

# NEWSLETTER

## NUMBER 65

## Summer 2014

### Iontaobhas Oidhreacht Mianadóireachta na hÉireann

#### DIARY DATES 2014

- |            |   |
|------------|---|
| Jul 12-13  | <b>Field Trip to the Connaught Coalfield</b><br>See inside for further information.   |
| Jul 25-27  | NAMHO Conference, 'Mining Technology: technical innovation in the extractive industries', Bangor, Gwynedd, North Wales. For details see: <a href="http://www.namho.org/news.php#26">http://www.namho.org/news.php#26</a>  |
| Jul 25-27  | Ancient Mining Landscapes: Research and Cultural Enhancement in Western Europe, International Symposium, Boticas, Portugal. <a href="http://www.pmaeo2014boticas.com/">http://www.pmaeo2014boticas.com/</a>   |
| Aug 16-23  | Walk from A to B. Fourth annual community challenge, a 140 mile walk across the south of Ireland, from Allihies in West Cork to Bunmahon in County Waterford. See Heritage Week: <a href="http://www.heritageweek.ie/">http://www.heritageweek.ie/</a>  |
| Aug 24     | Heritage Walk including a talk by Eamonn Monaghan at Drumkeelan Stone Mines. Meet at 15.00 pm at the Green Pump, Mountcharles, Co. Donegal. See Heritage Week: <a href="http://www.heritageweek.ie/">http://www.heritageweek.ie/</a>  |
| Aug 25     | Mining Heritage Walk, Glendasan, led by Sharron Schwartz in conjunction with Roundwood Historical Society and the Wicklow Uplands Council. Meet at the Hero Car Park. 19:30 pm to 21:30 pm. See Heritage Week: <a href="http://www.heritageweek.ie/">http://www.heritageweek.ie/</a>                  |
| Aug 31     | Avoca Mines Guided Walk led by Nick Coy. Meet at the White Bridge, Avoca. 15:00 pm to 17:00 pm. See Heritage Week: <a href="http://www.heritageweek.ie/">http://www.heritageweek.ie/</a>  |
| Aug 31     | Open Day at the Allihies Copper Mining Museum. Free entry 10:30 am to 17:00 pm. See Heritage Week: <a href="http://www.heritageweek.ie/">http://www.heritageweek.ie/</a>  |
| Sept 5-8   | <b>MHTI Overseas Field Trip to the Banská Štiavnica World Heritage Site in Slovakia.</b> Due to overseas work commitments, the organisers have had to postpone this field trip. Our apologies to all those who expressed an interest.   |
| Sept 6     | <b>Field trip to Ballyknockan granite quarries, Co. Wicklow, plus EGM. Meeting point and time to be advised.</b>  |
| Sept 5-11  | Association for Industrial Archaeology Annual Conference, Chester. Includes visits to Alderley Edge Mines, Minera Lead Mine, Poynton Coal Mining Landscape and Cheshire Salt Landscape. <a href="http://www.industrial-archaeology.org/aconf.htm">http://www.industrial-archaeology.org/aconf.htm</a> |
| Sept 25-28 | International Conference on Geological & Mining Heritage, Spain. <a href="http://www.sedpgym.es/">http://www.sedpgym.es/</a>  |
| Nov 8      | <b>Members' Medley in the afternoon, followed by Dinner. Details to follow.</b>   |

Check with organisers of meetings before making any travel bookings in case of change of dates or arrangements. MHTI lists events in good faith but is not responsible for errors or changes made. For MHTI field trips please register your interest, without commitment, so the organiser can keep you informed

Check out our website:

[www.mhti.com](http://www.mhti.com)



Like us on Facebook!

[www.facebook.com/pages/Mining-Heritage-Trust-of-Ireland](http://www.facebook.com/pages/Mining-Heritage-Trust-of-Ireland)

## MHTI MEMBERS' BUSINESS

### Chairman's Report for 2013

2013 was a year of change for your Directors. At the AGM in May, Nick Coy retired and we welcomed John Gibbons and Sharron Schwartz to your Board. In August John Morris and Des Cowman resigned, and in October Ewan Duffy rejoined the Board. We are very grateful to John and Des for their hard work on behalf of MHTI and its predecessors since 1995. During the year we held four board meetings, with an average attendance of five people.

In an internal change, Matthew Parkes stood down as Editor, and Sharron has kindly taken on the job. We are very grateful to Matthew for his work on the Journal and Newsletter, formally since 2007 and 2009, respectively. In 2013 we issued four Newsletters, a total of 58 pages, and an excellent Journal of 96 pages. Our website is in the process of being revamped and will be replaced in the near future. By the time of the AGM (25/04/2014) our Facebook page had 298 "Likes".

We had nine days of events spread over five weekends. Attendance varied from two people on a fieldtrip, up to the 32 people who attended our Post-AGM Conference at Nenagh, Co. Tipperary.

In March 2013 Phelim Lally organised a highly successful visit to the Slieveardagh Coalfield, Co. Tipperary. The event was well supported by local people, and we were treated to refreshments, meals and a film show at the Old School Community Centre, in Commons village. The weather during the fieldtrip was wintry at times, so MHTI members were extremely grateful to the community for their hospitality.

Seventeen people attended our AGM in Nenagh, with an additional 15 people attending the fascinating Conference afterwards, organised by Martin Critchley, which was held in conjunction with the Silvermines Historical Society. The following day John Morris led an excellent tour of the Silvermines area, focussing on the conservation work to the nineteenth century mine buildings at Ballygown, Knockanroe and Shallee Mines, with a break for lunch at Hickeys Bar, organised by the Silvermines Historical Society.

A fortnight later Nick Coy led a most productive field trip to the Avoca area, Co. Wicklow, visiting Ballymoneen, Cronebane and Shroughmore. The aim was to complete our heritage assessment which we had started in March 2012 (See Newsletter 55, April 2012). There is still a significant amount of work required to complete our assessment.

In August Des Cowman led a very interesting field trip around Co. Wexford, visiting Caime and Barrystown Mines and Bannow Bay.

Continuing our Bronze-Age theme, in September Martin Critchley organised an excellent visit to Parys Mountain Mine on the Isle of Anglesey, and to the Great Orme, on the North Wales coast. Ten members took part in this most interesting and enjoyable weekend and we are grateful to the Parys Underground Group and to Edrick Roberts of the Great Orme Mines for their assistance with the underground visits.

During the year we responded to various queries and consultations:

- General query about mines near Kenmare, Co. Kerry;
- Query about Hollyford Mines, Co. Tipperary;
- Request to borrow a mine cart /tub for a theatre;
- Request for information about potential employment in the Irish mining industry;
- Query about employment of former miners from Co. Cork;
- Query about Carrigacrum Quarry, Co. Cork;
- Request for information on potential sources of rail track and rolling stock;
- Consultation on revisions to the County Donegal Heritage Plan, and
- We wrote to Fergus O'Dowd, Minister of State at the Department of Communications Energy and Natural Resources (DCENR) regarding proposed remediation works at the Avoca Mines.

Looking to the immediate future, we have a good programme of events ahead of us, and plenty of ideas for future activities. Further away, in the summer of 2016 we are hosting the (UK) National Association of Mining History Organisations Conference, and we would welcome help from members who are willing to assist with organising this prestigious event, which is being held in the MHTI's 20th year. You do not need to be a director to get involved.

Our Directors, contributors to the Conference, Newsletters and Journal, landowners, the DCENR, the Silvermines Historical Society and Old School Community Group, members and attendees at our events have made 2013 a successful year for us. Thank you all.

*Alastair Lings*

### Extraordinary General Meeting

Notice is hereby given that an extraordinary general meeting of the Mining Heritage Trust of Ireland Ltd will be held on Saturday 6 September during the field trip to Ballyknockan, Co. Wicklow. Agenda: Presentation of accounts for 2013.

Signed: Nigel Monaghan, Company Secretary, 24th June 2014.

## EVENTS AND NOTICES

### Connaught Coalfield Visit Saturday 12 - Sunday 13 July 2014

#### **Brief History**

This field trip will examine iron and coal mining and related sites around Lough Allen. In the 15th century iron was produced in Drumshanbo, using charcoal to smelt the ore. By 1621 Sir Charles Coote employed 3000 workers at his smelting works at Arigna, Ballinamore, Creevelea and Garrison. Gradually the supply of timber for charcoal production was exhausted and the last charcoal fired ironworks closed in 1765 at Drumshanbo.

Then in 1788, the pioneering O'Reilly Brothers used local coal to smelt iron. Their works at Arigna eventually shut in 1838, and the last attempt to produce iron was at Creevelea in 1898. Coal mining continued to supply domestic, municipal and industrial requirements. In 1920 the 4 mile Arigna Extension Railway was completed, linking the mines to the Cavan & Leitrim Railway. Coal was supplied to cement factories at Limerick and Drogheda.

In 1958 the Electricity Supply Board opened the Arigna Power Station, which used up to 55000 tons of coal annually, 65-85 per cent of local production. This strong local demand for coal reduced the need for the railway, which closed in 1959.

When the power station stopped work in 1990, the coal mines shut. It is estimated that 29 million tonnes of coal remain unmined.

In 2003 a show mine and purpose-built visitor centre was opened: the Arigna Mining Experience. See: [www.arignaminingexperience.ie](http://www.arignaminingexperience.ie)

#### **Coordinator**

Alastair Lings

e-mail: [alastairlings@yahoo.co.uk](mailto:alastairlings@yahoo.co.uk)

Home: (Scotland +44) 01896 757861

Mobile +44 77 63 85 00 87

Mobile during the weekend: +353 862 505 026

#### **Provisional Programme**

##### **Saturday**

Meet at 10:00 for coffee at the Arigna Mining Experience (G 921 142), Discovery sheet 26. Optional tour of the show mine (at your own expense) then we visit iron mines by the Arigna River (911 165) and at Tullynamoyle (907 305), the brickworks chimney at Spencer Harbour (936 215), and the Creevelea Furnace (909 293). If time permits we may visit the incline at Monesk Mine (H 005 333).

##### **Sunday**

Same meeting time and place. We will visit the mines on Slieve Anierin, Bealbeg and Bencroy, east of Loch Allen.

*All visits are subject to receiving the consent of landowners.*

#### **Equipment**

Members are requested to bring warm clothing, waterproofs and hill walking boots or wellies. If going underground, helmets, electric lamps, crawling (knee) pads, oversuit, and a change of clothes are recommended. Please bring a packed-lunch with you.



*Culls Adit at Bencroy Mine (Gubnaveagh)*



*Hopper at Bencroy Mine*

#### **Accommodation in Drumshanbo**

c/o Nessa Campbell, Berry's B&B, High Street. Nine rooms. 071 964 1070, mobile: 087 742 5907. magscamp@hotmail.com . Special rate for MHTI members 35 euro/single occupancy/night.

c/o Bernadette McKeon, Forest View, Carrick Road. 071 964 1106. 45 euro/single/night.

c/o Betty McManus, Paddy Mac's, High Street. 071 964 1128, mobile 086 389 8133. paddy.macs@hotmail.com . 30 euro/single/night.

c/o Mairin Heron, Fraoch Ban, Corlough, (1 mile north of Drumshanbo). 071 964 1260, mobile 087 636 0446. mh@fraochban.com . (40 euro/single/night).

c/o Gian Castello, The Yellow Ducati B&B, Carraig-namBreac. 087 777 4857. taradeire@libero.it . 35 euro/single/night.

More accommodation is listed here: <http://www.joemooneysummerschool.com/where-to-stay.html>

#### **Bibliography**

Cole, G.A.J., 1922. *Memoir and map of localities of minerals of economic importance and metalliferous mines in Ireland*. (Reprinted by the Mining Heritage Society of Ireland in 1998) (Iron: p.77-78; Creevelea



*Adit at Aughacashel Mine (Mullaghgarve)*

- Furnace: p.xviii and xxviii in the MHSI reprint)  
Flanagan, P.J., 1972. 'Some notes on Leitrim industry'. *Breifne*, Vol.4 (No.15), pp. 406-425.  
Griffith, R.J. 1818. 'Geological and mining survey of the Connaught coal district in Ireland'. *The Dublin Society*, Dublin. \*  
Kane, R. 1845. *The industrial resources of Ireland* (2nd edn, 1971) Dublin. (Coal: pp. 16-25. Iron: pp. 122-124, pp. 133-136, pp. 144-148 and pp. 157-158) \*  
Layden, D., 2008. *A life's catch*. Dublin. (The Arigna industrial revolution from 1600s to the present: pp. 113-154).  
McArdle, P. 1992. 'Irish coalfields - technical developments in the 1980s'. pp. 341-358 in Bowden, A.A., Earls, G., O'Connor, P.G. & Pyne, J. (eds.), 1992. *The Irish minerals industry 1980-1990*. Irish Association for Economic Geology. (Connaught Coalfield: pp. 351-355).  
McParlan, J. 1802. 'Statistical survey of the county of Leitrim'. *The Dublin Society*, Dublin. (Minerals: pp. 11-17) \*  
Rigney, P. 2002. 'Report on the Arigna coalmines 1942'. *Breifne* Vol 9 (No. 38), pp. 509-516.  
Weld, I. 1832. 'Statistical survey of the county of Roscommon'. *Royal Dublin Society*, Dublin. (Collieries and ironworks: pp. 33-77. Arigna Coal & Iron Company: appendix pp.i-xxvii) \*

\*Available on <http://books.google.com/>

#### **Useful Websites**

EPA Envision Mines report on Connacht Coalfield: [http://gis.epa.ie/ENVisionMines/reports/MinesPg1\\_app5Index.htm](http://gis.epa.ie/ENVisionMines/reports/MinesPg1_app5Index.htm)

Irish Historic Geological Maps: <http://geologicalmaps.net/IrishHistMaps/index.cfm>

(1" sheets 55, 56, 66, & 67; and 6" Roscommon sheets 1 & 2. Memoirs for sheet 55 & 56, also Cole Memoir-see above)

Mining Heritage Trust of Ireland:

[http://www.mhti.com/mines\\_in\\_ireland\\_files/creevelea.htm](http://www.mhti.com/mines_in_ireland_files/creevelea.htm)

## REPORT ON THE AGM, FIELD TRIPS and SEMINAR: *The Bronze Age Revisited* 26-27 April 2014, Killarney, County Kerry

A fascinating itinerary was put together by Martin Critchley for this year's AGM held at Killarney, County Kerry. The weekend's activities kicked off with a guided tour of the prehistoric Ross Island mine led by Professor William O'Brien of University College Cork, an authority on the Bronze Age in Ireland, who first excavated the site back in the early 1990s.

Minerals have been exploited in the Killarney area in at least four known locations since antiquity, for the limestone of the lower Carboniferous contains metallic deposits of copper, lead, zinc, silver and cobalt and is particularly well-exposed along the shores of Muckcross Lake and Lough Leane. The tell-tale blue and green signs of secondary copper mineralisation led to the discovery of the Ross Island Mine, and those at Muckcross, Crow Island and Cahirmane. At Ross Island, the mineralisation extends to a maximum depth of 13-16 metres along the lake shore and could therefore be mined with relative ease, providing the water levels of the lake did not inundate the workings. For this reason, Ross Island has witnessed the mining of copper and other metals at various points in time over the past 4,000 years. Copper mining commenced here at the dawn of the Bronze Age (c.2,400-1,800 BC) when metal was first used in Ireland; the discovery of Beaker pottery during site excavations links the mine at Ross Island to the very beginnings of Irish metallurgy at the end of the Neolithic period.

Later episodes of mining occurred in the medieval period, and more recently, during the eighteenth and nineteenth centuries. It was this activity which first drew attention to the presence of ancient mining artefacts and primitive workings attributed to 'The Danes'. In the early nineteenth century, steam technology was introduced to address the issues of flooding and two engines were erected. The first, a 33-inch cylinder Boulton and Watt engine was installed in 1807 and a 36-inch cylinder in 1826. Unfortunately, very little remains of the eighteenth and nineteenth phases of mining at Ross Island, due to the fact that the estate owners deliberately landscaped the site, filling in shafts, levelling buildings and planting trees, after the cessation of mining in 1829. Lost in this reclamation of the industrial landscape were numerous mine buildings including the Count House, smith's forges, pitman's shed, assay office, bucking house, a barracks (housing mineworkers from Wicklow, Wales and Cornwall) and most sadly of all, the new engine house that once graced the shoreline of the lake.

The mines are located within the Killarney National Park and a signed mining trail conducts visitors around the site. It would greatly enhance today's landscape had some of the historic mining buildings survived. But, as Professor O'Brien explained, the emphasis is very much on the conservation and preservation of the natural environment in our National Parks, rather than archaeology. It seems perverse that the national and international significance of Ross Island, the earliest location of copper mining and metal production in Western Europe, is not being actively promoted at Killarney National Park.

*Mining in recent centuries uncovered older primitive workings which were called 'Danes Mines'. Visitor accounts recall 'chambers of rudely vaulted form', worked by '... kindling large fires on the limestone...'*

The day seems to hold little promise, blustery with rain in the air, as a large group of MHTI members and some visitors assemble at the head of the trail close to the restored Ross Castle, where Professor O'Brien greatly impresses us with a detailed sketch of the history of the site. Close to the head of the trail is a four wheeled cast iron artefact which has been mounted on to a plinth, and assumed to be associated with the mines. It was manufactured by Denning and Co. Ltd., Chard, an agricultural engineering company based in Somerset that was operational between 1828-1965. However, we conclude that the artefact is possibly connected to a sawmill.

The trail leads along part of an old mine road through mature woodland resplendent with fresh spring foliage, towards the lake shore. Here we pause to admire the views of mist boiling round the summit of Shehy Mountain across the lake and Crow Island glowering above the grey surface of the water. We descend to the lake shore where the characteristic turquoise staining on fragments of limestone betray the presence of copper. Listening to Professor O'Brien is to be transported back in time. Behind us is the Blue Hole, a partially flooded opencast, worked in the nineteenth century, but bearing the evidence of primitive mining, and at our feet he points out the truncated wooden posts of a crude coffer dam constructed in the eighteenth century to hold back the water. This was later superseded by a masonry embankment constructed of local limestone, parts of which may still be seen.



*Professor O'Brien pointing out the line of exposed wooden posts that formed part of the eighteenth century coffer dam on the shoreline of the lake*

The ancient lake shore, which undoubtedly contained significant archaeological evidence of Bronze Age mining, has unfortunately been lost due to the construction of the dam. But, as Professor O'Brien evocatively describes the terrain and conditions facing those early miners, we could almost see them appear through the mist in their boats, cattle swimming alongside, to land on the ancient shore in preparedness for another season of mining.

We proceed towards the Western Mine site, pausing briefly below a limestone escarpment to inspect the former site of the new engine house, betrayed only by a fragment of brick walling, and past numerous small flooded pits, each marking the site of a nineteenth century shaft. Looking at the excellent guidebook written by Professor O'Brien (*Ross Island and the Mining Heritage of Killarney*, 2000), many of the shafts had Cornish names: Cock's, Moyle's Dyer's, Martin's and Williams', to name a few. The modern period of mining was heralded by the arrival of Colonel Robert Hall in the early 1800s. He had been in command of a regiment of soldiers that included many Cornish miners, and, garrisoned at Ross Island, they had obviously spotted the tell tale signs of copper mineralisation. Hall initiated mining at Ross Island in 1804 and went on to develop other copper mines in the South West of Ireland. The Cornish connection with Ross Island was thus established early on and the Hibernian Mining Company, set up during the mining boom of 1824-5, continued to utilise Cornish labour and technology until the mines closed in 1829. Today, it is hard to imagine this place as a hive of industrial activity, employing around 500 people during its zenith.

We now approach the Western Mine area, and immediately spot the scalloped patterning on the limestone rocks caused by fire setting. Professor O'Brien explains how wood was piled up against the rock face as part of a daily work cycle. The heat generated by the fire fractured the limestone which could then be pounded using stone hammers and the copper bearing rock prised out using bone and wooden tools. The stone hammers, many thousands of which have been discovered at Ross Island, were carefully selected cobbles found in river beds. These were then grooved to secure rope or wooden handles and used for excavating the ore as well as crushing it to prepare it for



*Professor O'Brien pointing out the typical scalloped pattern of a limestone outcrop worked for copper using fire setting*



*Artist's impression of Bronze Age mining at Ross Island*

smelting. The area we inspect is subject to inundation by the lake, giving a hint of the conditions facing the early miners. Close by is a large cave-like void, now fenced off for health and safety reasons, one of the Bronze Age workings excavated by Professor O'Brien in the early 1990s. It was a pity to see how overgrown the site was becoming, the vegetation spoiling the visual integrity of the area and obscuring the archaeology.

We now proceed to an area atop a limestone escarpment that has been partially destroyed by later quarrying activity. This was a Bronze Age work camp where the ore was processed and then smelted. Professor O'Brien excavated a number of charcoal-fired pit furnaces here, which were used to obtain droplets of copper metal. These droplets were then re-melted to form small ingots. The metal, which contained arsenic, was particularly sought after for making high status axeheads and blades and was traded widely in Ireland and beyond. We are alerted to the remains of several bucking stones used to bruise the copper ore fragments prior to smelting. These are comprised of old Devonian sandstone and although the largest are in situ glacial erratics, some of the smaller examples might well have been deliberately selected and transported to the work camp.

Excavations here revealed the circular and sub-rectangular settings of stake holes for the huts used by the miners, and quantities of animal bone (cattle, pig and sheep), throw light on the diet of these workers who appear to have been provisioned by larger external settlements. It is not certain whether the mining and smelting operations here were organised purely on a seasonal basis, or if they involved the permanent or semi-permanent presence of full-time miners. Several artefacts of flint and worked bone were found, and most importantly, potsherds decorated with the cord and comb impressions characteristic of the Beaker peoples.

***The introduction of metallurgy to Ireland and Britain is usually linked to the appearance of Beaker pottery***



*Typical Beaker pottery*

The introduction of metallurgy to Ireland and Britain is usually linked to the appearance of this pottery. While some believe this occurred as a result of the arrival of immigrants from Continental Europe who brought with them new technologies that characterise the beginning of the Bronze Age, others claim that the rise of mining and metallurgy came about due to the initiatives of native Neolithic communities who established new trade routes and links with more advanced societies in mainland Europe. We were sure to hear more about this at the lectures being given by Dr Simon Timberlake and Alan Williams later that day.

After being regaled with the fable of Lén the Smith, whom local folklore records had a forge on the lake shore, which Professor O'Brien argues records the importance of Killarney as an area of metalworking in the Early Medieval period, we return via the mine road to the start of the trail head. En route we pass several other narrow voids and openings, of indeterminate date, and peer down into the northern most part of the Blue Hole workings. Very little of the Ross Island site has actually been excavated and it is intriguing to speculate what may lie hidden under the leaf litter and soil.

After assembling in front of Ross Castle for the obligatory group photo, Martin Critchley thanked Professor O'Brien for an intriguing and most engaging guided tour of this hugely significant site and complimented him on his encyclopaedic knowledge of the metalliferous mining history of the area.

To see more of the field trip photographs, please visit the MHTI Facebook page.



*MHTI members pose for the camera at Ross Castle after a very memorable field trip of the Ross Island Mine site with Professor O'Brien*

## AGM Lecture Session at the Killarney National Park Education Centre

The Ross Island field trip was followed by a lecture programme at the Killarney National Park Education Centre featuring presentations by Dr Simon Timberlake, of the University of Cambridge, and Alan Williams, of the University of Liverpool.

Timberlake, of the Early Mines Research Group (EMRG), has undertaken extensive excavation, field survey and geo-archaeological research at many sites of early mining in Britain, principally at Cwmystwyth (1986-2003) but also Parys Mountain, Anglesey (1988), Alderley Edge, Cheshire (1997-1999), and Ecton, Staffordshire (2008-2009). His presentation, entitled 'A new light on the dating and exploitation of metal ores in the British Isles - the Bronze Age copper rush?', introduced 12 Bronze Age metal mines/prospection sites verified over the last 20 years and at least 8 others that have been identified within England and Wales. Current interpretations of the chronology of Bronze Age copper mining and metal production note the presence of Beaker pottery at Ross Island, exploited at the dawn of the Bronze Age (c.2,400-1,800 BC) when metal was first used in Ireland, as being highly indicative of immigrant metalworkers from Continental Europe who brought this knowledge to the shores of Ireland. After the decline of the Ross Island workings mining spread to the poorer grade copper deposits within the Old Red Sandstone and other coastal outcrops of County Cork. A number of these primitive fire-set mines were worked over a period of several hundred years including Mount Gabriel.

A widespread phase of early prospection, most of which took place between 2000 and 1650 BC, was followed by production at a very limited number of sites (such as the Great Orme in North Wales) which continued right up until the Late Bronze Age. The sites are located along the western seaboard of Britain with a concentration in North and mid-Wales, but particularly in mid-Wales. Given that mining in south-west Ireland began around 2400 BC it is argued that this represents an eastward migration of copper prospecting following the decline of production at Ross Island, Co. Kerry, in Ireland. However, Timberlake cautioned that this pattern is far from simple, although we do see evidence of copper prospection at Bradda Head on the Isle of Man, close to one of the shortest sea crossings between Ireland and Britain.

Using Bayesian modelling developed by English Heritage, Timberlake has offered compelling evidence for a rethink of the current chronology of Bronze Age mining in Britain and Ireland. He argues that prospecting for new copper sources in Britain begins before the decline of Ross Island with Central Wales being one of the earliest areas of interest. Prospectors, or perhaps just the ideas, then spread rapidly east into Central-NW England. Moreover, there were possibly two phases: Central Wales to North Wales then to NW England; or, perhaps separately, North Wales to NW England. The Great Orme deposit had probably been discovered, but was not worked as a mine until later.

The earliest mines were small-to-medium sized ones, such as Copa Hill, Wales, located within upland areas working near

-surface copper ores within the oxidised zone of sulphide deposits. It seems that there may have been a Beaker 'association' with the initiation of mining; before that there is evidence of Neolithic-Mesolithic interest - possibly for pigments. These Bronze Age miners were perhaps pastoralists who undertook transhumance, working here in the summer-autumn months, bringing animals and fresh stone tools from the coast. Wood for fuel came from the clearance of new pastures. Ore concentrate may have been traded for metal as a means to enter the exchange economy. There is no evidence at all of smelting at the mines. By 1600-1500 BC, these mines (including Parys Mountain), were flooded and abandoned.

In the Early-Middle Bronze Age, the Great Orme was the main source of British copper (from 1600-1400 BC). Here miners may have lived in, or very close to the mine. They were supplied with meat and tool material and working may have been continuous. The deepest workings suggest some mining in the Late Bronze Age. Metal was now coming from other sources and the smelting site at Pen Trwyn was probably early and not at all representative of main production. In terms of metal production, from 2300 to 1800 BC the signature of Ross I - sourced metal in British copper - bronze artefacts becomes weaker as metal is re-cycled and local metal is added. Smelting now takes place away from mines. Lead isotope analysis is problematic as regards the provenance of ore/metal for the British Bronze Age, as there is an overlap of lead isotope signatures between different ore fields; consideration must be given to the 'pooling of metal' from a number of mined sources. Timberlake highlighted the need for an understanding of metalworking processes and also original compositions through experiment, the type of research being pursued by Alan Williams.

In his paper, entitled 'Linking Bronze Age Mines to Metalwork: New research on the Great Orme Mine', Williams explained that although this is the largest extant Bronze Age copper mine in Europe, where all the copper went has been a long running mystery. Using the latest scientific techniques and applying specialist expertise in ore mineralogy, geochemistry, lead isotopes and pyrotechnology, he has sampled a wide range of ores. An analytical programme is in progress to characterise the ores and establish a mine-based metal group. This will allow the ores to be linked to the database of British Bronze Age metalwork analyses. In addition, research on the nearby Bronze Age smelting site at Pen Trwyn and on the bronze particles found in the mine, is providing additional independent evidence. Williams' research work is ongoing and is complicated by many factors, but the initial set of results is starting to provide a fascinating insight as to where the copper probably went and suggests exchange networks. In particular, evidence is growing that the Great Orme was the source of metal for the Middle Bronze Age Acton Park metal assemblage.

*MHTI extends warm thanks to both speakers for their excellent presentations and to Killarney National Park for the use of the lecture room and for organising refreshments.*



## On the Trail of Bronze Age Workings in the Iveragh Peninsula *A Field Trip led by Alastair Lings*

The following day, 13 members met at The Church of the Most Precious Blood, Castlecove, between Sneem and Waterville. The object of the day was to examine primitive, possibly prehistoric copper mines, in the area east of Waterville. The most useful published source of information on the mines is O'Sullivan and Sheehan (1996), who include drawings showing St Crohane's Hermitage and Coad Mines, derived from O'Brien (1987). Much of their information is available in Portable Document Format from the Archaeological Survey Database on the National Monuments Service website <http://webgis.archaeology.ie/NationalMonuments/FlexViewer/>.

Our first stop was Staigue Fort, an impressive circular stone fort probably built in the late Iron Age (0-400 CE). After a group photograph we headed up the hill to our first primitive mine of the day: Staigue Mine (OSI Mapviewer: 461185 562982). This working was almost certainly the one referred to by Bland (1825, 27) as being 'within four hundred yards... an indentation made into a hard siliceous rock. This seems to have been deserted in consequence of the indication of ore having diminished to a mere thread, not six inches long'. The working is attractive in cross-section, almost like a wave about to break. The very modest mineralisation mentioned by Bland is still visible. Nearby are patches of spoil with the occasional piece of broken stone maul. Simon Timberlake pointed out



*The field trip leader stands beside the Staigue Mine working, which looks curiously like a wave about to break*



*MHTI members at Staigue Fort*



***Secondary copper materialisation can be clearly seen at the St Crohane's Hermitage Mine***

two fractured areas of bedrock, between the mine and the spoil, which had probably been used to crush the ore on. As we returned to our vehicles we were treated to fine views of Staigue Fort. On our way to the next scheduled visit, we took a brief stop to inspect some impressive cup and ring rock art.

St Crohane's Hermitage Mine is marked on the Ordnance Survey Discovery map as a 'Holy Well' on Coad Mountain (OSI Mapviewer: 457323 561605). It is a primitive working on a quartz vein with copper sulphides, and the carbonates malachite and azurite. Nearby are the remains of more recent copper mines, which were probably those 'opened since the commencement of 1837' (Rawson, 268). Jukes *et al* (1861, 34) record that the mines 'were examined by Mr. O'Kelly' and contained 'spots of yellow and gray copper' (chalcopyrite and tetrahedrite). The vein was mapped by John Calvert in May 1858, who recorded 'purple copper' (bornite).

In 1907 the Carrigrohane or Coad Mines produced one ton of ore containing 13 per cent copper, which may have been a trial sample (Cole). Duffy (1932, 11) states that 'in 1908 the old shafts to the east of St Crohane's Hermitage were cleared out by Mr. Eade who also had several other shallow openings made on the lode at intervals along its course'. In 1908 the Kerry Mines Syndicate Ltd of Liss Cottage, Waterville, were recorded as working Coad Mine at Behaghane (townland) for copper and lead ore, with four employees working above ground. Towards the bottom of the western wall of the Hermitage are the remains of a shot hole. B.B.G. (1915, 120) notes that 'the walls of the cell were somewhat injured when quartz rock was broken away by miners in order to extract the copper ore which it contained'.

It was intended to visit Coad Mine which lies south-south-west of the Hermitage. However, the field trip organiser had been unable to find the mine beforehand. The mine has been found, and the correct location is at OSI Mapviewer: 456708 560606. It is described by Jackson (1980, 21) as 'a shallow driving on greenish grey sandstones occurs on Coad Mountain. Its

general appearance coupled with the lithology of the beds are reminiscent of the Mount Gabriel drivings'.

The next stop was at the mine in Rath townland, immediately behind the house nearest to the pier on Lamb's Head (OSI Mapviewer: 452759 556922). O'Brien (1987) describes the mine:

*'This working is of interest for its comparative value with the Mt. Gabriel type primitive mines. Even though there are no obvious metal tool marks, the broken fracture patterns of the hanging wall show that this working was driven using metal picks and wedges. There is no evidence of blasting at this rock face nor are the smooth, concave surfaces typical of fire-setting present... It seems likely that this is a post-medieval surface trial for copper, using relatively 'primitive' hand extraction'.*

Simon Timberlake identified smooth curved areas where there may have been fire-setting prior to the use of picks and wedges. These areas were in the smaller northern working, and above the entrance to the larger southern working.

Further south towards Lamb's Head there is a square-cut stone-filled shaft which was probably one of the trials made by 'Mr. Ede about the year 1908' (Duffy, 49). Crane (1907, 127) may be referring to this site when he states 'recently a good many specimens of copper ore have been found on this peninsula'. The shaft was not visited by the group.

After appreciating the hazy views towards the Skellig Rocks we returned to Castlecove, where we were regaled with various drinks, excellent sandwiches and complimentary cakes at The Black Shop (An Siopa Dubh). Once we had restored our energy levels, an enthusiast suggested that we visit another primitive mine, to the north of Glengarriff, about 60 kilometres away. After more group photos outside The Black Shop we headed there along the scenic Kenmare Pass through a series of tunnels hewn by Allihies miners in the nineteenth century.

Tooreen Mine was discovered by Con Murphy and a



***Members at the entrance to the Rath Mine enjoying the uncharacteristically fine weather***



*The impressive scalloped shaped interior of Tooreen Mine near Glengarriff*

photograph of him in the mine appears in O'Brien (1994, 12; 1996, 12). This impressive mine is roughly A shaped, with two lower tunnels continuing at the back of the working, separated by a pillar. Slightly higher and immediately to the north of the mine is a small working at a steep angle. The site is easy to find as it is marked as "Copper Mine" on the Ordnance Survey Discovery map. A path, sandwiched between two fences, leads from a stile on the mountain ridge (Cork/Kerry boundary) to the mine.

After an interesting and enjoyable day, with glorious weather, we returned to our vehicles and went our separate ways.

### ***Alastair Lings***

***MHTI are very grateful to landowners for access to their properties, to the proprietors of The Black Shop for their great hospitality, and to Professor William O'Brien for providing information on Rath Mine. We also extend our grateful thanks to Alastair Lings, for yet another impeccably choreographed field trip.***

### ***Bibliography***

B.B.G., 1915. 'Kilcrohane'. *Kerry Archaeological Magazine*, Volume 3, Number 14, pp. 119-122.  
Bland, F.C., 1825. 'Description of a remarkable building, on the north side of the Kenmare River, commonly called Staigue Fort'. *Transactions of the Royal Irish Academy*, Volume 14, pp. 17-29.  
Calvert, J. Carrigrohane, 6" to 1 mile scale map. Unpublished. Geological Survey of Ireland Mine

Record MR000254.

Cole, G.A.J., 1922. *Memoir and map of localities of minerals of economic importance and metalliferous mines in Ireland*. Memoir of the Geological Survey of Ireland. Dublin. (Reprinted by the Mining Heritage Society of Ireland in 1998).

Crane, C.P., 1907. *Kerry*. London.

Duffy, T.J., 1932. *Copper deposits in south-west Ireland*. Unpublished report, Geological Survey of Ireland.

Jackson, J.S., 1980. *Bronze age copper mining in counties Cork and Kerry, Ireland*. pp. 9-29 +plate in Craddock, P.T., *Scientific studies in early mining and extractive metallurgy*. British Museum Occasional Paper No 20.

Jukes, J.B., Wynne, A.B., Kinahan, G.H., and Baily, W.H., 1861. *Explanations to accompany sheets 182, 183, 190, and parts of 172 and 191 of the maps of the Geological Survey of Ireland*. Dublin.

O'Brien, W., 1987. 'Primitive copper mining in south-west Ireland'. Unpublished Ph.D thesis, University College Cork.

O'Brien, W., 1994. *Mount Gabriel: bronze age mining in Ireland*. Galway.

O'Brien, W., 1996. *Bronze age copper mining in Britain and Ireland*. Buckinghamshire.

O'Sullivan, A., and Sheehan, J. (compilers) 1996. *The Iveragh peninsula: an archaeological survey of south Kerry*. Cork.

Rawson, R.W. 1838. Abstract of second report of the Irish Railway Commissioners. *Journal of the Statistical Society of London*, Vol. 1, No.5., pp. 257-277.

See OSI Mapviewer <http://maps.osi.ie/publicviewer/>

## CORRESPONDENCE

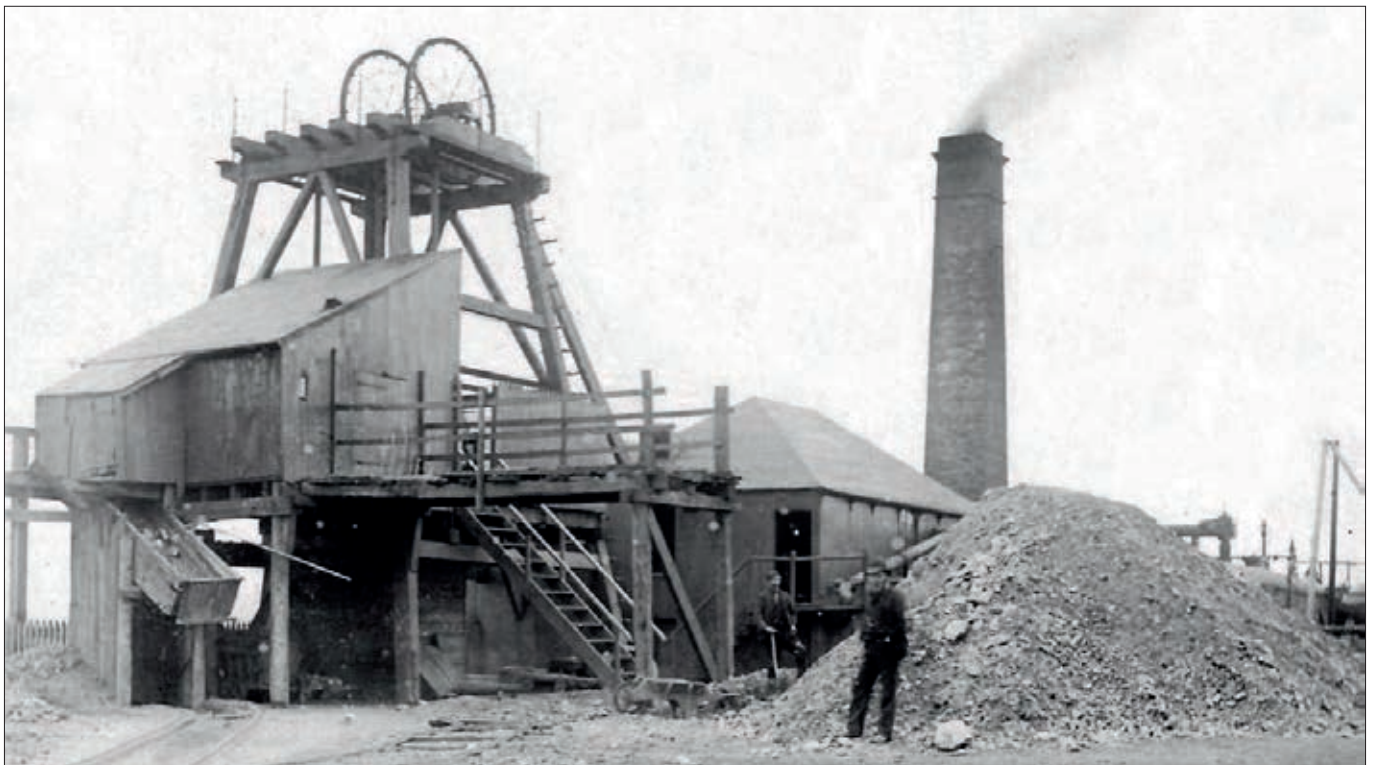
### **The Cumberland and Wicklow Mining Link** *Dave Banks, West Cumbria Mines Research Group*

Way back before the millennium, I responded to a request through the NAMHO newsletter for help in tracing Avoca miners who had moved to Cleator Moor in the 1860s and 70s. This NW English town, today in Cumbria, but once within the boundary of the historic County of Cumberland, had numerous iron and coal mines and an important smelting industry. It attracted Irish migrants in their droves, so much so that the town became known as ‘Little Ireland’. Although I was able to provide information, that link was broken. The thought, however, remained in my head and whenever I came across Wicklow-based references during my researching of Cumbrian mines and miners, I made a note.

In 2013, I spotted a request from members of the Glens of Lead group to show three of them around the area that men and their families from the lead mines of the Wicklow Uplands had migrated to. As part of the Interreg IVA *Metal Links: Forging Communities Together* project, they had discovered a migration flow from their mines to those in the Cleator Moor area and I volunteered to help. We hit it off straight away, and after returning to Wicklow they asked me to come over and give them a talk on ‘Little Ireland’.

The interest in mining migration from Wicklow was evidenced by the great turnout for my presentation held in the Glendalough Visitors Centre during Heritage Week last August. My Powerpoint presentation featured a number of examples of descendants of Wicklow miners, including personal photographs, and many photographs of the mines and housing that they had moved to. Some snippets from contemporary newspaper articles also amused the audience, especially the Cornish-Irish frictions that were apparent in their new home!

The talk was designed to show that migrants who left the Glendalough-Rathdrum-Avoca area, settled in the Frizington-Cleator Moor-Millom areas in Cumberland. Both areas are very similar in geography, with mountains and lakes as backdrops to heavy industry based on mining, and now all but gone. My best mate, Mike McCrickard, who came with me, was my ‘live’ example of Wicklow descendants, being descended from a Wexford miner who married an Avoca girl, having children born in Avoca, Rathdrum and Glendalough, before moving across to Cumberland, and living in Ulverston, Caldbeck, and then Frizington.



*Crowgarth No. 4, one of the many iron ore mines to attract significant Irish labour at Cleator Moor, Cumberland*

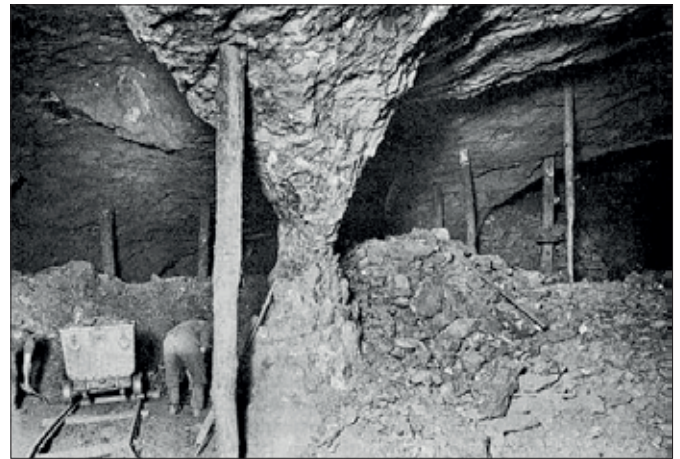


*Keekle Terrace, Cleator Moor. Immigrant miners from Wicklow would have been unfamiliar with this type of uniform two storey industrial housing, which was very different to the types of one storey cottages erected by the Mining Company of Ireland, or the cabins built by the mineworkers on waste ground or commonland in Avoca and the Wicklow Uplands*

We were well looked after, and made a number of new friends, not only with the Glens of Lead members, but also following Nick Coy's guided walk to the Avoca copper mines of Tigroney and Cronebane, we formed new links with members of VADA (Vale of Avoca Development Association). As my own researches have now concentrated on obtaining more information to contribute to our new friends' researches, we have started exchanging information (and banter) through e-mail and Facebook exchanges.

One of our biggest breakthroughs has been with the Catholic priest in Frizington (one of the three main recipient communities of Wicklow folk) allowing his registers to be photographed and then transcribed into an Excel spreadsheet. As we already had a similar spreadsheet for Cleator Moor, we now have an invaluable resource, which, when linked with census returns, has helped us identify literally hundreds of Wicklow-born residents between 1861 and 1911. Working with Deirdre Burns (County Wicklow's Heritage Officer) and Catherine Wright of the Wicklow Family History Centre, we hope to be able to trace where they came from. This work is ongoing.

This year, becoming aware of VADA's aim to re-badge Avoca Courthouse as a Heritage Centre, we (West Cumbria Mines Research Group) were able to offer them showcases from a mine heritage centre we used to have. These we delivered in a Luton van all the way from Cumbria to the new Heritage Centre in April, and most are now installed. Surplus showcases



*Precarious underground pillar, Crowgarth iron ore mine*

were passed to another mining heritage centre in Co. Galway (Keith Geoghegan's Glengowla Mines).

So, the link between the mining communities on opposite sides of the Irish Sea has become a lot firmer, and, as more information is gathered, it will be included in a modified presentation which we hope to give when the Avoca Heritage Centre has its official opening. We intend, periodically, to include examples of Wicklow migrants in future contributions to this Newsletter.

*Ed's note: Please direct enquiries to Dave via our newsletter*

## SPECIAL FEATURE

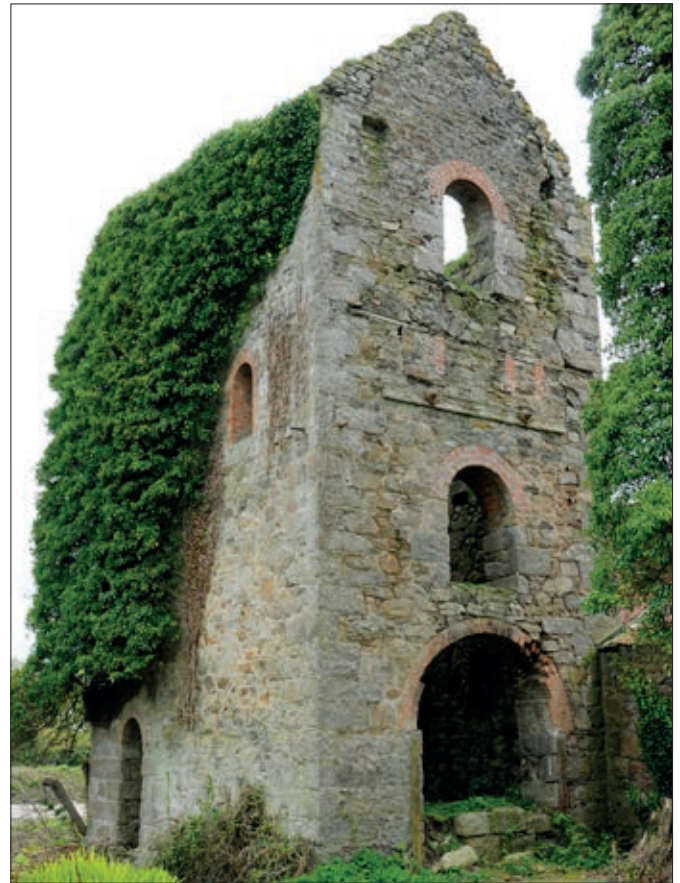
### **Forthcoming conservation works at Wheal Busy, Cornwall** *Ainsley Cocks, Cornish Mining World Heritage Site Office*

This summer will see the commencement of much needed building conservation work at the Wheal Busy site on the outskirts of the village of Chacewater near Truro. Wheal Busy forms part of the UNESCO inscribed Cornwall and West Devon Mining Landscape World Heritage Site, or ‘Cornish Mining’ as it is colloquially known, through its links to tin, copper, and later arsenic production, from the eighteenth through to the early twentieth centuries.

Wheal Busy was identified as in need of work as a result of an extensive photomonitoring condition survey, undertaken across the World Heritage Site in Cornwall and west Devon in 2010. This survey appraised just under 1,000 mining related features and clusters of features within the Site which together represent its Outstanding Universal Value, or international significance. Data from this was also used to inform the mandatory six-yearly UNESCO Periodic Reporting requirement.

The much-needed conservation work at Wheal Busy is being progressed by a partnership comprising the UK agri-environment agency Natural England with the site’s owners, the Tregothnan Estate. The consolidation works are to be entirely funded through the Natural England Higher Level Stewardship (HLS) scheme, and specifically the Historical and Archaeological Feature Protection facility of this (HAP). This targets European Union environmental funding via DEFRA (the Department for Environment, Food and Rural Affairs) to improve land management under the aegis of the Environmental Stewardship Scheme (ESS). It is anticipated that £230,000 (€281,000) will be made available to undertake the works.

***The mining of metalliferous minerals in the area around Chacewater dates from the seventeenth through to the early-mid twentieth century, with the first mention of Wheal Busy dating from 1666. In addition to Wheal Busy being a major producer of tin and copper, the site also saw the successive installation of early innovations in steam technology***



***The pumping engine house at Wheal Busy near Chacewater, Cornwall, soon to be conserved using Natural England Higher Level Stewardship funding***

Wheal Busy was at the cutting edge of early steam technology. A Newcomen Atmospheric Engine was at work dewatering the mine by around 1726, with this role fulfilled by a Smeaton improved atmospheric engine by 1775-1776, and eventually by a Boulton & Watt separate condenser engine, the first to work in Cornwall. This 30-inch cylinder engine was erected in September 1777, with its installation being personally supervised by its designer James Watt. The engine cost a reputed £800 and was intended to be a temporary installation to facilitate the driving of a level to the County, or Gwennap, Adit - an extensive network of drainage tunnels commenced in 1748 by John Williams of nearby Scorrier House.

As common to most metalliferous mine sites, Wheal Busy was worked and reworked under different managements, with new machinery being adopted by successive companies working the sett. The buildings which are to be targeted within the current project date from the mid nineteenth through to the early twentieth centuries, these being the pumping engine house complex at Engine Shaft (1856, Scheduled Monument,



*The Wheal Busy pumping engine house and its attached boiler house*

at NGR: SW 73927 44827), comprising its later attached boiler house (1909) and the adjacent boiler chimney. The house at Engine Shaft has contained three different engines during its life; the first of these was an 85-inch cylinder Harvey engine, the installation of which prompted much celebration when the foundation stone was set in May 1856. Over 10,000 people are understood to have attended the event with many of these arriving by train courtesy of the West Cornwall Railway. The inauguration included a formal procession to the mine, a special service at Chacewater Church, a roast ox, and a celebration dinner for the adventurers, followed by fireworks.

Following the cessation of this working in 1868 the engine was sold, but in January 1872 a 90 inch engine was ordered from the Williams' Perran Foundry at Perranarworthal which was installed and working by December that year. Known as Jose's Engine, after one of the partners in the new venture, its life at the mine was to be only brief as it was submitted for auction in September 1873 following the mine's closure. The engine house was to be reused for the third time in 1909 when a second hand 85 inch engine was installed, also of Perran Foundry construction, and at this time the original attached boiler house was demolished and a new construction erected on the western side, to accommodate three Lancashire boilers.

Managing the day to day delivery of the project are the conservation consultants PWH of Barnstaple which have also undertaken an extensive total station survey of the whole of the wider Wheal Busy site prior to the commencement of works. Beyond the features receiving attention here is a largely heather and gorse covered landscape of some 24 hectares (60 acres) in extent containing over 70 shafts, numerous spoil tips, the remains of a processing works and arsenic calciner dating from c.1908, and boiler and process water reservoirs.

The preparation phase of the project has included the commissioning of a detailed archaeological study of the whole mine in addition to ecological surveys to assess the nature of the flora and fauna on site, with particular regard for rare bryophyte and bat species. These reports will be used to inform the building conservation work and to ensure that this is undertaken with due regard for the site's ecosystem. Archaeological and World Heritage Site advice is being



*Interior of the Wheal Busy pumping engine house*

provided by Cornwall Council Senior Archaeologists Ann Reynolds, Colin Buck, and the author, and the work is expected to commence in May or June this year.

This project follows the successful conservation of three engine houses and a chimney at the Wheal Virgin site within the Wheal Maid Valley near St Day, last year. Here Natural England HLS funding to a total of £270,000 (€330,000) was used to conserve some of the oldest Cornish engine houses within the World Heritage Site, this figure similarly covering the full cost of works. The next stage in the Wheal Busy project is to select a team of specialist conservation builders to undertake the sensitive repairs required to the various structures, and these are to be appointed shortly following the completion of tendering. Within Natural England the case officers Beth Tonkin and Hugh Tyler are delivering the HLS agreement, and with Simon Leather, Tregothnan Estate Land Steward, are to be thanked for their considerable input in bringing this project into being.

While much will be achieved through the HLS funded project at Wheal Busy, there remain other features in need of attention which are unfortunately beyond the scope of the current scheme, including an arsenic calcining plant and chimney. The foremost of these additional features, however, is the mine Smithy; this extensive building (Listed Grade II), the main range of which measures some 30m by 13m, is the largest of its type in Cornwall and Devon, and formerly contained the forges which fulfilled the mine's metal working and tool sharpening



*Above: One of the two impressive cast iron lintels above entrances to the Smithy, anticipating good fortune in 1872 which did not materialise; the mine was to close again by the end of July the following year*

needs. Dating from the reworking of 1872, the Smithy is an adaptive reuse of the earlier Miners' Dry and Pitman's House, and retains two distinctive cast iron door lintels.

Manufactured by the Williams' Perran Foundry - the Williams family were major shareholders in the mine by this time - these impressive features proclaim 'Great Wheel Busy Mines', with the date of 1872 at the centre. These demonstrate the confidence and pride of the management in their new undertaking. The Williams family, as Williams and Co., held extensive mining interests across Cornwall and beyond, including the copper and pyrite mines at Tigroney and Cronebane mines in East Avoca, Co. Wicklow, which they worked for around half a century after leasing them in 1832. This mining activity has left behind a landscape in the Avoca Valley similar to Wheal Busy's and it too will shortly be subject to significant remediation works.

The Smithy has been underused for many years and in recent times has deteriorated badly with its scantle slate roof failing in large sections. Though the HLS funding cannot unfortunately be extended to address the costly conservation challenge posed by the Smithy, estimated to be in excess of £500,000 (€612,000), the project is covering the preparation of a conservation management plan which will be available to inform future initiatives. The Wheal Busy project is a good example of a partnership delivering much needed conservation within the World Heritage Site. The Cornish Mining World Heritage team is hoping that the incoming Natural England 'NELMS' programme (the New Environmental Land Management Scheme and the eventual successor to the current ESS) will facilitate further consolidation work in the future.

This article was prepared with reference to the Wheal Busy archaeological assessment prepared by Cornwall Council Senior Archaeologist Colin Buck for PWH Surveyors Ltd:

Buck, C. (2013) *Wheal Busy Mine, Chacewater, Cornwall: Sections of a Conservation Management Statement*, Cornwall Council, Truro.

**To find out more about the Cornish Mining World Heritage Site, visit: [www.cornishmining.org.uk](http://www.cornishmining.org.uk)**

**Editor's note:** In the late-1720s, a group of Cornish miners from Chacewater Mine (Wheal Busy) arrived in East Avoca, County Wicklow, and are reported to have introduced the process of precipitating copper from the salts contained in the mine water. The same process had been observed by Coster at the Chacewater Mine around the same time:

"... for after he had drawn out the water, which had been in the Mine for several years, he found the poll of a pick-axe wholly encrusted with a case of malleable Copper between two and three pounds in weight. This it was justly supposed was observed by the workmen, some of whom afterwards settled at Cranbaun Mine in the county of Wicklow in Ireland. The water of Cranbaun having this vitriolick acid in a very high degree, Capt. Thomas Butler, who was one of Redruth, and manager of that Mine, persuaded the proprietors to adopt the scheme of precipitating copper, of which they have made for many years past and now continue to make very considerable profit. They dig pits at proper distances in the Adit, (or so near as to admit the water) in which pit they place wooden rails, somewhat like a bottle rack, so as to suspend the Iron thereon. They put in many tons at a time; and, in about six weeks, the Iron is totally dissolved. The precipitated Copper is then taken out, fit for sale; the greatest part in the form of our Gossan pounded, with several grains of pure Copper interspersed."

Pryce, W., (1778) *Mineralogia Cornubiensis*, London, pp. 231-32.

Although this process continued at the Avoca Mines well into the late-nineteenth century (see the MHTI Journal article on Philip Henry Argall by Schwartz and Critchley, 2011), it was soon after lost in Cornwall and not reintroduced (on a stretch of the County Adit in the Carnon Valley) until the mid-1850s, by a Cornish miner returning from the copper mines of Cobre in Cuba, where the technique was also being used.



## IRISH NEWS AND PUBLICATIONS

### **Seismic Events at Glengowla Mines, County Galway (*Sherkin Comment* 2013 issue No 56)**

Situated 3km outside the village of Oughterard in Connemara, County Galway, is Ireland's only underground metalliferous mining heritage attraction.

The unique former silver-lead mine of East Glengowla, that worked from 1850-1865 and gave much-needed employment to around 300 people, has been painstakingly restored by the Geoghegan family and is open to the public for underground guided tours. Visitors don a helmet and descend 40 metres below the surface into the narrow tunnels and stopes of the nineteenth century mine workings, and learn from an experienced guide about the history of the mine, the life of the mineworkers and the exceptional geology, that includes rare octahedral fluorite crystals.

There are many equally interesting things to see and do at the mine's surface, including the renovated Mine Captain's house, which also served as the purser's office where the mineworkers collected their pay (and which is available as a holiday let); a reconstructed horse whim used to haul the ore up from underground and a restored magazine (where the gunpowder was kept). Visitors can also browse the fascinating museum, the blacksmith's shop full of period tools and the excellent shop, while children can have a go at panning for gold (and get to keep what they find!). A series of on site nature walks make this a great day out for all the family.



*The restored mine magazine*

The mine site recently featured on RTE's *Nationwide* and a big new attraction is the working seismograph which is part of the National Seismic Network. Visitors can see how this equipment measures the movement of the earth and how earthquakes all over the world are detected on the Glengowla seismograph. The exhibit has proved to be so successful that there are plans to expand it to include interactive elements and an educational programme which will be ready in the coming months.

For more information, visit: [www.glengowlamines.ie](http://www.glengowlamines.ie)

### **Valuable Item of Mining History Goes Under the Hammer**

On the 25th March 2014 the Glendalough Blunderbuss was sold at an auction in Castlecomer County Kilkenny. It was part of the estate of Mrs Una Wynne of Glendalough who died in May 2013.



I first saw the gun in the Wynne's living room in the mid 1990s while visiting Pat Wynne. During conversations about the family and their mining activities in Glendalough and Glendasan, Pat told me that the Blunderbuss had been used to protect the payroll of the Mining Company of Ireland when they worked the mines in the valley in the early 19th century. It is somewhat ironic that the gun was sold at Mealy's auction rooms in Castlecomer, a town with its own significant, if unrelated mining history. It fetched € 900.

*Nick Coy*

## Glenarm quarry extension plan gets go-ahead (*Larne Times* 20 June 2014)

Plans for a major extension at Glenarm quarry have been given the go-ahead by Environment Minister, Mark Durkan, this week. The Article 31 planning application, submitted by multi-national mining company Omya, was for a 23.8 hectare extension to Demesne Quarry. The development will see a sideways extension of the limestone quarry southwards into Tully Field. It will also restore Parishagh Quarry for agricultural uses to the original ground level. The revised application, which was lodged in 2011 and attracted no letters of objection, was deemed to be of such significance that the final decision rested with the Environment Minister.

Mr Durkan said the approval would bring an economic boost for Glenarm and Northern Ireland as a whole, securing existing jobs in the area for 25 years. He added: "The Ulster White Limestone extracted at this site is very limited in Northern Ireland. The current reserves the company has have almost been exhausted".

<http://www.larnetimes.co.uk/news/local-news/glenarm-quarry-extension-plan-gets-go-ahead-1-6101147>

## Dan Morrissey Quarries

Grant Thornton have been appointed as receivers for Dan Morrissey Ltd. The family-owned company has supplied construction materials since the 1930s, and operate two quarries. Clonmelsh Quarry near Milford, Co. Carlow, supplies high magnesium ground limestone. Balleese Wood Quarry near Rathdrum, Co. Wicklow supplies crushed whinstone (dolerite). <http://www.rte.ie/news/player/2014/0619/20601745-fears-for-quarry-jobs-in-co-carlow/>

## Additions to Bibliography

Alborn, Timothy. 2011. 'An Irish El Dorado: Recovering Gold in County Wicklow'. *Journal of British Studies*, Vol. 50, No. 2, pp. 359-380.

Barnes, Olive. 2004. 'Productivity amongst the Miners of Béara 1825-1884. Unpublished M.A. thesis, Bath Spa University College.

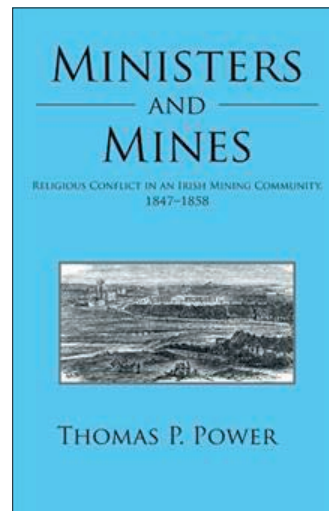
Clutterbuck, Richard, 1996. 'Industrial archaeology of an engine house in Slieveardagh, Co Tipperary'. *Trowel*, Volume 7, pp. 70-75. <http://trowelucd.weebly.com/back-issues.htm>

Colfer, Niall, 2010. 'Turning stone into bread: Harrylock Millstone Quarry, The Hook Peninsula, Co. Wexford'. *Trowel*, Volume 12, pp. 82-97. <http://trowelucd.weebly.com/back-issues.html>

Heidkamp, Linda, 2003. 'Lead, lives and landscapes. An industrial archaeology of the Glendalough and Glendasan Lead Mines (1826-1890)'. Unpublished M.A. thesis, University College Dublin.

Kerr, Jill, 1995. 'Castle Espie limestone monumental and building stone'. *Lecale Miscellany (Journal of the Lecale Historical Society)*, No. 13, pp. 16-17.

## New Publication



A new and indispensable historical work of reference was launched at the Copper Coast Geopark's Visitor Centre, County Waterford, on 14th June 2014.

Religious conflict in Ireland has had a long history. *Ministers and Mines: Religious Conflict in an Irish Mining Community, 1847-1858* is a case study of religious conflict in the copper mining community of Bunmahon, Co. Waterford, Ireland, in the mid-nineteenth century. By the time an English evangelical clergyman, Rev. David Alfred Doudney, came to the area in 1847 intense exploitation of its copper resources had begun. Depression in the industry followed by famine and its legacy spurred Doudney to initiate educational establishments to help the poor and deprived of the area, in particular, children.

These initiatives brought him into conflict with Catholic clergy who suspected him of engaging in proselytism. Doudney was more interested in encouraging a more vital Christianity in opposition to the nominalism he found around him whether among Catholics or Protestants, rather than in forced religious conversion. However, such a distinction was not clear at popular level.

In the rising tensions that ensued and against the backdrop of a suspected suicide, Doudney was the object of bigoted opposition, a narrow xenophobia, and of threats to his life, that together forced his departure. Not without blemish himself for, characteristic of the Victorian age, he articulated a strong anti-Catholic rhetoric, which he directed against the doctrines and practices of the Catholic Church.

Born in Waterford, the author, Thomas P. Power, is a member of the faculty of Wycliffe College, University of Toronto, Toronto, Canada. This thoroughly researched and scholarly book containing 338 pages, is an excellent edition to the bookshelves of those interested in Irish mining history. To order your copy visit:

<http://bookstore.iuniverse.com/Products/SKU-000683440/Ministers-and-Mines.aspx>

## OTHER NEWS

### Obituary

**Stuart Brian Smith, MSc, FMA, OBE, 19 August 1944 – 13 April 2014**

It is with deep regret that we report the recent death of Stuart Brian Smith. For over forty years Stuart devoted his life to the preservation of the industrial heritage as a museum curator and later Director at the Ironbridge Gorge Museum, and as Chief Executive of the Trevithick Trust in Cornwall. Internationally, his work over 26 years as Secretary of TICCIH brought him into contact with many of the leading advocates in the field all over the world who found in him a friend and colleague of unswerving determination. Indeed, numerous MHTI members will have known him through the MINET Project when he brought his considerable knowledge and experience in the promotion and valorisation of industrial heritage to bear. Stuart was one of the key speakers at the *Mine Heritage and Tourism: A Hidden Resource* conference organised by MINET in Nenagh, County Tipperary, in the autumn of 1999.

A Lancastrian from a strong non-Conformist background, Stuart was educated in London and Manchester before becoming (in 1968) Curator of Technology at Sunderland Museum in England where his acquisitive instincts were sharpened by the urgent need to capture evidence of the city's shipbuilding industry, then in decline. He was a founder member of the Ryhope Engines Trust, set up to preserve a pair of 1868 beam pumping engines, and was present at the first steaming, forty years ago this Easter. He also worked as a volunteer for the new open air museum being established at Beamish, County Durham, in north-east England, dismantling buildings and machines and moving them there for preservation.

In 1972 he was appointed Curator of Technology of the Ironbridge Gorge Museum in Shropshire, later becoming Deputy Director and, from 1983 to 1992, Director. He participated in the first international congress on the conservation of industrial monuments, held at Ironbridge

in 1973, and out of which the present international body – TICCIH – was to emerge. In 1986 he became Secretary of TICCIH, a position he held until 2012. This brought him into contact with world heritage initiatives and he was instrumental in the Ironbridge Gorge being inscribed in 1986 by UNESCO as a World Heritage site.

In the early 1990s he went to Cornwall, and was appointed the first Chief Executive of the Trevithick Trust, a consortium set up to manage a group of important historic industrial sites in the west of the Duchy. He acted as a consultant to the Cornwall and west Devon World Heritage Site Bid Team, helping them to achieve World Heritage Site status in 2006 and since 2002 worked closely with an international team in Japan dedicated to securing World Heritage ranking for a group of sites – mainly in Kyushu and the Yamaguchi Prefecture of Honshu.

A Fellow of the Museums Association from 1982, Stuart Smith was from 1991 to 1996 a member of the Royal Commission on the Ancient and Historical Monuments of Wales and from 1993 to 2002 of the English Heritage Industrial Archaeology Panel. He was a Vice President of the Association for Industrial Archaeology from 1992 and also served as a Board member of ICOMOS UK. In 2004 he was appointed OBE in recognition of his immense contribution, nationally and internationally, to the conservation of the industrial heritage.

An engaging and irrepressible personality with robust views and at times idiosyncratic tendencies, he was a collector and bibliophile whose knowledge, focus and resolve marked him apart from others of his generation. Stuart made much of his tough upbringing in northern England, despite essentially middle class Rochdale roots. His stoical and at times bluff demeanour became something of a signature persona and validation for some of his more distinctive eccentricities. He could always be relied upon to have a bottle of whiskey close at hand. The whiskey was usually Bells, a palatable but essentially very ordinary blend; single malts he regarded as an effete affectation which would be wasted on him.

Stuart Brian Smith died of lung cancer aged 69 at St Julia's Hospice, Hayle, Cornwall, on 13 April. He is survived by his wife, Jacqueline, two sons and a daughter and two granddaughters. With his death, the world of industrial heritage has lost an indefatigable campaigner and a luminary of great character, humour and knowledge.

*Adapted from the Obituary by Sir Neil Cossons in the TICCIH Bulletin No. 64, 2nd Quarter, 2014.*



**Stuart Smith far right, next to Dr Martin Critchley, then Chairman of the MHTI, at the MINET Conference in 1999 in Nenagh, County Tipperary**

## Hemerdon Tungsten Project Construction

### Update (*Wolf Minerals Ltd. 28 May 2014*)

Speciality metals exploration and development company, Wolf Minerals Limited, has provided an update on construction at its world class Hemerdon tungsten and tin project in Devon, in southwest England, following the successful completion of a £99.2m fund-raiser. A Ground Breaking ceremony was held in March to mark the commencement of the project. Wolf now advises that construction is well underway and is progressing on schedule. The contractors are currently expected to finish the plant and hand it over to Wolf in the third quarter of 2015. At present, there are more than 100 people working at the site.

The initial phase of construction activity at the project has been site preparation, which is now almost complete. Earthworks at the processing plant site are almost complete, and the site is being cleared and old plant infrastructure is being demolished. It is anticipated that the site will be totally cleared by early June 2014. The first concrete pour for the project's processing plant took place in late May.

The Company is currently working to complete construction of the mine access road, and the mine haulage road. To find out more about the company and the Hemerdon Project, visit:

<http://www.wolfminerals.com.au/>

## Filming begins on the new Poldark series

Few TV productions have been so closely linked with a geographical location as the 1970s hit series 'Poldark' was with Cornwall. Poldark was the TV drama that gripped a nation, redefined the genre, and created a tourist boom in Cornwall which is still being felt nearly 40 years later. The groundbreaking series, adapted from the novels of Winston Graham, ran for 29 episodes from 1975 to 1977 and attracted Sunday evening audiences of up to 15 million. It was so popular that some churches in the south west changed the times of evening services to avoid seeing congregations dwindle! The new 18th-Century saga, due to air on BBC One next year, will feature Irish film star, Aidan Turner, in the title role as Ross Poldark, and the programme's post-watershed slot will ensure the eight, one hour long programmes in the new series will be "steamier" than the originals. Although some of the filming is taking place elsewhere in the west of Britain, the majority of the scenes will be shot in Cornwall. 'We are pleased a lot of it is being filmed down here', stated Malcolm Bell, chief executive of Visit Cornwall, 'the shots of the coast do it for us and obviously the mining is very much a Cornish thing'.

Poldark Mine, which recently went into receivership, has been purchased by Dave Edwards, who has experience of running similar attractions in North Wales. Dave and his team have begun a programme of restoration and repair and have many exciting plans for this unique heritage attraction.

**Sharron Schwartz**

### MHTI CONTACT DETAILS

**Registered Address : c/o Natural History Museum, Merrion Street, Dublin 2, Ireland**

Registered in Ireland as Company 340387. Charity No: CHY14503

**Chairman (matters of policy): Alastair Lings**, [alastairlings@yahoo.co.uk](mailto:alastairlings@yahoo.co.uk), home 'phone +44 1896 757861, mobile +44 7763 850087

**Secretary (corporate matters, membership): Nigel Monaghan**, c/o Natural History Museum, Merrion Street, Dublin 2, Ireland, email: [nmonaghan@museum.ie](mailto:nmonaghan@museum.ie), mobile 087 7985570

**Editor – Newsletter/Journal: Sharron Schwartz**, home 'phone, 0404-32580; [sschwartz@era.ie](mailto:sschwartz@era.ie)

**Treasurer (accounts, membership):** post currently vacant – contact Nigel Monaghan

**Bibliographer (new entries): Paul Rondelez**, [prondelez@yahoo.com](mailto:prondelez@yahoo.com)

**Archives: Matthew Parkes**, [mparkes@museum.ie](mailto:mparkes@museum.ie), mobile 087- 1221967

**Memorials Registrar:** Stephen Callaghan, 00447849054344, (from ROI), [stecallaghan@gmail.com](mailto:stecallaghan@gmail.com)

#### **Area Contacts:**

**Northern Ireland:** Stephen Callaghan, (from ROI) +353860704000, [stecallaghan@gmail.com](mailto:stecallaghan@gmail.com)

**Sligo: Mick Carragher**, mobile 086-3665423, [michaelcarragher11@eircom.net](mailto:michaelcarragher11@eircom.net)

**Galway & Clare: Barry Flannery**, mobile 087-2930737, [barryflannery@gmail.com](mailto:barryflannery@gmail.com)

**Wicklow mines (Glendalough etc) and Silvermines : Martin Critchley**, home 'phone, 0404-32580; mobile, 086-8146956, [mcritchley@era.ie](mailto:mcritchley@era.ie)

**Avoca & 20thC mines/exploration: Nick Coy**, home 'phone 045 866400, mobile 086 3706731 [nickcoy@eircom.net](mailto:nickcoy@eircom.net), 16 Lakeside Park Naas Co Kildare. For Guided walks around Avoca contact me as above .

**Castlecomer: Seamus Walsh**, [swalshminer@eircom.net](mailto:swalshminer@eircom.net), 14 Maryville, Castlecomer Co. Kilkenny, 056-4441504 mobile 087-9619793

**Slieve Ardagh: Margaret O'Brien, Kyle, The Commons, Thurles, Co. Tipperary**, [muinteoirtipperary@gmail.com](mailto:muinteoirtipperary@gmail.com) or through the group at [oldschoolcommons@gmail.com](mailto:oldschoolcommons@gmail.com)

**Waterford & Wexford: Post currently vacant**, contact Nigel Monaghan

**Allihies: Theo Dahlke**, 0863103744, [theo.dahlke@gmail.com](mailto:theo.dahlke@gmail.com)

[COUNTRY CODE FOR IRELAND IS +353, AND THE FIRST ZERO OF AREA/MOBILE CODE IS OMITTED]