



Mining Heritage Trust of Ireland

No. 73 Summer 2016

SPECIAL FEATURE

**'TINTH' ANNIVERSARY: A metal
man's marathon through the Cornish
Mining World Heritage Site**

UPDATE

Remediation Works at the Avoca Mines

FORTHCOMING EVENTS

Members' Medley, Dublin

ACTIVITY REPORTS

NAMHO 2016 Dublin

MHTI 20 Years Anniversary Booklet

Buy a Copy While Stocks last!

Dates for your Diary

2016

September 6-11, 11th International Mining History Congress, 'Mines: History and Influence in Industrial and Social Development of Mining Communities', Linares, Andalusia, Spain.

September 10-11, European Heritage Open Days (Northern Ireland). <http://www.discovernorthernireland.com/loveheritageni/EHOD.aspx>

October 13, Conservation of Industrial Heritage seminar, Dublin. <http://ihai.ie/calendar-of-events/>

October 16-21, Australasian Mining History Association conference, Australia. <http://www.mininghistory.asn.au/>

October 26-28, ERIH Annual Conference "European industrial heritage - how to tell the international story". <http://www.erih.net/>

November 12, Annual Members' Medley, AV Theatre, National Museum of Ireland, Collins Barracks, Benburb Street, Dublin 7. Dinner afterwards at a local pub, tba

November 18, Northern Ireland Regional Group of the Geological Society excursion to the ISME salt mine at Carrickfergus, 10am start. Priority will be given to members of the Group. Pre-registration is essential before 7 November to GeolSocNI@gmail.com as numbers are limited. The tour underground, by vehicle, will last about two hours. Protective clothing will be provided but you may wear your own field boots if you prefer. For news and notifications of events in the Irish geology calendar, visit the site at http://www.igi.ie/events_calendar.htm

2017

April 4-7, Meeting of Historians in Latin American Mining, Buenos Aires, Argentina. <https://13reunionmineria.wordpress.com/>

May 11th-13th, 1st International Early Engine Conference, The Ironworks, Elsecar, South Yorkshire, England. See <http://www.earlyengines.org/>

June 15-19, Mining History Association Annual Conference, Alaska, USA. <http://www.mininghistoryassociation.org/>

NAMHO 2017

June 23-26th, *Mining History Organisations - achievements and challenges*, NAMHO Conference, organised by the Wealden Cave & Mine Society, at Godstone, Surrey. <http://namho2017.info/>

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.

MHTI Members' Business

2016 NAMHO Sponsorship

The MHTI would like to sincerely thank the following organisations that very generously sponsored NAMHO 2016 and the publication of our 20th Anniversary booklet: The Exploration and Mining Division; the Geological Survey of Ireland; the Geological Survey of Northern Ireland; Tara Boliden Mines Ltd; Dalradian Gold Ltd; Conroy Gold and Natural Resources Plc, SLR Consulting Ireland, and ERA-Maptec Ltd.

In total, the MHTI received €3,840 in donations which helped enormously to make NAMHO 2016 a resounding success. For information on how to buy a copy of our Anniversary booklet, see p. 19. The Board also wishes to thank all those members who volunteered their time, led field trips, and turned out to support events, which made NAMHO 2016 a success.

AGM

We held our Annual General Meeting (AGM) in June, after the NAMHO 2016 Lecture Programme at Dublin City University. Sharron Schwartz, Martin Critchley and Alastair Lings retired as Directors on rotation as required by our Articles of Association. They were re-elected unopposed. Mick Carragher stepped down as a Director after many years of service to the MHTI. We would like to acknowledge and thank Mick for his considerable input over the years.

At the AGM the following motion was passed: "It is hereby resolved that the Directors of MHTI clg shall arrange for preparation of annual accounts by a qualified accountant and no longer subject accounts to professional audit". This will save us the cost of an audit, over €1000. We can return to annual audit in the future if we so desire.

HELP WANTED

Rubbish clearance

Sadly mines and quarries are often seen as handy places to dump rubbish. An Taisce and the Live Here Love Here partnership in Northern Ireland organise spring cleans in April each year. Taking part in the clean-ups would help MHTI in its aim to promote "awareness, appreciation and conservation of the mining heritage". We will need to concentrate our efforts on sites where there has been rubbish dumped by the public, which government bodies will not tidy up. If you know of sites that need attention, please contact any director.

Vegetation clearance

At some mines and quarries vegetation is hiding features of interest, and damaging historic buildings. To preserve our heritage, we must take steps to control the vegetation and protect the structures. In the future we will be organising work parties to clear undergrowth, ivy, etc, outwith the bird nesting season (1st March-31st August). The work may be combined with surveying the buildings. If you know of sites that need attention, please contact any director.

Newtownards Mines, Northern Ireland

MHTI Directors, Martin Critchley and Sharron Schwartz, attended, and gave a presentation at, a meeting in Newtownards with the Ards and North Down Borough Council to discuss the future of the lead mining landscape at the former Newtownards Mines of Whitespots and Conlig, part of which lie in the Whitespots Country Park which is under the ownership of the Ards and North Down Borough Council.

Also in attendance were archaeologists from the Historic Environment Division of the Department of Communities, an ecologist from the Department of Agriculture, Environment and Rural Affairs, and members of the Geological Society Northern Ireland Regional Branch.

The meeting was highly successful with all parties present in broad agreement that something needs to be done to preserve and better promote the history, industrial archaeology, geology and ecology of the historic lead mining landscape. We look forward to further briefing members once a concrete action plan is in place.

Events and Notices

2016 Annual Members' Medley: Appeal for Presentations

Now a popular fixture in the MHTI's annual calendar, this year's Members' Medley will be held on 12 November at the AV Theatre at Collins Barracks, Benburb Street, Dublin 7. The customary dinner at a local public house will take place afterwards.

To make this year's event a success, we invite members to make a short presentation covering their recent research or interests on any topic related to mining/quarrying history or heritage. This might take the form of an illustrated presentation, a film or a lecture. Presentations should be in the region of about 20-30 minutes. Please contact Martin Critchley or Sharron Schwartz **before Friday 30th September** with the title of your presentation, so we can distribute the programme to the membership ahead of the event.

Recent years have seen members bring along a variety of items of interest, including minerals, printed material and mining equipment. Please dig out anything you think might be of interest for display at this year's Medley.

If you plan to attend the meal afterwards, please let Martin Critchley know **before 30 September** so we have some idea of numbers. We look forward to seeing you all there!

The Avoca Mines Remediation Works, County Wicklow: An Update



The ore bins at Tigroney prior to being dismantled and removed from the site
Image: Martin Critchley

Remediation works have commenced at the Tigroney Mine Site, and comments to the Draft County Development Plan 2016-2022, are sought before Councillors vote on the status of the RPS, writes Martin Critchley

Wicklow County Council has recently issued proposed amendments to the draft Wicklow County Development Plan 2016 – 2022 based upon submissions made concerning the draft issued in early 2016. The MHTI had submitted detailed comments in relation to the draft Development Plan and mining heritage in the County, and these were summarised

in our previous newsletter.

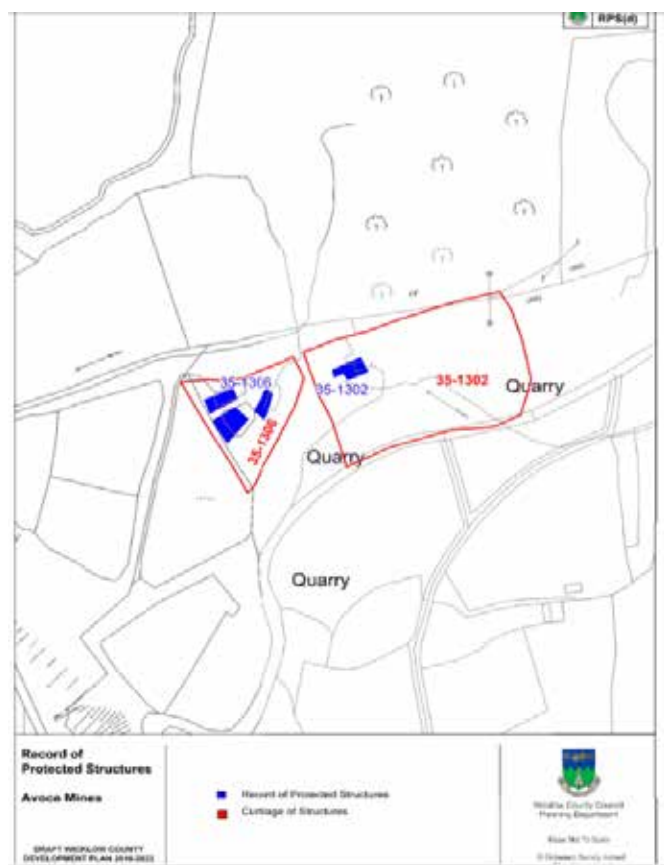
The amendments included a proposal to add additional mining related features to the Record of Protected Structures (RPS) and precise mapping of the curtilage of all mining related structures in the county RPS (see image left below). We also sought the retention of the open pits at Avoca in the RPS.

The proposed amendments to the draft Wicklow County Development Plan 2016 – 2022 recognise the submissions of the MHTI in relation to mining features in the county, and also for the first time, includes maps of their curtilage which encompasses some, but not all, of the mining spoil.

If adopted in the final Development Plan, this means that any future developments at Avoca will be subject to the scrutiny of the planning system. Unfortunately the open pits will be excluded from the RPS, but these are listed as County Geological Heritage Sites which it is hoped will afford some protection.

The remediation works at Tigroney started in late June and continue apace. Unfortunately, despite the best efforts of the MHTI, the mining landscape at Tigroney will be reprofiled and planted with 'native' vegetation, and the area around the ore bins will be covered with an orange coloured aggregate to simulate the characteristic ochre-coloured earth that will have been covered over.

We can, however, derive some small comfort that our recommendations for the conservation of the ore bins and the historically accurate reconstruction of the adit portals are part of the remediation scheme.



Happy Anniversary, MHTI!



Some of the MHTI Directors with copies of the newly published anniversary booklet
Image: Ainsley Cocks

NAMHO 2016 kicked off in style at Dublin City University with the launch of our 20th Anniversary booklet entitled *Celebrating the First 20 years of the Mining Heritage Trust of Ireland*. This beautifully crafted narrative of the first two decades of the MHTI contains 100 pages and is fully illustrated with colour photographs throughout, providing a must-have keepsake for all past and present members.

In the words of our Chairperson, this celebratory booklet 'contains excellent personal perspectives on the development of the MHTI and impressive accounts of our activities and achievements'. Expertly designed by Dublin-based graphic design company, A Worthy Cause, it has written contributions by Alastair Lings, Matthew Parkes, Martin Critchley and Sharron Schwartz.

The booklet was launched by Michael Starrett, the CEO of the Heritage Council, who also wrote the foreword, for which we are most grateful. The MHTI has enjoyed a close and mutually advantageous relationship with the Heritage Council over the last two decades, and we were very honoured indeed to have Michael launch our 20th Anniversary Booklet. See Page 19 for how to purchase your copy.

Following Michael's opening remarks, Colin Rynne of University College Cork gave a highly entertaining and very informative keynote lecture, entitled *Mining in Ireland from the earliest times to 1922: an archaeology*, which set the bar high for the rest of the NAMHO lecture programme!

Delegates were then treated to canapes and wine, and the cutting of a commemorative anniversary cake kindly donated by long-term MHTI supporter, ERA-Maptec Ltd. The two-tiered cake in MHTI green and sporting a miner's helmet on the upper layer, almost didn't make it to the venue in one piece, and it was only the nifty hand work of Ainsley Cocks who saved it from being reduced to mere crumbs in the back of Martin Critchley's car! After being cut by Alastair and Martin, it was, however, soon demolished by the delegates! Happy 20th anniversary to all of our members, and thank you all for your continued support of the MHTI.



NAMHO 2016, 'Mining and Social Change' Lecture Programme, Dublin 18 June



NAMHO delegates at the lecture programme held at DCU
Image: Ainsley Cocks

With the theme of 'mining and social change', this year's one day NAMHO lecture programme in Dublin had a real international flavour, writes John Hopkinson

The theme of this year's conference, hosted by the Mining Heritage Trust of Ireland (MHTI), was "Mining and Social Change". Seventy four delegates were registered, and although the lectures were limited to one day (Saturday 18th June), field trips were held from Friday 17th through to Friday 24th, spread widely across Ireland.

There was an international flavour to the lectures, which covered locations as far apart as Montana and Pennsylvania in the USA; Canigou, France in the SE Pyrenees; Sardinia; the Alps, and naturally Ireland.

The programme of eleven lectures got off to a flying start with a lively presentation by Jeanette Graulau from Lehman College, City University of New York (CUNY) on the financing and structure of mining corporations in the 12th to 14th centuries, with particular reference to silver mining in Western Europe and the Balkans.

Two lectures (John Hussey's and Niall Colfer's) covered quarrying in Ireland of granite and millstones respectively. A further two lectures explored social conflict. In Ireland,



Medieval silver mining specialists, Dr Peter Claughton and Professor Jeannette Graulau deep in discussion
Image: Ainsley Cocks



Terry Dunne detailed the 1826 to 1834 unrest and strikes in the Castlecomer (Co. Kilkenny) coalfield, during which sadly there was a fatality. The terms "Whitefeet movement" and "whiteboys" were new to me - very broadly similar to the Welsh "Hosts of Rebecca". In the USA, Alan Noonan's paper described the rising amongst the Irish miners in Butte, Montana in 1916 - timely when considering that 2016 is the centenary of the 1916 Irish rising at the GPO.

Paul Rondelez (originally from Belgium, but now living in Ireland) gave a fascinating paper on iron mining and production (by both bloomeries and blast furnaces) in Ireland in the 17th Century. Sharon Jenkins-Carter continued the iron theme by looking at the effect the heritage of iron mining on the Canigou mountain in the South East Pyrenees (which ceased as recently as 1985) has on the identity and culture of the local population.

We returned to Ireland and the Castlecomer coalfield with Anne Boran's (University of Chester) talk about her ancestor, Nixie Boran, who had a chequered history in the period 1927 - 1935 by leading the coal miners against the triple alliance of State/Church/Landlords. He had visited Russia in 1930 and led a six-week strike of the Mine and Quarry Workers' Union which ended on 20th November 1932. He also fought on both sides in the 1922-1923 Civil War.

More 'Irish coal' followed with Richard Clutterbuck's paper on the landscape archaeology of coal mining in the Mardyke/

Slieveardagh area of East Tipperary. He covered features from early "bassett" workings via engine houses to workers' housing and other extant buildings. "Bassett" was a new word to me. It is a method of working shallow coal seams somewhat akin to the bell pits, and would seem to get its name from the dictionary word 'basset' meaning an outcrop.

A double-act lecture by Prof. Robert Wolensky and his brother Kenneth, both from Pennsylvania, described the two schemes prevalent in the mining of coal in the Northern Anthracite Region of Pennsylvania. These were subcontracting and leasing, the former used typically where no more than 20 miners were working, the latter having typically 2,000 miners working on the lease. They described how the labour force fared under each. They went on to describe the wide-spread influence of organised crime, both on the side of the owners and later, the unions.

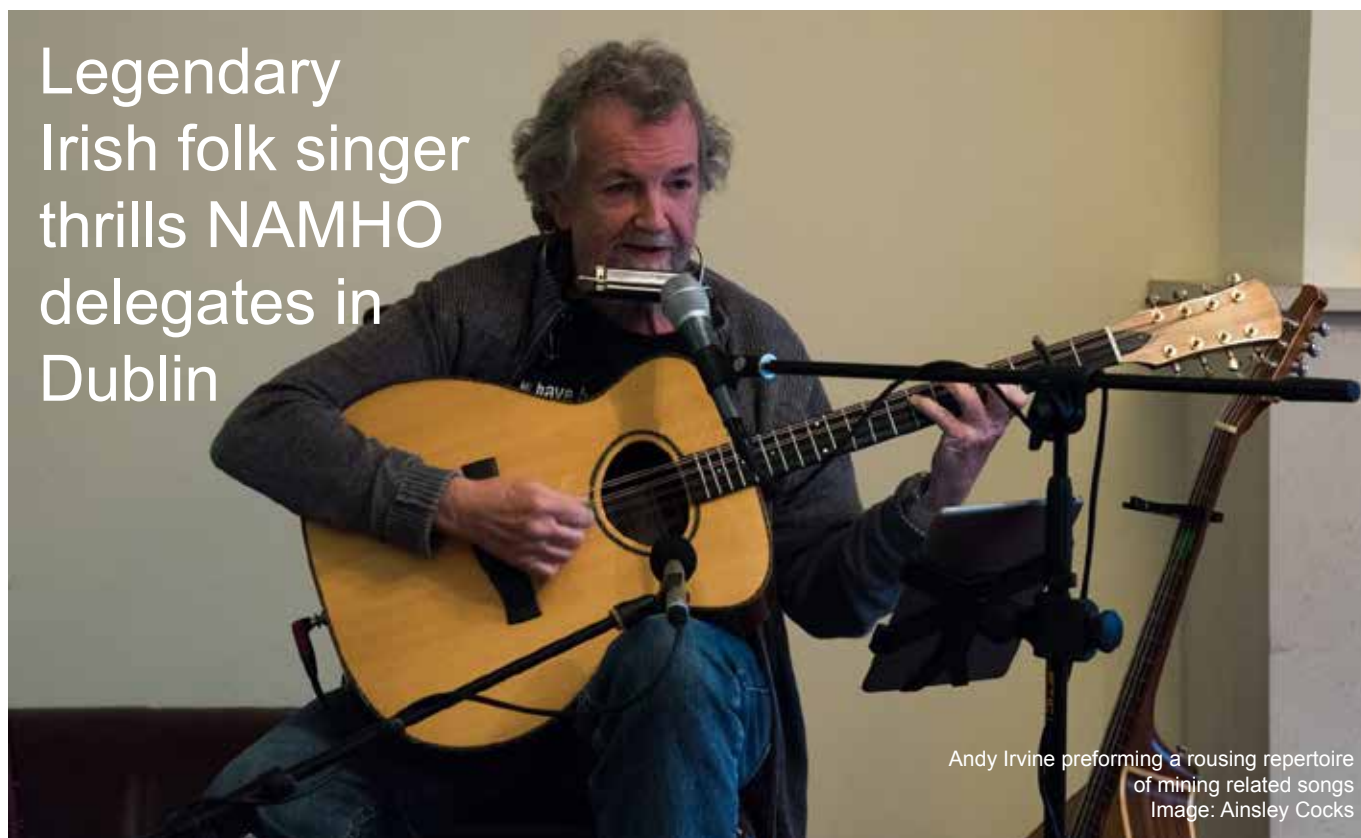
The Knox mine disaster of 22 January 1959 where twelve miners were killed following the inrush of the Susquehanna River into River Slope Mine was described and used to illustrate the rampant corruption. Unbeknown to the miners, their own Union President, August J. Lippi, was (secretly) the mine owner! This came out in the subsequent Inquiry, following which six men went to jail. Sadly the twelve bodies were never recovered. The *Wikipedia* entry for this disaster references a book on it written by Robert, Kenneth and Nicole Wolensky! The disaster effectively marked the end of underground coal mining in the area.

Dan Shields described his sociological research undertaken in 1983 and 1984 following the closure of Tynagh mine, a large post-war lead/zinc mine near Galway, when he interviewed 64 ex-miners and 20 other 'locals'. Differences of views between farmers and non-farmers and between pro-union and non-pro-union persons were explored; the orderly closure of the mine was blighted by a labour dispute.

All the Authors provided brief synopses of their papers; some of the papers may be published in full in the annual *Journal of the Mining Heritage Trust of Ireland* No. 16, which is due out at the end of the year.



Legendary Irish folk singer thrills NAMHO delegates in Dublin



Andy Irvine performing a rousing repertoire of mining related songs
Image: Ainsley Cocks

A highlight of the NAMHO Conference was the performance of Andy Irvine at the Conference dinner, and we were enormously honoured to have two new songs composed especially for the event, writes Matthew Parkes

Based on comments received, a highlight of the conference for some people, other than just me, was the performance by Andy Irvine after our conference dinner.

In the comfortable surroundings of the 1838 Dining Room, we were treated to a superb show by the legendary folk singer who has played in many groups such as *Sweeney's Men*, *LAPD*, *Mosaic*, *Usher's Island*, *Patrick Street* and most famously, *Planxty*.

As a long-time fan, I knew many of Andy's songs were based on mining themes, along with many others concerning social justice. So the set we listened to all had a mining connection, and here is Andy's set list:

The spirit of Mother Jones

Bonny Woodhall (well he was a miner before he joined the army...)

A Prince among men

He fades away
(about the Asbestos Miners in Wittenoom, W. Australia)

The close shave

The monument

(lest we forget) (about the Monument in Ludlow, Colorado)
Hard Times in 'Comer's Mines
(unaccompanied. Nixie Boran and all! Written specially for the event)

Goodbye Centralia Goodbye
(Woody song about the Mine disaster in Illinois in 1947)

Gladiators
(Not about Miners!!)

Waiting at the Gate
(Another Woody song about Centralia 1947)

Here's a Health to Every Miner
(Song with singable chorus about Irish Miners In Pennsylvania and Butte, Montana. Verses about South Wales/Nye Bevan and Miner's strike 1984. Written specially...)

Lest anyone think songs about mining are all bound to be doom and gloom, then hearing *The Close Shave* would soon dispel that. I won't give the story away, but say go and find and listen (www.andyirvine.com). Many songs were rousing versions, with audience chorus singalongs. Amongst these we had the enormous honour of having two new songs written especially for our event. A night I won't forget in a hurry, and I think many others enjoyed it as much as I did.

Wet, Wet, Wet! NAMHO Field Trip to Lead Mines in the Wicklow Uplands



NAMHO delegates on the Sunday field trip to the Wicklow Lead Mines
Image: Ainsley Cocks

When you have been to sites like the Glendasan dressing floors and the Glendalough misnamed 'Miners' Village' many times before, a familiarity sets in and you take them for granted, writes Matthew Parkes

Had there been no NAMHO participants in need of a lift to the Sunday field trip, I would probably have taken a rest and stayed at home. I was so glad that I did get up and go, despite the weather, as the field trip was an excellent experience.

When you have been to sites like the Glendasan dressing floors and the Glendalough misnamed 'Miner's Village' many times before, a familiarity sets in and you take them for granted. However, Martin Critchley and Sharron Schwartz have done so much new and detailed research and interpretation of these two sites in recent times, that this visit was a fascinating and highly informative experience for me.

Those NAMHO participants visiting for the first time would have got the best instruction about the sites that they could, perhaps without realising what a tour it was, distilling two highly complex sites into their fundamental phases of operation, processes and features. Every piece of wood poking out of the spoil, the rusty patches and the layers of different character spoil all had a significance that was made clear, especially in the complex of buddles below the cobbled dressing floors and water powered crusher buildings.

The group covered the main complex and then followed the path down past Moll Doyles and on to the 1950's workings beside Hayes Adit. Return for a lunch break was followed by the visit to Glendalough. The weather unfortunately deteriorated as the day wore on and everyone was soaked through by the time we finished, but it did not dampen

enthusiasm!

Given the number of visitors who pass by and through these sites, it has been a glaring omission for years that there were no interpretative panels on the mining heritage. On the tour we also saw the newly installed panels that Martin and Sharron had worked on with the local Glens of Lead Group and the National Parks and Wildlife Service who manage the Wicklow Mountains National Park.

In addition, some subtle measures to try and protect the fragile elements of the mining heritage on the dressing floors were explained, such as discreet edging of routes to channel walkers off the fragile features. The water powered crusher house had also been worked on to conserve the structure and some subtle channelling of the river undertaken to prevent the floods coursing through the dressing floors and eroding what is left.

For anyone who wants to know more about either site, the MHTI Journal has the comprehensive paper by Martin and Sharron covering Glendalough and Glendasan (in Journal 12, 2012) and also a comprehensive paper on Glenmalure (in Journal 14, 2014).

They are both to be thanked for sharing their knowledge and passion for these fantastic places on a wet and windy day of the Irish summer.

A round up of some of the NAMHO Field Trips



NAMHO delegates at Nick Coy's field trip to the Avoca Mines
Image: John Hopkinson

As part of the NAMHO 2016 Conference, delegates were treated to a week of superb field trips spread widely across Ireland, writes John Hopkinson

On the Sunday we had chosen to join Nick Coy's guided walk around the East and West Avoca workings, which exploited the copper sulphide deposits, usually for copper, but at one time when Sicily was out-of-bounds, for sulphur. Our visit may well have been the last opportunity to see parts of the site before they were "improved" by landscaping; contractors were already on site.

In the morning from the *Farriers Arms* car park on the R752, our party of 15 crossed the river and Dublin to Wexford railway to arrive at our first mine site in East Avoca, Tigroney. We saw the acid water emerging from the deep level just below the railway, and the 1950's steel storage bins and wooden cribbing before going uphill to Williams Engine House with chimney and severely overgrown boilerhouse, which had accommodated a 60-inch pumping engine built at the Perran Foundry in Perranarworthal, Cornwall. After this we continued on to Baronet's Engine House (winding only) and a deep open pit (Cronebane) which was operated from 1956/58 to 1962, and again from 1970 to 1982 for copper.

We continued onward and upward to an even more recent open pit (Conary) which has lately been used as a setting for TV programmes/films. The artificial hill between these two pits is known as Mount Platt after Jim Platt, the Chief Geologist (1969-1979). All the processing of the 0.6% copper ore was carried out in West Avoca, with the waste being

brought back across the river to build the mountain.

After a rather wet morning at East Avoca we returned to our cars and dried out in front of the fire in the *Farriers Arms* over lunch. We then explored West Avoca, stopping to look at Twin Shfts and then the much-photographed tramway arch, where an incline of Henry Hodgson's tramway passed across a mine road. Henry Hodgson was active at Avoca from 1813 onwards, and is believed to have come from Cumbria. Our guide, Nick Coy, would welcome any information about him.



Sheltering under Hodgson's Tramway Arch, Nick Coy far right
Image: Alastair Lings



Pan house archway at the Streamstown Saltworks
Image: Alastair Lings

On Monday we made an early start for the drive to Omagh Mine, a surface mine for gold operated by Omagh Minerals, a subsidiary of Galantas Gold. Besides being taken round the open workings (at Cavanacaw, 5 km west of Omagh) in 4x4 vehicles, we saw the processing plant and the end result, concentrate in "1 ton" sacks, each valued at circa £3,000. The concentrate is then shipped for smelting. Besides a comprehensive introduction in the site huts by the company geologist, Sarah, we were given samples of gold-bearing rock in goody-bags at the end of the visit.

Monday afternoon the focus was still on gold, and only a few miles away in Omagh town, but with a completely different slant on gold mining. Dalradian Gold were well on the way to satisfying all the "due diligence" rules for potential investors, and had completed a core-drilling programme of some 30,000 m of cores. After an introductory talk on the company and the geology we were taken round their extensive core-stores in two buildings on the Killybrack Business Park, and saw first-hand the meticulous logging and photographing of the cores.

For both gold trips, Alastair Lings of MHTI was our group leader. Our choice of trip for Tuesday being Abbeytown Mine at Ballysodare just outside Sligo, meant travelling across country from Omagh to Sligo, for B&B and an evening meal (actually a rather late all-day-breakfast) in the latter town. Abbeytown Mine (lead and zinc, circa 1800 to 1960) is accessed via a busy working stone quarry, and so the full H&S briefing and gear was deployed.

The quarry staff had pulled out all the stops to accommodate us, even to the extent of employing a digger and driver for a morning to uncover the blocked entrances to the mine. Broad inclined roadways were in evidence, with extensive pillar and stall working. The quarry itself has held water to various levels over the years, and these variations were easily seen underground as "tidemarks".

As is always the case with field trips in Ireland (and elsewhere) time was the enemy, and so plans to visit the coal mine and

museum at Arigna were postponed, and we went instead to an industrial archaeological site, the Streamstown Saltworks, which was only a few kilometres away. There we received a very warm welcome by the site owner, James McLoughlin, who not only took us down to the sea-shore, but provided tea and cakes afterwards. The saltworks has been recently surveyed and the results are expected to be published soon.

Our final field trip was on the Wednesday, to Glencarbury Mine on the slopes of King's Mountain which is adjacent to Benbulbin, the very characteristically shaped mountain overlooking Sligo. This was an all-day trip led by Mick Carragher, which started out at Ballintrillick Mill, accessed from the scenic Gleniff Horseshoe road.

There is a lot of history to mining in the immediate area, the barytes mining being the most recent phase (by Haliburton in the late 1960's and 1970's) to provide drilling mud for the exploitation of the North Sea oil finds.

As Mick worked for Haliburton on site for several years (before going to Tara Mines) we had a guide who knew the place inside out. Most of us went underground, where railways and ladders were still in evidence.

Thanks to all who made the field trips Sue and I attended so enjoyable.



Underground at Gleniff Barytes Mine, Sligo. Mick Carragher centre
Image: Alastair Lings

Harvesting Halite: Underground at Kilroot



NAMHO delegates inspect a recently cut salt face
Image: Ainsley Cocks

The two hour tour to the Kilroot Mine at Carrickfergus in Northern Ireland provided a very rare opportunity to experience an operational rock salt mine, writes Ainsley Cocks of the Cornish Mining World Heritage Site

As part of the programme of events for the National Association of Mining History Organisations (NAMHO) Conference held in Dublin, a trip was arranged by the Mining Heritage Trust of Ireland (MHTI) to the Kilroot Salt Mine in Carrickfergus, County Antrim, in Northern Ireland.

Managed by the Irish Salt Mining & Exploration Co. Ltd. (I.S.M.E), Kilroot has been in operation since 1965 when it initially produced some 14,500 tonnes of de-icing rock salt, or halite (Sodium Chloride, NaCl), per annum. Improved techniques and larger scale operations have subsequently grown production to around 500,000 tonnes per year and Kilroot is today one of only three companies mining halite in Britain and Ireland.

The production of rock salt at Carrickfergus is understood to date from 1845 when the 4th Marquis of Downshire inadvertently discovered the first salt beds while prospecting for coal (Nicholson 2014). While the anticipated coal was never encountered a salt deposit some 120ft (37m) thick was eventually found at an area near Woodburn known as Duncrue, at a depth of 550ft (168m).

Protected by an overlying layer of impervious red sandstone the halite deposits were to prove to be extensive and have since sustained a valuable industry.

The visit on Monday 20th June commenced with Dr Martin Critchley, MHTI Director, introducing the group to Jason Hopps, Minerals Surveyor, who kicked off the tour in the mine briefing room with an introduction to the geology of the area, a short history of the mine, and an overview of the current workings. These have grown considerably over the five phases of development and in total now extend for some 48km² at a depth of 400m below surface. Following a detailed health and safety briefing, the group donned dazzlingly bright orange overalls, along with safety helmets and cap lamps, and climbed aboard one of I.S.M.E's Land Rovers for a slow drive down the most recent of the mine's two decline roadways. Being a 'trackless' mining operation, ready vehicle access to the operational areas is essential and the size of the decline is suitably commodious to allow larger vehicles to pass without difficulty.

The halite is dry mined at Kilroot, i.e. extracted through excavation rather than by the use of injected water, using the pillar and stall technique. The first stop on the tour was to view a recently cut salt face to examine its extent and the nature of the exposed mineral. Here an explanation was given of how the face is first undercut to a depth of 3m, using an electrically powered base-cutter. Resembling an enormous electric hedge trimmer on wheels, this process takes a crew around 45 minutes to complete. Following



NAMHO delegates visiting Kilroot Salt Mine
Image: Ainsley Cocks

this the face is pattern drilled to an equal depth using an hydraulically powered boom-mounted drilling rig, before being charged with detonators and the explosive ANFO (a mixture of Ammonium Nitrate and Fuel Oil).

Jason then explained how the salt face would be blasted in sequence - the lower section first (down into the gap formed by the base cut) followed split-seconds later by subsequent blasts progressing upwards, giving an even depth cut across its 15m width. Safety restrictions require that salt pillars 50m wide are left undisturbed for every 15m of salt removed, in order to provide adequate support for the 400m of overburden above. Each blast of the 10m high face yields around 900 tonnes of salt which is then conveyed by Caterpillar 980 front-end loaders and Terex 30 tonne dump trucks to the underground screening and crushing plant. The group later passed a number of the large articulated 'Cat' loaders parked and unexpectedly inactive, and were informed it was probably tea time!

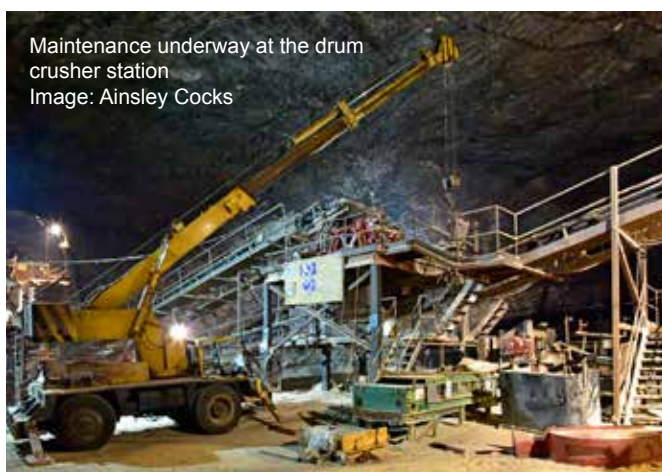
The next stop on the tour was to view the first of the

underground crushers which reduce the salt to the specified product size, this being 6mm in diameter for road use. The salt is first tipped into a feed hopper for screening before being conveyed by belt to an attached jaw crusher for primary reduction. The broken salt is then transferred to an adjoining chamber by conveyor belt, and the second stage in the process where vertically stacked three-drum crushers progressively reduce the salt to the final grade. The drum crushers seen during the visit are located in a huge chamber and the distinctive swirling pattern caused by the Webster Rockwheel - used to bring down loose-hanging salt - can clearly be seen across much of the chamber's roof.

Following processing the salt is transferred to the surface via a 2km network of belt conveyors, there to be treated with an anti-caking agent before being stockpiled in a voluminous storage building on the north shore of Belfast Lough. The visitors were able to view the ongoing construction of a replacement salt store adjoining, which is due to be completed and in use by the autumn of 2016. From here export is handled by a conveyor to load directly into ships offshore at the dedicated deep water berth, via the Kilroot Jetty; vessels up to 25,000 tonnes can be accommodated.

The two hour tour provided a very rare opportunity to experience an operational rock salt mine but proved to be over all too soon. After thanking Jason and I.S.M.E for their kindness in facilitating the tour, Dr Critchley presented a bottle of wine on behalf of NAMHO, MHTI and the very grateful party. With at least another twenty five years of rock salt production ahead of them, I.S.M.E are sure to continue to do their bit in treating the icy roads of Britain, Ireland and elsewhere for many winters to come.

Nicholson, C.A. 'Salt mines in the Carrickfergus area of County Antrim', *The Journal of the Mining Heritage Trust of Ireland*, 2014.



Maintenance underway at the drum
crusher station
Image: Ainsley Cocks

SPECIAL FEATURE

‘TINTH’ ANNIVERSARY: A metal man’s magical marathon through the Cornish Mining World Heritage Site



Creator of the Man Engine,
Will Coleman, Director of
Golden Tree Productions
Image: Ainsley Cocks

‘As someone with ancestors that worked in the copper mines of Cornwall, I could not help but be moved by the emotional power and grace of the Man Engine’s performance. The feelings of pride and achievement will stay with me’, writes Ainsley Cocks of the Cornish Mining World Heritage Site Office

It’s the 13th July 2006 and I am overlooking the much-photographed Cornish engine house at Towanroath Shaft, Wheal Coates. World Heritage Site status has just been bestowed on the mining landscapes of Cornwall and west Devon by UNESCO, in recognition of the cultural importance of these to all humanity. A fitting location, I think, to mark the positive conclusion of five year’s research and planning by a dedicated team that required the support of many individuals and heritage agencies across Cornwall, Devon, and beyond.

The 25th July 2016: ten years and twelve days later, and I am in the midst of thousands of onlookers in Bedford Square, Tavistock, in the easternmost part of the Cornwall and West Devon Mining Landscape World Heritage Site. A mechanical puppet known as the ‘Man Engine’ - the largest mechanical puppet ever created in the UK - prepares to make his spectacular debut. Part of a summer-long series of cultural events conceived to celebrate the ‘Tinth’ (or tenth) Anniversary of the World Heritage Site, Man Engine is the centrepiece of seven events taking place at over eighty

locations across Cornwall and west Devon.

The road to the Man Engine, somewhat like the bid for World Heritage status, was a long one. Commencing over a year earlier in the spring of 2015, a call was put out by the World Heritage Partnership for concepts of how the World Heritage Site, and the rich cultural legacy of metalliferous mining, could be celebrated and brought to a wider audience. Deborah Boden, World Heritage Site Co-ordinator, comments on the rationale behind the Tinth Anniversary:

“The mining communities of Cornwall and West Devon were industrial pioneers, inventing new technologies and techniques for winning vital metals from deep, hard rock, and becoming internationally recognised for their skill as a result. World Heritage Site status acknowledges that their achievements shaped not only this place, but all our lives and our world today. We developed the concept of a ‘Tinth’ anniversary to celebrate ten years as a World Heritage Site with the communities that live in and care for the Site today. We put a call out to the creative sector in Cornwall

and Devon to bring forward ideas to mark this milestone, and were overwhelmed with the response. The quality and inventiveness of the ideas put forward by our cultural partners is a fitting tribute to our ancestors' legacy. The Tinth Events Programme will enable people to see, learn and experience the meaning of the World Heritage Site, and what lies behind it all. The contributing events and happenings will bring to life the stories and the experiences behind all that happened here, in a sense reclaiming the ground and highlighting the global importance of Cornish Mining."

A diverse range of art and performance events were proposed as a result of the call, including the creation of a series of commemorative copper etchings ('Painting the Mines') and plays highlighting, respectively, the mining links which exist between Cornwall and Mexico ('The Zigzag Way'), and the life of Richard Trevithick, the Cornish pioneer of high pressure steam ('Trevithick!').

While these and the other events were to go on to be well received, it was felt that the celebrations lacked a showpiece which would spark the public's imagination and place Cornwall and west Devon's mining heritage centre stage. A contemporary dance event was one proposal under consideration to fulfil this role, until Cornwall-based Golden Tree Productions stepped up with its somewhat bizarre, and potentially high risk, concept of constructing the tallest mechanical puppet in the UK and to tour this across 130 miles of the World Heritage Site. It was hoped that Man Engine would visit each of the ten separate Areas of the Site in turn and that this would be met by locally arranged festivities at each of the 22 planned stopping points.

Golden Tree's plan was bold and ambitious; could this be delivered? What would be the cost and logistics required to undertake such a series of events? Could Cornwall, Devon and West Devon Borough Councils liaise successfully with the various town councils to close roads, undertake traffic diversions and oversee the myriad health and safety requirements necessary to present such an event to the public?

From the outset Golden Tree wished the Man Engine to be designed and built in secret, which caused some logistical problems and somewhat complicated the task of the public relations team, Excess Energy, in promoting a series of events around a concept which was essentially to remain a mystery, until its unveiling. Whilst starting with only a sketchy outline of what they wished to achieve, Golden Tree managed to secure the early support of Volvo Construction Equipment GB which, fortunately, agreed to loan the team of one of their 32 tonne L220 front end loaders for a year.

This machine was essential to the delivery of the project and this demonstration of confidence from such a well known international company was to pay dividends. Golden Tree were to go on to secure funding and support from Arts Council England, the Heritage Lottery Fund, First Kernow buses, Maen Karne, CORMAC, the National Trust, Imerys, Mining Searches UK, the Sir John Fisher Foundation, Derek and Karen West, and Deborah Hinton, in addition to Cornwall,

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Devon, and West Devon Borough Councils.

The health and safety of the public was to become a principal focus for Golden Tree as planning and construction proceeded, with each aspect of the Man Engine's design, build, transportation and performance being scrutinised and tested by local authority officers and engineers. This led to considerable additional work and the burning of much midnight oil by the Golden Tree team and partners. Their dedication and diligence is to be commended in delivering against difficult odds.

While I was fortunate to have been able to see something of the Man Engine during his construction and assembly, I was totally unprepared for the presentation on the day in Tavistock, in full 'show' mode. Firstly, a lone singer, Bec Applebee, delivers an acapella 'Lament for Cornish Mining', which stirs the creation to life. Mindful not to present an overly positive impression of hard-rock mining in the eighteenth and nineteenth centuries, this is an emotionally charged testimony to the many killed or injured in the mining industry.

Slowly the Man Engine rises while Will Coleman, Golden Tree Director and master of ceremonies, leads the 'Cornish Mining Chant' (Haka Balweyth) - in the Cornish language - proclaiming the importance of Cornish metal mining. Finally Man Engine reaches his full height - here is a genuinely impressive figure of steel and mechanics, standing - we are told - to 10.2m, and in a haze of smoke and the sound of rock drills.

People in the crowd around me - having no idea of what to expect - are genuinely amazed as this apparent jumble of painted metal transforms itself into a recognisable figure of a Cornish miner - complete with safety helmet and cap lamp. Incorporated within the design as his shoulder joints are a pair of winding sheave wheels that would be found atop a shaft headframe, while his 'neck' is the rocking beam from a Cornish engine. A team of skilful puppeteers, dressed in bright orange coveralls with helmets and cap lamps, pull on a series of ropes to direct the movements of the head,

*'The Public
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Image: Ainsley Cocks



www.cornishmining.org.uk
www.themanengine.org.uk



The magical Man Engine begins his marathon march through the Cornish Mining World Heritage Site
Image: Mike Thomas

arms, hands, and legs in turn, while another operates the smoke, lights and sound effects by remote control. All of this combines into a co-ordinated movement which is as eerie as it is impressive. As someone with ancestors that worked in the copper mines of mid Cornwall, I could not help but be moved by the emotional power and grace of the Man Engine's performance. Even as I write I am experiencing again the feelings of pride and achievement I believe I shared with much of the crowd, and this is something I am sure will stay with me. Will Coleman comments on the day:

"While we knew our Man Engine was impressive, we have been utterly blown away by the reaction to him and wish to thank everyone for their efforts and their feedback and glowing comments. My team has grafted so hard to make this vision a reality and it is so rewarding for everyone to hear the deeply personal and resonant reactions to our ultimate Cornish mining machine."

From Tavistock the Man Engine crosses the River Tamar into Cornwall, and travels on to visit a further 21 locations over the following 10 days, including Liskeard, Minions, Lostwithiel, Truro, Redruth, Camborne, Hayle, Penzance, and St Just in Penwith, with the culmination being at Geevor Mine. As news of Man Engine spreads - fuelled by broadcast and social media coverage - the crowds turn out in ever increasing numbers. An estimated attendance figure of 5,000 in Tavistock is exceeded by 6,000 in Liskeard, which in turn is surpassed by 15,000 in Truro, 16,000 in Camborne, and 24,000 in Penzance. It becomes quickly evident that crowd management will need to be re-examined and revised for each stopping off point in turn, in order to satisfy the public's expectations and to ensure health and safety requirements are met. It is testament to the skill and professionalism of the events' co-ordinators, Perfect Events Group, that all proceeds seamlessly and without incident.

Speaking in St Just in Penwith on 6th August, the final day of the Man Engine's tour, Julian German, the Chair of the Cornish Mining World Heritage Site partnership, notes;

"The spirit of co-operation and collaboration that has enabled the Tenth Anniversary events and Man Engine to

happen, has delivered impressive results since inscription in 2006. At 20,000 hectares across ten Areas in Cornwall and west Devon, we are the largest World Heritage Site in the UK. Far from being daunted by the scale of the challenge when compared to the very limited resources, the World Heritage Partnership has overseen the delivery of two Management Plans that have been instrumental in levering in over £100m [€116m] in capital funding for the regeneration of our communities and helped our rural tourism sector to grow, during one of the most turbulent economic periods we have seen in a generation – particularly important as we face more challenges to come.

"The public response to the Man Engine has been staggering. Over 100,000 people have now seen the transformation ceremony, and by the end of today's finale we will probably have reached another 20,000. This greatly exceeds the original 50,000 estimated audience, a measure of the Man Engine's huge success in capturing the public's and media's imagination, bringing the towns and villages along the route to the attention of national and international audiences."

Geevor Mine in Pendeen is the final stopping off point for the Man Engine and as one of the last mines to operate in Cornwall is a fitting choice. On 6th August an estimated 7,000 people gather at the cliff-top mining heritage attraction to celebrate Man Engine's final appearance (for now). Camborne Town Band is on hand and with the massed choir and crowd, rouses Man Engine to his full height, now revealed to be, in fact, 11m. At the climax, pyrotechnics accompanies the unveiling of the flags of the world, indicating the many countries to which the Cornish have taken their mining skills, technology and enterprise. One wonders if this could be an indication of Man Engine's ambitions for the future?

In conclusion, the comments of Kate Kennally, Chief Executive of Cornwall Council, give an indication of the impressive numbers involved around the Man Engine:

"The Man Engine was a fantastic event for Cornwall. Latest figures suggest it was seen by 137,000 people first hand and by over 25 million people across the rest of the country and the world via the media. What a way to promote Cornwall and our World Heritage status. "If we had to purchase that amount of media coverage as advertising it would have cost around £800,000 [€924,000]. The value of the positive public relations is currently running at an estimated £2.4m [€2.8m], and rising, as the global media reaction continues."

Man Engine has been an outstanding success - far beyond anyone's expectations - and is a fitting celebration of not only the World Heritage Site but all that is meant by the term Cornish mining. A huge thanks goes to Golden Tree Productions and all the many partners, funders, sponsors and employees within the various local authorities who came together to make Man Engine a hard-rock mining reality.

Now here's to our twentieth anniversary celebrations and the mechanical 'Bal Maiden' in 2026!

Ed's note: Please bring him here for next year's Heritage Week!

Irish News and Publications

Curraghinalt Gold Project, Gortin, Co. Tyrone (10/08/2016)

Dalradian Resources report that at their Curraghinalt Project "Completion of 492 days working underground, 232 blasts, approximately 960 metres of underground development, partial completion of 2 test stopes, all with zero non-compliance with regulations and zero lost-time injuries. Since the beginning of the underground exploration program in 2014, more than 70 inspections have been carried out by various health & safety and environmental regulatory authorities". During the three months ending on 30th June the company spent £3.3M (€3.9M) on asset evaluation including infill drilling and underground development.
<http://www.dalradian.com/news-and-events/news-releases/default.aspx>

Omagh Mine, Omagh, Co. Tyrone (09/08/2016)

Galantas are buying a drill jumbo and a load - haul - dump machine (scoop) for the first phase of their underground development at the base of the Kearney Open Pit. The company state "The single boom, Sandvik drill jumbo and the 6 tonne capacity, GHH scoop are refurbished, used units. The early acquisition will enable employees, drawn from the local area, to receive comprehensive operator training in advance of the commencement of underground operations. The refurbished units will avoid delays in the delivery of the main operating equipment, which is planned to be supplied new. Anticipated to be supplied on a lease finance basis, the main equipment will be confirmed when project funding is secured. After delivery of the main equipment, the refurbished units will assume a back-up and training role".
<http://www.galantas.com/news/>

Coal man of the year (23/05/2016)

On the 20th May the Southern African Coal Processing Society announced two people as "Coal man of the year". One winner of the title was David Power, Global Head of Coal Processing at Anglo American Coal. In 1982 he graduated from UCD with a degree in chemical engineering and joined Anglo American in 1988. In 2001 he moved to Anglo Base Metals and was seconded, as metallurgical manager, to Lisheen Mine in Co. Tipperary. He returned to Anglo Coal in 2004.
<http://www.miningreview.com/news/sacps-2016-coal-winners-shed-light-struggling-industry/>

Book Review

My Life as a Stonecutter

by Andy Farrington

Dedicated to the author's father who taught him the skills of stonecutting and who inspired in him a "love of the

granite stone", the book lovingly recounts a life spent in Ballyknockan, Valkeymount, Co Wicklow. Growing up in that fairly remote village in the Wicklow mountains, a stand-out time in the author's childhood was the harsh winter of 1947 when the village was snowed in and, to the delight of children such as himself, the school was shut for several weeks.

Quickly moving to the five years of his apprenticeship, he describes in detail the many different tools needed for the job of stonecutting with which each apprentice had to come equipped and pays tribute to the work of the blacksmith in the making and upkeep of these tools. The work of the quarrymen and cart-men working in the nine quarries in the area is also described. Nor is the contribution of the local farmers, who helped fuel the hard work of all, overlooked.

The book includes short memoirs by several fellow-stonecutters, not forgetting some of the present generation. Tribute is paid to the Ballyknockan Brass & Reed Band which, mainly due to emigration as a result of slack times in the quarries, finally fell silent in 1957 after some 70 years in existence.

Expressing gratitude for his much enjoyed career, the author continues to practice his stonecutting skills and with this book contributes in a stimulating and creative way to keeping alive the memories and traditions of his community as, to his regret, with advent of new machinery, the "rhythmic sounds" of the quarry tools that once provided the background sound to his life, gradually fall silent.

Self-published, no date (this copy signed by the author with date of 13 May 2016), the A5 sized, 70 page booklet contains many interesting illustrations. It is available at Blessington Bookstore, Co Wicklow, price €10.

Antionette Madden

A Miners Reunion: a commemoration of the closure of the collieries in 1990

By The Miners Historical Society

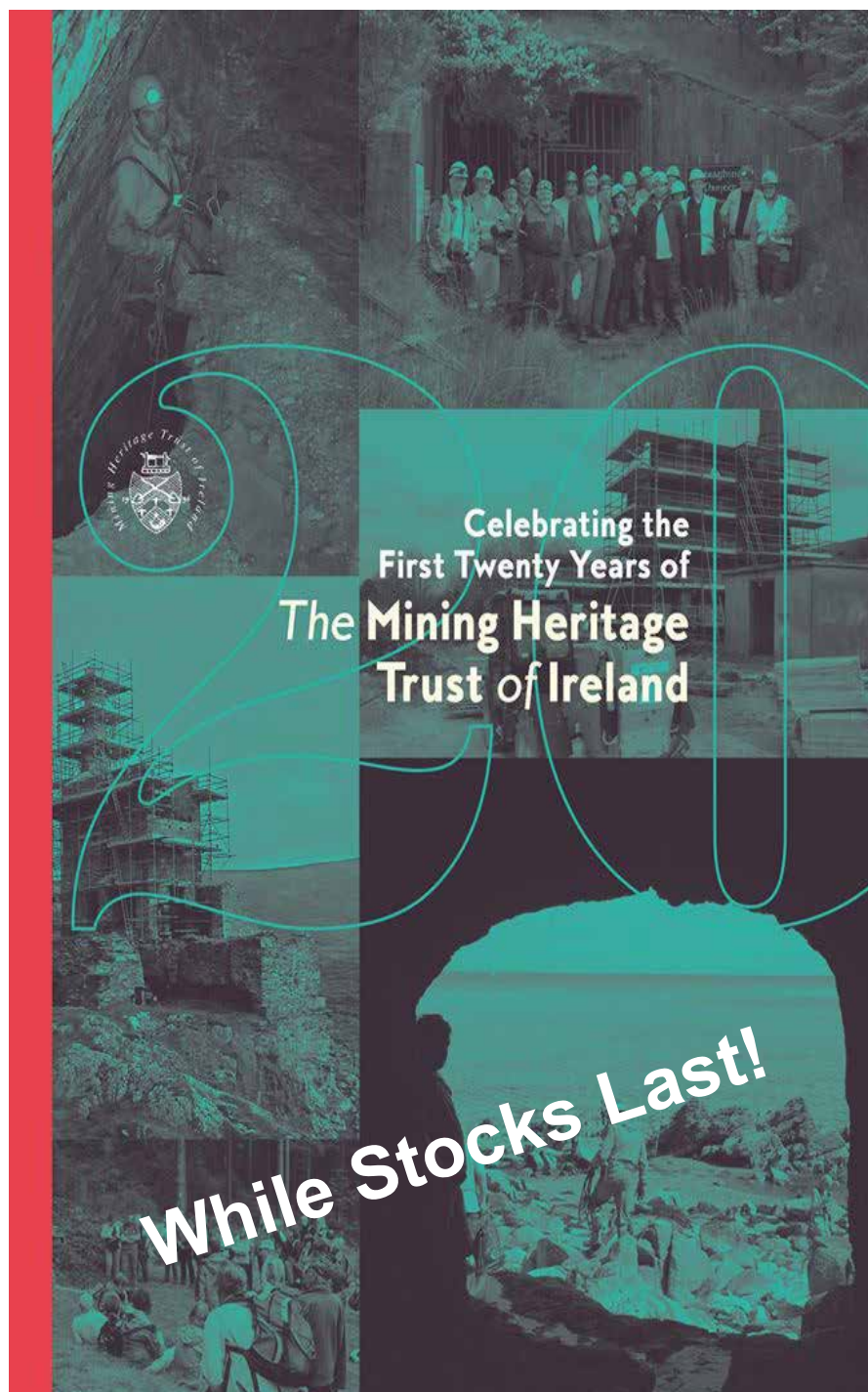
This book about the Connaught Coalfield is now available online (19 MB) at: <http://dbo.ie/wp-content/uploads/2015/03/Arigna-Cropped-A4-Smaller-File.pdf>

The Society would appreciate donations being made to the North West Hospice in Sligo:

<http://www.northwesthospice.ie/>

New group on Facebook: Quarries of Ireland. Cairéil na hÉireann

This is a group for people interested in documenting the stone, history and location of the many stone quarries around Ireland.
<https://www.facebook.com/groups/560383177467872/>



Celebrating the First 20 years of the Mining Heritage Trust of Ireland

With a Foreword by Michael Starrett, CEO, The Heritage Council

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Reflections

This limited edition must-have souvenir booklet is available to members at €15, and non-members at €20, plus postage. Buy yours while stocks last! Contact M. Parkes

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Other News

History repeating itself? Opposition to new opencast coal mine in

Northumberland (BBC, 17 August 2016)

Local inhabitants were shocked to learn that permission has been granted by Northumberland County Council for Britain's newest opencast coal mine, Highthorn, that will open just 400m away from the dunes of Druridge Bay, an area of high amenity value to the local community.

The Save Druridge Campaign cite concerns about the 300 HGVs that will be going in and out of Highthorn opencast mine every single day, creating noise and dust pollution. They are also unhappy about the negative effects on the local residents and wildlife, of blasting up to four times a day, and of the light pollution that will obscure views of the sky at night, all of which will spoil the beauty and tranquility of the area.

Other residents are worried about the effect the mine will have on tourism. One caravan park operator, already going through hard times economically, was horrified to learn that the boundary of the mine property is a mere two fields away. Friends of the Earth also question the wisdom of granting permission for this opencast, 'so a dying source of energy can wreck our climate'.

It is somewhat ironic that much of the landscape in this part of Northumberland was shaped by opencast mining that is

still taking place inland. Coal mining runs through the area's DNA. It has torn up the countryside before, but in the decades that have followed, the land has recovered.

The nature reserve at Oakenshore, near Durham, has been created from one of the old surface mines. It's an impressive place with lakes and green meadows carpeted with flowers, and surrounded by a forest of trees. The tourist attraction *Northumberlandia* has used the waste heaps from the Shotton mine next door that's still going strong, to create a series of landscaped hills in the shape of a woman. From the top you can look down into the mine itself. Post closure plans for Highthorn include conversion back into farmland, with some land becoming a nature reserve. Money will also go towards developing local tourism.

But detractors question whether this new mine, with a lifetime of just seven years, is even needed at a time when the UK coal industry is in bad shape, and the government has pledged to phase out coal-generated power entirely by 2025. Others, however, welcome the prospect of Highthorn creating 50 new and much-needed jobs in the area.

Druridge Bay is very much at the coal face of the dilemma dividing public opinion on British coal mining. 'A new opencast coal mine is only a short-term development, we need to think about what happens to employment longer term' said a senior research fellow at the Institute for Public Policy Research. <http://www.bbc.com/news/business-37011378>

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