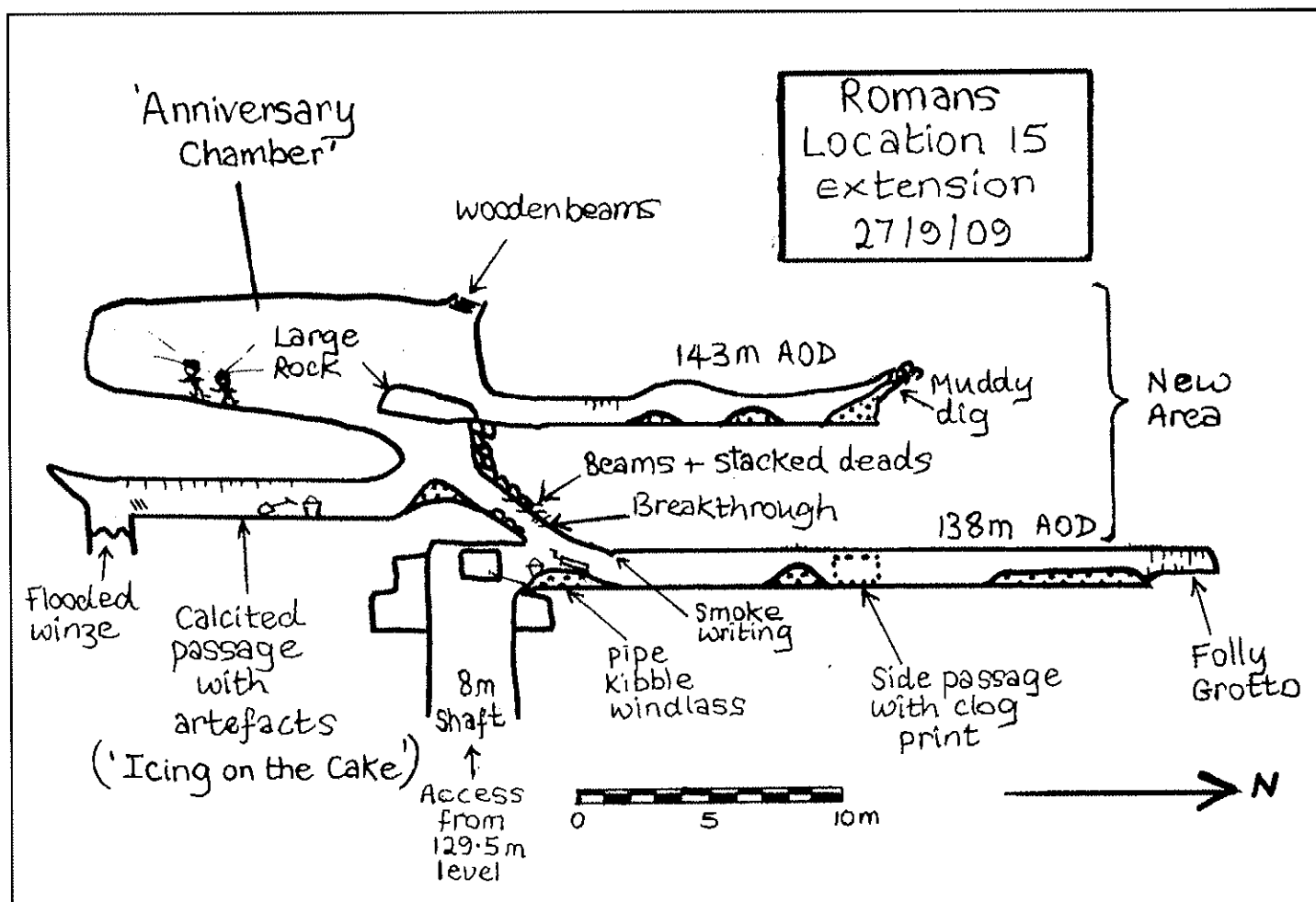
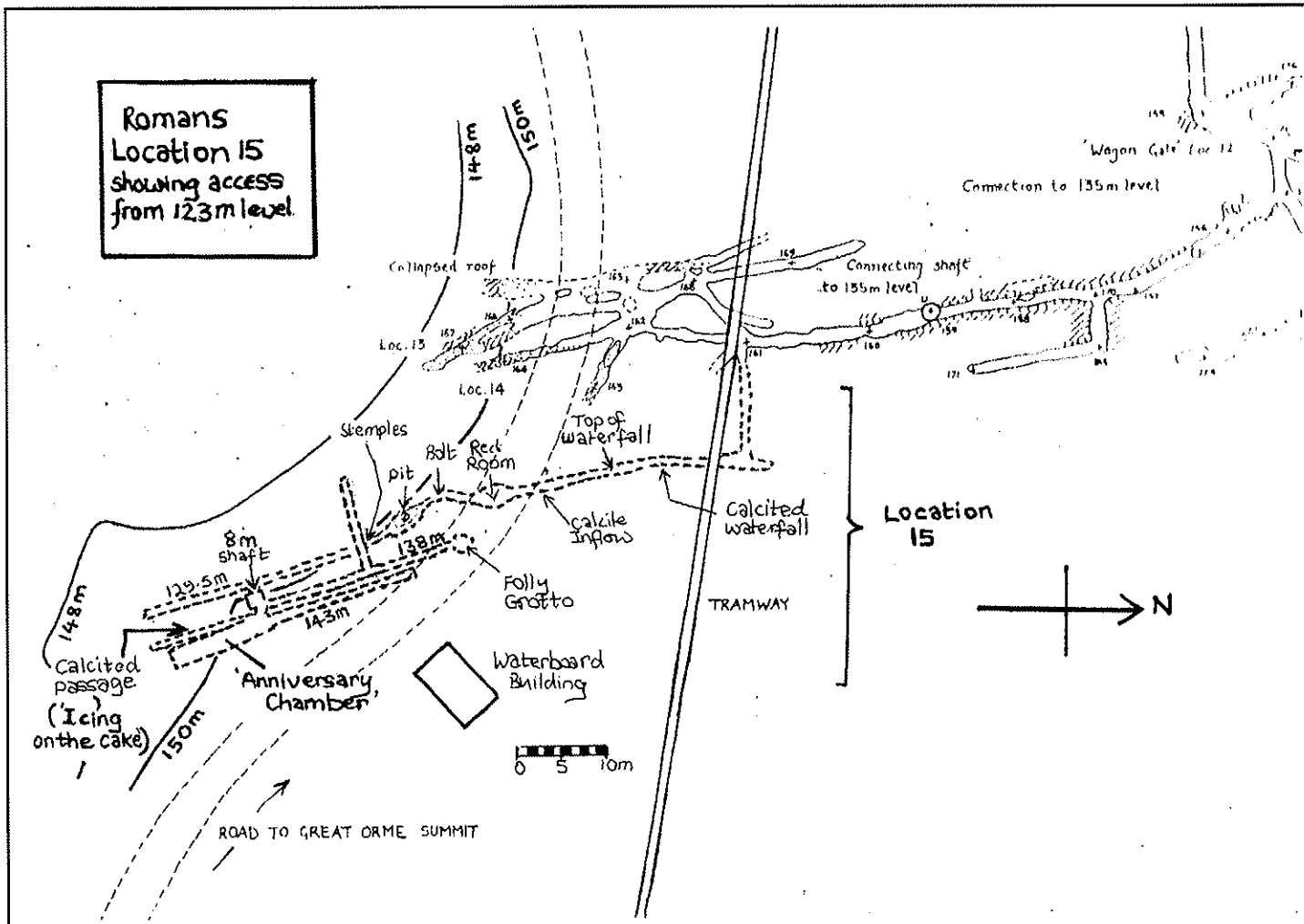
The formation which had been precipitated out of solution in the lime rich water was held in place by a combination of surface tension and delicate support from the edges. The grit had disturbed an equilibrium, the loss of one bit leading to the loss of the next.

Of course it was a lesson in how we inevitably change what we find, but apparently the calcite growth on such pools can naturally reach a point where its weight becomes too great and a break up occurs, the resulting debris settling on the bottom whilst another skim eventually precipitates out on the surface, a regular cycle of events. Hopefully, over the next few years we see this happening in this winze and our damage is not permanent. As a plus point, the departure of the calcite left the waters crystal clear, revealing other pieces of metalwork not too far down that should be retrievable.

Being almost the first discovery of GOES's twenty fifth year* our new chamber has been named 'Anniversary Chamber' and the calcited tunnel just has to be 'The Icing on the Cake Passage'. The pictures shown here were taken on the day. A return trip with better photographic equipment is planned to fully record the wonder of the place.

**As it was discovered 27th Sept 2009 I was a little premature with the name!*

David Wrennall, April 2010



Tom Griffiths explored the mines on the Great Orme 1967-71. In the following article he reminisces about his adventures and those of his friend Billy Davies.

PENMORFA

A chance encounter....

The Great Orme copper mines first began to stir an interest when, as a child, I read 'The Island of Adventure' by Enid Blyton, a story about an undersea copper mine, which gripped my imagination. Some years later at the tender age of about 17, drinking under age as you do, I began to frequent the Kings Head public house run at the time by a person called Peter Probert and his wife Joyce. It was one late summer afternoon in 1967 while having a few beers that I happened to meet up with Billy Davies who was in company with one Richard Allen from the Great Orme. I picked up on a conversation about the copper mines and soon we had expressed a mutual interest. I had already been exploring some of the sites near Haulfre Gardens above Invalids Walk (*Five Entrance Mine*). Billy stated that he was going to do some exploratory work in a mine entered from the West Shore. This was a place I was unaware of and I was very keen to join in.

at the time) and wore a pair of work boots. For lighting; a silver three-cell Every Ready torch.

I made my way on foot to the West Shore and meet up with Billy and Richard at the entrance to Penmorfa that same afternoon. This was my first introduction to the adit. I recall the trepidation and fear I felt as we entered the cold water, making our way toward to a point where the roof had collapsed and the wall buckled menacingly before the mudslide was introduced to me. Ideas of turning back were foremost in the mind especially when going through the mudslide into yet more tunnel and deep water. I can still recall the low headroom and the constant crack of my motorcycle helmet as it scraped along the roof.

We made our way to the end of the adit and turned right up into the workings. I recall my first site of the calcited ladder and the slopes leading up into the higher workings. Billy was eager to explore various blockages and dead tunnels which at the time filled me with fear especially when boulders and rubble went crashing down somewhere in the dark reaches where he had gone to explore alone.



I recall going home where my father was sat in the kitchen. I declared that I was going to explore the copper mines with some people from the Kings Head. This met with some opposition and an expression of concern as the copper mines were regarded as something of a death trap and certainly somewhere to stay out of. Despite the protest, I gathered up what I regarded as suitable attire for the trip. I recall a white woolly jumper and a pair of jeans, my first mistake!! I took my bright yellow crash helmet (having a motorbike

Visions of a major collapse and being stuck inside were not far from my mind. I must say that the first trip proved to be a rather fraught experience, which only faded as daylight appeared following the squeeze back up through the mudslide.

Further exploits....

My interest had been fired and in the weeks and months that followed many 3 to 4 hour trips were made with different agendas and ideas for making a journey up through

the workings and perhaps finding a way out at the top. Nigel Thomas (*Treasurer of North Wales Police Authority since 1997*) was one of those who joined us. We worked our way up some considerable height. I recall the passages with stacked deads, some of which were suspended overhead looking like they would come down any second. Frequently Billy and Nigel would go ahead and I would sit at a location for about an hour and wait terrified as they ferreted about, listening to the distant rumbles as they dislodged boulders in the search for hidden passages. I can recall finding an old wooden bucket or barrel. Those flash cubes that were found (near foot of Stemple Shaft) could well have been mine as I took a lot of pictures in there using a camera I bought specially for the purpose from the former 'Hoosons Chemist' in Upper Mostyn Street.

Some of the people who accompanied us on trips were Tom Parry, (we were both part time firemen) a lad called Hewitt and one nicknamed Boulton. There was Paul Whatmough, a local police officer. His sergeant thought he would have a look in case somebody ever got stuck in Penmorfa. His name was John Jones (nick named FANJO). He bottled out at the end of the adit. You should find FANJO on the wall; I recall him leaving his mark. At the time, I was toying with the idea of joining the police force, which I went on to do in 1972 serving 30 years.

Exploring Penmorfa led to numerous innovations. My brother Barry worked at Weirs Glass in Llandudno Junction and was tasked with cutting up a large amount of mirror into four inch by two inch pieces these were to be placed at the various twists and turns to reflect torch beams and aid navigation within the system.

The necessity for removing dangerous heaps of rubble jammed in shafts and across rifts led me to having a set of galvanised steel electrical conduit tubes cut with screwed joining connectors. I was in the building trade working on the Conwy Morfa flats (now demolished) at the time. The electrician spent an afternoon cutting conduit and threading various lengths for me. Rocks could then be poked and prodded from a position of comparative safety, until they gave way, often with a tremendous roar.

A big clearance and blind panic....

One particular trip was conducted with myself, Billy Davies and another newcomer whose name I cannot recall, a lad on his first visit who was very nervous. Billy had convinced himself that following the waterfall would lead us up and out. The day was organised with the new extendable pipes in mind to clear what Billy thought was a promising shaft. This area was accessed by climbing up through the waterfall and then crawling through a narrow slot that became a short tunnel. This led to an upward slope or shaft which was blocked with boulders. Billy had already cleared the rubble from the bottom leaving a gap to get under the pile and reach the suspended boulders in the shaft. He placed a piece of conduit pipe in amongst the loose boulders above his head attaching a short rope which was then pulled from a safe distance which happened to be the narrow tunnel we were crouched in.

This met with a few failed attempts before Billy managed to disturb the blockage, which gave way with a thunderous roar chasing him backward and for a few brief seconds leading us to think we were now entombed.

As might be expected the newcomer panicked considerably and took some reassuring. Billy, none the worse for the experience, climbed into where the rock pile had been dislodged and discovered that he had managed to clear an alternative path to the Ice Bridge with its calcified ladder.

By now we had formed a club (The Great Orme Mine and Caving Club). With club funds we went on to purchase ex National Coal Board helmets and miners' lamps as well as one electron ladder. Another part of our kit consisted of tobacco tins containing candles and matches with an emery cloth stuck inside the lid. In addition spare bulbs batteries and sweet fizzy glucose tablets would be carried in water proof containers. A decent boiler suit and a pair of boots were standard, a wet suit at a cost of about £12 was beyond my reach and the best part of a week's wages in those days.

Wetter than usual....

We decided one very wet Sunday to take friends from the then Llandudno Junction Outdoor Pursuits Club, of which Billy and I were members, for a visit to the Penmorfa mine workings. The rain was hammering down as we entered and the outflow of water from the mine was faster than normal. We were glad to get inside albeit soaking wet. Having negotiated the mudslide we found the water on the inside deeper than normal and on reaching the workings the stream and waterfall could be heard thundering well before it was reached. It was the group's first visit so they were none the wiser, but I recall expressing some concern over the flow of water from the waterfall. Billy dismissed it as normal telling us it would find its way out. The trip lasted about three hours before the decision to return was made. It was soon apparent that what should be calf deep water on the return journey was now knee deep, as we walked out this became waist and then chest deep with about 18 inches left to the roof. I could feel the panic setting in as we made our way to the mudslide to find water lapping well up the sides. As always, I steered well clear of the spot where the lining had buckled and looked set to collapse on top of you. Daylight was a welcome sight despite it still raining hard.

Voices from within....

Billy and I had gone into Penmorfa with a small group of others for a routine trip. We entered the water at the entrance of the adit and were about 12 feet in when a large eel swam past causing some to panic. The eel carried on towards the exit and we continued toward the mudslide. On the other side the water appeared to be rippled and disturbed. We continued onward and emerged at the workings. Once we had all gathered together distant noises could be heard from within the mine. As we made our way up through the workings the voices became clearer. Because they were so high up in the workings we were convinced that they had come down from the summit of the Orme. Eventually we closed in and startled the group who were well dressed for the occasion, with all the proper gear. They turned out to be lads from Derbyshire University! Of course they had walked in along the adit as we had done. We joined up for the rest of the trip showing them around the place. Afterwards they kept in touch and we had further trips down Penmorfa with them.

Billy goes back in alone....

Returning from one long trip into Penmorfa we had reached the half way out point when Billy announced that he had left some items behind. Rather than leave them until the next trip he decided to go back alone and recover them. I was too tired to wade back and suggested that I would carry on and wait for him at the mudslide. However, as many will know there is a pocket in the roof of the adit a short distance from the mudslide and I managed to get up into it and sit on the lip above the water. Billy was gone for what seemed an eternity, I began to worry that something had happened to him. Eventually a distant noise within the tunnel announced that Billy was making his return. The noise grew louder and louder, eventually a pin prick of light started to throw a beam on the water. The sloshing and splashing got ever louder and Billy eventually passed beneath me at which point I dropped into the water behind him. Billy was shocked and the air turned blue before we made our way out. It was a February day; I was soaked to the skin and covered in mud. A short walk to the sea wall revealed that the tide was up; I waded in and can still recall the surprised faces of people watching me swimming in my boiler suit. The sea water felt warm after my submersion in the adit.



Pocket in the roof

Santa's...

Around 1970 we met up with Duncan James from Conwy, a colourful character, extremely knowledgeable with a great love of caving. Duncan was very instrumental in the early exploration of the upper workings in Penmorfa including the discovery of Santa's with its decorative flowstone and calcited floor.

OTHER MINES

Duncan, Billy and I explored the shafts above the half way station next to the pumping station using electron ladders purchased out of club funds. I can recall that one shaft with a stone ginged lining (*Romans*) eventually enabled us to come out half way down the big shaft (*Treweek's*) with the large cap on it. It was like a window opening into the shaft (*Wagongate*).

I can remember investigating the short tunnel and flooded shaft overlooking the West Shore where the stream comes out running down to the old Bishops Palace (*Ffynnon Gogarth*).

Bill and I also did a lot around Parc Mine near Llanrwst and the ones around Llyn Geirionydd. Looking back on it they were dangerous. We visited one on the hillside about 2 miles out of Betws-y-Coed toward Llanrwst on the Trefriw side of the valley (*Aberllyn*). There was loads of industrial archaeology, old buildings, settlement pans and grading areas. We found what we thought were wax candles scattered about, closer examination revealed no wicks and faded writing on the side said Gelignite. We reported the finding to the police at Betws-y-Coed who came and had a look at them. They called out the army who in their wisdom decided not to enter and blew the entrance up instead, needless to say leaving numerous other openings untouched!

Billy and I would search many locations for the last remaining elusive copper mine, the Ty Gwyn. We spent hours digging at various locations around the Happy Valley and the area close to Pigeon's Cave (*Porth-yr-Helig*), where Billy thought he had found an opening. We worked on it for a while but I eventually gave up on it. On one occasion we tried to break a large rock with a crack in it using home made explosives. We filled some inch and a half diameter copper pipe with a certain weed killer / sugar mix and crimped the ends shut. The pipe was then wedged into the crack, a fuse lit and we retreated to a safe distance. The unexpectedly huge bang resulted in startled people looking over the Marine Drive wall and seagulls swarming with fright. The explosion simply blew the ends of the crimped pipe open and had no affect whatsoever on the rock. The flurry of activity soon afterwards which included the appearance of the Coastguard van convinced us both that it was time to give up on that idea and to deny all knowledge, if asked, about the bang when we emerged from the area.

Subsequently (January 1976) Billy managed to gain entry into a short tunnel and became trapped when the roof collapsed resulting in a major mine rescue operation and media interest. By this time I had moved on and was no longer engaged in the exploration of the Great Orme mines.

Mines strike back....

The copper mines finally got their revenge in 1991. I was walking with my wife to be, Wendy, on the Great Orme, 'I'll take you to see the entrance of a copper mine we used to go into' I suggested. It was the one overlooking the West Shore (*Ffynnon Gogarth*). I went ahead and she ran down the slope behind me, lost her footing and 'crump' shattered her left leg just above the ankle. That was the final chapter in my exploration of the Great Orme mines and a solemn reminder that exploration has its dangers even on the surface. I've stayed clear of them ever since.

May I wish the Great Orme Exploration Society the best of luck in its work, especially the holy grail of linking Penmorfa up to the summit workings. A quest that 40 years ago seemed a matter of weeks away, might finally become a reality?

Tom Griffiths, 2010

TY GWYN MINE - Circuit of Parallel Inclines

On the 10th of May 2009 the first circular tour, at least in recent times, of the Parallel Inclines was completed. This was only made feasible after the removal of a 'pinch-point' rock from the roof of second incline, immediately above the end of the ginging in the Main Adit and after, once again, digging a way up through the rubble cone in the first incline. This in itself is always interesting due to the large number of bottles being unearthed; a hole was even engineered in the ginging through which they could be safely passed for display. The rubble presumably falling from a shaft leading to surface is now largely stable and should remain easy to negotiate in the future.

The circuit definitely isn't recommended. The crawl/slide down the second incline is alarmingly tight in several sections. A stuck person would be very difficult to extricate. Help is definitely needed to emerge without damaging the ginging or falling abruptly to the floor! Thanks Brian and Steve for the shoulders and Ali and Dave Flowers for the photographs.

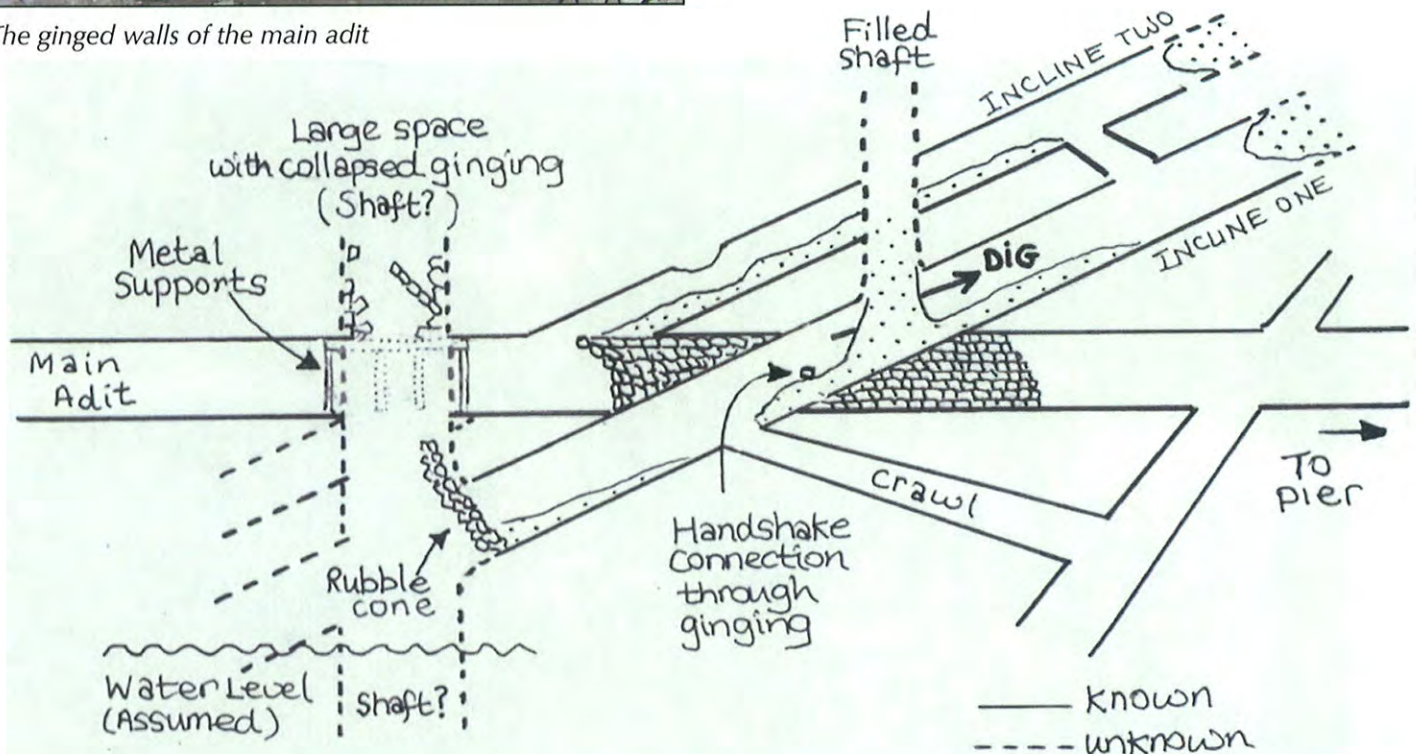


Emerging above the ginging in the main adit

David Wrennall, May 2010



The ginged walls of the main adit



Ty Gwyn Parallel Incline Area

SUMMER WALKS 2010

All walks start at 7pm and are usually gentle strolls which last approximately 2 hours. Sturdy footwear is recommended. Below is a list of the proposed walks, but all are subject to confirmation. Please check the community news section in the North Wales Weekly News, which will provide full details of the walk taking place and the arranged meeting place. If the weather is poor, it is very likely that the walk will be postponed until a later date.

Date:	Walk:	Meeting place:
27th May	Parc Mawr woods, Henryd	Parking SH761 744
3rd June	Vardre and Deganwy castle	All Saints Church, Deganwy (SH783 790)
10th June	Nun's Walk and Bodyscallen obelisk	Car park off Marl Lane (SH800 786)
17th June	Invalids Walk, back via Haulfre Gardens	Street parking, West Shore boating lake
24th June	Complete circuit of Parc wall	New parking area above St Tudnos Church (SH769 836)
1st July	Conwy mountain and hill fort	Car park top of Sychnant Pass overlooking Penmaenmawr (SH750 770)
8th July	Summit of the Little Orme	Somerfield (Co-Op?) car park, Penrhyn Bay (SH818 816)
15th July	Donky path on the Great Orme	Street parking, West Shore boating lake
22nd July	Bryn Euryn hill fort	Parking off Tan y Bryn road (SH834 802)
29th July	Ancient lookout tower at Llanrhos	Start of Bryngosol road (SH781 804)
5th August	Bryn Pydew area	Village Hall at Bryn Pydew (SH812 794)
12th August	Pen Dinas hill fort	Ski Slope car park (SH782 830)
19th August	Great Orme gun site (steep) and Monk's path	Concrete road car park (toll payable on Marine Drive) (SH755 840)
26th August	Bishop's Quarry and Maes y Frachrell NNR	Parking at Water Board building (SH771 832)



Historic perspective....

Since its discovery and exploration in 1985 the Ty Gwyn Mine has through occasional digging gradually revealed more of its secrets. Several tunnels, the Parallel Inclines and the Sim's Shaft have been unearthed by GOES explorers, together with sections of rail track, stone flags and an assortment of bottles and crockery.

Undoubtedly linking the Ty Gwyn Mine to the Tyn-y-Fron Shaft is the greatest challenge left. But the problem of working in glutinous mud on the Ty Gwyn side of the blockage and the difficulties associated with reaching the other side; a 280ft abseil, the arduous jumar back out and the need for a surface team, have conspired to limit interest.

One intriguing passageway which has so far escaped rigorous scrutiny runs from the Ty Gwyn Shaft southwards under Church Walks towards town. It lies mysteriously hidden behind a substantial brick wall. A hole was hammered through in the late 1980's by Bill Oliver only to find the passage beyond was full, practically to the roof, with infill. Several tortuous exploratory crawls have been made in the past but none had reached the end. Due to the constricted nature of the tunnel it was impossible to turn around; one early sortie had been made on a tray so that the pioneer could be hauled back. In 2000 I had squirmed down the tunnel tethered by a rope around my ankles. All the rope had been paid out just as my enthusiasm had waned at approximately 15m. I left a reflective armband to mark my furthest point before being hauled out backwards.

A rethink....

One reason for caution was the suggestion of bad air. Getting hot and bothered whilst crawling in a very confined space can easily lead to a feeling of breathlessness and the sense of isolation, being alone and out of reach, only adds to the unease that begins to flood the mind. Certainly there may be less air but is it bad air?

The fact that the passage ran away from the main Ty Gwyn workings and was likely to lead to nothing of importance was also perhaps a factor in its neglect despite rumours of tunnels and several mine associated stories linked to the upper town. Documents exist to suggest a reason for the tunnel; that water was transported quite some distance up to the Ty Gwyn from a well, found under the old market hall when it was demolished, near to the present day Cottage Loaf. The system consisted of several leats and occasional shafts where the water was lifted to a higher level.

I was curious to discover more. Perhaps in the interest of completeness it was time to find out exactly where the mysterious tunnel might lead. I also knew that it would be a good project, an easy to reach, relatively straightforward 'team dig'. Of course, this simplicity wouldn't apply to the digger wedged within the constriction. My plan was to reverse in whilst digging out the spoil, placing it into a container that could be pulled out by the team, taken out through the brick wall and stacked in the roomier corridor running back towards the Ty Gwyn Shaft. In the restrictive space this would be the only practical way of digging, loading and retrieving the container. Looking back into

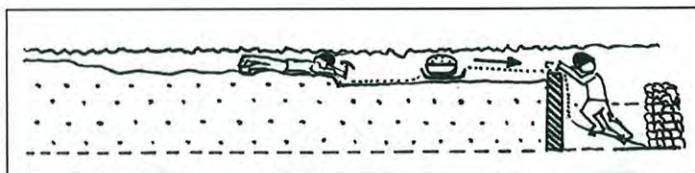
the enlarged tunnel as it was created would allow me to breathe fresher air and keep me in good contact with the others, essential for both my sanity and safety.

Work in progress....

On July 26th I began my mission aided by Les and Sion. Working whilst fully prone was totally exhausting, all the wrong muscle groups. My ice axe was more of a scraper, no room to swing it. The plastic wash basin was awkward to drag in, had to be filled one handful at a time and proved extremely difficult to drag out once loaded. The methodology however was successful, the first section of tunnel was deepened and we would be back.

On the evening of Wednesday 21st of October GOES were showing a group around the Ty Gwyn mine. This brought my dig into focus again and gave me the opportunity to tidy up the stone walling in the open passageway next to the brick wall. This would allow extra storage space for the excavated rubble.

On November 1st a team assembled to continue with the work. With me were Steve, Brian, Ralph, and Angela. Dave Flowers came taking photographs. Once in the mine and through the broken wall, I was able to reverse easily down the enlarged tunnel, finding time to admire the vast array of small stones and pebbles that adorned the roof of my cocoon, one large smooth black stone, set slightly lower, was indeed glorious and made a fine marker. Just past this I reached the limit of my digging and lodged my body firmly in the tightness beyond. Hauling was made much easier using a sledge on which the basin could be placed, made by Brian with alkathene runners, but the work was no less gruelling. My shoulders and hips rolled painfully against the surrounding rocks as I constantly squirmed to gain extra space, elbows supporting my upper torso were ground into the rubble, as I pulled, scrapped and filled. My body was in the way of the digging, the rope got tangled, the sledge occasionally snagged or the empty basin fell off as it returned.



Digging backwards and Hauling

One clay like section was smelly, I was aware of a staleness pervading the air. I was getting warm, flustered and feeling slightly sick. I tried to breathe normally and stay calm, the nausea didn't get worse. I was coping, but between bouts of activity I would lay my head down on the dirt to rest and wonder, 'what is the point of this?' Tenacity eventually won an additional five or six metres. The fresh air as we climbed from the culvert onto the promenade was a real treat as was the beer. The following morning I awoke trashed, my pummelled body ached and I was a mass of bruises. The price of progress.

Introduction....

When visiting the Rhiw Bach slate mine last year our party, whilst walking down the entrance adit, started to talk about how poor our lights were. I have always been very happy with my Oldham lamp (the second in 22 years) but this tunnel seemed darker than others. The main beam spot light was fine, punching a light along the adit, but the side spillage and general brightness around my feet was a little dim.

The Brief....

Build a lamp with more light than my current lamp, which must be just as durable and must last as long.

Research....

The internet soon produced some excellent articles such as "The Fellow MagnumStar"

by Roy Fellows, www.ledcaplamps.com

and "A powerful Headlamp For under 50 pounds"

by Miles Moulding, www.mine-explorer.co.uk

The Solution....

The Oldham lamp, as others and myself have found, is a proven survivor underground so it would seem sensible to base any new lamp on the remains of a trusty old Oldham. I had such a lamp lying around in the garage, long ago discarded, but not forgotten. After giving it a good clean it looked as good as new, except the battery was dead. The first job was to disassemble the head set. Having fully removed all the inside bits, and taken some dimensions, it became apparent that the available space was quite small. The switching mechanism itself taking quite some space off the side reducing any real depth for a new reflector.



I had decided that the Cree Q5 emitter, which produces 228 lumens at 1 amp, was going to be the light source but this produces a lot of heat running at this level so would need a large heat sink. It also needed a metal reflector to cope with the heat, so looking on the Dealextreme web site I found several aluminium

reflectors for Cree emitters. Some were close to the size of an Oldham reflector but I did not think these would fit past the switching in the headset, so I opted for a smaller diameter shallow reflector at 41.5 x 18mm. For this to work I needed to make a reducing ring to sit the reflector into. This would be a replacement for the plastic Oldham reflector. I cut the reducing ring from an old saw blade at 57mm diameter with a 41mm hole to sit the reflector into, and then soldered it into place on the back. I also cut 4 thin slots on opposite sides of the ring for the fixing wires.

Next, I had to make a heat sink that would fit into the headset. For this I used some copper discs, approximately

the size of 1 and 2 pence pieces. The large one I left as it was, and the others I cut into halves. The intention was to solder these together so I had a round base with 5 vertical fins. After several attempts, with complete failure, I was advised by a friend to bottom heat it and allow the solder to run under by capillary action. So the end solution was to hold the five semicircular halves together with Blu-Tack and solder strips between them while placed on top of the larger disc, and balanced on the gas cooker ring. It was then heated until the solder had fully run between all the edges. Once cool the Blu-Tack was removed and 4 small holes of approx. 2mm were drilled for the wire fixings.

Now back to the headset. After stripping the pilot bulb assembly out I then removed all metalwork that was not needed, which was most of it as there was only going to be one switch position with no charging through the headset. The cable entry has a lot of cable so I cut these back to the minimum, and reconnected the eyes back with solder so as to only fit onto the connection points. This gives a little more room and makes the assembly neater.

The MCB controller supplied had short wires and needed the lamp side connecting, so I changed the existing wires for some longer ones and then attached some for the lamp. This done, I was ready to assemble the lamp, first placing some insulation tape to the rear of the reflector, then soldering the wires from the MCB to the Cree lamp. This was then placed, with some heat transfer paste, onto the heat sink and the whole thing tied together with wire into the slots in the reducing ring, so making a complete unit to place into the headset. I then replaced the seal and glass.

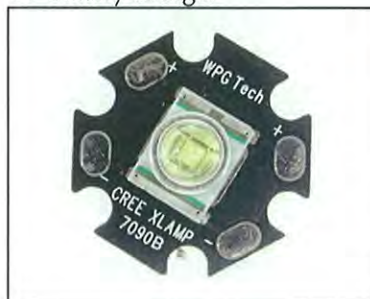
The lamp now only required a battery. For this I removed all of the insides of the old Oldham battery, and cut the dividing strip out. The space created allowed a new 6V lead acid battery to be slid inside. A 2.1mm chassis DC socket was added for the charger, and the whole thing reassembled.

Once bench tested for a few hours, it was off to the Orme to test underground. The results are great, running on full power for hours with no over heating, and the light levels are 3 times that of a traditional Oldham. Have I used any other lamp since... NO! If you see me, ask - I will be using the new lamp.

Parts Required....

An old Oldham lamp

6V battery charger



From:
www.dealextreme.com

Cree XR-E Q5 Emitter on
Premium Star
(228LM at 1A)
\$5.36

ALI SERIES CONNECTED TO D-DAY RIFT AND MORE...



3V~8.4V 5W Cree
5-Mode Memory Circuit
Board for Flashlights
(16.7mm*6.3mm)
\$2.99



Aluminium Textured/OP
Reflector for
Cree MC-E LED Emitters
(41.5mm*18mm)
\$3.68

Cost \$12.03 or £7.56 with free postage

From: Maplin - Llandudno

6V 7Ah Sealed Lead Acid battery
151mm Long x 34mm Wide x 97.5mm high £11.99

Heat Transfer Compound 2ml £2.99

2.1mm DC Socket £1.20

Total overall cost £23.74

Stephen J Lea, May 2010

The great escape....

On 4th March 2007, in a scene reminiscent of a classic 'Dads Army' episode the squad which had been strategically positioned underground within the Ali Series fought to escape out through the constricted entrance. They had been hoping to spot smoke, perhaps faint wisps rising from hidden passageways below. When it came there was plenty, too much; an evacuation was ordered. 'Don't panic, don't panic!' One by one, survivors struggled out of the barrel and into the fresh air, those at the back awaiting their turn within the acrid cloud. 'Doomed, all doomed!' Thankfully even they made it to surface coughing and spluttering to laugh at the industrial plume of smoke coming out of the hole. 'So there is a connection then?'

The smoke bomb (tablet) which had been lit that day by Ben Atkinson and myself on the 149m level of D-Day Rift (An area of workings we had discovered in June 2004, off the Treweek's Shaft 135m level) was an attempt to find the best place to dig a connection through into the Ali Series, found just a month previous, which lay somewhere above.



Steve at the 149m level

Trial and error....

Amazingly over two years had elapsed since the comedy of our first attempt before we decided to try it again. On June 28th 2009, Sion Jones and Les Smith accompanied me down Treweek's and up into D-Day Rift. This time much less smoke was to be produced by only burning small amounts of paper at likely sites. Brian, Steve and Abby took up positions within the Ali Series.

After starting a small fire close to an old can and small animal skull at the top of a tiny side passage (Area A) it quickly became apparent that the airflow wasn't quite the same as on the last occasion. It was in fact the reverse with air sinking downwards towards the lower workings. Our surroundings gradually filled with a nasty haze. Obviously those stationed above would be unlikely to see any smoke, so for a while, I resorted to shouting and waiting for faint replies. The ringing in my ears after each bellow and, the pounding of my heartbeat as I lay listening in the confined space, were both very distracting but, for one moment, just fleetingly, there seemed to be a higher pitched reverberation, almost voice like, a female voice. I told Sion, but I surmised it was a trick of my imagination as further shouts went unanswered.

We moved on to look at Area B, which I regarded as the most likely place for a breakthrough. This was the site of our original smoke bomb where the air had been whistling strongly through a constriction. Again the air flow was reversed, so, after some futile shouting, we set about removing more of the soil like infill from the narrowing, a process I had begun previously. After half an hour I was able to crawl through it and stand up in a small rift. Looking at the larger boulders hanging precariously above I thought it prudent to start widening the constriction some more, chance they were to move and block my escape route. It was an interesting place, easy to dig and almost certainly near to the lower reaches of the Ali Series, but eventually we had to pack up and head back to Treweek's. En route we poked about a bit and at the far end of a corridor thought blind discovered a raise leading into 'Sion's Loop' with its shovel and kibble.



Shovel in Sion's Loop

The breakthrough....

Once at Treweek's Shaft we realised that Les had already jumared to surface. Sion was just beginning his ascent when Brian shouted down that they thought that they had heard my shouts! I should go back to Area A and try again. I was knackered and not too enthusiastic about climbing back up the system but Brian was keen and that faintly feminine note still haunted me.

Lying at the top of Area A, I only had to shout a few times before hearing a muffled reply and, by removing some loose rubble wedged in the roof, I was soon able to communicate with Brian. I began neatly stacking rocks at the highest point of the passage, creating a wall around the old canister and skull so that I could leave them in position.

As digging continued it became apparent that my excavation was following a solid floor running back up above Area A. Suddenly, in the flow of rocks and grit, a row of large teeth dropped down attached to a jawbone, part of the Ali Series' lost horse skull. More assorted bones appeared in the rubble at regular intervals with lots of vertebrae and ribs. By now I was rolling rocks into a small niche lower down the passageway where I also created a display of the bones. I had just glimpsed Brian's light when he began warning me that a wall of stones above where I was emerging looked extremely unstable. I squirmed through to survey the situation. True the earthen wall above did look dodgy, but happily I was through and we left well pleased with our achievement. Improvements could wait.

Consolidation....

We were back the following Sunday, the connection we had forged had suffered some slumping but was still open. I was able to squeeze through and start improving the link, to be joined by Les and together we rolled rocks into the blind alcove next to the museum and added more bones to the display. A good connection was soon established but there was a substantial amount of slumping occurring and yet more bones emerging.

There followed, half an hour of rapid stone walling. Plenty of large rocks were available and a semi circular structure soon began to evolve protecting the new thoroughfare from the hazardous collapses, fitting the final few rocks into the tapering dome was extremely satisfying.

In retrospect there had been strong clues that a connection was likely to be made in this location. The horse skull in the Ali Series which had intrigued us and then mysteriously disappeared presumably under a collapse had had its counterpoint below in the small skull found next to the canister. The floor of Area A consisted of a very fine, dark earth suggesting a closeness to surface, probably soil mixed with well decomposed horse! 'The Knackers' Yard' seems an apt name for the new link.

And more....

On August 2nd I had the opportunity to show Brian and Les 'Sion's Loop' Acting on a whim I left them at the kibble and made my way back up onto the 149m level hoping to find a voice connection. I wasn't disappointed, at the far end of the level I made contact through a metre and a half of run in material. I realized that excavating the rubble would provide us with a 'walkable' route from the Ali Series to Treweek's Shaft 135m level.



Richie emerges from the 'walkable' route

Whilst this successful mission was taking place, Les had removed an old plank of wood from the floor close to the kibble revealing a lower section of workings. I quickly travelled back round to help in the exploration of 'The Smithy' as it became known. Several routes were blocked by infill but there was an angled stope leading upwards plastered in a slurry of rubble. Squirming up into 'Slithering' we soon reached pleasanter conditions; a corridor, containing a hammer head and a chisel, ended in a small dig. Some workings above the corridor gained quite a height, but proved blind.



Chisel and hammerhead in the 'slithering'

On April 24th 2010 the 'walkable' route was successfully dug out together with a minor loop nearby. Explorers can now totally avoid the rope-work of D-Day Rift when visiting the lower sections and Treweek's Shaft, or incorporate the abseil with an easy way back up afterwards.

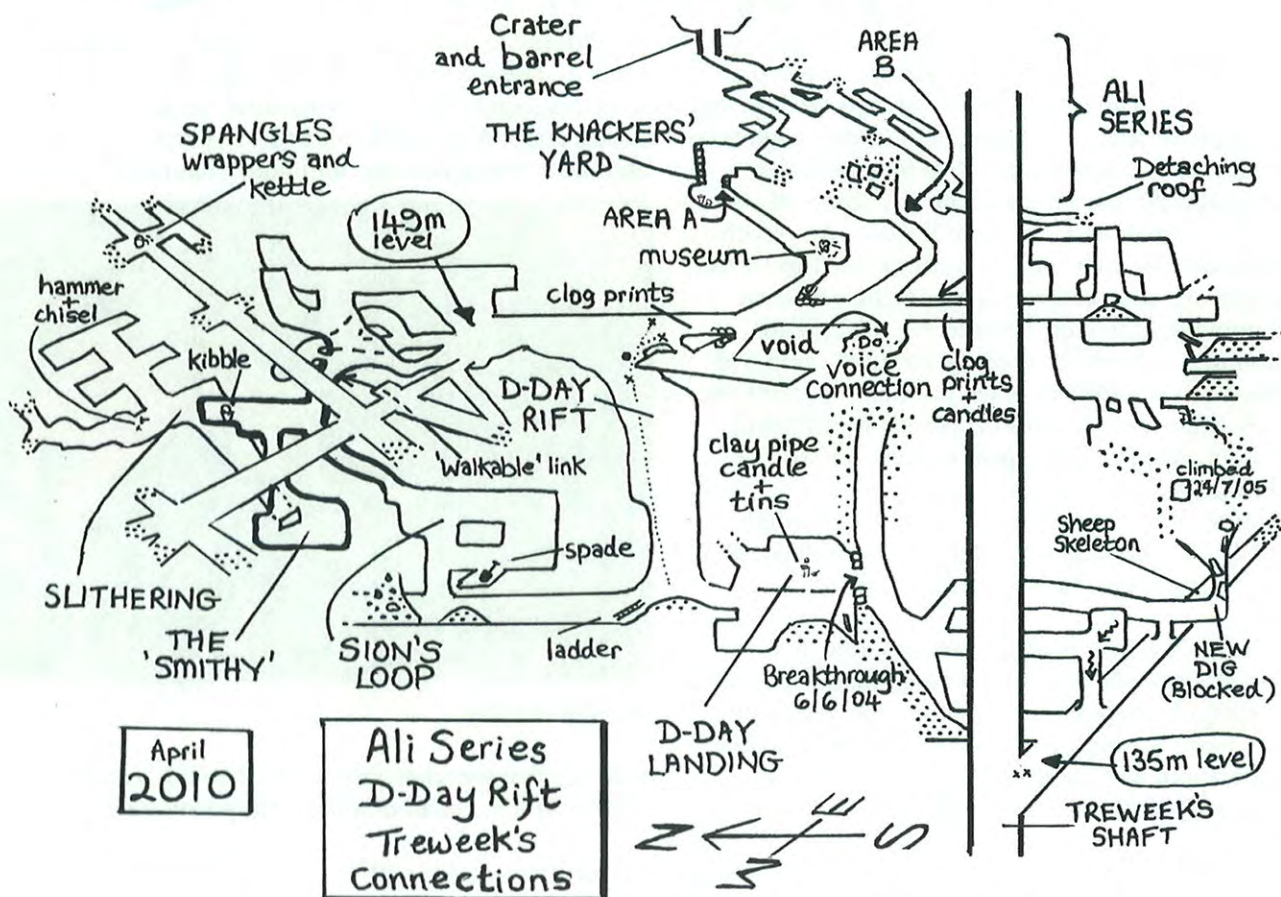
The original breakthrough from the 135m level on 6.6.2004 led into an admirable set of workings. With the discovery of the Ali Series on 7.2.2007 and its eventual connection to



Les emerges from 'The Smithy', the kibble in the foreground

these workings on 28.6.2009 we have been provided with an easy access route into them. The area continues to have regular visits and several new sections have been discovered, more can be expected.

David Wrennall, May 2010



A TY GWYN SLEEP-UNDER

The Chairman had volunteered for a 25 hour sleep-under to help mark the Great Orme Mine Exploration's 25th Anniversary. The weekend of the Victorian Extravaganza seemed a suitable time, the Ty Gwyn Mine the obvious venue.

When he was seen in on the Saturday (at 1:30pm) the entrance had been next to a 'Greyhound' tent. When he emerged on the Sunday it had been unsettlingly transformed into a GOES tent. Everything else was the same, sunshine, lots of music, hoards of people.

Two large barrels transported all the necessities and camp was soon established at a dry and flat junction close to the Ty Gwyn Shaft.



A dry and flat junction

To make it more interesting, time was to be judged using the height of the water in the shaft which, as we know, is affected by the tide. Watch and phone were left behind. Twenty five hours should be just more than two tidal cycles which gain approximately forty minutes each day. High tide in Llandudno was 13:25pm (9.0m.), five minutes before entry. The initial water level in the shaft was observed and marked by stones at around 13:50pm? It went on to reach its highest point some time later, 14:30ish? Coincidentally the marked height was observed during the 'night' whilst on one of the numerous 'comfort' visits to the shaft portal! Assume around 02:10am. The eventual strike of camp and exit to surface was planned for when the water reached the rock markers again at what would hopefully be 14:30pm. As it turned out, Brian would appear to point out that 25 hours had elapsed on surface even if they hadn't underground! Family had been waiting for quite a while. Had the tidal calculations been relied upon an additional half hour of isolation may have been required.

It was a fine camp. Much time was passed sitting in a comfortable chair, reading, writing notes, drinking tea and cooking. Taking photographs with a timer provided some amusement. Sleep was rather restless but seemingly a lie in took place. Brian with Richie and son visited in 'the morning' as breakfast was being finished. They let it be known later that it was noon!

There were no furry visitors, although a candle was always lit to dissuade the curious. Lit stubs were replaced during the wakeful night. Six or seven candles were used in the 25 hour period.

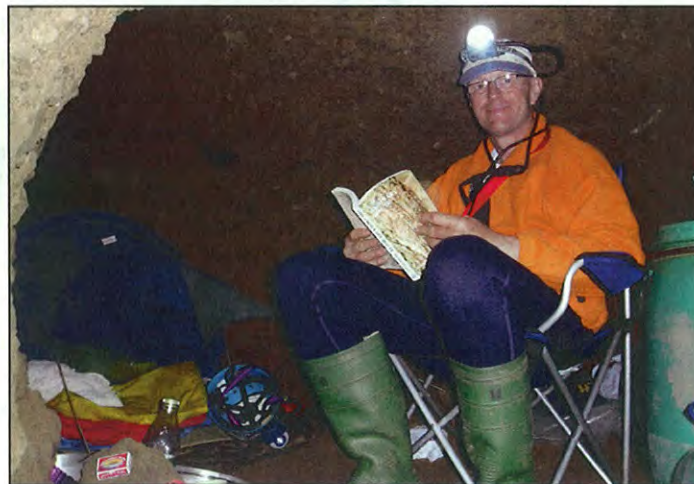
The distant dripping from the shaft was a reliable companion. Occasionally there might be a slight suggestion of traffic on the Ty Gwyn Road but no other external noise, except a spell of repetitive, vague thudding in 'the morning'. Perhaps pipes in the Empire's basement?



Home from home

Hearing definitely sensitised. The 'pop' of the meths when it lit in the stove was quite striking. Something slipping in the barrel caused a start. The sound of a small piece of grit falling from the roof onto a pan lid was dramatic in the silence.

An odd way to commemorate 25 years it has to be said, but all in all, it was a memorable and enjoyable venture. A very quiet time, spent alone, underground, on probably the busiest and noisiest of Llandudno's weekends. Could it become a 'rite of passage' for future Chairmen?



Time for reading

They say that spending time alone, like this, can turn you into either a madman or a poet. No poems were written.

David Wrennall, May 2010