



Welsh Mines Society

(Member of the National Association of Mining History Organisations)

NEWSLETTER 49

Winter 2003



*Ball Mill & lay shaft at Esgair Mwyn, June 2000
As previously used at Graig Wen gold mine (See last N/L, Item 44)*

Editorial Thoughts

1. Just in case you hadn't noticed, (!) we now have a photograph on the front cover - something I'd like to continue with on future issues, so if you've a photo (landscape format please) which, ideally, is relevant to one of the articles, or perhaps an article in a previous Newsletter, then please do send a copy in.

Simon Hughes has suggested that as the next Newsletter will be the fiftieth, then perhaps it ought to be a little bit special - it must (more or less ?) coincide with the Silver Anniversary of

Inside this Issue:

<i>Important Announcements</i>	<i>p.4</i>
<i>New Members</i>	<i>p.4</i>
<i>Field Reports</i>	<i>p.5</i>
<i>News and Developments</i>	<i>p.10</i>
<i>Query Corner</i>	<i>p.18</i>
<i>Book Reviews & Bibliographical References</i>	<i>p.20</i>
<i>Miscellaneous</i>	<i>p.23</i>
<i>'East Bronfloyd'</i>	<i>p.28</i>
<i>'Tailings'</i>	<i>p.32</i>

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www.welshmines.org

the **WMS**. So, if for the past 25 years you've been thinking of writing something for the Newsletter, now is the time ! It can only be a 'special' Newsletter if I receive 'special' articles ! Any reminiscences that relate to the activities of the WMS would be particularly welcome.

As always, thanks to those 'stalwarts' who have contributed to this little publication – your hard work is much appreciated by all. (Note that due to space constraints, some material will be carried over to the Spring Newsletter.)

Mike Munro & BD

Events - Dates for Your Diary

(Note that details of forthcoming WMS meets are always posted on the WMS web pages as soon as they are confirmed - URL below.)

2. WMSoc. 2004 Programme

Winter Meet - Sunday, 14th March 2004. Host; **George Hall**, Tel./Fax. (01584) 877 521. George and Nheng Hall again invite all members for an informal indoor one-day 'winter meet' at their home 'Abilene', Sheet Road, Ludlow, Shropshire, SY8 1LR. Arrive at any time from 10:30 a.m. onwards, tea and coffee will be provided. If you want a buffet lunch these will be available, cost ca. **£6-00** (pay on the day) but needs to be booked **a week in advance**, otherwise just turn up and bring a few slides.

To get there - Sheet Road goes into Ludlow from the southern of the two roundabouts on the Ludlow by-pass (A49), 'Abilene' is about 200 yards down on the right, the third house beyond the N.F.U. Mutual Office.

Summer Field Meet - Weekend 19th-20th June 2004. Location: Gwynedd (Slate) and North Cardiganshire (Metal). Organisers: Alan Holmes (Tel. 01785 812820) and George Hall (Tel./Fax. 01584 877521). Headquarters for Saturday evening meal and accommodation: Corbett Arms Hotel, Tywyn, Gwynedd, LL36 9DG; Tel. 01654 710264, Fax. 01654 710359. Located in Tywyn High Street near the cinema. B.&B., £28 single, £56 double.

Book accommodation directly with the hotel, stating you are with the Welsh Mines Society.

Other accommodation nearby:

Hendy Farm, Tel. 01654 710457; Sunningdale, Tel. 01654 710248;

Monfa, Tel. 01654710858; Tredegar Arms (budget - no en-suites) Tel. 01654 710368;

Camping at:

Ynysmaengwyn, Tel. 01654 710684; Tynllwyn Farm, Tel. 01654 710370;

Vaenol, Tel. 01654 710232

Saturday 19th June Leader Alan Holmes - **Meet at 11:00 a.m. at the village square, Abergynolwyn, NGR SH 675 069** for a walk up to Bryneglwys Quarry. Limited parking here, use the side streets or along road B4405 west of village. Bring a packed lunch – sandwiches etc. available from village store. (Field notes available for download on the WMS web pages – click on 'Field Meets : Current' in the footer.)

Saturday Evening - Dinner 6.30 for 7.00 p.m. at the **Corbett Arms Hotel**. (Menu available for download from the WMS website - paper copy to be circulated with the Spring 2004 Newsletter.) After dinner there will be the usual informal meeting, and a projector and screen will be available if anyone wishes to show some slides - assuming time permits !

Sunday 20th June Leader George W.Hall - Brynarian and Bryn Dyfi Mines. **Meet at 10:30 a.m. at Gwar-cwm-isaf farm, NGR SN 6685 9140**, for Brynarian Mine. G.W.H.

recommends that you turn off the A487, Machynlleth to Aberystwyth road, immediately after passing the Talybont '30' sign, by St. Peter's Church, and carry on up to the top of the hill, turn left at the 'T' junction, past Pensarn wheel-pit, through the farm gate, then, by courtesy of Alan, the farmer, park anywhere by the road, which is unfenced, before the farmyard.

Please take care here, and on the way to Bryn Dyfi, as these by-roads are narrow, with some steep, sharp bends. Please also make sure that all gates are left closed.

Afternoon at **Bryn Dyfi**, by courtesy of Mr. Stephen Evans. Mill site is located at NGR SN 683 934. Return to the A487 from Brynarian, turn right towards Machynlleth, then turn off right up the forest track just beyond Penrhyn-gerwin, at **NGR SN 6720 9405**, and continue (there are no significant side turnings) to Llwyn-gwyn, **NGR SN 6830 9405**, where there is space to park. From here it is a short walk to the mine along the Council road, which is gated and grass grown ! If the situation at the farm permits, this approach and meeting place may be changed. If this is done the new locations will be announced at the dinner and at Brynarian. There will be opportunities to go underground, but only if you don't mind getting wet !

Pub and cafe lunches are available at Talybont and Tre'r-ddoll, but there are good picnic spots, with fine views, at Brynarian, as elsewhere in the vicinity.

Autumn Field Meet - Weekend, 18th-19th September 2004. Location: **Penrhynreaduth** Area, N.Wales - Leader: **Harold Morris** (Tel. 01766 512903)

Saturday 18th September - The Penrhyndeudraeth mines, i.e. Pant-y-wrach copper mine, Catherine and Jane, Bwlch-y-plwm lead mines, and an ancient bole site.

Sunday 19th September - A visit to manganese mines in the mountains between Clynnog Fawr and Pant Glas. i.e. Bwlch Mawr and Seler Ddu mines. An underground visit is a must for Seler Ddu it is small but quite unique. If time and weather permit then the remote site of Cors-y-ddalfa or why not a short walk to the summit of Bwlch Mawr, just for the view.

Full details about the evening meeting and accommodation location will be posted in the Spring 2004 Newsletter.

Other Societies & Organisations

3. Russell Society AGM and conference 2004

For 2004, the annual Russell Society AGM weekend, with conference and field visits, is being hosted by the RS Wales and West branch. It will be based at the University College Wales, Caerleon, Friday 16th to Sunday 18th April 2004.

WMS members are welcome to join in the Saturday conference. At the moment, we plan an update on the minerals of Dolyhir, Machen lead mines, the Minescan survey of Wales and more. On display will be Welsh minerals, branch displays, microscopes and swaps.

The cost for the day conference is £28 – lunch, coffee, tea, and an informative conference pack are all included.

If anyone is interested, please contact the Secretary W&W, Lynda Garfield, Tel. 02920 891 588, email lyndagarfield@tesco.net before 29 February 2004.

If you're aware of events or trips which other organisations are holding or making to/into Welsh mines, please let your editor know and they will be included in the next Newsletter.

Important Announcements**4. WMS Membership & Insurance “Crisis – what crisis ?”** *David Roe reports....*

The WMS & WMS members have had NO insurance cover since 30th September 2003.

As many of you will know the insurance for underground activities has now descended into chaos. The British Caving Research Association (BCRA), who have organised the insurance cover for most underground activities in the UK over many years, is unable – at the time of writing – to obtain *any* insurance cover. **You are not insured via the WMS at present.**

I am hoping that some form of individual insurance will become available for those wishing to undertake underground activities and I will notify all members when this becomes available. I believe the WMS should be able to obtain insurance for itself and WMS members *overground* from an organisation such as BTCV (British Trust for Conservation Volunteers) and I will be pursuing this option in the next few weeks. The WMS can not be responsible for any overground activities (George Hall’s “at home” is not included in my definition of overground activities) until we are adequately insured. Underground activities organised by the WMS have to be put on hold until the situation is resolved – the officers and field trip leaders could be held liable and therefore directly responsible for any legal costs arising from an incident – an invidious situation for them to be put in.

We can now dispense with the titles of ‘Friends of the WMS’ and ‘Insured Member of the WMS’ – this was purely to help reduce the insurance burden on the society – and we can all become Members again – at an annual fee of £4, or (to ease administration) £8 for 2 years.

The paid up date for membership is shown on your address label – if you are “paid up to DEC 2003” or earlier, then the date will be **highlighted in red** indicating your subs are now due, and your Treasurer, David Roe (address on front page), would be most grateful if you could pay promptly.

Some of you – bless you – ignored all requests not to send 2003/2004 renewals for insurance. I have made a note of your additional contributions and will either return them or extend your membership payments when the dust has settled a little.

5. Welsh Mines Society sweatshirts - John & Daveleen Alder would like members to know that there are a few Sweatshirts and T-shirts left over from NAMHO 2002 - Aberystwyth, (white logo on black): Sweatshirts - £16.00; T-shirts - £12.00, inc. p+p.

Also, W.M.Soc.Sweatshirts, (gold logo on navy blue), £16.00, inc. p+p.

Please place orders with Daveleen Alder, 43 Rowlands Crescent, Solihull, West Midlands, B91 2JE, Tel. (0121) 711 1049, or by e-mail to **aggie@1ststoponline.co.uk**

6. WMS-NAMHO Representative – I’m pleased to be able to announce that Dave Seabourne has taken on this important role for the Society. We offer our thanks to Alan Williams, from whom Dave has taken over, for the work and time he has previously committed on our behalf.

New Members

7. The Welsh Mines Society says ‘**a croeso**’ (hello and welcome) to the following new members:

MR A BARNES, 20 Katherine Green, Covingham, Swindon, Wiltshire, SN3 5ES

MR P CLARKE, 7 Windsor Terrace, South Gosforth, Newcastle on Tyne, NE3 1YL

MR B DUPREE, 3 Hillary Road, Cheltenham, Gloucestershire, GL53 9LB
MR G GOSLIN, Pant Rhedynog, Maeshafn, Mold, Flintshire, CH7 5LS
MRS H HALL, As Geo. Hall
MRS D LEVINS, As G. Levins
MR G OWEN, Dept. Geography, University of Wales, Singleton Park, Swansea, SA2 8PP
MR C PILSBURY, 3 Rothesay Road, Curzon Park, Chester, CH4 8AJ

Field Reports

8. WMS Autumn Meet, 20th-21st September 2003 – Shropshire Lead Mines, Collieries and Smelt Works.

About 35 members of the Society and three members of the Shropshire Mines Trust met at the Nags Head carpark, Pontesford, in glorious weather – to be moved across the road to an overflow carpark. Both carparks are in fact the sites of old coal pits, as shown on an early 1860's mine plan. The Pontesford Coalfield is one of three small fields that make up the Shrewsbury Coalfield. They are unusual in that they worked thin Upper Coal Measure Coals, sometimes in conjunction with a thin limestone seam. They were developed only to supply local needs, including the smelting of lead. An ambitious scheme of bringing a branch railway line here to provide for easy exportation of mineral had the reverse affect, when it was found that the railway could bring in better quality coals at a cheaper price. The two lead mining companies, Stiperstones and Snailbeach, then closed down their coal mining operations.

A short walk to the next large field with several old pit mounds (and with an increasing number of members) led to an engine house (called No.1 for convenience, as there are four engine houses remaining in this vicinity, three of them, Nos. 1, 2 and 3, are probably Boulton and Watt, Newcomen type – late 18th Century) No.1 is described as 'Engine' on the 1860's map, long abandoned, it is now a ruin in thick woodland.

Returning back over the road, the party studied the two 'smelters'; first the Snailbeach Company smelter, in use 1780's to 1870's, then the White Grit (Stiperstones) Company smelter, in use from before 1842, probably closing in the 1850's. Although both smelters have the appearance of being 'original', there have obviously been many structural changes. Each building is buttressed and had a short flue and chimney. Both are in an alternative everyday use. In 1851 they employed a total of 90 men and 35 boys (a full contemporary description can be found in PDMHS Bulletin 1992)

A short walk, along Back Lane, Pontesford, led to Engine House No.3, described on early maps as 'Fire Engine', it is still in good condition although now converted to a dwelling. The maps also show a 'ROD' leading from this house to a water wheel alongside the nearby river (and two cornmills). Did the wheel and rod provide power for pumping this pit at an early date – or did the engine and rod power the wheel, hence the cornmills, during dry seasons? A few yards from the other side of the No.3 house, the No.1 house could be clearly seen, together with its boiler house still almost complete.

From the opposite side of Back Lane, 'No.2 Engine House' (its postal address !) could be viewed, a fine engine house, used as a dwelling since at least 1804. (Described in Shropshire Magazine June 1976). Further down the lane (and over the overgrown track of the Minsterley Branch Railway) is No.4 engine house, described as 'New Engine' in mining documents. Substantial remains survive of the full complex up to 3 metres high, but in thick

vegetation. This engine house was made of brick unlike the other three, which were mainly stone.

Moving on to the next stop, Snailbeach Mine, the party passed the sites of two further smelters (Malehurst and Pontesbury - behind the Horseshoe Inn) and the transshipment point of the Snailbeach District Railway to the Standard gauge Minsterley Railway. The SDR is now used by a modern quarry access road.

A larger party now congregated on the Village Hall Carpark which was the site of the Lower Mill (barytes), brickworks and other operations until the mid-1950's. The old white tips so conspicuous in the past were now a 'glorious' green and interpretation boards described the general scene. A whole day is needed to study this site but time was only available to consider the general plan, the narrow-gauge railway route (1870s to 1950s) with two reverse-shunts, the 'new' smelter flue (1862 to 1897) beneath the site from the Smelter to the high chimney on the hill, the tramway 1860s to 1880s around the site from mine to Smelter and quarry, and the position of the veins and mine entrances. The following structures were visited ; ruins of Halvans Works for spa-processing, loco shed (unlocked for inspection), the assay area ruins and old office block, the blacksmiths shop (restored and opened for the visit) the miners dry (now used as an interpretation centre), the 1872 engine house, Old Shaft and the 1881 Compressor House. A special study was made of this, (possibly ?) 18th century steam engine house, the Day Level leading to the Engine Shaft, the Ore House, Crusher House, processing area and wood yard. Most members also went underground in the Day Level to see the Engine Shaft.

Over the main vein and flue line the party entered the mainly barytes producing area of Lords Hill, first passing the as-yet unrestored area of Black Tom Shaft and then between the old and new (1870s) reservoirs, Snailbeach Mines powder magazine (conserved) and candle factory (still in ruins) were seen en-route to the steep climb to the mine's chimney and main pump-house. At this point a group peeled off to visit Perkins Level underground workings and the partly conserved 1940s plant.

For those that remained a good view of the whole site was obtained from the area of New Engine Pit 61in. Cornish Pump House, its winding engine house remains and other structures including the chimney even higher up the hill.

Coming down, the Count House was passed and the old SDR track followed nearly to Crows Nest. The reversing point with highwall, bridge and weighmachine house was the next stop. The line was then followed back towards Minsterley, past the exploratory Scott level and the Lower Works site to finish at the recently exposed round brick and concrete buddles of the more modern plant.

The party then moved on to the Bog Mine, passing New Central Mine (boilers still remain in place), Burgam Mine (last worked in the 1960s), Boat Level entrance and Tankerville (well worth seeing) but unfortunately parking for 30 vehicles is impossible along this narrow hill-side road.

At Bog Mine (1980s style land reclamation) all is now gone except for a couple of buildings; the base of the boiler house/coal store, now fitted with interpretation boards and the School/Church now a small heritage centre – open by appointment and in the summer months only. The latter was especially opened for our party and found to be well used and very interesting. Subsidence has recently occurred in the carpark, and an area is now fenced off. Members with energy remaining visited the Somme Tunnel (fenced off to protect the

bats) and the conserved powder magazine – while a determined few were seen heading for Ritton Castle Mine down the track.

After a very busy day the party then split up to find their way to the distant Dolforwyn Hotel for the traditional evening meal and entertainment.

Ivor J. Brown

Ivor informs us that a donation amounting to £50, was made by members attending, to the Shropshire Mines Trust for help received from their members in arranging the visits to the locked buildings and for leadership on the underground parts of the meet.

[We're a bit short of reports on this years WMS meets – other than Ivor's positively sterling contribution of course. So if you were able to attend this years meets, please do think about sending in a report for inclusion in the next Newsletter, as the rest of us would very much like to hear about what they missed. – Ed.]

9. WMPT Working Weekend 27/28 Sept 2003 at Catherine & Jane Consols Mine

The WMPT held a successful working weekend at Catherine & Jane Consols Mine. The Trust is very grateful to the owners Tilhill Economic Forestry for granting access permission. Thanks are also due to Harold Morris for his help in preparing the weekend.

Work was carried out at four locations:-

- 1) *The Engine House* - Vegetation was cleared from the building remains. The building remains were also surveyed.
- 2) *The Smithy* - Vegetation was cleared from the building remains, the area around the building was also cleared. Underneath the ground cover we found and exposed two small



Simon Hughes (left) tackles yet another piece of vegetation in front of the Smithy, while Harold Morris (centre) & Lyndon Cooper (right) provide moral support !



One of the sets of steps revealed at the Smithy

flights of steps, and several walls. One of our group is skilled in dry stone wall building and has made a start at rebuilding the wall at the far end, hopefully this work will continue over the winter.

The undergrowth screening the entrance to the Middle adit, just below the Smithy was left in place, so as not to tempt casual visitors to enter it.

3) *Wheelpit of Bigland's 35ft pumping waterwheel* - Vegetation was cleared from this structure and the walls of the pit exposed.

4) *Lower Dressing Floor area.* - A start was made clearing the area, the slate floor was found and several slabs were exposed. The area around the two wheelpits was cleared, several large pieces of rock from the wall of the lower wheelpit were removed from the stream, improving its flow. A flight of steps was also discovered and exposed.

There are some other interesting buildings and the upper dressing floors that still remain buried in undergrowth. It is hoped that we can arrange another weekend next April to carry on the work. The Trust will also be working with Tilhill Economic Forestry on the provision of an 'interpretation board' at the mine to explain to visitors the history of the mine.

My thanks to the following members of the Trust and the Welsh Mines Society who attended over the weekend; Bob and Mrs Barnes, David Bick, Nigel Chapman, Lyndon Cooper, Bryan Grimstone, John Hopkinson, Simon Hughes, Tony King, Harold Morris, Dave Seabourne and Paul Smyth.

Graham Levins

10. Explorations at Rhoswydol and Old Clogau – A report of activities by Dave Seabourne, as executed around August 2003.

Rhoswydol – I revisited the upper adit at Rhoswydol and after putting in an additional bolt belay to the existing one I abseiled about 40 foot down the shaft, of which the last 15 foot was quite a dog leg and landed on a sloping rock ledge which was heavily littered with rock debris. The ledge led to the top of a large stope and it seemed possible to see the bottom about 90 foot below and what should be Smithies Level ?

After clearing away all debris (gardening) likely to fall, a descent of the stope was made down the steeply inclined footwall, after securing belays with rock bolts and tying to a half buried timber / drill steel. The bottom of the stope was found to be littered in huge lumps of slaty rock that had fallen down from the roof, and this continued the length of the stope about 70 foot or so. The fallen rock had completely obliterated any evidence of a level below

it, although the top of a wooden ladder (which presumably originally connected the stope to the level) resolutely remained intact and poked above the fallen rock.

On exploring the extremities of the stope we found that at the far left a short level had been driven into solid rock at the side of the stope and a short winze remained intact giving access to a level about 15 foot below. This was much better news, so the winze was quickly bolted and descended to find a roomy level with rails in place. With mounting excitement we rounded the corner of the level to find a large metal ore truck just waiting to be admired and drooled over-what a beauty ! Sadly however we came back to earth all too quickly by finding the level finished in a blind end about 30 foot further on.

On exploring the level a shallow metal bowl was found which I thought was a frying pan minus its handle and nearby, just to complete the picture was some degraded hay kindling ? *[Suggestions on a postcard please ! – Ed’]* Finding the artefacts certainly made the trip worthwhile but it was disappointing that further access was not possible.

Old Clogau - Taking advantage of the hot weather a trip was arranged to explore the flooded lower adit at Old Clogau, which members who attended the June 2002 field meet will recall is situated between the lower boundary stone wall and the two fenced shafts higher up the bank. *[NGR SH 6780 1985]*

Following a couple of earlier trips the water level had been reduced so that there was now an air space of about 12 inches from the roof of the adit, which headed off straight into the hillside but the water depth inside the adit entrance still looked like it might be too deep to wade through. After putting on my wet suit and other mining gear I crawled through the narrow adit opening and slipped down into the water, which was initially at chest height. I followed a branch from the adit, heading off left, with plenty of air space but this proved a blind end after about 50 foot. Back to the main adit, and the water level was up to my chin *[let us not forget that Dave is over six feet in height ! – Ed’]* and the adit roof was dropping so that shortly I had to incline my head on its side and I was still blowing bubbles in the water as I proceeded onwards. This situation did improve, and the water height slowly receded to waist height when I reached an area 80 foot on, where the adit widened and split into four separate drives. I carried on along the right-hand side drive, which quickly encountered a shaft, which I recognised from an earlier abseil as the nearest of the two fenced shafts up on the bank. I skirted round this and the adit soon reached the bottom of the second shaft where I inspected the 6 inch square wooden pipe that I had also seen on my earlier abseil trip. I knew where I was now and continued onwards in an almost dry level until I reached a flooded sump out of which rose a 3 inch square wooden pipe. Without doubt this must be the ‘outby’ end of the 3 inch square pipe that I had previously seen going down into a flooded sump from the workings at the rear of the dilapidated engine house. *[Ref. Item 21, last N/L.]*

I retraced my steps back to the point of the four way split and was disappointed to find the middle two drives were short blind ends of about 40 foot. The left-hand side drive looked equally unpromising until I noticed two vertical timbers about 6 foot apart running parallel with the left hand wall and on reaching them of course I found them to be the silent sentries of a flooded winze now that their original use had come and gone. Because of the depth of water in the levels I did find it necessary to unclip my lamp headset from the helmet and to have it as low as possible in the water in order to see a hazy sight of the floor. The thought comes to mind that the founder members of the society would have had fun trying that 40 or 50 years ago with their carbide lamps – hats off to them I say !

On a slightly different tack; Dave advises; ‘...if there any wine loving Francophile members, that it is possible to obtain bottles labelled “Domaine Des Hautes Troglodytes”. Maybe this should be the compulsory tipple for our Saturday evening meal !’

Dave Seabourne

News & Developments

11. ‘Slate Inclined’ – Field observations made during April 2003, unless stated otherwise.

Pen-yr-Orsedd Slate Quarry - The quarry is now being worked for varying grades of broken/crushed slate for hardcore etc. The new roundabout of last year has gone but more intruding roads have appeared. Most of the buildings still remain but the Workshop on W6 is now very close to one of the graded stockpiles - perhaps just a matter of time before the building is damaged.

Maenofferen Slate Quarry - The site has seen much deterioration since my last visit. The caban/office has lost all roof tiles and the double door entrance to the mill has been pulled down. It is indeed a sorry sight from just a few years ago.

May 03 – 70 slate waggons were purchased from the quarry by the Ffestiniog Railway Society.

Llechwedd Slate Quarry - The quarry is back producing again after the working area was closed off last year due to overhanging rock but there was very little stock in the yard.

Talysarn Slate Quarry - There are still gradual falls at the pit face but a recent addition is graffiti part way down - a dangerous occupation.

Hafodty Slate Quarry - The old Votty pit is now dry, every visit has seen the level of water drop but the ‘plug’ has been well and truly pulled. It would seem that underground movement has seen the water drain.

Dinorwic Slate Quarry - The Garret side still very well worthy of a visit - the splendid Penrhydd Bach Locomotive Shed still has water tank in situ. Much to see and ponder.

Aberllefenni Slate Quarry - Sad news, the quarry is to cease being worked for slate extraction and is due to close at the end of the year. The Company had been looking to open a new chamber but test results were not good. They even attempted to drain an old chamber but again to no avail. The Company will continue to operate but will now purchase slate product from Blaenau, Penrhyn and CHINA and use the mill to cut and dress. The Company are now pursuing plans to open the quarry to visitors as a tourist attraction. The tour of the mine will go in as far as Twll Golau, a large chamber from where 300,000 tons of slate has been extracted. A planning application is being worked on. (May03) A visit to the quarry in June saw Ffestiniog Slate in stock with bagged slate for sale for the crazy paving, rockery and walling. It was good to see the yard so full, albeit not with Corris slate.

Alexandra Slate Quarry - The words ‘waste tips’ are synonymous with quarries but the ‘new’ tipping here is motor cars with no less than 8 rusted wrecks noted on the visit.

Abercorris Slate Quarry - Led by an officer of the Forestry Commission, a group of volunteers have been excavating some of the buildings and the site of the weighbridge. The Forestry plan to fell trees around the site to make it more accessible to interested visitors. The site was well worth a trip before and with more exposed it should be even better !

Ty Mawr East Slate Quarry - New sign at the entrance reads 'Inert Waste Only'.

John A. Knight - September 2003

12. The Origins of Flotation - Further to Item 16, last N/L, George Hall raises the following comments : 'In response to the news item that you quoted, which claimed that flotation originated at Broken Hill, I wrote to the editor of the Mining Magazine, and he used my letter in the May issue (p. 239). My point was, that while the first economically successful use of flotation was indeed at Broken Hill in 1905, flotation, as a workable process, was first developed at Glasdir Mine, near Dolgellau, by the Elmore family, in the late 1890s. Their plant, though not an economic success at that site, was a practical one, in that it was able to produce a satisfactory grade of copper concentrate, with a good enough recovery, at a reasonable cost, from refractory ores. Elmore plants were soon erected at several mines, here and abroad, and the flotation plants used at Broken Hill, and everywhere else, though differing from the original Elmore process, principally in that they use bubbles to lift the mineral in the pulp, not oils, all sprang from the Elmore's inspirations, and from the Glasdir Mill.'

[The editorial of the M.J. are evidently still not convinced as in the September 2003 edition of Mining Magazine, in an article entitled '100 Years of Mining', under 1904 (p.95) it states "The 'flotation' process was invented at Broken Hill in Australia (albeit there is disputed first use)." Note also that George has kindly pointed out my spelling error in the last Newsletter, at it's 'Flotation' not 'Floatation' – perhaps someone ought to tell Bill Gates, as he doesn't appear to mind how it's spelt !]

13. Sygun Mine – After being on the market for over a year, this show mine has now been sold. Perhaps someone could enlighten us as to who the new owners are ?

14. Cwm Machno Slate Quarry – With regard to John Knights notes (Slate Inclined N/L No.48) concerning Cwm Machno Slate Quarry, should members wish to know more about this they are welcome to contact me at my e-mail address (jon.knowles@ukonline.co.uk) and I will provide them with details. The Hunter level to which John refers was discovered by the undersigned, another WMS member Peter Hay, and Andrew Hurrell. May I also take the opportunity of correcting John, the Hunter driven level is not unstable – just wet. It is the main workings, which no longer connect with the drainage level, which are unstable.

Jon Knowles

15. Vigra & Clogau Mines – (Ref. Item 8, last N/L). I hope Alan Holmes will excuse me if I make some comments on his report on our visit to the Vigra & Clogau Mines, but it seems to me that owing to my not explaining things clearly some confusion has arisen, which perhaps ought to be cleared up :

I am sure that, owing to the conspicuous outcrops, with frequent showings of minerals, made by the quartz lodes of this district, mining began here in prehistoric times, but that patchy mineralisation and very hard lodes long limited it to a small scale. However, as far as I have been able to discover, a serious attempt to develop Vigra as a copper mine was made in about 1840, when a large water-wheel, and new dressing floors, were constructed, immediately west of Vigra Bridge, as shown in a well-known photograph taken only a few years later. Presumably flat-rods were carried up the hillside to pump the Vigra engine-shaft, and the well-graded road that we followed made, at the same time. This, because of its convenience for water power, became the site of all the later Clogau (St. David's) mills.

This operation did not succeed, I presume they did not find enough copper. But visible gold in waste dumps from old copper workings was discovered in 1853, not at Vigra, but at the site on top of the Clogau Mountain, 1,500 yards to the north-east of the mill site, that we visited in the afternoon. Attempts were made to work it, but because the occurrences of gold in this locality, though extremely rich, are very sporadic, disappearing as suddenly (when driven on or stoped) as they appeared, and another can be very difficult to find, the operation came to nothing.

In the event the economic possibilities of the Dolgellau Gold-belt were not revealed until 1861, when a new, much larger, bunch of gold was found within a few feet of the original discovery. For nearly two years the mine, that is Clogau, to the east of the river, up on the mountain, was extraordinarily productive and profitable. It continued to be actively, if less successfully, worked until 1870, and after that intermittently, until the 1890s.

It then entered its most active and productive period of operation, which lasted until 1911. During these years the Ty'n-cornel adit (which we visited) was holed through to the old workings on top of the mountain, and an aerial ropeway constructed to take the ore thence to the Vigra, by now St. David's, Mill, and several times rebuilt. After the Llechfraith adit, (which starts from the bank of the Afon Hirgwm, ¼ mile above the mill, and is driven along the St. David's [Clogau] lode from the Hirgwm), came under these workings, a tramway was built to carry ore from them to the mill. It was the drumhouse at the end of this, and the incline down from it, that we saw above the mill site.

No gold of any consequence has yet been discovered at Vigra Mine. Jenny's Adit, intended to drain the old Vigra Mine, and Eliza's Adit, to drain Old Clogau, were both driven in the 1860s, at the insistence of the Crown, the mineral owner, who wanted to see these mines properly developed. Neither reached their target at that time, but Jenny's was extended to a lode under Vigra in, I believe, the late 1930s.

16. Royal Gold – (Ref. Item 20, last N/L) 'So far as I understand it, the Royal Family's stock of Welsh gold had been exhausted at the time that Sir Mark Weinberg gave the Queen a one kg. bar of gold from Gwynfynydd. I therefore suppose that some of this bar was used to make the ring given at Prince Edward's wedding to Sophie Rhys-Jones, but I don't know if it was. [*The gold for this ring did in fact come from the Prince Edward Mine – John Mason, amongst others, extracted the auriferous quartz, crushed it then panned the gold from it – Ed.*] In view of contradictory evidence that I have heard, it will need more than Hugh Edwards' remarks to convince me that the Queen's ring, or any Royal ring, came from Clogau.'

17. Le Neve Foster – (Ref. Item 26, last N/L). Who, I wonder, wrote Le Neve Foster's obituary? There are too many people about who try to put a dark face on past mining. Of course, it depends on what you mean by 'appalling', but the death rate in metalliferous mines (as opposed to collieries) never approached what I would call appalling, except for a few years immediately after 1900. Then the new hammer-type machine-drills produced enormous amounts of dust, which were deadly in siliceous rocks - especially on the Rand - until the metallurgical difficulties of making a hollow drill steel that would stand up to such a battering had been overcome. Then water could be sent down the hole to kill the dust.

George W. Hall – Above three Items

18. Hafod Estate - Ceredigion Archives are presently cataloguing the Hafod Estate documents recently received from the Forestry Commission. The collection comprises of many hundreds, possibly thousands, of documents concerned with the title of the lands which were accumulated and disposed of after 1600. It therefore covers the regime of the Herberts – Johnses – Newcastle – Houghton – Chambers and the Waddinghams. Many of the Waddingham Papers are preserved in the National Library of Wales and there is a substantial quantity of information about the mines contained within the BGS Archive in Keyworth.

Items of interest to the mining historians are numerous and scattered throughout the collection, there are references to Bodcoll, Ty Gwyn – de Broke, Brignant and East Hafod. No doubt others will materialise in due course. As the documents are concerned with who owned what, there are many declarations and testimonies verifying that the mine had always been worked by the owners of the Estate. I will try and provide other updates as the work progresses.

19. Ellen Vannin Waterwheel – By the time that this newsletter reaches you, the Ellen Vannin waterwheel which was going to be erected at the Llywernog Mining Museum, has been re-possessed by the Trevithick Society and is to be rebuilt at the Snaefell Mine, from where it was removed circa 1910. Whilst this is another lost opportunity, it does illustrate the vulnerability of private museums and the pathetic lack of support by the authorities.

[Check out <http://www.snaefellwheel.com> for more info. – Ed.]

20. Darren Mine – At the north end of Darren, most of the dumps from Level y Coed, Francis's Adit and Francis's Shaft, have been carried away and an agricultural shed erected in their place. All traces of Francis's Shaft have been removed despite a considerable sum being spent on capping it and ensuring that bats had access. An absolute disgrace !

21. Subsidence at East Darren – Following the appointment of contractors to erect a safety fence around the remains of the East Darren Mine, several subsidence holes were simply filled in to make the job easier. A Couple of months ago the subsidence became active again and ran under the fence. Another bit of 'wire and post' fencing was rapidly erected by Ceredigion alongside the new security fence. A month ago the crater was heading along the lode in a north-easterly direction, towards the concrete culvert which was installed in 1981, but never worked properly. The minor road to Cwmsymlog village has been constructed over a backfilled stope and it is only a matter of time before cracks start appearing !

Simon J.S. Hughes – Above four Items

22. Garth Haematite Mine

On 22 February in Cardiff, Dr Tony Jukes gave the 2003 joint talk to the Russell Society and South Wales Geologists' Association on 'The Iron Mines of The Garth'. We welcomed several visitors interested in this local area, a total of around 40 people.

Tony is a keen underground explorer, having already thrilled us in 2002 with his talk on the underground workings around Machen. In contrast, the old iron mines, which are actually on the northern side of the Lesser Garth hill (north west of Cardiff), are large and cavernous.

The iron occurs as irregular pockets within massive limestone which is over 500' thick, dipping c35° north, with little faulting. The iron was probably found by accident, possibly even by dowsing. It has been suggested that the Romans worked iron here, although this has been questioned.

In the Lesser Garth cave (on the southern side of the hill), there are possible indications of iron workings by early man.

Nearby, above Castell Coch (east of the Taff Gorge), there are several workings, such as the Blue Water; also all around in Forest Fawr are many surface small holes, dips and humps indicating former iron workings.

Iron making is known in the area since the 1560s, when Hugh Lambert came from Sussex and built a furnace in Tongwynlais, the remains of which can still be traced, originally right next to the Glamorgan Canal. There were probably bloomeries in the area prior to this. Iron making closed in the 1600s because the iron cannon products were being sold and getting into the wrong hands !

Nicholas Price started/rebuilt the Pentyrch Forge, just to the west of the Taff, in the 1740s. An old picture shows a blast engine, two arches, and a large chimney. Up to the late 1800s, the Garth mine fed these works.

Unfortunately, by 1876, the furnace was obsolete and out of date as Bessemer steel was coming in; and the company owed £600,000 to the bank; both the bank and the furnace company went bankrupt. The tin works close by and the coal mines sold easily, but the iron furnaces and mine were left unsold.

1909 indications (in a government report) are that the Garth caverns were abandoned and difficult of access. The ore contained 39.6% Fe in raw state, some ores were richer. It was estimated that during the last 50 years of operation around one million tons of ore had been extracted, at around 68% iron oxide.

So, the major workings on the (Lesser) Garth were around the 1790s to late 1800s, taking ore for the Pentyrch Furnace. Prior to that, there may have been some shallow workings.

The big caverns left now go down around 400 foot. More recently, water seepages and material from the working quarries on the Garth have partly filled in the old mines. The excavated caverns can be traced for some distance underground. They occur mainly in the dolomitic rocks within the Lower Limestone Series of the Carboniferous Limestone. They are vertical – they do not follow the dip. The ore, in irregular cavities, was worked until it was exhausted. The miners were possibly following faults and beds to try and find new pockets.

The workings used to be easy to get into via an adit, but this is now barred with a locked gate (one member indicated it is possible to gain access for properly organised visits), through which water still flows. This entry adit is around 300 foot long. The caverns, now filled with water to the level of the adit, appear as large lakes, which are all connected at depth. When worked, they had to be continually pumped out. A blacksmith's shop was half way down the workings. There was also an underground steam plant with boiler and flue. Coal came from the nearby Coed y Bedw workings.

In 1926, when the mines were opened up again and worked by the West of England Iron and Ochre Co. for red and yellow ochres, it took 18 months to pump the water out at great expense; they soon gave up. Then Mr Watkins from the Forest of Dean took over and worked the mines for ochre almost to the start of World War II. During this war, the mines were used as a MoD ammunition store.

Tony indicated that he and fellow cavers have done quite a lot of exploration. In some parts there are traces of older workings. Some industrial archaeology, such as relics of a tram road, are left. Not much is written down, most of what is left to us is to be found in the

Transactions of the Cardiff Naturalists Society, who visited the mines, with a notable account in the 18th May 1887 edition.

We were treated to some marvellous photographs of the underground workings, the large caverns, shafts, lakes, tunnels, and more. The lighting needed some ingenuity, lights used to illuminate wide areas in turn with an open camera shutter being particularly effective. The final photo of one person standing within a huge cavern, the person at first not being noticed by the viewer because of his small size, put the whole of the mines into perspective.

As with Machen, we knew the workings existed, but had no idea how extensive they were. Some members took along specimens of iron minerals collected on Russell Society visits from nearby Taffs Well and Tonmawr quarries.

The Pentyrch and District Local Historical Society has just published (June 2003) its newsletter (The Garth Domain) Vol. 20 on Iron. This gives a variety of detail about the history and industrial archaeology of the Garth Mines. Contact Don Llewellyn Tel. 02920 890 535, or visit www.pentyrch.org.uk/history It is also sold by the Pentyrch and Taffs Well paper shops.

Lynda Garfield

23. Environment Agency - Metal Mine Strategy for Wales – the saga continues. With reference to Item 22, last N/L, Peter Cloughton states....

The consultative group meeting originally scheduled for March took place at Llandinam on 15th July. We were updated on progress with Phase II of the Strategy and received presentations on a number of related issues.

Phase I of the Strategy was realised with the publication of the Metal Mine Strategy document - available from the agency's offices and accessible on their website www.environment-agency.wales.gov.uk - and its recommendations for further action. The primary driving force behind the Strategy is poor water quality, particularly heavy metal loadings, in Welsh rivers, with Acid Mine Drainage (AMD), leaching from tailings and erosion of spoil, as the principal causes of the problem. At Phase II it is intended to prioritise the mine sites identified as problematic, the 50 sites listed in the published Strategy document; maintain a dialogue with interested parties, the 'stakeholders', including the Welsh Mines Society; commence remedial design on key sites; and seek funding for the implementation of remediation. As part of this phase detailed monitoring of mine and river metal loadings on waters flowing into Cardigan Bay is being carried out, due to be completed in September this year.

For Group 1, sites with no diverging issues where remediation might be effected without a conflict of interests, there was only one mine identified - Llanfair - and there river quality problems are not clearly related to the mine. No further action is envisaged on that mine at present.

Of the higher groupings, mines where there are potential conflicts, three sites have been identified for further investigation - Cwm Rheidol, Nantymwyn, and Parys Mountain.

At Cwm Rheidol the removal of the ineffective filter beds, originally designed to intercept discharges from Aldersons and the No. 3 adit, has already been considered in consultation with stakeholders. Consultants, SRK (UK) Ltd of Cardiff, have been engaged to provide for feasibility and design options for remediation of the site. The contract specifies liaison to take into account stakeholder views. They have 6 months in which to report but that is expected to be extended to at least 12 months if metal loadings under winter flood conditions

are to be taken into account. Work on Cwm Rheidol has the potential to significantly reduce the pollution of water in the Rheidol as the AMD from it, and the mines around Ystumtuen which feed into Aldersons, account for 60 percent of the metal loadings in the river. Potential threats to the mining archaeology will probably come from any scheme to reduce the inflow of surface water into the mines around Ystumtuen, many of which have 18th century features.

Nantymwyn is the subject of an MSc research project, involving an Environment Agency Wales (EAW) employee, designed to examine the impact on the Towy, determine the need for remediation and develop a cost effective strategy. Here the major problem is believed to be erosion of dumps and tailings. There is no reference to stakeholder liaison in the project but full consultation on the research findings would be expected.

Drainage of water from above the Joint Access Level at Parys Mountain is already completed and removal of the dam in the level is anticipated in the near future. *[I understand that this has now been done – Ed.]* The meeting was given a detailed presentation on the progress of work which was initiated independently of the EAW metal mine strategy. With concerns for the integrity of the concrete dam in the Joint Level, constructed in the 1950s as part of a scheme designed to provide copper rich water to the precipitation process, dewatering of the mine was seen as the only viable remedy to a potentially catastrophic flood risk to the Afon Goch and the town of Amlwch. Preparations were made for dealing with a high metallic content, including the impounding and settlement of the discharge water. However, water quality was relatively consistent with fairly low acidity and discharge through the existing reedbeds on the Afon Goch was found to be adequate, with continuous monitoring provided on the outflow into the sea and its effect on the marine environment. Lowering the water to the Joint Level has removed the seasonal inundation of the main opencast pit and curtailed the flow of AMD to a number of streams around the Parys Mountain and Mona mines. Future effective treatment of discharges can now be centred at the Joint Level portal and the outflow into the Afon Goch. Dewatering has also provided an added benefit in the access to the lower workings below the main opencast. Monitoring of the volume of water removed during the scheme has revealed that the workings were five times more extensive than original estimates based on surviving documentation.

The work at Parys Mountain is co-ordinated by a working group including all the interested parties, including Amlwch Industrial Heritage Trust, Parys Underground Group, Anglesey County Council, EAW and the Countryside Council for Wales (CCW). Co-operation is planned with other sites experiencing similar problems with AMD for copper mining, with Avoca in Ireland, Co. Wicklow, as an example cited in the presentation.

Presentations were also given by Kevin Hallberg, University of Wales Bangor, highlighting the microbiological research resources present in AMD waters - countering the view that such waters were 'dead'; Bob Mathews, West Wales Area Geologist with CCW, on the case for geological / mineralogical conservation on mine sites; and Louise Austin, Principal Archaeologist with Cambria Archaeology, on the archaeological potential on mine sites. Simon Hughes was to make a presentation on the historical perspective to the Cwm Rheidol site but was unable to remain for the full duration of the meeting.

After the presentations there was opportunity for comments on them and the Strategy in general. This allowed for emphasis on the need to address the protection of access to significant underground features during remediation work, picking up on reference to

scheduling of mine sites in Louise Austin's presentation and the need to build in to any contract for remedial work an allowance for a halt on work to investigate / record unexpected archaeological features. It was stressed that most of the surface features on the sites in the Strategy's 'top 50' list represent the peak of non-ferrous metal production in the mid 19th century, yet they may very well conceal earlier, possibly mediaeval, features.

The level of consultation on two of the three sites selected for further investigation is a cause for concern. Whilst the Parys Mountain project is co-ordinated through an active working party, for Cwm Rheidol it is left to the consultant to liaise with stakeholders and no formal consultation is evident in the investigations at Nantymwyn. The latter is not expected to result in remediation in the near future but the design consultation on Cwm Rheidol could quickly develop into a remediation scheme. SRK's representative at the meeting was quite open on their role and keen to identify stakeholders in the site. Progress towards full liaison will have to be monitored to ensure mining history and archaeological interests are reflected in the design for remediation.

A further meeting is proposed for next year to update stakeholders on progress.

Dr Peter Cloughton

24. Environment Agency - Metal Mines Strategy – Another angle...

I was cynical when the project commenced, this was firmly re-affirmed during the stakeholder's meeting which was convened on the 15th of July at Llandinam. To present the remedial works at Cwmbrwyno as an outstanding success is simply ridiculous considering that the EA were almost prosecuted for disturbing the SSSI, whilst no one appeared to care about the damage done to the industrial remains ! The EA have no money and would like the stakeholders to support their case for European money. I heard the sum of five billion pounds mentioned on Radio 4, as being the UK total for the water quality improvements and many people will be aware that their water charges are likely to rise by 50 pence per week.

This Strategy is designed to improve the quality of the water, upon which the Agency have been granted a sales monopoly – as with all the previous reclamation schemes, it is down to simple commerce rather than for concern about the historic mining environment. Mid Wales has a shortfall in its water supply and the old mines impair water quality, it has nothing whatsoever to do with looking after what little is left. There have recently been questions asked in The House of Commons regarding what the Agency is proposing to do about the situation. The Strategy is nothing more than smoke, mirrors and spin.

Having closely observed the expenditure of many tens of millions, largely from the public purse, on these reclamation schemes, now re-branded as '*remediation projects*', I feel that I am qualified to offer my opinion based on a 25 year association with most of these schemes. All of the undertakers are prepared to throw vast amounts of money, provided that it comes from Europe and is all spent at once, they then select the cheapest tender which invariably leads to shortcuts being taken. The ratio of expenditure on works and administration is an absolute disgrace and must be improved – up to 90% of the European grant money is absorbed on administration. The finance comes from the public purse, it seems impossible to view the accounts. When the contractors leave the site, there is no financial provision made for long term aftercare and management. If some care and management took place on a regular basis many of these schemes would not have been deemed to be necessary in the first instance. I cannot believe that between all the Local Authorities and Government Agencies they cannot find the finance for three labourers, a foreman and materials.

I remain staunchly cynical about the whole situation and, as a reminder, am producing a CD on what has been destroyed during the past 15 years in the name of improvements. Dead sheep, scrap cars, stone robbing and 4WD trials as an addition to the grant funded reclamations – remediations or whatever you choose to call them.

Contact me at **mining.man@amservice.net** if you want a copy of this disk or if you have a site which you think is worthy of inclusion.

Simon J.S. Hughes

Query Corner

(Please reply direct to the correspondent. Any follow-up info will however be gratefully received by your editor to allow a suitable response to be placed in the next newsletter for the benefit of all.)

25. Garth Copper Mine Mystery Deepens

In previous newsletters I have from time to time suggested possible locations for the lost copper mine of Garth, said to be in Breconshire and returning ore in the 18th century. But all attempts to find it have failed, including some very promising clues which opened up only a few months ago - N/L 48, item 23. In fact, the latest lead goes back many years and only came to light when I was perusing my old Ordnance map of Brecon (Sheet 141) and noticed a pencilled note in the margin 'Copper vein, ref. I.T.'. I.T. stands for the late Idris Treharne who opened several mines and trials in the 1960s in South Wales, but is sadly no longer here to tell us the source of his information - was it documentary, or did he see the lode for himself - I have long since forgotten.

The note, which I made 30 or 40 years ago, referred to an area below the Mynydd Eppynt east of Llanwrtyd Wells, very approx. NGR SN 920 455; [*Sheet 147 current 1:50,000 – Ed.*] and in confirmation, something I had never spotted before - there is a nearby dingle on the map labelled 'Cwm Mwyn', which we all know means Mine Valley ! Furthermore, the location is only a mile or two from a hamlet called Garth. All this seemed certain evidence that the Garth copper mine was on the brink of discovery at last. But alas, the endeavours of Mr and Mrs G. Hall have failed to find it, perhaps because much of the land is densely wooded. Half way up the valley the geology changes from Silurian to old Red Sandstone; nothing is shown on the old 6 inch Ordnance maps. However, the above testimony that something must be there is very strong and perhaps others would like to pick up the trail - it is still, I think, our best hope yet.

David Bick

26. Mining Journal Research - George Hall occasionally gets enquiries from consulting geologists and others for information from the Mining Journal. If this is on British mines, and up to 1894 (where his own run of the Journal ends), he would usually deal with the matter himself. But where it relates to foreign mines at any date, and British mines from 1910 onwards, he would like to pass such enquiries on to anyone interested, and willing to undertake the research. If you come into this category, please advise him by letter of your position and limits. (See Item 2 for contact details.)

27. A bit of a Puzzle ! If DRIFT = 7, STOPE = 9, MOIL = 11, and CLACK = 13. What is the value of LODDE ? Answers to the Editor. (Clue – You need to think like a computer ! Also the ability to differentiate between curvy and straight letters would be an advantage !)

The answer will be provided by Harold Morris in the next newsletter – assuming that no one has thrown him down a shaft (that must be 15 ?) in the meantime for providing such puzzles !

28. Ore and Stone Mining – C. Le Neve Foster's '*Ore and Stone Mining*' went through several editions in the late 19th and early 20th century, and in them there are a number of descriptions of mining methods (Van), plant at British mines (see Simon Hughes, last N/L, p.30), and so on, which are not the same in every edition. I suggest that it would be helpful to all if anyone who has a copy could look through it, list any of these descriptions, and advise our editor thereof, together with the date and number of their edition.

George W. Hall

29. Quick-lime 'Explosive' - Further to Item 27, N/L 48 & Item 34, N/L 47, the following responses have been received...

'I read with much interest Robert Protheroe Jones' contribution on this matter. We are now discussing two rather different categories, pre-gunpowder, and its relatively recent use in collieries. I would still like to know more about just how it was used in pre-gunpowder days, whether any old accounts of the process survive, and whether there are any known examples of lime-blasting holes in Wales.'

George W. Hall

'In the last Newsletter, George Hall asks if "anyone has ever seen the remains of such large holes in Wales". I noticed at Porthgain stone quarry during the June 2003 WMS meet the remains of an estimated 3" diameter hole perhaps 24" long in an apparently blasted rock face. The hole was roughly parallel to the face which intersected the hole less than 1" in from its edge (i.e. there was perhaps three quarters of the bore remaining in the rock face).'

Dave Linton

'When I was doing my National Service in the Tunnelling Troop, Fortress Engineer Regiment, Royal Engineers, Gibraltar in 1953-54, I read or heard (after 50 years I cannot now remember which !) of the use of quick-lime in the tunnelling carried out by Staff Sergeant Ince, starting in 1782 during the Great Siege. He supervised the driving of what are now known as the Upper Galleries, at a height of several hundred feet above sea level, inside the North Face of the Rock, in order to create gun positions which could bring to bear flanking fire on the enemy positions on the isthmus below. (As the original query about quick lime in Newsletter No.47 was raised by George Hall, it may be worth mentioning that one of the main gun positions created is called St George's Hall !)

As I recall, the story ran that when Sergeant Ince proposed the tunnels, the idea was approved but, because of the siege and the consequent shortage of supplies, he was told to go ahead, but not to waste gunpowder hence the use of the quick-lime. I have no idea what diameter the holes were drilled, but the method involved inserting quick-lime into the hole followed by a bladder (made from goat's intestines?) containing water, followed again by stemming. In due course the lime rotted the bladder, which burst, causing the water and quick-lime to mix and react.

The only reference I have to hand which mentions this is 'The Tunnels of Gibraltar' by M S Rosenbaum and E. P. F. Rose, published by The Gibraltar Museum (18-20, Bomb House Lane, Gibraltar. I purchased my copy of this booklet in 1993, when its price was £1.75 plus £0.65 postage). The booklet (32 pp, A5), in describing the 30 miles of tunnels which now exist within The Rock, includes a chapter on Tunnelling Techniques. In this, the authors say:

“Early tunnelling methods had been very slow” (about 600ft per year for a tunnel of 7ft by 6ft cross-section). They mention firesetting (carried out by the Moors in about the 8th century) and then “quick-lime (slaking of lime tamped into bore-holes)” but do not go on to elaborate, although they make the comment that these methods “caused minimal damage to the surrounding rock and this has been repaid by the long-term stability of the smooth walls so created”.

References quoted by Rosenbaum and Rose (none of which I have seen) include:

Anon., 1970. *History of Tunnelling at Gibraltar (1782-1968)*. Unpublished Report, catalogue No. 13301, held by the Technical Information Centre, Royal Engineers, Chilwell, England, 33pp.

Cotton, J.C. 1948. *The Tunnels in Gibraltar*. In: *The Civil Engineer in War*, Vol. 3, pp. 229-248. Institution of Civil Engineers.

Eley, D.M., 1957. *The Gibraltar Tunnels*. Proceedings of the Archaeological Society of Gibraltar, 1956-57, pp. 37-44.’

Tony Brewis

Somewhat coincidentally, a few months ago, your editor received the following anonymous e-mail to my works address from a company based in China : (Reproduced here, complete with warts an’ all.)

Subject: Silent Domolition Agent (soundless creaking agent)

"shenli" Silent Domolition Agent uses in exploiting and cutting rock and non-explosive fragmentate and demolish concrete.

Please stir a kind of cement powder matter with water, pour it a hole in rock or concrete. After a moment, rock and concrete will rend themselves.

Silent Demolition Agent can be used for creaking dismatles of various cement buildings, extracting of granite, marble, jade, stone, etc.

Particulars: <http://www.baopoji.com>

Book Reviews & Bibliographical References to Welsh Mines & Mining

Book Reviews

30. ‘Blaen y Cwm & Cwt y Bugail Slate Quarries’ by M.J.T. Lewis.

ISBN 0-9522979 3 0. 82pp. A4. Edited and produced by Celia Hancock. Published by Adit Publications, Towerside, Pant y Buarth, Gwernaffield, Mold CH7 5ER. Available direct from the publisher, £6.95 p&p free.

We’ve waited a while for another Slate Quarry book from Adit and this certainly does not disappoint. The book is based on fieldwork during 1985. I was fortunate enough to have acquired a copy of the initial report a few years back but welcome this volume to put everything together.

It is a most interesting read even with, as it is pointed out, disappointing archival remains on both sites. The text is very informative and is well complimented with an excellent coverage of plans/maps and photographs together with plenty of drawings. There has been much work done on investigating and interpreting the remains. I would not hesitate to recommend this, and at a bargain price too.

If you intend to visit either of these sites take a copy with you it will be invaluable. I have visited both but I'm keen to return to look over what I've missed !

31. 'Fragments of Mine & Mill in Wales' by Alun John Richards. ISBN 0-86381-812-9 Published by Gwsag Carreg Gwalch, 2002. 128pp. Quarto, glossy paperback £9.50

This is a move away from Alun John's usual style of book in that it is a picture book albeit with plenty of reading matter, although for more detailed accounts of the slate quarries his other books are recommended. This book is aimed at the wealth of relics that were left behind from the Welsh mining industries that are now vanishing. This is his attempt to place them on record before they disappear forever – some already have!

The quality of photographs are excellent [*well, some are ! – Ed.*] (which has not always been the case from this publisher) and a number are in colour.

The book is very enjoyable and a place on the bookshelf should be made for it. As mentioned above this book became available last year but was only spotted in April this year in a Porthmadog bookshop.

John A. Knight - Above two reviews

32. 'The Old Copper Mines of Snowdonia', by David Bick. ISBN 1 84306 075 2 Published by Landmark Press, £ 9.95. A revised, expanded and revitalised edition previously published by the Pound House.

Landmark have firmly stamped their house style over that of the Pound House and I am most impressed with the results. I am no stranger to the pitfalls of small scale and self publishing but Landmark have put such a gloss on the presentation that it is barely recognisable alongside the original Pound House edition. Of the half dozen people who have seen my copy, all have said that they must get a copy and commented on the clear new style.

When the first Pound House edition appeared in 1982 it was the only compendium of its type, it covered a greater geographical area than the whole of the series on Mid-Wales and gave a greater degree of coverage to the development of individual mines. Considering how busy David was at that time, it was nothing short of a monumental feat. I had no advance warning of its impending publication [*see item 32, last N/L – Ed.*] and was delighted when I discovered that Landmark had decided to publish another edition.

[I did read another review of this publication which complained that there was no mention of Parys Mountain – I think reference to the title explains all ! – Ed.]

33. 'The Copper King', by J. R. Harris. Published by Landmark Press.

A most wonderful biographical study of Thomas Williams of Llanidan. The man who amassed a fortune from Parys Mountain and whose employees referred to him as "Twm Chware Teg" or Twm fairplay.

This book has become somewhat scarce of recent years and I have seen a couple of second-hand copies at £25+. My interest in Parys Mountain is both professional and personal for it was from here that my father's family originated and g. g. grandfather appears to have carted copper ore to Amlwch port when not engaged in farming. I first read Harris's text about thirty years ago and have probably read it 'cover to cover' about five or six times, whilst finding a reference contained therein is more usually a monthly task. This is an essential part of any mining historian's library regardless of your place of abode as Williams can be truly considered to be a global trader. Production from Parys grew to such a level as to play havoc with the Cornish Mines who, in an effort to stay solvent, sunk deeper and found tin lying beneath the shallower copper deposits.

Historically, these are exciting times for Britain; George III is losing his mind and his hold upon America, Louis XVI is about to lose his head to the French people and throughout Europe revolution is in the air. The price of copper soared in anticipation of war and Williams prospered to such an extent that it was said that every gallon of water pumped out of Parys Mountain contained a penny-worth of copper. Not to be confused with the Cornish Williamses of Scorrier, who were also engaged in copper mining, Williams of Llanidan was a lawyer from a long established Welsh family, he lived close to the mine, contributed heavily to the Industrial Revolution and ran his business in a very efficient manner. Whilst the book is essentially about Thomas Williams and his family, it is interwoven with the history and development of the mine and is, in my opinion, a far more interesting and enthusiastic commentary than that of John Rowlands in *'Copper Mountain'*, which is also scarce [until recently republished – Ed.] and forms a useful companion volume.

I am absolutely delighted to see that it has been reprinted. I am sure that the late Professor would thoroughly approve. It is also most opportune in view of the current project to revive and exploit the history of Amlwch Port and Parys Mountain, as outlined on Thursday the 4th of September in BBC2's series 'Restoration' presented by Griff Rhys Jones with support being voiced by Glennys Kinnock. The Amlwch Industrial Trust's website is also well worth a visit.

34. 'Victorian Slate Mining' by Ivor Wynne Jones. ISBN 1- 84306 073 6. 144pp. Further to the review in the last Newsletter (Item 33), Simon adds the following comments...

This is not an all encompassing historical account of slate mining but a commentary on the difficult to find 1895 *'Parliamentary Report on Meirioneth Slate Mines'* otherwise referred to as B.P.P. C 7692.

It is well divided into 12 chapters, each of which is written in an essay style, that consider the various aspects of the report, its production and consequences. Some years ago, I was fortunate enough to find an original copy of the report and therefore knew that J.C. Burrow, in association with G.J. Williams and Clement Le Neve Foster, of the Mines Inspectorate, produced the photographs which accompanied it. However, Ivor Wynn Jones points out that it was Le Neve Foster who commissioned Burrow and then gives a most readable vignette on contemporary photographic methods and technology. Burrow is probably best known for his work in Cornwall and for *'Mongst Mines & Miners'*, a photographic account of the mines of Cornwall in 1893 and widely available as a Bradford Barton 15/- reprint, published in 1965. Burrow's own description of 'How the camera was used' forms the core of chapter two, to which have been appended other notes on his life and works.

G.J. Williams, apart from being Le Neve Foster's assistant inspector, was a fluent Welsh speaker and acted as translator for the commission. Williams was himself quite an accomplished photographer and mineralogist but this is another story and strays from the text under review. Adequate biographies of Sir Clement Le Neve Foster and G.J. Williams are both long overdue.

The author is a director of Llechwedd Slate Caverns, a journalist and has other publications to his credit. He thus has access to the considerable private archive of the Greaves Family who have been key players in the Welsh slate trade for over a century and a half. The book makes much of the fact that Greaves family also furnished the Commission with a great deal of information.

Most of the 130, or so photographs have been drawn from this archive, the remainder are by Burrow to illustrate the report and are fairly widely reproduced in the many volumes and pamphlets now in circulation. The majority of the photographs I had not seen before, which immediately placed it in my 'must have' category.

The quality of reproduction is excellent and appears to be better than the originals. I suspect a degree of computer enhancement. None were of such poor quality as to distract from the overall quality of the book.

My criticisms are minor: Though not vital, it would have benefited from an index and a little more attention to the biography. I do not know why or how Jean *Lindsay's 'History of Slate Mining in North Wales'* or Michael Lewis's excellent monograph on Rhosydd, and indeed various other good accounts, have been omitted, whilst difficult to find Welsh language rarities have been included. The title is maybe a little misleading as the volume only considers the Blaenau Festiniog district and the transport of the product to the slate wharves at Porthmadoc. I found it a particularly easy book to pick up and commence reading wherever it fell open. A good read, and a valuable reference.

Simon J.S. Hughes – Above three reviews

Bibliographical References to Mining in Wales

- 35. 'Below'** – Quarterly Journal of the Shropshire Caving & Mining Club, No. 2003.1 pp.9-10 'Great Orme – Roman Shaft 9th February 2002'. A trip hosted by G.O.E.S. pp.11-13 'Gwynfynydd Mine – A re-cap', by George Hall. A potted history of this mine with an explanation of gold recovery methods used there in the 1980's.
- 36. 'Below'** – Quarterly Journal of the Shropshire Caving & Mining Club, No. 2003.2 p.4 'Trips: Glyn Ceiriog 23rd February 2003'. Visit to the slate quarry at NGR SJ 187 379
- 37. 'The Exploration of Croesor Slate Mine'**, by Jon Knowles. A 'history' of the exploration of Coesor Slate Quarry as carried out by CAT members over the years. *'The Mine Explorer'* – *Cumbria Amenity Trust Mining History Society, Vol. V, 2002, 43-56pp.*

Miscellaneous

38. How to Make Money from Mining.

In January 1872 particulars of the registration of the Glain Pedror Mining Company (Limited), with a nominal capital of £30,000 in 1,000 shares of £30, appeared in the Mining Journal. Its object was to purchase and work the 'Genfron' mine in Cardiganshire, but this seems to have been a misprint for Geufron, a sett adjoining and west of the Pant-mawr, alias Silver Mountain, Silver Bank, &c., mine, immediately north of and below the Devil's Bridge road, about 8½ miles from Aberystwyth.

About a dozen reports, over the name of Hugh Johns, then appeared in the Journal between February and May. These mentioned three lodes and described the sinking of an old shaft, found to be 12 fms. deep, and the driving of two new adit cross-cuts. Activity at the mine was, however, perhaps less than that at various stockbrokers' offices, as shown by a letter from 'A Victim of the Circular Nuisance', dated April 22nd. He first enquired if Glain Pedror were a good investment, and then went on to say: 'Early in March I received a circular from Messrs. J. Bell & Co. offering 20 shares at £33, if applied for before March 13th. The following day comes a circular from Messrs. Brewis of Bishopsgate-street Within, offering a few at £38, if applied before March 18th. Same day comes a circular from Messrs. Howard

McEwen of Fenchurch-street, offering shares at £34. Two or three days after I receive a prospectus from the office of the company, with a form to apply for shares at par. I was permitted to rest in peace for a fortnight, when another circular comes from Bell & Co. offering shares at £36, if applied for before April 5th. Then a day after comes one from Howard McEwen & Co., offering shares at £37.10.0 before April 6th. Then Brewis & Co. come up again, they ask £44 now. I am now left quiet for another week, but then Howard McEwen and Co. write again, offering 23 shares at £40.12.6....'

Things then went quiet in the Journal, and on the mine, which stopped in May, but in September Mr. F.R. Kirk of Birchin-lane, Lombard-street, wrote saying, among other things : 'The modus operandi of E. Brewis & Co. seems to have been... an agent (accomplice) in Fenchurch-street, styling himself Mc. Ewen & Co., and a second in Bush-lane, of the name of Bell. Circulars by the hundred were then dispersed, ostensibly separate and independent, but actually issuing from Brewis head centre...'

Nothing much then appeared in the Journal until the report of a meeting to confirm resolutions for winding-up the company, but at which there was not a quorum, held in April 1873 at 10a, King's Arms-yard, Moorgate-street. It transpired that in the previous July there had been £244 in hand, but this had since shrunk to less than £150, most of the money spent being for 'Secretary's salary, petty cash, and sundry expenses'. Mr. Kirk urged that more directors should be appointed, but Mr. Royston, the only one present, refused to entertain the idea. He also refused to reduce the secretary's salary, although the company had suspended operations the previous June, and on being urged to consider the interests of the shareholders living in the country, whose money was being frittered away, Mr. Royston replied that 'he did not care a toss for the interests or opinions of shareholders...'

In July of that year a petition was presented to the Court of Chancery for winding-up the company, and the name of Glain Pedror appeared no more in the pages of the Mining Journal.

This looks to me like a much easier way of making money than by tunnelling through hard rock in search of an elusive vein of lead, and with our suitably scattered membership, and knowledge of the appropriate jargon, the W.M.S. ought to be able to meet its increased insurance premiums with ease by pursuing the same system !

George W. Hall

39. Mining Rhyme – Long time **WMS** member Neil Dickinson, offers us the following thoughts...

'Reading the newsletter, looking at maps and dipping into my books brings memories of being in the Welsh hills drifting back to me to the point that I was moved to try putting those feelings into verse. My effort might equally apply to other parts of Britain, perhaps with the thought of some of the bigger, more substantial mines but all the same, I wonder if my words stir the same thoughts in the minds of other WMS members ?

I know a place, a long abandoned mine,
Where rocks from the ground once blasted and hewn,
Remain in desolation, piled or strewn,
Hidden by Nature's healing hand of time.

A hammer's blow can still reveal some trace
 Of the ores sought by miners from deep down,
 Which erstwhile wealth indulged the local town
 Some civic face, by courtesy His Grace
 The Umpteenth Duke; fate's luck struck mineral lord.

Though those men are gone and their industry,
 That site to me stays haunted by some chord.
 Or do I just hear the wind in a tree
 And the cry of a solitary crow,
 Lost into the sky o'er that place I know ?

Neil Dickinson

40. Van Mine

The ornate commemorative slate plaque that was originally set above the main adit at the Van Mine has been in the collections of the Department of Industry of the National Museums & Galleries of Wales since 1967. It weighs over a quarter of a ton and is cracked in half and has rarely been moved. Recently when the plaque was being moved to be photographed, it was discovered that its reverse bore a far plainer and variant inscription of the one the front. The inscription on the front reads:

THE	
VAN MINING COMPANY LIMITED	
Incorporated February 1 st 1869	
T.C. MUNDEY ESQ ^{RE}	CHAIRMAN
ROBERT OLDREY ESQ ^{RE}]
WILLIAM PAGE ESQ ^{RE}] DIRECTORS
JULIUS ALINGTON ESQ ^{RE}]
F.L. SLOUS ESQ ^{RE}]
W.J. LAVINGTON ESQ ^{RE}	SECRETARY
CAPT. W ^M WILLIAMS	MANAGER

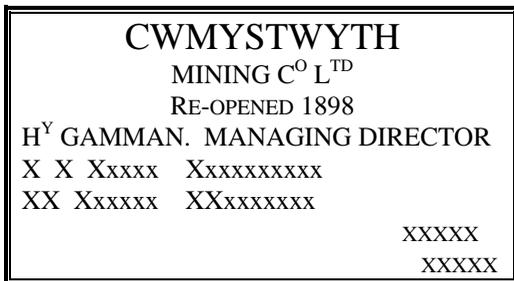
The inscription on the rear differs by spelling 'Alington' as 'Allington' and by omitting the name of F.L.Sloos, as well as being less clearly laid out and being far plainer in its design. David Bick notes that Capt. William Williams (1825-1879) was previously agent of Penyclun Mine and was responsible for the discovery of the Van Lode in 1850 and that Williams and Munday – whose name he spells as 'Munday' – were responsible for the development of East Van (*The Old Metal Mines of Mid Wales* part 4, pp.41-45). Can any WMS members throw further light on the individuals named on the plaque - were they involved at any other mines or was the Van company their sole involvement in metal mining ?

For completeness I also give the inscriptions of the other six metal mine plaques in the collection of the Department of Industry at the National Museums & Galleries of Wales:

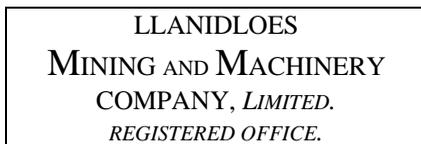
Slate plaque from the inclined shaft, Goginan Mine. J.T = John Taylor. John Taylor & Sons worked the mine from 1836 to 1881, latterly through holding companies.

J.T 1842

Slate plaque from Level Fawr, Cwmystwyth Mine. The 'x's indicate defaced lettering infilled with lead where Gamman erased his co-directors' names upon assuming sole ownership of the mine in 1905. See WMS n/1 28 item 6 (June 1993) and n/1 29 item 32 (December 1993) for details of the movements of this plaque and the GRP replica illustrated in plate 22 of S.J.S.Hughes, *The Cwmystwyth Mines*, British Mining No.17. Gamman worked the mine from 1897 to 1915, latterly in association with other companies after he exhausted his own resources.



Four brass plaques from the registered offices of mining companies. These bear imprints of having been mounted overlapping one another, indicating that the registered offices of these concerns shared a single building – very probably Minerva House, Llanidloes which was the address given for these companies during the Great War. Slightly later their address is given as the Mining Office, Llanidloes – can anyone confirm whether this was the same building re-christened with a more impressive title ?



Llanidloes Mining & Machinery Co Ltd worked Van Mine from 1908 to 1915, Nantiago Mine from 1913 to 1915, and owned Gorn Mine in 1914 only, although working was reported as being suspended throughout that year.



Nantiago Mine Ltd worked Nant Iago Mine from 1916 to 1920. In the *List of Mines* the company title is given as Nant Iago Mine Ltd; to determine its correct title, recourse would have to be made to defunct companies registration records in the PRO or to any company archives that may survive.



New Castell Blende Mine Ltd worked Castell Mine from 1912 to 1920.

<p>WELSH VAN MINING COMPANY, LIMITED. REGISTERED OFFICE.</p>
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Welsh Van Mining Co Ltd worked Van Mine from 1916 to 1922.

The inter-relationship of these concerns - hinted at by their shared address - is underscored by the fact that the Llanidloes Mining & Machinery Co Ltd was simultaneously succeeded by Nantiago Mine Ltd and by Welsh Van Mining Co Ltd in 1916. Are WMS members aware of the precise nature of the inter-relationship of these four concerns with regard to directors in common or other key figures that may have featured in more than one of the companies ?

Robert Protheroe Jones, Department of Industry, National Museums & Galleries of Wales

41. Moel Llyfnant Manganese Trial

This trial is located high on the southern face of Moel Llyfnant, a mountain of height 751 metres, four kilometres south-south-east of Llyn Tryweryn, a small lake situated beside the A4212 road between Ffestiniog and Bala, in Gwynedd, Wales. The mountain may be approached from this side by a public footpath starting near a farm called Nant Ddu at NGR SH 806 385.

A pleasanter and more interesting route approaches from the south, starting near a farm called Hendre-Blaen-Lliw situated less than half a kilometre north of a minor road between Llanuwchllyn on the A494(T), eight kilometres south-west of Bala, and Bronaber on the A470(T), about three kilometres south of Trawsfynydd. There is limited parking on the minor road near to the start of the public footpath leading to the farm. At the farm a northerly route should be taken along a broad rocky ridge, which leads in a little more than half a kilometre to a gate enabling access to the continuation of the ridge beyond a fence crossing the hillside. (Note:- This route does not follow the public footpath which heads north-east from the farm). The mountain up ahead to the north has a rocky crest but lower, a large expanse of scree, shown on the OS map as 'Marian Llwyd' is very obvious. Examination of this scree slope from a distance, reveals what might be a faint path line rising from left to right across the face, however under poor lighting conditions this feature might be rendered invisible. Continuing, a small stream 'Ceunant Coch' is reached, this is best followed to its source, where a small ruined structure can be seen at NGR SH 8079 3478 directly under the scree slope. This structure may possibly have been used for the dressing of ore, but as there is no source of water at hand, the dressing process would have been of a very basic nature.

The start of the path rising across the scree is only a few metres higher but is not at all obvious, having being destroyed in its lower reaches by the movement of scree. A small built up section is apparent a little higher up and gives some indication of the route to take. Higher still the path becomes more distinct, having further built up sections, finally passing through an area of large rock outcrops and isolated boulders. The path ahead terminates at a small level area showing evidence of tipping, here a mine tunnel has been driven into the rock-face at NGR SH 8080 3486.

The tunnel has been driven on a heading of north (magnetic 2002) for about thirteen metres where upon reaching the lode, it turns abruptly to the east, to continue for a further eight metres to an end. The vein dips steeply to the south.

A metre or so beyond the turning point mentioned above, a pile of debris almost blocks the tunnel, this has been brought down from the roof above, probably by blasting, leaving a

cavity of about two metres in height above the crown of the tunnel, and extending for a distance of about two and a half metres. Black ore of what is probably manganese and iron is visible filling fissures in and around the fault line. A few drill holes are visible, these would have been hand drilled. Out on the tip and indeed at several locations along the rising path samples of ore can be readily found, nice specimens of hard black botryoidal ore, being probably hematite.

The ground immediately above the tunnel site shows signs of disturbance where an attempt has been made to open on the back of the lode; higher again there is some evidence of a filled in shaft.

Continuing from here the route climbs steeply through crags to the summit of the mountain, but a short way above. A visit to the summit is well worth the small effort involved, as it provides a fine viewpoint for the surrounding countryside.

J. Harold Morris, 01/03/03

Harold would very much like to hear from anyone who may have any further information about this venture, e.g. company names or dates. He can be found at 21 Morfa Lodge, PORTHMADOG, Gwynedd, LL49 9PF. Tel. 01766 512 903

42. EAST BRONFLOYD

This old mine, whose earlier name is not known, was restarted in June 1862 by a company using the title of East Bronfloyd. The workings, when cleared, were found to consist of two adits, and a shaft sunk to 9 fms. below the deeper level. These are situated close to the western boundary of the lease area, and as the lode presumably strikes somewhat north of east, and so across the valley floor, not much could be done at adit level, but shaft sinking was pushed on, reaching a new 10 fm. level in August, and the 15 in April 1863. In the meantime a leat had been dug, water-wheel pit built and the wheel erected, together with pumps, a hauling machine, a crusher, and dressing-floors laid out, the machinery being supplied by Mr. Green of Aberystwyth.

Throughout this period a series of highly coloured reports by Charles Williams of Tre-taliesin, the agent, appeared in the Mining Journal, and he forecast sales of 50 tons a month. These did not escape notice in the neighbourhood, where people were not so convinced of the value of the lode as he was. As a result in December 1862 a Journal correspondent issued a challenge that '10 tons of dressed ore cannot be scraped together within the boundary of the mine,' loser to pay £10 to the Lancashire Distress Fund. Williams quickly asserted the truth of his reporting, but without accepting the challenge. Another correspondent then sent the Journal a cheque for £2.2.0, to pay for a report by an independent and reputable agent, but no such report appeared.

There seems to have been an especial enmity between the East Bronfloyd people and James Lester, the Bronfloyd agent, uncomplimentary remarks being exchanged. The former party derided Bronfloyd's frequent calls, and said they regretted parting with the best part of their property, and wanted it back. The latter claimed that East Bronfloyd had no payable ore.

This antagonism prompted the following report from Lester, dated January 8th, 1863; 'In consequence of the brilliant character of the reports from East Bronfloyd from week to week, we have opened a cross-cut exactly 6 fms. west of their engine-shaft, at a point 10 fms. below its present depth. We cut three fms. through an entirely unproductive lode, and have suspended it, being now more than ever convinced that the surrender of the ground (now held by the East Bronfloyd Company) about four years ago by this company [Bronfloyd United]

was justified by its utter worthlessness; besides, the underlie of the lode will presently take it into the Brwn-vy-reg (Fron-feirig) sett.'

This, of course, immediately resulted in letters attacking Lester, although the fact of the lode being barren at one point did not mean that it could not be valuable a few yards away. Optimistic reports continued to flow from Williams' pen, the value of the lode being usually given as about one ton of galena per cubic fm. over a width of as much as 30 ft.

In May 1863, two or three months behind schedule, Williams claimed to have sampled 20 tons, but at the first general meeting, held at the offices, York-buildings, Adelphi, on May 30th, General Shortrede in the chair, an unfortunate truth came to light. Capt. Williams had indeed been completely misled by the appearance of the 'ore', much of which seems to have been only a slate 'of a very dark blue colour, in some places covered by a shiny coating.' A Mr. Edwards remarked that 'it was a singular fact that the blende was of the same specific gravity as the lead ore and clay-slate', so perhaps this had caught Capt. Williams out. None of the directors names appeared on the report. They claimed to have been as misled as ordinary shareholders, and the chairman excused the board by saying that the directors could not be held responsible for Capt. Williams' reports. This caused a Mr. Hamilton to ask who then could be, and he added that 'it had required a long time to find out these facts, which was especially strange when it was recollected that the agent's judgement was called in question long since...'

In fairness to Williams it should be said that none other than Capt. Matthew Francis had, in August 1862, verified everything he had said, adding 'People here are envious of the great discovery of ore... I never saw a better discovery in Cardiganshire; rocks of ore yesterday were more than half metal, 2 or 3 ft. long and 3 ft. wide, several cubic feet of ore in a single stone; so large that the men had to lash them in a rope because they could not be drawn up in the bucket...'

At this time (May 1863), apart from the shaftmen, six men were employed in driving east at the 15, at £6 per fm., six stoping in the back of the 15, at 65s. per cubic fm., plus one engineman, one lander, one dresser, and seven boys and girls, who would be on the floors.

In spite of this debacle the mine carried on, although stoping and dressing ceased, and work was restricted to cross-cutting in the 15 and shaft sinking, the 25 being reached in September 1863. Nothing much seems to have been done after October 1863 other than drive the 25 cross-cut through the lode, a total distance of 14 fms., lead being seen the whole way, but not in sufficient quantity 'to put a value on.'

Surprisingly Charles Williams continued as agent until September 1863 (but then, he had 250 shares in the concern, significant voting power), when, after an interval, he was succeeded by Andrew Williams.

In February 1864 the East Bronfloyd Silver-Lead Mining Company, capital £10,000 in shares of £2 each, offered up to 1,000 new 20% preference shares, to enable them to sink another 10 or 15 fms. Presumably an insufficient number were taken up, as no reports appeared in the Journal after October 1864.

Although Lester had by then been replaced as agent at Bronfloyd by Thomas Kemp, I can imagine him, and indeed Mr. Balcombe, smiling when Kemp wrote in May 1865, referring to their new shaft, about to be started: 'This shaft will be sunk by means of the excellent machinery recently purchased at the East Bronfloyd sale.'

This unfortunate trial was, I am sure, situated on the south bank of the Nant Silo, immediately west of the bridge at Penbont Rhydybeddau, where the collapsed adit portal, and mine dumps and tailings, can still be made out at NGR SN 6715 8350. The site of the shaft on the hillside above is presumably marked by heaps of disturbed development rock, but no features can now be distinguished there.

George W. Hall

43. Cwmystwyth - Blue Level

In Newsletter No. 44 (April 2001), Item 44 and Newsletter 47 (October 2002), Item 17, the identity and location of Blue Level was raised, and in the latter Simon Hughes and I undertook that we would in due course report on the matter. Having examined all available evidence, we conclude that the highest level at the extreme east end of the mine (NGR SN 8118 7499; altitude c.325m), termed 'Pengeulan East Level' in The Cwmystwyth Mines (British Mining No.17, 1981 - schedule of adits, p.71; off east edge of map on p.54) is in fact Blue Level. The level (NGR SN 8102 7486; altitude c.260m) to which the name 'Blue Level' was applied in BM 17 (BM 17, schedule, p.70; map p.54), we conclude is an unnamed minor level. We would not usually burden the WMS Newsletter with minor corrections of identification of this nature - indeed, there are a number of re-interpretations of this sort that will be published in due course as part of the survey and extension to the 1981 monograph on Cwmystwyth. (See Newsletter No.47, Item 16 for further information). However, this particular re-identification is of some importance for it was suggested in BM17 that Blue Level was possibly synonymous with William Waller's 'Silver Hill' working of 1704-1708 (BM 17, p.11). If correct this would be one of the very few locations at which easy access is possible into what might be one of Waller's levels. The level comprises a 220m long crosscut with, at its inner end, 19m of south east-trending drift with a minor stope, which is about 90m below the Bronze Age opencast.

In 1708 Waller reported his Silver Hill working to be 189 fathoms (346m) long. His possible exaggeration of distances driven makes it problematic to compare measurements and it must additionally be recognised that the names he employs might refer to a group of levels in aggregate. Blue Level is more regular and is far more commodious than the Nantrefach Level, the only level at Cwmystwyth categorically ascribable to Waller. This suggests the explanations that either Blue Level, although originally driven by Waller, may have been subsequently stripped, or that it entirely post-dates his period of activity at the mine. I tend towards the latter interpretation, which would suggest that Waller was responsible for a number of other shorter levels in this section of the mine and that he was quoting their aggregate length in his figure of 189 fathoms. On grounds of passage cross section and layout, I would not ascribe much of the accessible workings on the Pengeulan Lodes to Waller. This leads to the suspicion that his 'Silver Hill' workings largely or entirely comprised the currently inaccessible Pengeulan Adit crosscut and the drivages off it on the Pengeulan South Underlier Lode - if indeed 'Silver Hill' equates with the Pengeulan section of the mine. It is to be deeply regretted that the dig to reopen the Pengeulan Adit was abandoned after twenty feet of tunnelling, for access into this adit might have done much to resolve this extent and location of William Waller's work.

Robert Protheroe Jones

44. Esgair Llee – The story continues to unfold....(Ref. Item 43, last N/L)

Simon's underground notes on Esgair Llee are most interesting, and have given me a good deal to think about.

When I wrote my original article on Esgair Llee I knew that Barker's engine-shaft became the engine shaft of the Esgair Llee Silver-Lead Mng. Co. (1870-73) and their successors Great West Van. I also knew that it was 108 fms. east (or rather E.N.E.) of Eliza's Shaft, and that it would have been worked by the water-wheels shown on the plan in David Bick's book. I also assumed that the shaft came to surface (not unreasonable), although the ore and waste rock had been drawn out through an adit. I therefore equated it with the shaft still to be seen on top of the bank within the loop of the A44.

Simon Hughes has now drawn our attention to an underground engine-shaft that he saw in the floor of an old adit in 1973. This shaft is about the same distance from Eliza's, and could also have been worked by the above-mentioned wheels. This information, together with other matter since sent to me direct by Simon, induces me to agree with him that this underground shaft is, almost certainly, Barker's engine-shaft.

As to the Old Engine Shaft (of Esgair Llee), east of the upper reach of the Afon Castell, when it was decided in 1851 to deepen this shaft, then just over 6 fms. below adit, the agent said (April 26, M.J. p. 221) 'In consequence of the engine-shaft from surface, which is about 9 fms., being only a small tribute working, it would be most proper... to cut down the shaft as soon as possible...', and this work was done between then and June. The site of this shaft, in my opinion, can be clearly made out on the slope about 50 feet vertically above the deep adit, though it's only represented now by a hollow in the waste heap.

With regard to the intersection of the (Old) Esgair Llee workings with the Castell lode, a most interesting point, referred to by Dr. O.T. Jones. As I mentioned in my original article, the deep adit on the Caunter Lode reached what they then believed, I should think correctly, to be the Castell (or Bwlch Gwyn, as they called it) lode in January 1853. This must be 200 fms. into the mountain, but I have been unable to work out an accurate distance. Unfortunately they did little development on it, the few reports described it as running 6° north of east, underlying south at 2 ft. in a fm., principally slate, quartz, and mundic, with a little lead', and at least 5 ft. wide.

The great storm that Simon refers to occurred on August 25th, 1850, the Esgair Llee agent reporting: 'On Sunday morning we were visited with a most terrific flood, such as was scarcely before remembered; it rained incessantly for 24 hours, carrying away fields of wheat and barley into the sea at Aberystwyth, and... I regret to inform you it has done us much damage by washing away the north wall of the slime pits and the western wall of the dressing floors, and, as near as we can judge, 4 or 5 tons of ore.'

I used Esgair Lle(e) as the title because, in view of the variations in the spelling of Welsh words that have occurred in the past, it seems to me to be good practice to adopt the form most commonly used of a mine when it was at work. 'Llee' was the usual spelling in the 19th century.

George W. Hall

‘Tailings’

WMS E-mail Discussion Group – This has been set up for the exclusive use of WMS members, mainly for the communication of WMS matters outside of the Newsletter – you’ll hear it first there ! Details of how to sign-up can be found on the WMS website :

<http://www.welshmines.org>

Acknowledgements - Many thanks to all those who have provided me with contributions and feedback for the newsletter. Note that all items are credited to the contributor, unless submitted by your editor.

All contributions welcome - see note (below) about format. Absolutely ‘any’ field reports/ notes, or news item from the local paper, T.V., radio or ‘heard down the pub’ are sought. Without these the Newsletter would cease to exist, so please don’t stop sending them in !

Mike Munro & BronwenDog 🐾

Welsh Mines Society Membership

Annual membership of the **WMS** has reverted back to £4 per year or (to ease administration) £8 for 2 years.

The paid up date of your subscription is shown on your address label - on the envelope you’ve just thrown in the bin !! If you are “paid up to DEC 2003” or earlier, then the date will **be highlighted in red** indicating your subs are now due, and your Treasurer, David Roe (address on front page), would be most grateful if you could pay promptly.

If any of your membership details change between payment of subs, you can use the ‘on-line’ form on the WMS web pages to automatically send any changes direct to David Roe.

Copydate for the next Newsletter, **15th March 2004**, publication due April-ish ! (Please be prompt – the sooner I get the material, the sooner I can ‘go to press’ !) Articles, preferably typewritten, and ideally in electronic form, (MS Word 97 or Plain Text format) should be sent (on a 3.5” disk) to Mike Munro, (address on front page) or by E-mail to **editor@welshmines.org**

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