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The Newsletter of the Cumbria Amenity Trust Mining History Society

Artifacts in the Cappleclough Flats
Photo Tony Holland.

No. 101 **November 2010**

Cumbria Amenity Trust Mining History Society
Newsletter No 101, November 2010.

Contents:

Membership
We welcome new members Alex Thurston from Earith, Huntingdon and Nigel Bottrill from Ulverston. Alex is interested in all aspects of mine exploration and conservation, and is a member of WCMS and PDMHS. Nigel has a degree in mineral processing and is interested in attending local surface meets.

Membership renewals
Membership subscriptions are now due for 2011 and you will find a renewal form enclosed with this newsletter. However, it is now possible (the treasurer strongly prefers!) to pay your subs via the CATMHS website. Go to the homepage at http://www.catmhs.org.uk and you will find a link to the new subs page. From there, you can select which class of membership you require, and 'buy now' to pay via PayPal. You have the option of either your PayPal account or a credit / debit card.
Provision is made to alert the treasurer of any special instructions, e.g. for Joint Surface / Underground, which individual requires the underground insurance. For queries, please contact either webmaster@catmhs.org.uk or treasurer@catmhs.org.uk

Pete Fleming has changed his email address.
The new one is: petefleming@talktalk.net

Incorrect telephone number
Tony Holland's phone number as listed in the meets list (13th March, Dodd End) is incorrect. It should be 01229 836074.

Change of address
Richard and Eileen Hewer have a new address:
1 Eastcote Avenue
Lawley Village, Telford
Shropshire, TF4 2TR

News
Carrock Mine Management Agreement with English Heritage
In a letter to Warren Allison, English Heritage has offered CATMHS a management agreement for Carrock Fell Tungsten, Lead, Copper and Arsenic Mines. They have in mind a three year agreement which will allow CATMHS to carry out the initial phase of repairs to the portal and installation of silt retention measures. They will require us to carry out an annual check and minor maintenance work until the end of the agreement, which is for three years. They will pay £ 60 per year to CATMHS for management and a further £2,753 for the works, payable on submission of receipted invoices for the work. The CAT Committee discussed the offer at their last meeting and decided to accept. This agreement breaks new ground for CATMHS and is quite a compliment. Congratulations to all concerned and especial thanks to Eleanor Kingston, LDNPA Archaeologist, for her considerable help and support.

Barratt letters

A while ago I sent to Mike Gill of PDMHS copies of the digital images of the letters contained in the John Barratt letter book which belonged to Major Hext, together with partial transcripts. Mike completed the transcriptions and sent us copies. The letter book was later sold at the auction of Major Hext's effects. Mike has now written a paper, *John Barratt and the Grassington Mines 1818-1834*, based on the 44 reports on the Grassington mines written by John Barratt and sent to John Taylor in London, which puts the information contained in the letters into context. It is an interesting read and is to be published by PDMHS, probably to appear around March/April 2011.

Weils disease

The BCA has updated its Weil's Disease Leaflet and the new version is available for download from the BCA website. Some of its advice is reprinted here, and it is hoped this will encourage members to download and read the full document.

The national rat population is increasing and between 50% to 60% of rats carry and excrete the organism Leptospira ictero-haemorrhagiae in their urine. Infection of humans with this organism causes an illness (commonly called Weil's disease), which has been known to result in death in 10% of cases. The organism enters the body through breaks in the skin such as cuts, blisters and abrasions, or via the lining of the nose, throat or alimentary tract.

The incubation period is 7-13 days and the disease starts with a fever, muscular aches and pains, loss of appetite and vomiting with prostration. Subsequent bruising of the skin, sore eyes, nose bleeds and jaundice may occur. The fever lasts about five days and may be followed by significant deterioration. It is vital that the doctor be told that the patient may have been in contact with a source of infection. The symptoms can easily be mistaken for those of flu and, if the patient has a clean occupation, the possibility of Weil's Disease may be overlooked in the early stages.

Remember: The disease is curable if recognized in time, but many doctors in urban areas will never have encountered it. If you have any reason to suspect that you have been infected, you may need to draw your doctor's attention to the possibility that the symptoms could be Weil's Disease.

William Gibson Diaries.

William Hays, who resides in South America, came across our web site and sent the following email to our secretary:

'In the family archives I have come across the diaries and account books of William Gibson for the years 1769-1781. Gibson was a colliery viewer based in Newcastle who worked for William Brown of Bells and Brown. While most of the diaries relate to Tyneside, Gibson was also concerned with collieries at Pittenweem Fife and Ferrybridge in Yorkshire. In Cumbria he was called into assess and investigate the workings of Warnell Fell Colliery (Sebergham) on various occasions and his reports are interesting. He didn't think much of the way they were being worked!

In 1771, 17 indentured miners absconded from the Duke of Northumberland's Walbottlemoor colliery and Gibson is set on to track them down. It's quite an example of detective work. He visits various collieries in Cumbria before finally tracking down one miner at Greysouthen and two more at Gilcrouse (Gilcrux). The agents and owners of the collieries he visited from Carlisle down to Harrington.

What I would call an epic, but which he seems to think is normal is his RIDE on horseback from Wigton to Newcastle in a day.

If anyone is interested in these records perhaps they could get in touch with me.

Though I am a Cumbrian, I have lived in Uruguay, South America for many years, so it isn't easy to pop round for a chat but I can be reached by e-mail at hayswilliam@gmail.com and if necessary can talk by phone on skype.

With kind regards, William S. Hays MA, MRICS

NAMHO News

A Research Framework for the Archaeology of the Extractive Industries (Mining and Quarrying) in England

Over the summer of last year a bid was submitted to English Heritage for funds towards a comprehensive study of the current state of mining and quarrying archaeology. The bid was successful with in excess of £46,000 being made available for the project over the next two years. In October the project management group appointed Phil Newman as Project Officer and the project got underway in late November. Phil is well known in the South-West of England for his expertise on tin working but he has a wide ranging knowledge of the archaeology of both mining and quarrying which is being put to good effect in collecting the data in which we will base our assessment of current knowledge. What can you add to the data on the archaeology of mining and quarrying?

A selection of published and unpublished material has been filtered from the Heritage Environmental Records, where available, but is mostly unseen by the Project Officer; its usefulness or relevance cannot therefore be vouched for at this stage. We also acknowledge that HERs do not contain comprehensive catalogues of sources whilst also possessing printed material that is not recorded in their data-bases, so these lists are far from exhaustive. If on viewing the lists you are aware of omissions, however small, or wish to comment on the usefulness or otherwise of any aspect of the material presented, please contact the project officer at projectofficer@namho.org. We are particularly keen to hear of research that has not yet become available in the public domain and lesser-known published sources of archaeological information that do not feature in the HERs.

If you have access to the Internet, go to the newly updated NAMHO web site at www.namho.org and look at the Research pages were you will find summaries of the archaeological data by county.

Mines Forum, 20th Sept 2010
The meeting was held at the National Trust Offices at Bow Barn in Borrowdale.

It started with a discussion regarding access to Geenside mine from Glencoyne Level. There is a concern that people may descend from there to Lucy Tongue, pull through their ropes and then find that they cannot get out through the locked gate at the Lucy Tongue entrance. It was agreed that a notice should be installed inside the gate at Glencoyne stating that there is no egress from Lucy Tongue unless previous arrangement had been made. The National Trust could provide a suitable permanent notice. It was agreed that an emergency key could be kept at Glenridding Tourist Information Centre.

Roundups:
CATMHS.
Tilberthwaite Horse Level: Warren Allison reported on progress on the dig at Penny Rigg. At the time 27 visits had been made by the digging team 55 meters of level had been cleared. The steelwork constructed prior to the November flood had been exposed, and a further two sets of legs erected.

Carrock Mine: An agreement had been offered by English Heritage with CATMHS to clear and gate the entrance to Carrock Mine. EH is to fund the costs. The CATMHS Committee will consider this offer at their next meeting

Silver Gill: The University College of London ground penetrating survey arranged by Phil Meredith and carried out last year had indicated a strong possibility of the existence of a level. An Environmental Impact Assessment and a working agreement with English Nature and the Environment Agency are required before work can commence.

Penny Rigg Mill: Mike Mitchell had been trying (unsuccesfully) to get quotes for emergency stabilization of some of the structures, which have recently deteriorated due to weather and vandalism. John Hodgson wasn't in favour of such action as the Conservation Management Plan is due in the next week or so and it was hoped that conservation of the site by Archeo Environment Ltd would be included and would be fully funded. Mike also produced a specimen notice which asked the public not to cause damage to the historic structures. John Hodgson was not in favour of having notices put on the site, but accepted the proposal providing they were sited so that they couldn't be seen from a distance.

MoLES
Donald Angus reported that no further work had been carried out at Yewthwaite Mine. A MoLES Extraordinary General Meeting had been held but no changes to the Society were envisaged.

Threlkeld Museum
The Railway had been running on steam every day throughout July and August and was now running at weekends. A successful open day had been held. The museum had had a reasonable year; attendances were up but takings in the shop were down. A stem navy was shortly due to arrive from Lincoln and also the tank engine from Haig Colliery, which, unfortunately, being of standard guage, would not be able to run on the Threlkeld track.

Coniston Local History Society, Alastair Cameron.
Cove Quarry: They had been fortunate to receive information about operations at Cove between about 1855 and the middle of the 20th century from an elderly gentleman whose father and grandfather had worked there.
Sled ways: The society have been looking again at remains of old sled ways on the NE shoulder of Coniston Old Man. Much of the area has been covered with spoil from later operations, and they are trying to link the remains with old stock yards shown on the First Edition OS map

Honister: Some Historical Interpretive events have taken place at Honister. Some interpretive panels have been placed on the Via Ferrata. A feasibility tudy is being carried out regarding renewable energy at Honister. A wind turbine and a water turbine are being considered. The proposed Zipp Wire was discussed. Peter Fleming pointed out that it's proposed length meant that it could not start at the top of Fleetwith Pike as had been reported. ADC confirmed that id would in fact start in the vicinity of Ash Gill. PF said that he thought that it would not be as conspicuous as first appeared.

Risk to Historic artefacts and sites: Alastair suggested that specialist and individual groups were not being consulted before work is done on historic industrial sites in the Lake district. He cited destruction of sledge tracks on Lobstone Band and alteration of tracks at the Coniston Old Man quarries by Fix-the-Fells at Castle Crag, Borrowdale, and planning permission granted to clear tips at Dubbs Quarry and at Parrock Quarry at Coniston.

National Trust
Goldscope Dam: John Malley reported on work on the dam, which had suffered in the November floods. The spillway has been widened to relieve erosion and some repirs carried out. They are monitoring a bulge in the lower right hand side of the dam. When comparing the dam today with photographs from the recent past it is apparent that it is becoming in-filled with detritus.

Wadd Mines and Yewthwaite Mine: No action had yet been taken regarding erosion caused by the November floods
Force Crag mine. A planning application is due for work at Force Crag involving Zero and No 1 levels. The roof timbers in No 1 level are beginning to show signs of failure. Mike Mitchell suggested that acrow props could be inserted as a temporary measure.

Peter Bardsley from the Environment Agency reported that M Tec had been commissioned to investigate water quality at Force Crag. There are high levels of zinc and cadmium and the Environment Agency is obliged to address the problem. They are applying for capital funding to install a pilot treatment plant. A discussion ensued regarding water quality from all the Lake District valleys containing mines. The EA has a responsibility to monitor water quality but has no data base of mine sites. It is keen to work with local specialist groups to share information.

LDNPA
John Hodgson reported on the historical Environment Strategy. ELMS with Natural England would use the Conservation Management Plan to carry out works at Coniston and Tilberthwaite which despite the cuts was still expected to be fully funded.
World Heritage Site bid. This was on hold pendin production by the government of a list of sites.
The LDNPA was expected to make cuts in its budget of 30% over the next four years which is likely to have an impact on archaeology and conservation. 60% of costs go on staffing.

IM.

Tilberthwaite dig

At the time of writing the digging team have made about 30 visits to the site since the November 2009 flood. By July some 50 meters of blocked passage had been cleared to expose the steelwork erected the year before. Progress became slower working within the confines of the steelwork, but after a few more visits the old forehead had been reached and the sides of the tunnel lagged with green larch boards. They are now driving through new ground by spiling forward with sharpened scaffold poles. Five more sets of legs have been erected, the work has progressed about 20 feet further and is now hampered by collapsed timbers probably put in in the 1920's. The following article was written by Alastair Cameron and gives some idea of the problems encountered in this part of the adit.

The work face, 17th October 2010

John Barratt and 'The 1000 Yard Tunnel'

(re-print of an article in the Coniston Magazine, Oct 2009)

There is no doubt that the one person who had the greatest affect on Coniston life during the middle years of the 19th Century was John Barratt. John was a mining engineer who had 'served his time' under his father at the Wheal Friendship mine in Devon. After a brief spell in Yorkshire he moved to Coniston in 1824, lodged at Wraysdale House, (*now the Doctors surgery. Ed.)* and took over the operation of the Coniston Mine. He was clearly the right person to reverse the mine's flagging fortunes and he made it his life's work.

In 1850, with the Coniston Mine now in good profit, he started to take an interest in the Tilberthwaite Mine as well. This mine, which is situated beyond the top of Tilberthwaite Ghyll, was also seriously run down, prone to flooding and in a difficult location for transporting material away. But it had one good attribute - fine reserves of copper. John Barratt's solution to improving the mine's fortunes was to drive a 'thousand yard tunnel', from close beside the road to High Tilberthwaite, in the direction of the mine. The tunnel would pass under Tilberthwaite Ghyll, swing slightly to the right and finish in the depths of the mine, almost 600ft directly below the fell side above. He estimated it would take 7 years to complete.

In fact it took 10 years, but it immediately changed the fortunes of the mine. It overcame flooding by acting as a drain and it also allowed the ore to be brought out very close to the valley road. At this point Barratt built a complete processing plant including '*revolving screens, elevators, jigs and wagons'*. Much of the masonry structure still remains. The plant operated for 15 years but in 1875 production stopped.

There was a problem with the tunnel. In the section directly under Tilberthwaite Ghyll the tunnel passes through an area of soft sand and boulder clay. There were frequent roof falls and it was becoming far too costly to keep it open. During the following year it was abandoned completely. By now John Barratt had died and one can't help wondering, if he had still been alive, whether the outcome would have been somewhat different.

In March 1883 new owners of the mine engaged William Hellen of Coniston to clear the blockage. Willie reported the tunnel was '*in rather a poor state'* but he eventually completed the task. The tunnel was now open again but 3 years later another roof-fall had occurred and again it was abandoned.

Nothing happened for another 40 years. Then, in 1925 a new company took over the lease of the mine and the 1000 Yard Tunnel was again cleared. This time the team consisted of extremely skilled men including names we all know – Wilf Perry, Jack Tarr, Joe Shaw and Billy Gibson Snr. They also extended the tunnel beyond 1000 yards and at the end put up a ladder-way all the way to the surface, 600ft above. A trap door was installed on the surface to stop sheep falling down.

The story has been told several times of a descendant of John Barratt who decided to explore the mine. John Hext walked the full length of the tunnel, alone, with torches and waterproofs and then started to climb the ladder-way. After an exhausting climb he reached the top but found he couldn't push the trap door upwards. Eventually, after a major struggle, he managed to release the bolts, force open the door and climb out onto the fell side, to his great relief. He then had to run all the way down-track to the road to avoid being late for tea.

By 1930 the tunnel was again blocked, but this wasn't by any means the end of its usefulness. In 1933 John William Shaw started to work a deposit of slate in the tunnel, between the entrance and the blockage, creating a sizeable underground slate mine. His 'backer' was a Swedish entrepreneur Oscar Gnosspelius, a mining engineer, aviator and inventor and someone who many Coniston people will remember. Both he and John Willie feature (under different names) in Arthur Ransome's magnificent book 'Pigeon Post'. Shaw also employed his granddaughter as a rock hand and by all accounts she became extremely skilled in this roll. The slate mine operated for 5 years until Shaw became too old to continue.

But that still isn't the end. In 1989 another skilled miner with entrepreneurial flair took over the slate mine in the 1000 Yard Tunnel. George Tarr managed to obtain planning permission to re-start the venture and he worked the mine for about 10 years, eventually abandoning it because of other commitments. During his time there George introduced wire sawing to reduce breakage during blasting. Slate clog from the mine was taken away to George's workshop in Coniston for further processing.

Today the tunnel is as George left it. Could this possibly be the end of the story? Personally I don't think so. I am sure it wont be long before another team take an interest in the tunnel and possibly even clear the blockage, for a fourth time.

Alastair Cameron.

Further Explorations in the Lake Stope

Following on from our initial exploration of the new ground at the base of the Lake Stope earlier this year, we made a return visit on 25th July for an attempt to bolt our way up the stope footwall to the level we had previously seen entering some 60' or so above. With only the two of us, transporting all of the necessary gear including four big ropes, drill & batteries plus rigging gear (lots of rigging gear!) it was hard work carrying it all up to Levers Water and then down through the Paddy End workings. On arrival at the base of Lake Stope (Base Camp), it was time for Sherpa Holland and Sherpa Ramsden to enjoy a lunch break. Whilst Nutty Flip and lemon curd buns were consumed, we eyed the bolting system that had lain unused in my garage for over a year since it was purchased (an untidy pile of etiers and a bar with a bit of rope sticking out of the top) dubiously. Looking up at the long way we had to go, I had a growing feeling that the day was going to be more educational than enjoyable – and so it proved to be.

With Sherpa Ramsden on life-lining duties, I commenced the ascent, managing to free climb the first 10ft or so. With the first anchor bolt hammered home into good rock, I thought we would now see if there was any credence to the claim in the instruction leaflet that it was possible to climb thirty meters in an hour. After one hour of swearing and sweating, I had managed a measly three anchors and those with difficulty. Time for another lunch break. We considered carefully our (lack of) progress, discussed where we were going wrong, fortified ourselves with more nutty flip and lemon curd buns before starting on round two. This time things went far better with improved communication and a better rhythm, the anchor bolts flew into the hard rock and the Level above was getting nearer and nearer. We were about 20' short of the Level when sadly, our battery drill expired and unable to progress further we had no option but to call it a day. We left our equipment in place ready for effort the following weekend.

It was actually a fortnight later before we could return to base camp. This time, we were brimming with determined optimism, sure that we would reach the isolated section of middle level that so far we had only seen on the mine plans. I climbed up to our last placed bolt and started making rapid progress until I could at last peer over the edge to look down the level. Or rather I would have, except that only about 10' of it was visible, the floor rising rapidly to the roof. And at that point, large boulders protruded down. The Level was blocked. No, not just blocked, it was completely and utterly collapsed. I secured the rope and abseiled back down to base camp, while Sherpa Ramsden went up for a look, as much to determine whether or not I was pulling his leg, I think.

After a lunch break, we de-rigged everything at started the long slow climb out to day. This took a long time as one of the Sherpas had neglected to take his dose of Ginseng the previous evening, which meant that Sherpa Holland had to do all the tackle hauling! Although not very productive in the end, the project was indeed enjoyable and the system showed its merit for bolting up with a small team.

Sherpas: Tony Holland, Roger Ramsden.

Forthcoming Meets
The Boxing Day Meet has been re-structured. Disregard the instructions in the Meets List, it will now take in the slate workings in the Tilberthwaite Valley and will start and finish at Tilberthwaite Ghyll Car Park. There will be some food and drink provided at an undisclosed destination. In order to cater for this, if you intend to go it would be helpful to let the meet leader know in good time.

Recent Collapses in Coniston Copper Mines
There have been a couple of collapses recently in Coniston Copper Mines, one at Red Dell and one at Paddy End. During July, the Orpheus Caving Club had a weekend meet at CCM, staying at the climbing hut. I had arranged to meet Paul Thorne on the Friday afternoon to loan him a key for access into Levers Water Mine. Over a cup of tea we looked at mine plans and discussed their underground options. He later contacted to confirm that their weekend was both full and eventful, including an alarming incident in the Bonsor East Shaft. Pauls report follows:

'On Saturday five of us had an excellent descent from the crater down to Hospital Level, via Top Level extension, and many other places we 'explored' on the way down. All the belays were sound, copious good fixed ropes were used, and a good time was had by all. Well done to CAT for the two repairs in Hospital Level. Afterwards we popped into Deep Level to check that the base of Bonsor East shaft looked clear.

On the Sunday three of us first visited Levers Water Mine. We had to dig the gravel away from the gate to open it, but have left it as clear as we could. I had forgotten how pretty it is in there! We then went over to Bonsor East shaft, the aim being to descend to Deep level, and re-ascend the same way, de-rigging the ropes as we went. The existing small thru-bolt belays were used, although they are pretty rusty now.

This aim we completed, admiring the deep shaft/stope as we went, but taking great care to keep clear of the very few platforms of deads anywhere near the line of rope descent. The bottom 20 feet is a bit of a mess, but we had no problems here. We used about 3 re-belays. We re-ascended without incident.
We de-rigged safely, and had just literally exited to daylight when we heard a roar and a crash from inside the mine! After a few moments we went back inside to see what had fallen. A look back down the stope revealed nothing, but of course you cannot see far down. The top showed no sign of disturbance. We exited, and went down the hillside to Deep Level. Some way in we smelt that smell you get from freshly broken rock. Where Bonsor East shaft meets Deep Level there was a large fresh pile of rock and timber, adding several cubic meters to what we had seen there barely an hour previously. This included some pretty large lumps, a foot or two across, with freshly broken faces! We did try to (gingerly) look up the shaft, but the source of the rock fall must have been some way up as the bottom of the shaft appeared unchanged. Needless to say we did not stay exposed to any fresh fall for more than a few seconds, just in case.

So clearly the 'knockers' were kindly disposed to us on this occasion, and timed what appears to be a spontaneous collapse from high up the shaft barely minutes after our exit, fortunate really, otherwise a fatality would seem pretty likely given the size and amount of fallen rock. I remember there being some isolated rotten platforms covered in stacks of deads in one side of the shaft, well to the side of the rope route, and maybe one of these collapsed.

No doubt someone else will descend the shaft in due course, possibly unaware of this incident, but it would be a good idea to circulate some sort of warning among CAT members at least, of this rather near miss. Given the size and depth of the shaft, any attempt to 'garden' the shaft would be almost impossible, our policy was to leave everything alone and keep well clear. I hasten to add that all three of us are used to the great caution needed in such places. Anyway, apart from this 'incident' we had a splendid time, also visiting the massive Slate Closeheads under the Old Man. We also popped into Tilberthwaite Deep Adit level (as part of a fell walk), and were most impressed by the hoisting scaffold and neat massive spoil heap from The CAT dig in there.'

A visit to the base of the Bonsor East Shaft showed that a pile of fresh material lying on top of the debris cone. Amongst this was found a rather curious roller-like artefact (see photo).

The following week I had a report that there had been a collapse in the Hospital Level. A visit confirmed that a section of floor adjacent to where the Paddy End Engine Shaft intersects the level had collapsed falling down the shaft (see photo). Fortunately, access is not in jeopardy, the remaining section of is not on false flooring. I can only speculate that the very dry winter and early summer has maybe dried and shrunk a few fragile timbers resulting in these collapses. A reminder that the underground environment at Coniston is both fragile and worthy of respect at all times!

Tony Holland

Castle Crag, Borrowdale

In June 2008 a project-brief was drawn up for some exploration work in Borrowdale which included a proposal to '*….carry out a complete ground survey of Castle Crag, Borrowdale, and back this up with a literature survey to cover archaeological and historical aspects of Castle Crag.* The extent of the survey area was described as *….the River Derwent which forms the eastern boundary, Dalt Wood and quarry forming the northern boundary, the area known as Lingy Bank as the southern boundar,y and the former cart-road from Grange to Rigghead and Seatoller forming the western boundary.*

*'*The team assigned to carry out this task consisted of a small group from the Honister Slate Mine and an assortment of people from around the area who were interested in Lake District history. We were very fortunate at the start of the project that John Hodgson, National Park Senior Archaeologist, was able to provide digital 1:6000 maps of the area which were transferred to my lap-top. Jamie Lund, National Trust archaeologist also produced the result of a survey of Borrowdale showing the historic sites that his team had identified. Within our boundaries there were over 40 references most of which were old industrial sites – charcoal pitsteads, slate workings and potash pits.

By July 2008 everything was ready and work started. Surveys on site were undertaken at weekends and the team fluctuated greatly in size. By April 2009 most of the ground had been covered. The underground slate closeheads were left for future exploration. We were hoping to borrow a 'cloud-point scanner' from Aberdeen University to help with the surveying of the underground areas.

During the summer of 2009 work continued. Peter Fleming completed an excellent in-depth historic literature survey of Castle Crag. The results of our ground surveys were analysed. Clearly we had not finished and there was still some more work to do but this had had to wait until winter when the bracken had died down. The cloud-point scanner had arrived in Borrowdale but had not lived up to expectations. This machine was supposed to survey in half an hour what would otherwise have take many days. It had spectacularly 'failed' during a trial survey in one of Honister's closeheads. The humidity in underground slate workings seemed not to be to its liking!

On 14th March 2010 a CAT trip completed many of the tasks. The group met at the Dalt Wood ford and initially inspected the slate workings on the lower slopes of the Lobstone Band above the Rigghead Road. Three of the four small workings were carefully surveyed by GPS and results recorded. The benefit of CAT's Magellan Mobile Mapper was clearly demonstrated by Mark. With the tall aerial in use the mapper completed the survey of the buildings on all three of the quarry banks by the end of the morning with outstanding results.

Towards the end of the day the group turned their attention to Lingy Bank, on the south side of Castle Crag. Jamie's survey had identified bronze age remains on an area which clearly must have been an ideal site for a bronze age settlement. But the group's most exciting discovery

was what appeared to be the site of a Viking longhouse, tucked away behind a hill. Lingy Bank certainly needs a further visit by experienced landscape archaeologists.

The next site of interest was the issue of a saline spring in a lower field close to the River Derwent. Saline springs are unique to Borrowdale. The Furness Abbey monks made use of them as a source of salt. After dissolution much of the Abbey's resource went into local hands. But the saline springs and the Borrowdale Wad Mine were retained by the nobility because of their value. Today the springs still issue from time to time, although the one inspected by the CAT trip had dried up. A year earlier it had been flowing well; we sampled it and United Utilities in Warrington had carried out a mineral analysis. Sodium and chlorides were high but so was calcium which was thought to be unusual. Geologists are puzzled by the number of springs in the valley. It is assumed that the solutions originate from a long way down, within the earth's crust.

On the afternoon of 20th September 2010 another visit was made to this part of Borrowdale. As well as several CAT members a number of people who had attended the Mine Forum Meeting that morning also came along including John Malley, The National Trust Property Manager for Borrowdale and Dr Peter Bardsley, a pollution expert working for the Environment Agency. At the Dalt Wood ford we met up with Alan Leyland of Manesty. Alan's father and grandfather had worked the Lobstone Band and Rigghead slate quarries for many years and had 'not made a penny out of them'. The group made their way up the Rigghead Road with Alan talking all the time explaining about the history of this part of Borrowdale and how the road had been improved by his forbears. Eventually we reached the Rigghead workings where Alan explained in great detail how the aerial flight had worked and the difficulties his grandfather had in keeping the road repaired. The method for working slate in the Rigghead closeheads was very similar to that on Coniston Old Man, clearly a result of the frequent movement of the skilled workforce between the two communities.

One final exploration that took place as part of the survey was of a remarkable slate working on very steep ground above Gait (Goat) Crag. We had been informed about the working by John Malley. We knew roughly where it was from John's description but I was sceptical. It seemed very unlikely that anyone could have worked slate in such a steep, inaccessible location.

After two unsuccessful attempts to gain access I had more or less given up trying to locate it. However I had talked to Mark Weir at Honister about it and he had become interested in it as well and wanted to see for himself. Accordingly I got bundled into the helicopter, camera in hand and we headed for the site, flying above the Rigghead Road. I was almost convinced that we would not find anything, but I was proved very wrong. There on the side of the crag, a few feet from where we were hovering, were remains of retaining walls built to try to create a small area of flat ground and a remarkable riving shed which seemed to hang over the edge of the crag. It was impossible to believe that anyone would want to develop a slate working in such a location; and how they shipped the finished product away is difficult to imagine. This must rank as one of the most inaccessible industrial sites in the whole district.

A D Cameron.

Northamptonshire Records Office, May 26, 27

Why visit Northampton with its endless suburbia, lethal dual carriageways and industrial hotels? The only reason I can think of is that the records office there holds a great deal of information about the history of Furness. On a preliminary visit, a helpful archivist pointed me toward the Montagu of Boughton collection, old box 3. It contained many 18th century mining leases and the original lease of Newland Furnace. I had a strong impression this box provided some of the raw materiel for Alfred Fell's book.

I set out to find what else could be found in the Montagu of Boughton collection, but the only guide to the collection was a folder of typewritten sheets. I requested every box which might contain mining leases, but many of the leases were farming leases and the mining leases were mainly 20th century, when there was little ore left to be found. According to my scrappy notes, the waste cottages was a row of 20 and still standing in 1904. (Box V1946). The pier at Plumpton serving the quarries was planned in April 1897. The licence to build Askham pier was granted in April 1898. It was to be a narrow slag pier leading to a large wooden pier in the channel. The plan was modified in November 1903 to something like what exists today, a broad slag pier with berths upstream of the pier. (box V1715)

In March 1894, the Duke of Buccleuch leased Hodge Close quarries to Thomas Barton Massicks Esq, of Millom, Edward Swann of Middlesbrough, iron merchant, Henry Cook Esq of Barrow and Myles Kennedy Esq of Hillfoot, Ulverston (notes illegible) That may be interesting, but it is not worth a tank of diesel, and certainly not worth negotiating M1 junction 15 for. As a last resort, I asked for box V1720. This is the box mentioned in Jeremy Greenwood's letter, which he said was taken at random. Among many mining leases, there was a bundle which gave some information about the take-over of the Ulverston Mining Co by Harrison Ainslie. The Ulverston Mining Co had mortgaged their lease for £1000 to two businessmen and it was the non-payment of this mortgage that caused the liquidation of the company. They appointed Stephen Hart Jackson as liquidator, but sale was delayed by the death of the Duke of Buccleuch. An indenture dated March 1886 records the sale of the plant and the remaining term of the lease to Harrison Ainslie for £8,622.[1]

Harrison Ainslie now had a London head office, 23 Abbingdon St. The indenture was signed by Stephen Hart Jackson as liquidator and for the company by Dorothy Harrison of Scale How, Ambleside, widow, Benson Day Harrison of Perth, Walter Dowson of London, William George Ainslie, Aymer Ainslie of Hall Garth, Carnforth, Tom Kelly of Newmarket and William Langstaff Ainslie of East Sheen. The most interesting signature is that of Alfred Fell, signing as witness to WG Ainslie's signature and giving his occupation as clerk with Harrison Ainslie. He was then 25 years old. In 1901, he was company accountant and in 1905 acted as liquidator, handing over the assets of Harrison Ainslie to a new company with the same name. In 1908 he published "The Early Iron Industry of Furness and District" which remains the only book on 18th century charcoal blast furnaces.

That is the summary of what I found in the Montagu of Boughton collection, but I am not convinced that it is all that could be found. The typewritten notes contained no mention of box V1720. Then there is a Brudenell collection and a Buccleuch collection. These are private collections, not present on A2A. To use the plan of Outcast ropewalk (NL 97), I needed permission from the Duke of Bucchleuch (The archivist, Crispin Powell kindly asked for me). In the absence of an electronic catalogue it is hard to see how information can be extracted from these collections.

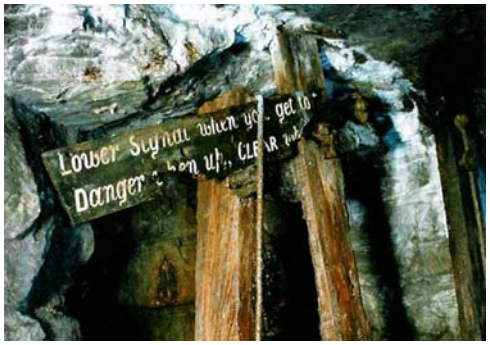
Peter Sandbach.

[1] This contradicts documents in Cumbria RO where it appears that the lease was secured against £15,000 worth of 4% debentures and the assets were bought for £22,000 in 1885.

The Great Nenthead Traverse, October 10th

ML Tony Holland, Helen Wilkinson, Julian Davey, Chris Cowdery, John Ashby, Roger Ramsden, John Cameron, Richard Veitch, Chris Twigg.

Nenthead, 10th Oct 2010. By 09:30 a strong team of 9 explorers had arrived at the portal of Capelcleugh Level, the start of our 6 mile tour of virtually all of the major Nenthead Lead and Zinc workings. By 10am we were underground, making our way along the arched section of level, passing the underground magazine and the branch leading to workings on the Dowgang Vein. After some small falls and water we arrived at the foot of the Capelcleugh Incline, a steep section of level warranting its own signalling apparatus. At the top of the incline can be seen some fine graffiti. The level then cross cuts in shale to the Browngill Vein through very fractured and fragile ground with many collapses and deep water to negotiate along a length of 500 meters or so.



Tool boxes in the Capplecleugh flats

On reaching the major three way junction at the Browngill Vein, we took the left branch towards Smallcleugh Mine. The traditional route follows the Horse Level through very deep water all the way to the laddered rise up into Smallcleugh, however we took a considerably more interesting and varied way via a laddered rise into the large and impressive Capelcleugh Flats. Here can be seen many artefacts including a wheelbarrow, tools & boxes, a selection of tubs in various stages of decay and even a jackroll complete with its own steel kibble and ceiling mounted wheel. We made our way through these fascinating workings to where a rise connects to Smallcleugh Mine. This was our first SRT of the day, and before long we had all prussicked up to reach a very remote part of our second mine.

A short passage led to another large stope and many artefacts are to be seen here also, including a wheelbarrow and a selection of tubs. We made our way along the stope to a man-way down to the Smallcleugh Horse Level. Heading outby from this point, a collapse is encountered which means a complex route is required to regain the level, involving an ore chute, two short prussicks, stopes and sub levels. Also we needed to cross the collapse chamber, through the roof of which

Explosives on the Capplecleugh Horse Level

pass the large bore Bogg Shaft pipes – a remarkable sight. After the chamber a makeshift suspension bridge manufactured from ‘meccano’ like metal provided some entertainment.

Arched Level through the Smallcleugh Flats. Photo Tony Holland.

Once back on the Horse Level, the route changed from primarily stope and flat workings to one of Horse Levels, and it is true to say that from this point on very little is to be seen of actual workings, though we did opt to reach Prouds Sump via the Smallcleugh Flats, rather than the Horse Level. This was our way into our third mine, Rampgill. The through the roof of the Prouds Sump Flats. A pendulum action combined with the grabbing of a large stemple with ones legs was necessary to get off the rope. This was hugely entertaining for onlookers, points being awarded for poise and dexterity.

The Rampgill section is fairly routine, a tramp along the Hanginshaw Level, past Whisky Bottle Junction, then turning right onto the Scaleburn Vein to the steps up to the sub level and on to the final two SRT pitches down into the Brownley Hill Mine. This is where the really deep water is encountered and here, the meet leader expended far too much energy laughing at Roger Ramsden’s attempts to keep his nose above the water – his feet not touching the floor! Once out of the deep water, we proceeded on to the laddered drop down to our final mine – Nentsberry Haggs. We finally emerged out, some 8 hours after entering Capelcleugh, to a warm still evening which was a bonus as we had a two mile trek ahead of us back to the Nenthead car park. This was a thoroughly enjoyable and interesting day with a fine team of very competent people. My thanks to all who attended, and as usual some had travelled a considerable distance to do so. Special thanks to Helen Wilkinson for help with the rigging.

John Ashby – In at the Deep End!

Tony Holland .

Tilberthwaite, Wetherlam
Meet Sunday 15th August 2010.

13 members, 2 guests and 2 dogs (barking mad honorary members) met at Tilberthwaite car park on a warm but breezy Sunday morning. Early arrivals visited the Horse Level dig, admired the ongoing work and met the rest of the party at the head of Tilberthwaite Gill, where the mortar stones were examined and theories advanced as to why some of the stones had a drill holes to about half their depth. Consensus agreed that this was probably to start the shaping of the mortar stone into its familiar cup shape.

The party then moved on to the Elizabethan Haystack Level then Borlase Mine where lunch was taken. From there we headed up hill to Birk Fell Hause Mine and then on to the Long Crag workings below the summit of Wetherlam. Little is known about these seldom visited workings and not much ore seems to have been mined. They are remote from the main paths; access and working conditions must have been hard. Some of the party found access hard, retreat to Birk Fell Hause from the far reaches of Long Crag workings even harder! This was compensated for by excellent views of the Langdale Pikes, Bowfell and Scafell ranges to the north and Fairfield and Helvellyn to the south.

By this time some of the party had left for coffee shops and easier terrain.

We then followed the Birk Fell ridge to Hawk Riggs area passing the old Elizabethan flooded stope and Dr. Booth's Level. From there a steep but pleasant path overlooking the Hodge Close and other nearby slate workings was followed back to Tilberthwaite.

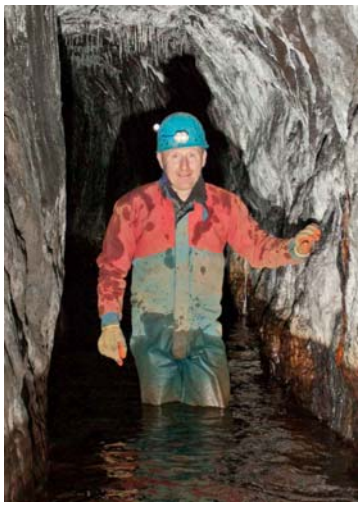
Thanks to all those who came for their input into an interesting walk. See you again on Boxing Day meet at ~~the BMSC hut~~ Tilberthwaite Ghyll. At 10.00am.

Mark Scott.

NB. The Boxing Day Meet has been re-structured. Disregard the instructions in the Meets List, it will now take in the slate workings in the Tilberthwaite Valley and will start and finish at Tilberthwaite Ghyll Car Park. There will be some food and drink provided at an undisclosed destination

Coldberry Mine 19th September

Dave Young (ML), John Aird, John Ashby, Chris Cowdery, Tony Holland, Jon Knowles, Roger Ramsden, Mark Waite plus the Riggers and Diggers.



This is not really a detailed Meet report more a profound "thank you" to Dave Young for introducing the party to a most interesting area and showing some very fine underground stuff. Similar thanks go to the Riggers and Diggers who did all the hard work i.e. rigging the pitches, digging out the bits that needed digging and then after the visitors went home; derigging.

Having met in the valley above Middleton; we set out up the Hudeshope beck, passing through the gorge where the stream breaks through the Great Limestone. Spoil heaps and signs of hushing were evident all around. Following the left bank we were persuaded to enter Marlbeck level which contained "a little water", so only up to waist level then! Having comprehensively ignored the instructions "not to go too far since the air got bad" we were eventually rounded up by the ML and led up the valley to the bridge and on to Coldberry mine itself. Last worked in the 1960's with the dumps being re-worked subsequently, little remains on the surface apart from the vandalised Coldberry mine shop.

From here the party set out for the Firestone (Clay) level, the day's main objective. Exploration of the level produced some interesting artefacts and even more interesting examples of digging techniques. "Just used to come in after work for a few hours every Thursday evening"!

Then on to the descent down to Low Skears drainage level; the only note of criticism of the day creeps in here, having an electron ladder (from which one of the top wires has completely rotted away) hanging down a quite narrow descent is not a good idea! Still there were things to see at points on the way down, including a wooden tub where the body had completely rotted away, and then the bottom pitch turned out to have a totally calcified ladder in situ.

Much emphasis had been placed by the cognoscente on (a) the depth of water (b) the water temperature and (c) the length of the drainage level so it was decided that the group would split into pairs at the top of the last pitch and each pair would proceed swiftly to the portal on

reaching the level. The third man down was impressed that the first pair seemed to be waiting for him some distance ahead so he set off as his partner was close to the level. Having only travelled a quite short distance, he was disconcerted to find that the lead pair were now returning. They had come to a three way junction and thought that the other way along the level might be the way out. Despite having the direction of water flow and the compass bearing pointed out to them, they insisted on a return to the descent shaft for confirmation. Once this was achieved it was a matter of pressing on and trying the various alternatives until the main way was discovered. (The cognoscente had been correct on every point!). A great day out!

John Aird

The Eldorado Dredge, Victoria, Australia.

Driving along a dirt road east of Wangaratta on a spring evening; in beautiful wooded countryside close to Reedy Creek, it was something of a surprise to be confronted by the vast bulk of the one remaining alluvial dredge in Victoria; still just afloat in the self excavated pond where she was abandoned in 1954, a victim of the Breton Woods fixed exchange rate mechanism with the gold price fixed at $34/oz.

Built in 1936 she weighs 2100 tons and has a hull length of 70 metres being the largest dredge in Australia when constructed. The massive bucket ladder, fitted with about 110 buckets allowed excavation down to 98 feet below water level. The buckets made of cast chrome steel had riveted lips of manganese steel for extra toughness, as can be seen, these required frequent repairs after striking bedrock. Each bucket weighed 1.6 tons and held 12 cubic feet of material. Originally the bucket "band" was driven by a 200hp electric motor; when in 1939 a 320hp motor was substituted months of delay occurred due to band failure caused by the higher loading. The main electrical supply was at 6600 volt via a floating cable supported by empty 44 gallon drums; this was transformed to 440 volts 3 phase for the main motors and 110 volts single phase for lighting. The bucket ladder was raised (completely out of the water for maintenance) and lowered using the massive fore gantry across the bow of the dredge. Cables with

associated winches ran from each corner of the pontoon for directional control and ahead to control the “crowding” of the bucket ladder into the working face. The cables were normally attached to appropriately positioned trees. The “Winchman” was confronted with an in line row of fifteen levers reaching to chest height to control the dredge while there was a separate electrical switch and meter room.

From the top of the bucket ladder the raw feed went to a trommel, oversize was discharged via the short launder immediately behind the small corrugated iron building on the stern gantry (the “dunny”; practically the only staff amenity on board). The undersize from the trommel was fed to jigs, with rejects from the primary jigs discharged from the larger launder supported by the timber poles. Gangue from the secondary jigs was pumped overboard via the central pipe, this arrangement being designed to layer the waste from coarsest at the base to finest at the surface thereby encouraging the re-growth of vegetation.

The concentrate was a black sand consisting of gold and cassiterite (tin oxide), this was shipped ashore, the gold removed by amalgamation with mercury, the mercury recovered by retorting and the gold smelted and cast as ingots. The cassiterite concentrate remaining was shipped to specialist refiners.

Operation was continuous in eight hour shifts with crew varying between five and thirteen men depending upon the shift, maintenance was carried out on Thursday’s day shift with Sunday’s day shift available if needed. The noise from the dredge could be heard at a distance of ten kilometres but despite the primitive working conditions only one life was lost in eighteen years, a crewman on whom a steep section of bank collapsed while he was working on the bucket ladder.

Total production was 35,376,788 cubic metres of material yielding 70,664 oz of gold and 1,383 tons of tin concentrate. With the gold price at $1,250/oz now (and tin at $21,750/ton), and the Australian climate, food and wine, the miners will be back!

John Phelan.

NEWSPAPER EXTRACTS FROM 1850 – 1927 concerning Slate Quarrying
from the Ulverston Mirror and Furness Reflector and the Millom Gazette.
The first three are from the Soulby's Ulverston Advertiser and concern Coniston Coppermines
Peter Fleming

Soulby's Ulverston Advertiser – August 29th 1850

SHOCKING ACCIDENT AT CONISTON MINES
On Wednesday the 21st inst., a most distressing accident (unparalleled we are happy to say, in the accidents of these mines.) occurred at the above place attended with loss of life, in the most shocking manner to one of the workmen, Thos. Millican, senr., aged 61 years.

The deceased it appears on the day mentioned, proceeded to his usual employment at the works, an occupation in which he had been engaged for upwards of 13 years past, viz., attending the engine which draws the water and Ore out of the mine; and his first job in the morning in question was to pump out the water, and as usual to stop the pumps on a signal being given him by the person in care of them. When the water was all drawn out, the signal to stop was repeatedly given but not being attended to, the pump master proceeded to the engine house to ascertain the cause, but poor Millican could nowhere be seen, and the engine was immediately stopped, when he was discovered at the bottom of the wheel, in the inside, his body literally torn to pieces, and divested of every thread of clothing. The head of the unfortunate man was found completely severed at the outside of the wheel pit, and his bowels after having been dashed out, were, with other portions of the body, carried down the watercourse. We will not however, further pursue our revolting description, suffice to say that the mutilated remains were carefully collected, and deposited in a coffin to the mines to await a Coroner's Inquest, which was held on the following day, and the interment took place on Friday. As the wheel (which is 30feet high) is placed upon the mountain side above the works, and which was tended by himself alone, it is not known how he got in, but it is thought that he was in the act of greasing the axle, which it was necessary to do daily, and that owing to the slipperiness of the ground, near the pit, from the constant splashing of water from the wheel, he had slipped or stumbled, and fallen in. The wheel, was revolving at a most rapid rate, and deceased must have been immediately pierced by the almost innumerable screw bolts that project through the casing to the inside, like so many iron teeth, in the midst and upon which, as in an immense cylinder he had been hurled round and round upon them.

Soulby's Ulverston Advertiser, December 19th 1850
A large shaft for a waterwheel weighing five tons has been cast by Mr Winder of the Lund foundry near Kendal, for the Coniston Copper Mine Company. This shaft is for a very large waterwheel of about 48feet diameter which when completed it is calculated will be upward of one hundred horsepower.

Soulby's Ulverston Advertiser – December 12th 1854
Coniston and neighbourhood were visited with a heavy fall of rain which continued without ceasing and caused the rivers to overflow their banks and to flood the low ground in and about the village. In many parts the road was impassable for pedestrians.
The Mines Beck came roaring down like a cataract and took away the middle pillars from the Forge bridge and otherwise injured it. The Black Bull Inn was at one time in danger of being surrounded so that it would have been difficult for a stranger at least to make out the proper water course. But the worst remains to be told. A little further down, at a place call Low Bobbin Mill, the flood actually swept away a dwelling, occupied by a miner named William Poole, with all the furniture belonging.

At the time this happened Poole was busied in preventing the rain from injuring the bed, and his wife was at her domestic employment when he heard a scream from the latter and instantly perceived an opening in the wall. They snatched the children up and made to the door. But scarcely had they crossed the threshold when the house was swept down the beck, with all their clothing and furniture. Two tables, a box, corner cupboard, bedsteads, clock etc were picked up on the opposite side of the lake the same evening and the following morning the three first articles nearly broken to pieces and the cupboard very much shaken; but no clothes has yet been found.

The sand and other debris has covered a great quantity of land on each side, upwards of a foot thick, together with a wheat field belonging to Mr. Wilson. Many houses which laid low were also inundated and the furniture swimming therein.

SLATE QUARRYING

23 March 1867
Inquest at Coniston. An inquest was held at the Black Bull Inn before W. Butler Esq., Coroner, on the body of a young lad named Moses Mossop, 13 years of age. It appears that Mossop was engaged with others at the slate quarry belonging to Messres Mandall and Son, and one day last week about 8 a.m., when a noise was heard on the roof of the quarry. The workmen, well knowing that it foretold a fall, tried to escape but before they could do so a large mass of debris fell upon the deceased, killing him instantly. Another young man named Spedding, was also caught by it on the leg and seriously injured. A verdict of accidental death was returned.

4 January 1868
Accident at Coniston. A serious accident happened to John Nicholas of Coniston a quarryman whilst working at Walney Scarr slate quarries on Friday 27th ult. He was in the act of plugging a hole with gun cotton, when it exploded and struck him on the hands. He was conveyed home as soon as possible and medical aid called in, when it was found necessary to amputated the greater part of both hands, only leaving the little finger on one and the thumb on the other. He is said to be progressing favourably.

8th April 1871
KIRKBY IRELETH
Accident at the quarries - Soon after the men at the slate quarries began to work on Wednesday morning, an accident was caused by the explosion of gunpowder used in blasting the rock, by which two of the men, named Brown and Whittaker, were severely injured, the former was carried up on a stretcher to his home at Head Cragg, where he was attended by Mr. Chapman, the surgeon to the works, and was found to be much hurt about the hands and feet, his head and face were also wounded, but fortunately his eyes escaped injury. It appears that he had been drilling a hole in the rock, and about half filled it with powder, which by some unknown means exploded, scattering rock and stone in all direction. The other man was struck by a piece of rock several tons in weight, which rolled over upon his leg and severely injured his ankle. We understand that both of the men are doing well and are likely to recover.

July 19th 1873
A QUARRYMAN KILLED AT CONISTON.
Joseph Mitchell, a quarryman, was killed on Tuesday last, at the quarry near the village of Coniston, belonging to the Furness Railway Company.

It appears that the deceased, along with others, was engaged with doing so, and in doing so had to removed the soil from the root of a large oak tree which stood on the top. Thinking the tree had roots sufficiently strong to hold it, the men apprehended no danger.

Between four and five o'clock in the afternoon a brisk wind got up, and the tree, without any warning, fell over into the quarry, crushing in its fall the above named unfortunate man, others narrowly escaping.

He was speedily attended to, but before medical aid arrived he breathed his last.

An inquest was held on Thursday, when a verdict of "accidental death" was returned.

November 4th 1876

TO BUILDERS
To be let by Tenders
The building and completion of 6 or 8 workmen's cottages, near to "Hodge Close" slate quarries Coniston. The plans and specifications may be inspected at the office of the above quarries, and further particulars may be obtained from Mr J Stephenson, to whom all tenders must be delivered on or before 25th inst.

The lowest or any tender will not necessarily be accepted.
Holme Ground, Nov.1st, 1876

March 1st 1879
QUARRY ACCIDENT NEAR CONISTON.
A young man, named John Briggs, engaged at Mr Stephenson's slate quarry, at Moss Rigg near Coniston, was very seriously injured on Tuesday week. It appears that immediately after the dinner hour, when several men had begun work, a quantity of stone and rubbish, loosened by a recent thaw, came down, and in their fall struck Briggs, breaking both is legs, and injuring his head and body. He was at once conveyed to his lodgings at Tilberthwaite, and his injuries were attended to. We understand he lies in a precarious condition.

June 7th 1879
FATAL QUARRY ACCIDENT AT CONISTON.
Early on Wednesday morning a man named Johnathan Newby, employed by the Green Slate Company at the Penny Rigg Quarry, fell from the top of the workings to the bottom, a depth of 30 yards, and was killed on the spot. The poor man was 48 years of age, and has left a widow and five little children totally unprovided for. A inquest was held by Mr Coroner Poole at the house of deceased on Tuesday and a verdict of "accidental death was returned.

Friday March 4th 1898
GUNPOWDER EXPLOSION AT CONISTON
The Coroner of the Furness District received an intimation on Monday, of the death of Daniel Hogan, a quarryman, aged 37 years, of Forge Cottages, Coniston, who died late on Saturday night, from shock and injuries sustained in an explosion of gunpowder at the Moss Rigg Quarries belonging to Mr J. Stevenson, of Kendal. It appears deceased went to work on Thursday morning, and was engaged chiefly in boring preparatory to blasting. Deceased subsequently went to the powder store in connection with the quarry, for some gunpowder, and on getting there he found it would be necessary to open a fresh case. For this purpose he took out of the store a 50lb case of powder and conveyed it to a shed 100 yards away. He was seen to kick off the hoop at the end of the case, and then sought to push in the end of it. He failed to do so, however, and then crossed

over to where some quarrymen were working and borrowed a chisel and hammer, and proceeded back to the shed. Immediately afterwards a terrific explosion took place, the roof of the shed being blown off and the door blown out. A number of quarrymen ran to the place, and observed deceased coming out from a partly demolished shed, his face and hands being frightfully injured and his clothing on fire. He lost consciousness and died at 8 o'clock on the following night. Hogan who was the sole support of his aged parents, had been seriously injured twice previously.

Friday May 26th 1899

DEATH OF MR T MANDALL, CONISTON

We are sorry to have to record the death of Mr Thomas Mandall, eldest son of Mr T. Mandal, quarry owner. Deceased who was only 33 years old, had established a very successful photographic business. Wreathes were sent by the parents, Annie, Mr and Mrs Barrett, Mr and Mrs Mandall, Mr and Mrs Forsyth, Mr and Mrs Brierley (Huddersfield) and Mr and Mrs R. A. Mitchell.

Friday August 3rd 1900

QUARRY ACCIDENT AT CONISTON

On Wednesday afternoon, two men named Shepherd and Coward were severely cut and otherwise injured owing to the breaking of a ladder upon which they were working at the Parrock Quarry, near Coniston.

Friday June 7th 1901

QUARRY ACCIDENT AT CONISTON

A serious accident occurred on Monday morning, at the Addiscale Quarry, Banniside Moor, Coniston, to a Youngman working there named John Masterman, who resides at Bank Cottages. A huge block of stone of some three or four tons weight, which had been detached by blasting, was lying on a sloping bed of rock with its lower end about two or three feet from a wall of rock. Masterman was in the act of passing between when the block suddenly slid down, piercing the side of his foot, and pinning him firmly to the spot. Assistance was quickly on hand, and unsuccessful attempts were made to release him. Extra men were obtained from a neighbouring quarry but it was found impossible to move the stone, and it had to be broken to pieces before the unfortunate workman could be extricated. The work altogether occupied fully an hour, and must have been a very trying ordeal for the victim of the accident of the accident, who, however, is said to have borne his sufferings with remarkable fortitude. On being attended to by Dr Kendall, it was found that his foot was severely hurt, among other injuries being a large wound extending nearly through it from side to side. Several bones were also shattered and had to be removed, and it was felt at first that amputation would be necessary.

Millom Gazette – August 9th 1901 (page 7)

An inquest on the body of Benjamin Cooper, who was killed by a fall at Bannaside Quarry, Coniston, on the 1st inst., was held at the Sun Inn on Saturday morning, before Mr Coroner Poole and a jury, of which Mr A H. Cooper was foreman; Mr Hamer, a proprietor; and Mr Leck, H. M. Inspector of Mines were also present.

John Barrow, foreman at the quarry, said he saw the deceased and another man standing on a stage dressing down rock on Thursday afternoon. Each of them had a rope round him fastened to a bar at the top. Deceased came to the top and spoke a word to witness, who shortly afterwards turned to go away. A few seconds later he heard a shout that deceased had fallen into the quarry. He found him at the bottom supported in a sitting position by another workman, Casson Brockbank. Deceased was bleeding heavily from the nose, and only breathed about twice afterwards. The end of the rope was lying loosely about his legs. There was no doubt it had slipped off the bar. The latter was sill in the ground. He thought the deceased would himself put the rope round it.

By Mr Leck:- There were at first two ends hanging down, a man at each of them bites or knots were made round the bar and the middle part of the rope lay slack behind. Cooper would probably

slip the rope off his body before coming up. Deceased was a careful practical man, and always selected for such work. They had every confidence in him. Mr Leck said the rope was 130 ft. in length, the middle 60 or 70 feet would be lying slack behind the bar. Each man adjusted his end to the length he required by making a hitch or not on the bar. The bar sloped slightly backwards, and stood about 18 inches out of the ground.

Friday November 29th 1901

QUARRY ACCIDENT NEAR CONISTON: FALL OF 300 TONS OF ROCK

ONE MAN KILLED : ANOTHER INJURED: NARROW ESCAPE OF QUARRYMAN

Another dreadful accident took place at Hodge Close Slate Quarry, about 3.30 on Wednesday afternoon. The occurrence is similar in nature to what happened in a neighbouring quarry some three years ago, when one of the workmen was entombed by a heavy mass of rock. The quarry is worked by the Tilberthwaite Green Slate Company, and the men were employed on "landings" one above the other. It appears that a group of quarrymen were engaged upon a large face of rock, when without warning the whole mass came forward and fell to the floor. Unfortunately one poor fellow, John S Casson, was caught by the rock, and must have been instantaneously killed. His whereabouts under the mass of metal calculated at 300 tons would have been difficult to ascertain, had not his fellow workmen noticed one of his hands protruding from the debris. His father, Mr John Casson, a very experienced hand, was providentially knocked by the calling mass into a side level. His cries were quickly located, and ready hands soon effected his release. His injuries were only of the nature of severe bruises, and he was able to walk home.

The remaining men had narrow escapes, as they only managed to get to places of safety just in time, and the falling rock reached to within five yards of their haven. It is generally thought that recent frost and subsequent thaw are responsible for the slipping of the rock. In most cases warning his given by pieces of dislodged metal rolling down, but in this instance the fall was quite sudden.

The deceased, who was only 24 years of age, and was a member of the brass band and string band. Whilst general thankfulness is felt that the father is spared, and that only one loss of life is involved, there is sorrow in the whole district by the sad circumstances coming as it does just before the festive season of Christmas.

Millom Gazette – May 2nd 1902

SERIOUS ACCIDENT AT TORVER

On Monday afternoon last an accident happened at the Broughton Moore Slate Quarry, The Cove. While working in a rather narrow part a man named James Mara, was seriously injured by a fall of stones and soil etc. The accident occurred about 2.30 in the afternoon, and the unfortunate man appears to have been jammed between the side and a large piece of rock. He was released from his dangerous position and carried home, when Dr Kendall was called and found a wound on the ankle, and the thigh crushed. The patient had not rested much on Monday night but hopes are entertained that his injuries may not prove worse than at present indicated.

Millom Gazette – July 18th 1902

FORTY THOUSAND TONS OF ROCK DISLODGED

HUGE BLASTING OPERATION IN WESTMORLAND

A gigantic blasting operation has been successfully performed at the Tilberthwaite Green Slate Company's Quarries, which are situated at an altitude of several thousand feet on Langdale Pikes.

It was decided some time ago to effect the removal of about 40,000 tons of rock which overhang the chasm at the top of the peak known as Mossrigg. For this purpose the rock was mined in 21 places, and the blast holes were filled to a depth of 13ft or 14ft. with explosives. Five cwt of gelatine were used. The whole was connected by an electric fuse.

The charges were fired by Miss Jeffreys, the daughter of the principal owner of the mines. The noise of the explosion is compared to the sound proceeding from the discharge of 1000 guns. The rock moved forward in a body and toppled over into the depth below. The gully was filled with a

dense volume of smoke, and it was impossible to see a rock in the abyss, but the surface from which it was discharged was left as smooth as if planed.
The party which witnessed the explosion, numbering about 10 persons were entertained to luncheon, and a silver casket was presented to Miss Jeffreys as a memento of the occasion.

Friday July 10th 1903
SERIOUS QUARRY ACCIDENT AT CONISTON
A very serious accident occurred on Wednesday afternoon at Moss Rigg Quarry near Coniston, to a workman named William Wilson, residing at Bowmanstead, Coniston. He was engaged in stemming a bore hole preparatory to blasting, when the charge prematurely exploded. He received frightful injuries about the face, one eye being said to be destroyed, and is also badly hurt about the hands, but the full extent of his injuries have not yet been ascertained.

Friday February 11th 1910
QUARRY ACCIDENT AT CONISTON
Mr John Mitchell, a married man residing at Tilberthwaite Avenue, Coniston, met with an accident whilst at work at the Old Man Slate Quarries, on Wednesday afternoon, having one leg broken near the ankle, through being caught by a fall of stone and rubbish. He was removed home on a stretcher, and surgical assistance at once obtained.

Millom Gazette – July 21 1911
KILLED BY A FALLING SLATE
A quarry fatality occurred in the Lake District yesterday, a workman, John Brockbank, aged 36, living at Hodge Close Cottages, Coniston, being accidentally killed.
A load of slate stone was being raised in a wagon up the side of the Green Quarry, when a piece fell off and struck Brockbank, who was working on the floor of the quarry 200 ft below.

Millom Gazette February 11th 1916
Coniston Quarries to be Closed
Owing to the continued depression of the slate trade, caused by the war, the Buttermere Green Slate Company have decided to close several of their quarries. Amongst these are the Parrock and the High Fellside Quarries, which have given employment to a number of men in Coniston and district. The announcement, which was read to the men at the weekend, gave notice at the end of February of contracts and day work would cease. The notice further stated, "Owing to conditions caused by the war the building trade is practically dead, and the result is a large accumulation of slate, which is not likely to be required for an indefinite period. Therefore, the Company, with regret, have temporarily to cease raising slate." A hope is expressed that the day of reopening may not be far distant. The closing of the quarries will cause about twenty-five men to look for work elsewhere. As most of these will probably leave the district, it will mean a further falling off in the business of Coniston. Before the war these quarries gave work to over sixty men . The Company have also decided to close other quarries at Elterwater, where a large number of men are engaged.

Millom Gazette – Friday Dec 2 1927
A LAKELAND FALL
Three Honister quarrymen had a miraculous escape from death on Monday, when a fall of many tons of rock and earth down Honister Crag on to the hut in which they were dressing stone, crushed in the roof of the hut and buried them. It took their fellow workmen, some of whom fortunately were working in the hut nearby, an hour to release them.

They were Frank Pepper, Borrowdale, who was completely buried, Syd Bird, Borrowdale, and Jo Butterworth who were only partly covered. Bird and Butterworth escaped with injuries to limbs and head, but Pepper was more seriously injured and is detained in Keswick Hospital.

A Visit to the West Coast of South Island, New Zealand

Taking the opportunity during the Wellington holidays to travel to the West Coast of South Island, Eileen and I wanted to cover an area missed on our previous tours from Westport up the coast to Karamea. We flew to Christchurch, and scuttled over Arthurs Pass towards Greymouth and onto HWY 7 where at Ngahere we located a renovated Davidson Bush Logging Steam Loco parked in the old railway sidings by the roadside.

Saw millers required steam powered locos, Messrs. Davidson's of Hokitika provided the answer by producing log haulers and bush steam locos that were easy on the rails and could withstand the heavy duty asked of them. This particular loco was No 25 out of 26 built around 1920 by G & D Davidson at Hokitika. It was used to transport logs around various saw mills, tramming logs from the bush and moving sawn timber to the yards until just after 1942. It was then abandoned in the siding, partly dismantled and disappeared into the encroaching bush. In 1974 Jim Staton discovered the loco, cleared the site and reassembled as much as he could, including retrieving the boiler from four kilometres away! The DoC decided to restore it in 2001. Gray Brothers of Greymouth completed restoration including rust proofing and painting.
(Source - DoC On Site Information Board)

Having completed our first objective we retired to our accommodation at Cape Foulwind. The following morning we headed north on a hit and miss basis, for our information was a little vague. We wanted to visit the Denniston Incline that allowed rope hauled coal trucks to descend from the high plateau to the coast some 600 metres below, however most our info. stated that a rough road wound its way up the steep hill; a gate prevented access part way up and a very rough 4 X 4 track continued. As usual we decided to give it a try; the information was pure tosh. A steep tarmac road took us all the way to the top and to the Brakehead site. We landed and parked fifty feet from the historical site.

John Rochfort's party was the first to discover coal high on the escarpment of the Mt William Range. Rochfort reported his find and consequently a survey party was organised, led by Julius von Haarst and James Burnett. They eventually found an 8 foot seam and named the area Coalbrookdale. The location was high in the hills and it was with considerable ingenuity that a route was surveyed and work commenced on what was to be the Denniston Incline. Later Rochfort and Burnett estimated reserves of 72.6 million tonnes of coal in the region.

It was decided to extend a railway up the coast from Westport to Waimangaroa where a branch would meet the base of the incline at Conns Creek. Several other coal deposits were located and could now be exported economically. Work commenced on the incline in 1878 and completed in 1879. The total distance from the Brakehead to Conns Creek was 5,500 feet dropping some 1,700 feet. The incline was divided into two sections, the upper incline or No.1 incline – a short middle brake section – and the lower or No. 2 incline. It was necessary to have a suitable system for braking the fully loaded

wagons each weighing between 11 and 12 tonnes plus the ropes. The raising and lowering of wagons was operated by the counterbalance system,

Conns Creek Station and the Denniston Incline

fully loaded going down and empties travelling up. However a hydraulic brake was incorporated to control the rate of descent through two 9½ foot diameter brake drums to the middle brake section where a second hydraulic brake controlled the two 10½ foot diameter drums, controlling the descent to Conns Creek. Each set of two drums wound the rope in opposite directions. The near side drum hauling the empties and far side lowering the full wagons (far side being on the left looking up the incline) There could be between 10 and 15 fully loaded wagons descending the incline at any one time and these could reach speeds in excess of 30 miles per hour, accidents were common, and miners and families killed whilst illegally riding the wagons. Both brake drums had emergency strap brakes in the centre of the drums.

At the Brakehead and after the incline had been constructed, the screens and storage bins were erected to sort the coal into three grades, screened by miners who were no longer fit to work underground, and the coal was stored in discharge bins. A tramway led from the area to Banbury Mine and other workings. In later years an aerial ropeway was constructed from Wharatea and the Sullivan Mines replacing the ropeway system.

It has been suggested that over 85 years of operation more than 1.5 million wagonloads of coal descended the incline which finally closed in 1967 and the area cleared. Trucks continued transporting coal down the rough road. In 1979 the coal bins caught fire and were destroyed. The site was cleaned up in 1980, later the DoC realised that the area was of historical interest commenced repairing the site and producing a very interesting interpretive area at the Brakehead, they are now in the process of repairing and clearing the tramway for the installation of a small tourist tramway and the middle brake area is receiving attention too.

We had arrived, and the air was a bit thin! The track took us straight onto the wood deck of the Brakehead. It was quite amazing. The rails were still in place and two or three wagons were respectfully sited producing that ‘just ready for descending’ view. The view down the incline to the middle brake section left one in awe of the work involved producing such a steep and workable incline. The construction work must have been soul destroying. I peered over the edge of the 1 in 3 gradient incline. I could see the narrow cutting running down through the bush, the lines in place over the bridge to the passing loop before disappearing round the bend of the middle brake section.

Returning to the wide deck, it was easy to visualise the whole operation in action though only the foundations of the screening plant and winch house remain. The winch house lay ahead,

behind and to the left the rails continued into a siding. To the right and beyond the winch house was where the trucks were filled from the bins, and then drawn forward to be hooked up to the cables. The huge bins were attached to the main building where incoming coal was screened. The screening plant and storage bins were modified many times through the years; however the winch house remained much the same.

The incoming and outgoing rail track with the wood deck, rollers and cable guides are still in place. The DoC has placed a number of story boards at important locations and these are very helpful. Numerous old mining tubs filled with rubble act as an embankment towards the rear of the site and have been in position for many years. A tramway to Banbury Mine is now closed and will eventually provide visitors with a mini rail trip up to the old coal mines. To the right of the site stands the sole sentinel from the aerial ropeway system, complete with the back balance adjuster and tension trolley, which served to keep the seven mile long endless cable taught from the Wharatea and Sullivan Mines. On arrival at the terminal tower (removed), the full buckets of coal ran off the moving cable onto a rail and emptied coal into a chute. The empty bucket was then clipped back onto the rail and pushed onto the rope. The delivery capacity was about 800 tons per day.

Having filmed the site we set off to explore Denniston town (half a dozen baches and numerous chimney stacks). We moved on further into the plateau looking for Burnett's Face where the remains of miners' homes are sited, not knowing that we were on an operational open cast mining road to Coalbrookdale, as a result I was chased by a huge lorry carrying 30 tons of coal, the driver of which was wishing to turn where I was parking! After a hasty retreat and much bowing and scraping, I recovered my nerves and we set off for Burnett's Face, only to find I was still on the lorry road. I retreated, leaving a local guy and family in a pickup truck being chased by another wagon.

We travelled back down the steep hill to Conns Creek where we observed the Denniston Incline from the bottom. A small crane stood mounted on a buttress, this was used to transfer mining materials onto empty trucks ready to be carried up to the Brakehead. The DoC has cleaned up the area and we could see several sets of sidings running parallel to the original branch line, now a rough road along the riverside. The incline emerges by the side of the crane and at more or less right angles to the sidings. Another double track ran further up the valley, complete with operational point's lever. I ascended the incline to the first bridge which had long ago collapsed into a side creek. Nearby on the side of the incline stood the remains of a runaway truck, one of many hidden in the bush, this truck jumped the tracks, sped over the bridge and buried itself into the bush. A battered rusting steel relic, minus its wheels! The transfer points could be seen at the base of the incline where the men hooked off the loaded truck and coupled on the empty to the rope. There was coal everywhere. I looked at Eileen and she firmly said. "NO!"

After a pleasant half hour we set off up another long winding hill to find the Millerton Incline, now this incline is well and truly buried in the bush. Having climbed high into the hills and leaving Eileen sunbathing I ploughed into the thick, sticky bush and immediately found the bath house, a roofless concrete structure complete with a turn of the century boiler (no, not the wife!) There were about forty individual shower cubicles (all cast in concrete)

each with windows, outlets and clothing hooks still in place. A large central area at one time held the lockers. Steps led up the hillside and away from the central entrance. These concrete steps let into the hillside climbed up for several hundred yards leading to a path that took the miners to and from the mines.

Millerton Mine bath-house with boiler

Just to the side, above and below were two reservoirs. To the front and incline ropeway passed by into the bush, the lower section entering a wide well constructed tunnel (collapsed several yards in). Several shallow inclines criss-crossed the moor and rail tramways appeared and stopped for no reason. I returned and we drove down the track passing a small cottage, which was the local 'help yourself' museum. Inside were numerous photographs of the mining area and plans of the workings.

We left and set off for Karamea which was a centre for logging operations from the 1860s until 1967 then the 'forest and bird twitchers' arrived and convinced the Forestry Commission to drastically reduce logging grants to such an extent, there was not enough timber to feed the mills. I was after steam driven log haulers, i knew there was at least one in the woods!

Having driven for miles through forests splashed red with Ratta flowering trees (scarlet), we descended in to Karamea – not a lot going off. It was dead, as in non-functional. Even the restaurant could only offer coffee! So calling at the '4 square' supermarket, we tucked into cheese sandwiches and contemplated—a lot! Turned round and set off back! However, old eagle eyes Eileen spotted along a side road; rusting metal. So I swerved off the road and we set off up the track, there in a patch of boggy ground we found a Marshall portable steam engine, yes it had been rescued but had just been left rusting away.

I have enclosed a photograph, so any advice would be most welcomed. I've been on the internet and I think it could be dated about 1906 and maybe 4 or 5 horse power. Being in this area and judging by the fly wheels that were arranged to accommodate leather belts, it could be for threshing but I'm more inclined to think it was a portable plant for an on- site (temporary) saw mill. Most mills had a fixed engine. It could have been used out in the bush. Tell me what you think.

Much elated we made our way back to Cape Foulwind. Reefton was our next destination.

On our way to Reefton, Eileen persistently shouted out items I should be seeing by the roadside, which of course were not there anymore, like herring bone dredge tailings. We drove past a sign that said 'Boatman's Creek' I just said "That sounds nice". "Oh there's a gold mine up there." Eileen casually answered. Well you know me. I stopped so fast, I could

have been in an F1 racing car. Black tyre marks on the road. We turned round and shot along this dirt road. Yes, folks all the signs were there, earth bankings in the creek valley bottom, very similar to Alaska. I could smell dredging operations, sure enough around the corner I could see a conveyor belt in the air, beckoning; a dirty old pickup by the roadside and a 'Hill Billy' guy in a JCB. I stopped and signalled for permission to film and he said yes, OK. Brilliant!

I now understood that this guy was moving up and down the wide valley, testing the ground. If the gravels were gold bearing, he cut out a thirty foot wide by about two hundred feet long section of top soil until he reached clay and gravel. He then brought in a floating pontoon upon which rested a portable dredger, similar to the one I described in the Otago article last year. Now what I didn't realise was that the pond was over twelve feet deep, the JCB dug down until the arm was nearly fully immersed and carefully Mr. Goldminer lifted the contents up and dumped them into the hopper. The gravels and stone then descended into a pitched rotating cylindrical screen, stones and boulders dropped out onto the conveyor and were deposited behind the unit, no herring boat shapes. The remainder past through several course blankets before the liquid ran off back into the pond. It was interesting to watch. I didn't trespass, aware that Mr. Goldminer may have a double barrelled shotgun by his side, besides his Rottweiler kept laughing at me! I finished and he gave me a wave and we continued up the valley observing numerous trials and test pits and another digger starting to excavate a new pit, then the road ran out – just like that. We turned around and made our way back, giving the guy another friendly wave and on to Reefton.

The information centre was very good and I bought copies of three mine plans (to hang up in England). We made our to Black Point museum, where the guy told me he was closing for his lunch, I quickly put my $5 back in my pocket, I said not to worry, because I was walking up to the operational Morning Star Battery. He looked at me and said. "Oh! Ah! I ain't opening that until 1pm, when I've had my dinner!" Can he be in two places at once? We gave up and drove on to the Energetic and Keep it Dark Mine by the side of the road. However that was all barbed wired off, no luck there. So I tentatively mentioned that there was a mine I was keen to inspect but it was 17Ks down a dirt road. My lucky day, Eileen said OK! So, we

headed for the Prohibition and Blackwater Mine at Waiuta. The journey was really very pleasant, except for little damp bits through the forest, (a bit like the RAC rally) we emerged in a dirty car into a wide valley and the abandoned town of Waiuta.

Gold was first discovered at Waitu in 1905, a town soon developed and continued to be occupied until about 1958. Unfortunately the Blackwater Mine shaft collapsed in 1951. Four prospectors found the 'Birthday Reef' in 1905, they quickly sold it for 2,000 pounds, and the speculator then sold it for 30,000 pounds to Consolidated Goldfields of New Zealand (London Company). The Blackwater Mine became fully operational in 1908 and the town quickly grew to around 600 persons.

The mining of the reef continued in a northerly direction and extraction costs were mounting, Blackwater Mining Co. decided to reopen the old Prohibition Shaft on the hillside above and by 1938 crushing was carried out in adjacent ball mill and an oil flotation system recovered the fine gold, achieving a recovery rate of 98%. In 1951 the Blackwater Shaft collapsed, this shaft was used for ventilation and pumping, as a result gas and water crept through the workings and it was decided to close down. When the mine closed, so the town died. Many of the miners suffered from breathing in the quartz dust, striking them down when only in their late 20s.

The mine produced 750,000 ounces of gold from 1.5 million tons of quartz and there were still years of ore reserves left in 1951. The old 879 metre deep Prohibition Shaft is now grilled over, remains of the winch house, mine office and strong room are still visible. There are still a few small bach type buildings around the site and there is a lodge for 30 people, mainly to accommodate trampers. The site is well maintained and information boards show what it was like at its height of operations. The old winch house, complete with boiler and supply tank remain. The shaft is fenced and has completely run in. One amusing name in the town is Incubator Alley. A row of small homes that accommodated young families, five of which produced 54 children!

Some time ago I had found in the Alexandra Turnbull Library three old photographs of Snowy River Battery. (The original battery for the mine). Two were labelled as such and I identified the third one. I was on the site and wanted to visit the mill. At that time, I was not very well but the old brain was telling the body what to do, my body ached and I had the most appalling bad throat, still got it! It was a hot day but I was determined to visit the site. I can honestly say that it was the only time I was really seriously worried I would not make it back to Eileen.

We drove to the far side of the site and a track descended gently through beech woods, before becoming steeper and then near vertical. It was a long walk, humid, hot, damp, slippery and strength sapping. After descending some 500 feet my legs were dithering and I was quite exhausted – yes folks that was only downhill! I had reached my objective.

The Snowy River Battery was sited here due to the abundance of water; the mill crushed the gold bearing quartz for over 30 years. A long incline delivered the ore to the coarse crusher. Huge concrete foundations supported the heavy machinery. Power was supplied by two Pelton wheels sited in an underground chamber at the base of the mill. Water was supplied through water races, part of the supply coming from 10 kilometres away. The mill was completed in 1908 and the ore was crushed initially by 30 stampers later increased to 40. Gold was extracted from the pulped ore by mercury amalgamation and cyanide treatment. The two remaining tall steel tanks were part of the complex system and used to agitate the slimes with cyanide solution.

All the machinery was hauled up the Snowy River bed and took months to deliver. The most productive year was 1915 when 54,643 tons of ore yielded 30,000 ounces of gold. The battery operated until 1938.

Snowy River Battery from the sands disposal area

The battery buildings were spread out so that gravity and water supply could be maximised from the coarse crushed ore treatment through to completion with the fines at the down-river section of the mill. As far as I can make out there were three inclines, one that started from the town (where we were parked), one that ran from a tramway I crossed on my way down, the tramway removed ore from the collapsed No. 2 Low Level to the head of an incline that fed into the top of the mill and another tramway from Joker Level that also fed the bins. From 1936 to 1938 ore was bucketed down by an aerial ropeway from the top of Prohibition Shaft.

The stamper room contained sets of 5 stamps, each weighing 948 lbs and functioned with an 8 inch drop. Large belt driven bull wheels turned the camshaft which raised and dropped the stamp rods and heads. Amalgam tables saved 80% of the gold. Crushed pulp was run over copper plates wiped with a cyanide solution and coated with mercury. The free gold formed an amalgam with the mercury. It was removed, ground in Berdan pans, heated in a retort to remove the mercury and later melted down into gold bullion. The residues from the amalgamating process were run into tanks filled with cyanide solution, this dissolved any remaining gold, the process was repeated for a week and then the sands were sluiced down the river. The zinc retort room processed the gold-cyanide solution from the cyanide tanks through wooden boxes filled with zinc shavings. The gold precipitated onto the zinc and then separated by washing and acid treatment.

One of the forty cams at the Snowy River Battery

Stamp head, Snowy river battery.

The site was silent, coarse foundations cracking and falling apart, tall structures running out of plumb. A large collapsing concrete lined cavern where the Pelton wheels were enclosed. The steel cyanide tanks partially containing the last sands, thin timber rods laying on top, dry and bleached. Scattered around are the remains of heavy stamp heads, bases, lifting cams. The tall agitation tanks stand drunkenly pitched to one side. Concrete steps rise up to the base of the incoming incline, all is silent and empty. I wandered about filming; it's quite an awesome place, eerie in a way.

Having drunk my energy drink, I packed up and set off, climbing some 50 feet or so, I was in trouble. I couldn't breathe, my heart was pounding and I felt very ill. I continued climbing slowly through the forest, passing the tramway from No 2 level, more stops, sitting down, gasping for air. I thought Eileen would never find me, no mobile –huh- no reception! If I die I'll shrivel up like old road kill, least I'll be lighter to carry!

After 40 minutes I staggered out into sunshine and dropped by the car. Eileen started to stuff Smarties and sugary drinks down my gullet, being a diabetic I sensed my sugars were low. Even a Weka came to see how I was, standing two feet away (like a large grouse). No fear, no humans! After ten minutes I stood up; well folks my feet and legs were wandering off in one direction whilst I wanted to go in another. Half an hour later I was something like. Good old Smarties! We set off for Cape Foulwind. Looking back I was foolish to have gone down – but you know what? I'm glad I did.

Weka, failing to eat a smartie.

Having recuperated we tracked to Blackball coal mining town, a big coal mining union town, where just off the road there was an abandoned coal mine. "You're not going in there after what you've been through today." Chirped Eileen. Well, I didn't have my hearing aids in, did I? So I wobbled off across the road to another bath house and old boiler (did I say anything?). In a nearby cutting was a coal mine, the shaft had run, there was a bricked up adit and a building containing two fans. Excellent. Driving down to the main road revealed, in the distance, a huge gold dredge sporting the logo, 'Mobil' on its roof. Excellent again.

The following day we made our way back to Christchurch and flew back to Wellington. The last of the big trips. Just Australia next, it's quite a big island, isn't it? Must take my junior hacksaw!

Reference, acknowledgements and further reading:

Department of Conservation Notice Board. Te Papa Atawbai, Denniston and Waiuta.
Denniston's Incline review.
Waiuta. Victoria Forest Park. Friends of Waiuta. DOC information boards at Waiuta and Snowy River Battery.
The internet (Ref.)provides a considerable amount of information regarding these sites, though the technical data varies!
Note: Waiuta Mines and Battery, excellent photographs on www.nxhistory.net/tags/waiuta
Info. regarding the 'Mobil' gold dredge at http://www.mineralswestcoast.co.nz/dredge.html

For those who include coal mining as part of industrial archaeology and I do, I would recommend reading 'The Illustrated, Denniston Rose, & Heart of Gold' by Jenny Pattrick. Though could be described as a 'ladies book' it explores the harsh working lives of miners and their families at Denniston near Westport New Zealand. Contents included numerous photographs. For the definitive story see. DENNISTON'S INCLINE, Coal From The Clouds. Edited by Bill Prebble.

*Baches or Bach = Small beach type chalets.

Richard E. Hewer, February 2010.

A Trip to the Gold Mines in the North and East of Adelaide, South Australia.

Our final trip in the Southern Hemisphere was to experience the Ghan train journey from Adelaide to Darwin through the centre of Australia, returning to Adelaide and having a few days exploring the goldfields around Adelaide. The Ghan route was originally called the Afghan Express, named after the Afghanistan and Indian Cameleers who transported goods through the Australian interior.

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The 3000 kilometer rail journey took two days to complete and passed through some remarkable landscapes. Of course we had a little drama in the middle of the trip when the engine broke down, like wheels not turning and a heavy odour of shellac and burning oil floating through the air! One or two passengers started panic buying from the bar; however, after two hours a replacement engine coupled on to the front of the 37 carriages (a mystery where it came from) and we were on our way!

As regarding mining activity there wasn't much to see apart from a zinc smelter in the distance at Port Pirie and evidence of an open pit iron mine in the hills. Coober Pedy, the town famous for producing over 85% to 90% of the worlds Opals passed by us during the night! So there was no chance of going AWOL. Nearer Darwin, at Adelaide River and to the north-east there had been mining activity and still is but well out of our sight. Daytime temperatures were around a low 35ºC, a month before it was up in the mid 40's! It was hot, damned hot! After being shaken and not stirred, Darwin was the place to relax!

Upon returning to Adelaide we picked up a hire car and headed out for the hills. I had indicated to Eileen the areas we needed to survey; unfortunately I found another mine a little further north. Now to you and me it wouldn't be a problem, but I had just destroyed 'madam's' pre planned navigational route! As a result the temperature in the car was somewhat greater than the outside temperature of 32ºC. Sulking appeared to be the order of the day. We slowly made our way (across country – my fault - tch!) to Kapunda, just north of Gawler.

Kapunda Copper mine was the first successful copper mine in Australia. (Kapunda = Cappie oonda - Aboriginal for 'A Spring'). In 1842 Francis Dutton and Charles Bagot discovered copper deposits, however they didn't own the land. After determining the extent of the mineral deposits, they managed to purchase 80 acres of land around the outcrop for 80 pounds. The blue and green surface ore was picked and shovelled into carts with little further work done. The high grade ore was exported to Swansea (Wales) for smelting; later the company built their own smelting works and refinery (1861).

Approximately 340 miners and boys (mainly from Cornwall) were employed to work at the surface and underground until they struck the water table. By 1847 the horse whim was struggling to cope with the rising mine water, in 1848 a second hand beam engine was purchased from England to drain the workings, followed by a second engine in 1850. The mine closed from 1852 until 1855 as a result of miners migrating to other gold fields. However, Kapunda mine recommenced operations in 1856. It was found that the rich lodes were becoming exhausted and in 1867 a Henderson treatment plant was erected. Low grade carbonate ore was dissolved in acid and allowed to precipitate copper on scrap iron; it was a failure. The mine closed in 1879 and then periodically worked at the beginning of the twentieth century. 12,800 tons of copper was recovered plus 1,200 tons from the leaching process (1844 – 1912.)

The second hand beam engine purchased in 1848 pumped from the shaft by means of flat rods; it also hauled ore and drove a crusher. Rated as 40 horse power, double acting 30 inch cylinder, with a 6 foot stroke, it was known as the Draft Engine. It was later moved due to ground subsidence and sold in 1879 for 90 pounds.

The Buhl pumping engine was used to drain the workings down to 360 feet below surface. It was rated as a 36 horse power single acting Bull pumping engine (known at the site as Buhl) 36 inch cylinder 8 foot stroke. It was operated at 5 to 6 strokes per minute, raising 340,000 gallons of water per day by way of a 12 inch plunger column. Made in England by Harvey's of Hayle, Cornwall, for the Tungkillo Mine – not required! Sold to Kapunda for 2,100 pounds in 1850. The engine was later sold for 125 pounds to Moonta Mine in 1878.

View from engine chimney. Buhl Engine House centre right

The pumping engine was designed by Edward Bull (1758-1798) who was a friend of Richard Trevithick. The steam cylinder was inverted over the pump and as a result there was no need for the beam and the engine took up less space. It was cheaper to purchase and easier to erect. Unfortunately Bull's design fell afoul of James Watt's patent and production more or less ceased until after 1800 when Watt's patent expired. The design was then improved and manufacture of the engines recommenced. Harvey & Co of Hayle started to manufacture Bull's engines in the 1830s. (Para. Ref. GLIAS Aug 2008).

The copper ore occurred in veins and lodes in a band of shale 656 feet wide and in places, impregnated the shale, it varied from a few inches to over a yard wide in quartz. The ore was sorted in sheds and graded accordingly. (References. 'Kapunda Mine' SA Dept. Mines & Energy. Notice and Signboards - Rotary Club of Kapunda; District Council of Kapunda, SA Dept. Mines and Energy, Kapunda Tourism Committee. Information supplied by the "i" staff office.)

After parking I could see that the site was well laid out, a long row of parallel dumps continued up the gradual incline from the area of the smelting houses to the two shafts and engine houses. Between the dumps were several deep flooded open cuts. Numerous mullock dumps prevented a clear view, however Health and Safety had obviously been on site so that the route around the mine was strictly controlled by high wire fencing, must have thought I was a kangaroo! Notices reminded visitors that fossicking was not allowed, the penalty being a ball and chain and a $5,000 fine. So, I set off something like a sheep at a stockyard. To crown all Eileen was bleating behind me with what was to become a familiar phrase of comforting words. "Watch out for snakes, spiders and scorpions." "It's 34º C, they'll be in the shade." The only scorpion I was seeing was the one shouting at me!

Well I made it up to the Cornish engine houses (raided by the locals for the dressed stone), where from the restored chimney I could view the workings. I could clearly see a considerable amount of copper minerals around on the dumps glistening in the sun, and that was not all. I spotted a flash of light, half a mile away. In a jeep was a park warden watching me through his binoculars! So I raised my camera and took a photo of him; apparently he was camera shy, became very upset and sped away, I never saw him again. The Buhl shaft was quite large but impossible to approach; access to the good stuff was denied. It was a pity you could only view the site from the periphery. The interpretation boards were excellent, not only for the text but also diagrams and old photos. I returned to Eileen and we drove around the periphery crunching over stones of black glassy smelted clinker. It was an interesting site and at least it wasn't being used as the local rubbish dump. I understand that local volunteers visit the area and have a tidy up and maintain the site. (Worth looking on the internet)

We continued on our way after stocking up at the local supermarket with drinks and nibbles. Our next destination was the Barossa Goldfield. Much of the land has recovered from the days of gold mining and is now planted with orchards and vineyards. Land contours flow smoothly down to the creeks, where at one time they were covered by tented cities and alluvial workings. Certain areas have been protected and preserved, though access can be restricted. We made our way to the Para Wirra Goldfields where we stopped at the Victoria Hill workings overlooked by the restored Bowden's Cottage, the headquarters of the Barossa Goldfields Historical Society. There were three trails for those wishing to explore, The Victoria Hill circuit 1.4km, The Phoenix circuit 4.2km, and the Lady Pearce circuit 5km. Now, it was hot, dry and according to Eileen full of Richard eating snakes, spiders and scorpions! So, I elected to 'belt' the Victoria Hill circuit.

I had parked at the top of the hill; a walk way guided me between the ubiquitous wired fence posts and through the workings. Although restricted, the diggings were quite amazing, numerous beautifully cut 4½ ft by 2½ft shafts descended some thirty feet to the usual blockage, visitors obviously throw various tree branches down the openings.

Prospectors found traces of gold in the valley and as a result, unusually, started shaft sinking on the hill. Goddard's claim struck 'pay dirt' in 1869 on his 50 square yard claim and immediately over a 100 miners descended into the valley. Diggers had to display a white flag when they were prospecting and a red flag when they had struck gold. Gold claims were licensed in 10 square yard leases. When the shafts entered pay dirt (just above the bedrock) the gold glistened to the viewer (some sight).

One of many small windlass shafts 1885. Jupiter workings

The shafts were sunk through gravels, clay and sand (15 million years old) to a depth of around 80 feet where they pierced the gold bearing gravels that were laying on top of the bedrock (Gneiss, 1500 million years old). A framework of timber produced a secure base before the shaft was sunk, mullock was tipped around providing a level platform and a windlass provided the means of raising and lowering a bucket for the removal of rubbish and 'pay dirt'. The shafts were sunk by using hammers, chisels, spades and crowbars as the gravels, clay and sand were compacted and hard, sometimes a hard clay called 'cement' had to be blasted out of the way. Small windmills provided ventilation for the miners working in the narrow shafts and galleries. On average it took four weeks to sink the shaft and reach the gold bearing gravels. Once reached, drives were taken out from the shaft base to test the gravels and if rich then the miners worked to the limits of their claims leaving pillars of gravel for support which were removed as they retreated.

The 'pay dirt' was brought to the surface in order to remove the clay by puddling (see description later in the text) and then panned. Heavily cemented ore was crushed. There were over 100 shafts on the hill most were found to be barren but some yielded as much as 10 ounces of gold per bucket, it was the luck of the draw. The gold recovered was often coarse and there were many nuggets.

Many of the shafts were the same size; I measured a sample of shafts at 4½ feet by 2½ feet, some I found were circular and roughly 2½ feet in diameter. I could see numerous mullock

dumps in the forest but could not approach. Further down the hill I came to an area where the gravels met bedrock and it was here that the first adits started to appear, now well and truly run in or purposefully destroyed, they exhibited a likeness to the Derbyshire workings. The inner levels appeared to be about four feet high (as far as my straining body would allow me through the fence without being garrotted). A visitor in 1869 stated that he worked his way along a very low level for some distance before he came upon several branches leading along the gravels. Pin pricks of light illuminated the area. He picked up a stone and hit it; it broke in half revealing a gleaming nugget of gold! Well I thumped half a tonne of stone in the area and all I got were blood blistered fingers!

Across the valley was the Belle of Barossa Mine that worked a quartz reef. My time was up and I had to return to the car (didn't see any wildlife). On our way out we saw several emus.

We passed the Forestry Park Headquarters; I squealed to a halt and drove in to the car park. There was a young lady on duty and I knew the department had free leaflets showing the mine sites and access areas. I walked to the glass door and found it locked. I tucked in my tummy, swept my hair back and put on my best 'Garfield' smile and peered at her through the window. No effect. I tried moving sideways, always smiling, up and down; no effect. She knew I was there. Then I saw the notice, open 9am until 11am. What? It was now 4 pm. This was the office where one collected gold panning, walking and access permits, but only between those times. Come on guys! Obviously I was loosing my charm (and good looks). So I got in the car and did a wheelie out of the car park scattering gravel and dust. Needless to say I didn't go back. Off to Mannum on the Murray River, where we stayed two nights in our own lodge complete with 'surround sound cinema effects' Wow! Guess what was the feature film? Crocodile Dundee!!!

The following day, after a trip up the Murray River, we worked our way to the Gumeracha Workings and Birdwood Goldfields, down through Hahndorf (large tourist town – very German – Mr. Hahn's Village!) to the Jupiter Creek Diggings (free gold panning), Enchunga Goldfields. A well signposted and guessed route took us to a large car park, the periphery littered with bits of crockery, shards of glassware and pieces of rusty metal. This was the site of the original township that catered for over 1200 people who flocked to the diggings. A tented city and wattle and daub housing sprawled through the brush. Gold was discovered by Henry Sanders and Thomas Plane in 1868. By September of that year over 1200 people had settled in the area rising to 2000 by 1870, only to dramatically fall to 120 after that date as the deposits petered out and other sources were discovered elsewhere. The miners were always on the move.

The Jupiter workings incorporated seven mines. These operated with varying degrees of success, the last during the 1930s. In total between 25,000 and 50,000 ounces of gold was recovered, the exact figure is unknown and may suggest some spiriting away. By the end of 1868 all the easily obtained alluvial deposits had been exhausted and shaft sinking was necessary. Reef mining commenced in 1869 but was later abandoned some time during 1871.

Our trail through the bushy wood during the hot, humid afternoon led us to Crystal Mine. A number of shafts dotted the area, with the Crystal Shaft at the centre. The trail then descended deeper into the wood to the major workings. Time and distance were not on our side so as a result I spent a little time around this mine site.

A young boy herding sheep discovered gold on an abandoned mullock tip. As soon as the discovery was made, in 1884, a lease was taken up and the first 25 tonnes of ore produced $200 (Au) of gold at today's price. Further encouraged, a shaft was sunk on a quartz reef to a depth of 66 feet and 400 ounces of gold were recovered. The quartz reef ran through weathered shale and quartzite bedrock.

In 1887 a company was formed called ‘The Crystal Gold Mining Company’, who operated until 1895 and recovered approximately 1,500 ounces of gold. During the 1930s The New Crystal Syndicate Shaft was initiated, hoping to locate the ore shoot found in the Whip Shaft; this venture was not successful.

There had been a lot of fossicking about and I had already passed a lady holding a metal detector who had a very satisfied look on her face. My gold pan was useless here! However all was not lost. I found the Whip shaft, which looked very insecure at the surface. This was started in 1885 and sunk to a depth of 157 feet. A novel horse whim of sorts was erected. A rope was attached to the shaft bucket this was fed at the surface over a pulley fitted to an elevated crane arm over the shaft. The rope passed through the pulley down to another pulley anchored on the surface and on to the horse. ‘Dobbin’ walked forward along the mullock dump and the kibble raised to the surface, he reversed and the kibble descended to the miners working below. Simple!

Nearby was a Horse Puddler. It consisted of a circular wooden lined pit and a centre wood lined circular raised section. A centre vertical wooden axle was supported by a wide frame. Passing through the axle at right angles and at a low level was a second, thinner pole; attached to each end was a cord that supported a rake (similar to a wire garden rake). The horse walked round towing the supported lower pole. The rakes stirred up the gold bearing gravel and clay, separating the clay from the mix. The former was carried away by the excess water (water pumped from the mine workings). The Horse Puddler was quite interesting though the timber had long gone for firewood. I continued further down the hill noting several adit trials but little else was visible unless I continued on quite a long walk. Besides Eileen was getting twitchy, I thought because of the snakes (bless ‘em) but no, it was the mosquitoes in attack mode, all our jungle insect repellents were useless. So we retreated, performing Austrian folk dances and Australian hand waves on our way.

(References. Department of Mines and Energy notice boards. Treasure Enterprises of Australia. Postcards SA. Flinders Ranges Research. State Library SA. Manning Index. Battunga.org.sa.)

The last trip of the day was to The Chapel Hill Workings or Old Echunga Diggings. We parked and walked along a level section known as Poor Mans Hill. The diggings in this area commenced in 1855. The gold bearing ground was associated with cemented gravels in ancient stream beds up to 33 feet below the present land levels. Gold was originally discovered under the roots of a stringbark (tree) by William Chapman in a nearby gully. A rush of over 600 miners ensued producing about 5,000 ounces of gold during the next few of years. There were a number of limited rushes to the area and similarly, in parts of the year, the claims were deserted. Chapel Hill was noted as a bawdy town. Total production up to 1930s around 100,000 ounces, many nuggets weighed up to 1½ ounces.

Our track led us to the site of the National Gold Mining Company and Dam. It was quite evident that the approach through a wooded area had been well tried, there had been over 70 claims of which roughly 15 had produced 1 to 1½ ounces of gold per cart load. No wonder that the track was well fenced, I have never seen so many windlass shafts so close together. Winding shafts lay approximately twelve feet apart along each side of the track, the shafts measured once again 4½ feet by 2½ feet, rounded at the corners and well defined. Most were only twenty to thirty feet deep. Beyond the fence and in the woods I could see numerous untouched mullock dumps, shining white in the sun. The track led down to the dam and two walls of the engine house. The whole area had been well fossicked, obviously a family affair.

Near the engine house large tracts of ground had recently been dug over, large stones from the conglomerate had been dug out and stacked. Gravels, clay and pea sized pebbles were taken to the edge of the dam, sorted and washed. By now, something of a pier about twenty feet long had been created by constant panning of gravels. The fenced area stopped, so I was able to ascend the hill to the old workings; most had run in and it was quite a dangerous area. Indeed a notice simply stated 'Don't walk backwards whilst filming!' I could see where some hydraulic sluicing had occurred in 1909 and there had been further diggings during the 1930s. Again one required a day to work the area, ideal for weekend picnicking with all the family. I made my way back quite pleased with the day's adventure. (References. Gold Deposits and Fossicking Areas in S.A. Battunga.org.au. Department on Mines and Energy notice boards)

And so we made our way south towards Victor Harbour and, quite by chance, we passed the Angas Zinc Mine at Strathalbyn. It was Sunday and the Angels had been on the beer, the first day in two weeks and it was throwing it down. However, the company had very kindly produced a public notice board and viewing area over the pit. In the base of the pit was the entrance to the decline into the huge workings. Unfortunately there wasn't much activity, it being Sunday, apart from a loader that was constantly tipping zinc ore into a jaw crusher. I could see a conveyor removing the crushed ore into the discreetly positioned mill. Luckily the notice board provided more information including the availability of site tours.

The ore body consists of coarse grained sulphide minerals, mainly sphalerite, galena, pyrite and pyrrhotite. A jaw crusher feeds a conveyor to a semi autogenous grinding mill, the ore is then fed to Lead and Zinc flotation cells and Lead and Zinc concentrate filtration. 400,000 tonnes per annum of ore is treated. (Floatation Lead Copper circuit - rougher, scavenger, cleaner) Zinc circuit the same, plus re-cleaner. Thickeners (lead, copper, zinc and tailings). Filtration – (lead, copper, zinc). Tailings storage. Reverse Osmosis plant.

Underground mining is achieved by sub level open stoping and bench stoping. Progressive filling is employed to maximise stability of the ground. 1,000 tonnes a day extraction rate. ROM grade 8% Zinc, 3% Lead. Currently 120m. RL with 1.6km of development. The company is very environmentally conscious and there is a policy of extensive monitoring in place. They have an open line for any complaints from the town or neighbours and produce a regular newsletter. Mining started in 1846. The mine is named after the local river. The large zinc deposit was discovered by Aberfoyle Resources Ltd in 1991. Terramin Australia Ltd redefined the deposits in 1997. Mining lease granted in 2006. Processing commenced in 2008. (References from Terramin Australia Ltd site notice board, public viewing).

So folks, that's the end of the story and our stay in the Southern Hemisphere. If anyone requires further details, information or is intending to visit New Zealand then I will be contactable by email on emhewer@yahoo.co.uk

Opals. If you are considering purchasing an opal then there are a few details to consider. Cost, size, flare and colour to mention but a few. 'Opalios' of Coober Pedy, have produced an excellent leaflet on www.opal-ios.com.au or opal@opal-ios.com.au Well worth having a look at the contents before you take the plunge.

Richard E. Hewer. April 2010

CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY

Committee Meeting held on the 12th July 2010 at the BMSC Hut at Coniston, starting at 6.00pm.

Agenda.

1	Apologies for absence	2	Minutes of the last meeting
3	Matters arising	4	Secretary's Report
5	Treasurer's Report	6	Membership Sec. & Newsletter Reports
7	Meets & next meets list	8	RA forms
9	John Barratt Cost Book	10	Publications
11	Library	12	New projects
13	Publicity Officer	14	Coniston Coppermines & Quarries
15	GPS	16	Mines Forum meeting
17	Any other business	18	Date and venue next meeting

Present: W Allison (WA), J. Aird (JA), S. Barker (SB), I. Matheson (IM), J. Brown (JB), T. Holland (TH), M. Scott (MSc), M. Simpson (MS), A. Wilson (AW) & C. Woollard (CW).

The meeting commenced at 6.00 pm. 10 committee members attended.

1 Apologies for absence from: M. Mitchell (MM) & P. Fleming (PF).

2 Minutes of the last meeting

The minutes of the committee meeting held on Monday 11th May had been previously circulated to members. It was **PROPOSED** by JB and **SECONDED** by IM that the minutes be signed by the Chairman as a true and correct record of the proceedings. This was carried unanimously.

3 Matters arising

3.1 Item 3.1 JA, Online payments; now fully operational. The system can be used for the collection of subscriptions.

3.2 Item 3.2 JA, Force Crag Mine feasibility study to hand. Conclusions and report of conversation with John Malley in attached document. JA will reply to Entec on CATMHS behalf.

3.3 Item 53 JA, The Treasurer has been reimbursed £1840 for purchase on behalf of CATMHS at Hext auction.

3.4 Item 13.3 M Sc. had circulated an article (attached), which explained the presence of planning notices on paths around Coniston. Paths had been realigned as part of the 'Fix the Fells' project.

3.6 Item 16 TH – he had collected the VMCo plans from Rudy Devriese and delivered them to the. Archivist.

4 Secretary's Report - SB had nothing to report that was not covered by other items.

5 Treasurer's Report

JA had circulated the balance sheet to members covering the period from the 11th May to 12th July 2010. Income from: subscriptions, donations & publications, expenditure: on £1840 refunded to JA (purchase of Barratt cost book), printing, travel expenses & printing leaflets.

The Treasurer wished the committee to approve his expenses of £66.16 for stamps and ink. Approval **PROPOSED** SB, **SECONDED** JB, all in favour. The current a/c stood at £15824.80 and the Scottish Widow a/c at £365.31.

6 Membership Secretary & Newsletter Editor's Reports

One recent new member; Tom Collins. JA said the membership subscription would be increasing next year. IM had almost completed the next newsletter, it would be going out shortly.

7 Meets Report

The next meet list was discussed, suggestions made were: Oct. Nenthead through trip – T Holland, Nov. Greenside Mine maintenance – W Allison, Dec. Tilberthwaite Horse Level – J Brown, Sunday 12th Dec. after CAT AGM, impromptu visit to Grasmere Elizabethan mines – J Aird, Boxing day, meet at BMSC Hut, surface/underground, Jacobs Join - M Scott. Jan, workmeet in Arete Chamber & assess work required for route to avoid MAG's Catwalk - M Simpson. Feb. Silver Gill – W Allison, March Dodd End – T Holland & April Carrock Fell Mine project – J Brown. SB to send list to J. Knowles.

8 RA Forms - nothing to report**.**

9 John Barratt Cost & Letter Books

JA to contact P. J. Eyre, Assistant County Archivist to discuss the possibility of CATMHS depositing the Barratt Cost book and the other items purchased (on long term loan) in the County Record Office. We would require two copies to be supplied; one for our archive and one for JRM.

The CATMHS transcriptions of the Barratt letter book were also discussed. IM suggested that we have bound copies made. He would work on the material over next winter, improving the quality. It was thought it could be produced in book form for about £150 to £200 per copy. All agreed.

10 Publications

10.1 The reprinting of LMH was revisited, SB to contact Alastair Cameron regarding progress.

10.2 JA would contact Hills regarding book sales.

11 Library

The Archivist would send IM a list of recent acquisitions to go in the newsletter. MS had taken the late Dave Blundell's photographic collection from the CAT archive to make digital copies.

12 New Projects

12.1 Carrock Fell Mine – WA reported: It appears that the funding for Carrock Mine is ringfenced and we are just waiting for comformation prior to starting work.

12.2 Silver Gill – WA reported: I have spoken to Eleanor Kingston and she is making enquiries as to what Natural England need for the application to open up the proposed fourth level as indicated by the survey carried out by University College London. WA and CW would put the required report together. The Russell Society have offered to carry out a geological survey for us.

12.3 Tilberthwaite Horse Crag Level – JB reported: Work is progressing well and last week (Sunday 4th July) we reached the start of the steel work which was installed last November. Yesterday (Sunday 11th July) another section of track was laid and mucking out progressed up to the third set of steel with lagging boards are now being fitted. Tools and equipment are being recovered, much to the joy of those who left them behind in November, not knowing what the hand of fate was going to deliver! Since 7th March when the first skip was hoisted in the Close-Head, we have made 18 visits clearing approximately 45 metres of Level with an estimated weight of approximately 180 tonnes. We have about another 4 weeks capacity left in the present tipping area and are now thinking about whether we increase this capacity by raising the aerial ropeway or we locate it elsewhere. A digital record is being compiled and will record the activities, materials used and members present at each visit. A pictorial record is being kept by Messrs M. Mitchell, C. Barrow and A. Woollard.

12.4 Penny Rigg Mill - WA reported: I have spoken to Eleanor Kingston about the continued deterioration to the waterwheel pit and associated structures. She replied the funding that the management plan could release for potential work was a long way off. However I asked if CATHMS could obtain quotes for some remedial work which, Mark Simpson and Mike Mitchell suggested and she has agreed to this. Mike Mitchell is currently obtaining quotes.

13 Publicity Officer

New leaflets have been distributed to TIC's in South Lakes. They have also been put into books at Tinners Rabbit, Ulverston and Heaths, Barrow. Please can the books sold online include the new leaflet.

I have approached Ulverston and Broughton TIC's with regard to selling our books. Authority will have to be sort from a higher level, but should be ok. We need to start thinking about the display at the Archaeological Conference in Keswick soon.

PF had arranged for two articles to appear in the Evening Mail; CATMHS 30th birthday, celebrated by the re-erecting of the Braddyll Stone and a review of Journal Six. JA had printed CAT recruitment posters; he suggested that MSc could send copies to University Earth Science depts. etc.

14 Coniston Mines & Quarries

14.1 Leverswater Mine, JA had cleared the pipe in the portal, more work would be needed shortly.

14.2 LDNPA's Lakeland Mining Heritage Project - Coniston Coppermines Conservation Project. ArchaeoEnvironment Ltd has been employed to carry out a conservation management plan as a first step. They had been in contact with the John Ruskin Museum, regarding the museums actual and potential interpretation role in the plan. Vicky suggested they contacted PF, who will be meeting with them shortly.

15 GPS - MS has the GPS, DB the laptop.

16 Mines Forum Meeting

Next meeting will be on 20th September, 10am at Bowe Barn, Seatoller. With a visit to Rigghead Quarries in the afternoon.

17 AGM including discuss venue for 2011 AGM.

JA will make a provisional booking for 2nd December 2011 at Rydal Hall.

18 Any Other Business

18.1 Message from PF: He attends auction sales at the Thompson, Roddick & Medcalf saleroom in Carlisle. In June a map showing mining and smelting sites at Ramshaw and Blanchland, circa 1850's was sold for £250. On 15th July lot 228 contains 20 director's reports for the Hodbarrow Mining Co. 1920's - 1980's and a slim manuscript a/c book for Staveley Mines. It was decided we should bid up to £250 for the lot. WA would go to the auction.

18.2 The LDNPA have again changed the lock on Lucy Level. WA had picked up the new CATMHS key, the same conditions apply.

19 Date and Venue of Next Meeting - Monday 20th September at the BMSC Hut, Coniston at 6.00 pm.

There being no further business the meeting closed at 8.15 pm.
SB 13/07/2010

CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY