MINING HISTORY SOCIETY OF IRELAND

NEWSLETTER

Cumann Stair na Mianadóireachta

NUMBER 6 **DECEMBER 1997**

CONTENTS

CALENDAR OF EVENTS TO SEPTEMBER 1998

Sat. 14th February: At 11.00 a.m. in the Geological Survey Offices, Beggars Bush, the A.G.M. of the M.H.S.I.. (Details have been sent to members; however, note change from original date of 7th Feb.. Ballot papers accompany this Newsletter).

Sun. 15th February. Field Trip.(See accompanying documentation)

Wed. 8th April. "*Gold in the Hills*" R.Callender (in association with the Irish Association for Economic Geology).

Spring (date to be arranged) "*Mining in Ireland in the 1940s and 50s*", Dr. Murrough O'Brien,

23rd-28th April Geotourism Conference in the Ulster Museum, Belfast. John Morris will speak on the tourism potential of Ireland's mining heritage, (Anyone interested, contact Dr. John Morris at the GSI).

15-17th May: NAMHO Field Meet in Nanthead, Alston, Cumbria. Anyone interested in traveling to this from Ireland contact Dr. Martin Critchley at ERA Maptec.

30th May-1st June: MHSI visit to Cornwall. (Further details in next Newsletter.).

13th -20th June: visit by Shropshire Caving and Mining Club to Wicklow.

5th Sept.: National Heritage Day. (Details of MHSI participation in next Newsletter)

EDITORIAL

This issue catches up on the Summer's field meets. These are possibly the most important activity the society has to offer; reports such as these are pale shadows of the actual experience. The point has been made, though, that the number of sites in Ireland is very finite. However, there are a great number of aspects to each site as Ken Browns article on Avoca indicates. There is also the enlightenment that is to be had from visiting overseas sites (see our visit to re Derbyshire and Shropshire plus programme for visit to Cornwall). And, most importantly, there is the revisiting that must take place as a result of the site inventory.

Her we also introduce the important issue of how heritage legislation in the Republic affects mine sites. This will be further discussed in the next issue.

NOTE.

!. ***Website***: Our new address is **WWW.ERA.IE/MHSI**

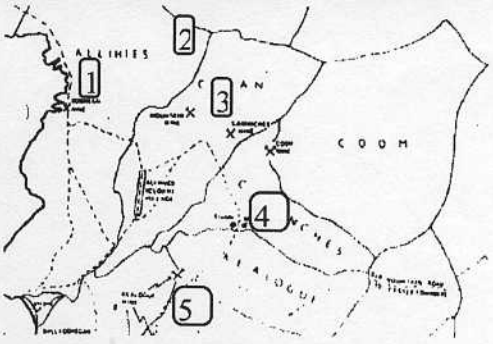
2 ***Mine Inventory***: Members are urged to complete the inventory form accompanying the last Newsletter. It is not necessary to survey sites at this stage - just list what remains are visible.

ISSN 1393-3930

FIELD TRIPS

ALLIHIES

Sun-drenched hills, a turquoise sea and matching cliffs stained bright with azurite and malachite - this was the setting at Duneen that April 12th morning where members of the society and friends assembled. Dan Tietzsch-Tyler brought us back to the origin of those hills in an estuarine environment just south of the equator (it seemed appropriate!). The main mineralisation is associated with four quartz veins that form **S** or **Z** shapes with the copper tending to be concentrated at the turns. We were standing near the first of these to be worked by John Puxley beginning in 1812.

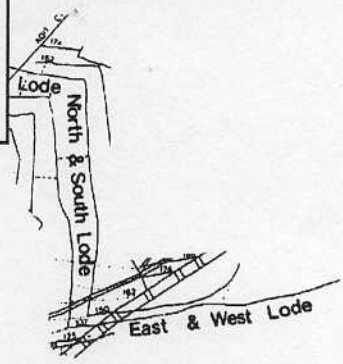


Visited - 1 Duneen; 2 Mountain; 3. Cloan; 4 Caminches; 5 Kealogue

Alan Williams then outlined the unhappy history of this mine from the disastrous 1812 adit driven below Spring tide level, through the faulty engine erected in 1826 whose problems were compounded by salt water in the boilers, to abandonment in 1838. Subsequent attempts to revive it proved unsuccessful. The main survival on the site is a reservoir, scant remains of an engine house and the shaft with the masonry for the balance bobs.

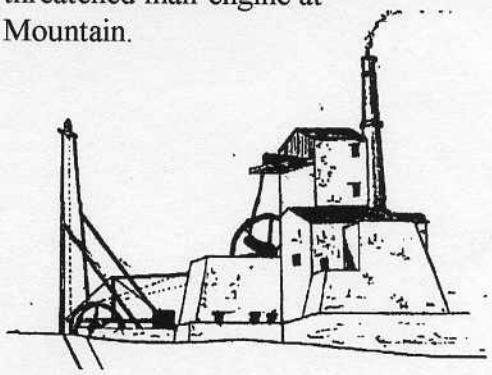
From there we went to Mountain mine with its man-engine (the only one in Ireland) spectacularly silhouetted on the heights above. Ascending to it (having been lavishly lunched by the local ladies committee) its sad state became apparent. One long wall of it defies gravity with a long lower section missing. It became something of the preoccupation of the weekend how this could be saved from following the fate of the nearby pumping engine which collapsed in recent memory. Under Alan's guidance we followed the open stopes eastwards, peering as well as we could through the county council's firm netting wire.

Detail showing the **Z**-shaped lode at Mountain.

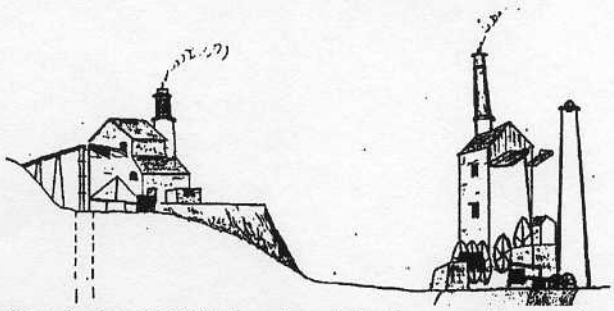


This brought us to the Cornish village where Alan set us th ıere from the Valuation maps and listings. After much enjoyable specula louble walled powder house and further considered the social implications of its strength and siting. From there we hiked past Caminches mine whose periods of prosperity were too short to accumulate any significant remaining surface structures though it did once have two engine houses. A fine engine house of 1872 stands at nearby at Coom though its only recorded production was about 80 tons of ore. However, vertical incisions placed regularly along what seemed to be the boiler-house walls gave rise to speculation as to their function. There were also nice waste heaps to browse through in the evening sunshine before returning to the village.

Detail 1869 of the threatened man-engine at Mountain.



There, in the parish hall, Alan gave an illustrated overview of the various Allihies mining operation as well as making some trenchant points about the need for conservation, especially of the man-engine at Mountain. Those from the locality who spoke recognised the need for this and hoped to put it in the context on a proposed museum cum art gallery. It also emerged that the Puxley papers have been presented to the local community and it is apparent that a secure environment must be procured for them.



Sketch dated 1869 showing, left, the pumping engine house which collapsed down the shaft in recent memory. Is Ireland's only man-engine, adjoining right, about to suffer a similar fate?

We reassembled on the Sunday morning to visit the last of the S-shaped lodes, that at Kealoge. Rubbish had recently been dumped on the dressing floors and nothing remained of the stamps engine with only scant ruins of the pump and whim engine to the east though some of the tramway linking the 18 or so shafts has survived. So have parts of the stables with timber yard and, on the eastward extremity "Puxley's Engine House". In that magnificent setting, with a view of most of the other mines, we concluded the formal part of our field trip (some went on to view the artificial beach at Ballydonegan produced by the crushed mine waste and to Dunboy where stood the Puxley residence and quays). Thanks were recorded for the hospitality accorded to us locally, to Dan for his geological insights, but most particularly to Alan Williams, not only for his oral presentation of this complex set of mines but for the detailed documentation he had prepared on each of them which will enhance all our collections. These inputs, with sun and scenery combined to make this a most memorable weekend and well worth the long journey involved.

OLD GLENGOWLA

There were many surprises in store for those of us who turned up there on Friday evening 2nd May. A mile and a half west of Oughterard a huge sign announced our workshop and an arrow directed us to a beautiful cottage which was ours for the weekend. From there we watched the red sun drop behind the hills of Connemara. The fridge was full and over the next two days we were to be continuously provided with tea, sandwiches and biscuits by our hospitable hosts.

Not too early on Saturday morning we assembled at the mine. The Geoghegans had modestly said they'd cleared out some rubbish: this was a massive understatement. A linear open-cast had been cleared of back-fill and roofed in concrete (an engineering feat in itself) and turfed over to keep the water out of the main workings below. Into these a new "adit" had been created ((Fig. 1) with concrete steps leading to the stopes. These had been pumped to sixty feet revealing scores of pit props and, a first for all of us, the pump rods from the 1850s working. The Geoghegans had also found chisels of various kinds and a kibble. More marvels will doubtless emerge from the next stage of dewatering*

. The new "adit" into Glengowla mine.

* Since then, according to Pat Geoghegan, ladders have been found in place, a wooden slide for the kibble, the piping for the pump and a lot of miscellaneous timbering. Is this unique?

In our innocence we had originally offered to come to Glengowla to help to clear out the mine. The presence of a power winch anchored above the Gangway Shaft (plus in contrast, a recreated hand windlass for display above the old Whim shaft) and the extent of the clearances humbled that aspiration. For geologist, mineralogist and mere historian the cleared workings were a wonderland set in marble, permeated by calcite, punctuated by crystalline hollows and etched with the chisel marks of the miners. The Mineral Statistics give only 250 tons of ore removed; the scale of the workings suggests it was far more significant.

We had also intended to do an exploratory survey over and underground. However, the Geoghegans already had had teams from U.C.G. and the Camborne School of Mines who had done all this. Daunted, we nevertheless listened while Martin Critchley's colleague, Anita Doran, demystified the surveying process, at least on level ground (see article in *Newletter 5*) and we practised new-found skills.

The one area that the Geoghegans had not got around to yet was the interpretation of the dressing floors and on this we exercised our skills on Sunday. The showed us the route of the one and a half miles of of leat and launder to drive the water wheel. Did this also provide water for dresssing? We decided no; it probably came from the water pumped from the mine. As the showers became a continuous downpour we investigated the floors.

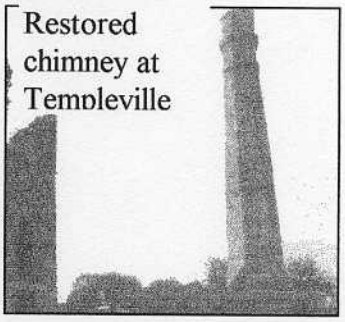
Upright stumps became apparent once we poked among the reeds and it was obvious that below lay timbers preserved by peat. This raised questions as to what should now be done. The dressing floors here apparently lie embalmed until exposed to air. They need an archaeological investigation, with a survey and conservation programme. The comments of members would be appreciated.

DERBYSHIRE, SHROPHIRE, ETC..

Six of us from the MHSI assembled near Matlock, Derbyshire on 11/12th July for the NAMHO (National Association of Mining History organisations) conference. The hugely varied programme with its various options cannot effectively be reported here nut those of us new to the area learned a new mining vocabulary arising from medieval customs and the local limestone environment. There are *soughs* (long levels from valley bottoms to drain the shafts sunk from the moors above), *rakes* (cracks in the limestone which filled with lead-enriched materials), and *"nicking" a mine* (where a nick was put on one of the wooden boundary markers each week it was not worked; somebody else could then claim it), etc..

Visitor sign for the mine rescued by our friends of Shropshire Mining and Caving Club.

On Sunday 13 the three Cs (Coy, Critchley, Cowman) set off to meet our friends of Shropshire, being joined next morning by the three Gs of the Geoghegan family. There we were escorted, with justifiable pride, by six of the Shropshire Mining and Caving Club (plus a trained guide hailing from Waterford!) around the extensive remains of Snailbeach lead mine which they had caused to be rescued from undergrowth and ruin. This included making some of the underground workings safe for visitors such as ourselves. From there we went to the nearby Templeville mine where they are currently in the process of restoring surface features including the engine house and chimney. Our final visit was to see a massive winding engine which they had just rescued at 24 hour notice from an abandoned coal mine. We departed on the 14th somewhat in awe of the hands-on approach to mining heritage and greatly appreciative of the attention they had shown us. Our thanks to them.


Restored chimney at Templeville

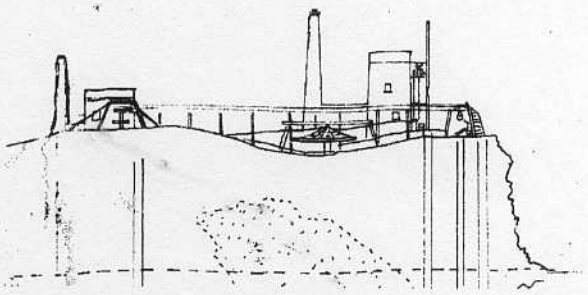
Our route to Holyhead was via Minera lead mine (near Wrexham) whose dressing floors had been preserved intact under debris until recently and is now very nicely presented. The extraordinary bronze age mining complex at Orme's Head was our next call followed by a quick visit to Parys Mountain,

Anglesey before catching the ferry. These memorable few days opened out our vistas of mining history and heritage as well as giving us a greater appreciation of what we in Ireland have and alerting us to its fuller potential.

BUNMAHON AND SLIEVEARDAGH

A group of twenty or so turned up at Bonmahon on Saturday morning 3rd October on an overcast but not unpleasant day. Among those present were three members of the Trevithick Society from Cornwall, Ken Brown and Roz as well as Phil Saundry. Led by Des Cowman, the group proceeded to Ballydwan beach where Des outlined, in his own inimitable way, the life and times of Thomas "Bullocks" Wyse, an 18th century entrepreneur and his mining activities in the Waterford area. Nothing remains at Ballydonegan except an extraordinary shaft collared in a sea stack about thirty metres off the beach. This must qualify as the first offshore mining company in Ireland. In the absence of Dan Tietzsch Tyler , the structural geology of the area was explained by John Morris.

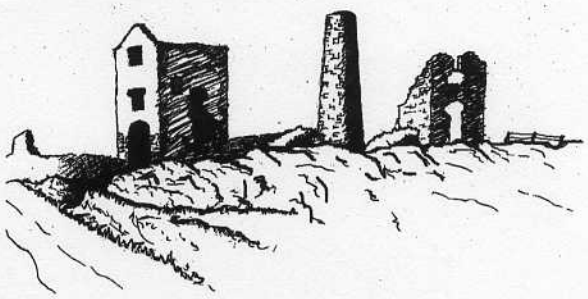
The next stop was up the road at "Danes Island" described in the literature as bronze age mines although Billy O'Brien did concede the likelihood of present workings being 18/19th century. Members scrambled down a grassy incline to inspect some adits and a stope on what is a promontory rather than an island. An excellent lunch was then provided by Ms Karen Tobbe at Knockmahon Lodge, once the residence of a director of the Mining Company of Ireland.



The two engine houses at Stage, detail from plan of 1840. Purdy's engine on the right was transferred to Tankardstown in the early 1850s.

The group then set out on foot via the Knockmahon dressing floors to Stage Mine. In an area between the old mineral tramway and the sea cliffs, Ken Brown endeavored to interpret a number of grass covered hummocks and hollows surrounding several open mine shafts where once there had been at least two engines. At least one capstan pit was identified .

The next stop was at the Tankardstown Engine House, the most recognisable mining related landmark on the coast. Interpretation of the site revealed a second and smaller all enclosed engine house, probably housing a small whim engine and used primarily for winding. The final stop was at Tankardstown North where a small but impressive "Cornish style" engine house (stack attached to the building) stands in a farmyard.



Tankardstown today. Pumping engine on left, chimney and remains of winding engine.

Evening hospitality was at "Chez Des" in Boatstrand where the culinary finesse of chef Cowman will long be remembered. Discussions went on late into the night, being well lubricated by Des's wine cellar. Then on Sunday morning the group set off in convoy to the Slieveardagh Coalfield in county Tipperary. The first stop at a solitary tall chimney stack ("steeple"?) in the townland of Copper raised more questions than answers. At Knockalonga a fine small engine house and stack was interpreted as a winding engine and part of the cylinder bedstone was uncovered. Earlshill colliery was the next port of call. A fine chimney stack and powder house still stand near the old mine office, now used as a farm building. A unique feature of the site is a section of rising main, probably

from the pumping shaft, now propping up part of the building. The last call of the day was to Mardyke Colliery. This mine site probably contains the finest collection of old colliery buildings in Ireland. The site is dominated by a large beam engine house, which contained a 55 inch cylinder and separate stack. The engineering design and history of the engine was outlined in amazing detail by Ken Brown. Other buildings include an office, school, cottages, the remains of an R.I.C. barracks and a smaller engine house

Congratulations and thanks from those present to Ken and Roz who gave so generously of their time and expertise. A special thanks to Des Cowman and Karen Tobbe who set a standard of organisation and hospitality that will be hard to beat.

NICK COY

[NOTE: The report on the ecology weekend has been held over to *Newsletter 7*]

THE CORNISH ENGINE HOUSES OF IRELAND

2. AVOCA, CO. WICKLOW

Kenneth Brown

The great copper lode which crosses the Vale of Avoca is the most important deposit in Ireland. It carries several other minerals including traces of gold. However, from 1840 onwards copper became less important than iron pyrites used to make sulphur for the chemical industries - a product which kept mining active until 1982, using large scale opencast methods. In 1858 an article in the *Mining Journal* gave an annual output of 140,000 tons from the five principal mines averaged over the previous 17 years.[1]

Opencast mining tends to spell doom to 19th century mine ruins, so one must be thankful that four Cornish engine houses survive out of more than a dozen. Even the huge yellow waste tips, on the high ground each side of the steep valley, are not unattractive when sunlight sharpens the contrast with green pasture and moorland. A myriad hues on the sides of the open pits, too, tell a tale of the treasures once wrested from them.

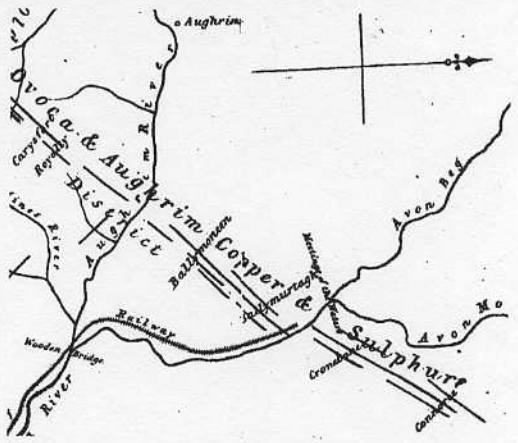


Figure 1. The mines at Avoca. Connoree is on the extension bottom right.

However, even these are under threat. The huge pit on the sites of Ballygahan and Ballymurtagh has been host to fleets of lorries bringing in refuse to be tipped. The same could overtake the two pits at Cronebane Mine on the other side of the valley once the problem of a steep and tortuous access has been solved. Now is the time to visit the Avoca mines before any more is lost, though public awareness of the rich industrial archaeology in the area is now growing, plus the hope of an interpretive centre.

---

[1] Mining Journal, February 27th 1858. The figure was made up of 50,000 tons from Ballymurtagh, 50,000 tons from Cronebane and Tigroney together, 30,000 tons from Ballygahan and 10,000 tons from smaller mines, probably mainly from Connoree.

The great lode actually runs north-east to south-west, crossing the north-south valley at an angle. The river and main road and railway from Dublin to Arklow and beyond are in close proximity. The crossing point is about a mile north of Avoca Village, as indicated on the map (Fig. 1)

Connoree stands on high ground some 2 miles NNE of the village from which it is best approached. The road that threads its way northwards through the little town passes the mill of Avoca Hand Weavers and then changes into a narrow lane, winding its way upwards on to high ground. At the top turn left and Connoree is marked by a large fenced burrow crowned by a small Cornish stack. This features some unusual stonework.

Connoree is not in the big league by Avoca standards It produced some 16,836 tons of copper ore in 1832-1864: the sulphur tonnage is not recorded. It appears to have stopped before the turn of the century and so escaped being opened out. From Argall's mine plans dated 1879[2], the stack belonged to an 18 inch steam whim (winding engine), the engine shaft with a 36 inch cylinder Cornish pumping engine being some 250 yards to the SW[3]. Both engines were at work in 1857 according to a contemporary report[4]. The mine was then 84 fm deep and under the control of a single proprietor, Mr. Markham Brown.

Subsequently control passed to a Dublin company, and in 1862 it was stated that "three valuable steam engines" had been erected[5]. But it seems that Capt. Bishop was simply left to get on with it, for in March 1868 a special meeting was held to consider the troubled financial condition of the company[6]. Not only was the machinery suffering from neglect, but the secretary had been arrested and charged with misappropriation of funds dating back to his appointment in 1863! Despite this setback, the mine seems to have continued at work, for Argall's cross-section shows the two beam engines and the bottom level sinking below 94 fm.. Apart from the aforementioned chimney stack and its peculiar stonework there is no sign of the engines today. An ill-fated retrial about 1880 used a waterwheel driving pumps to the shaft by means of a long endless rope going up the hill to the mine. Site exploration has revealed traces of the waterwheel and four of the supporting towers for the rope pulleys.

Cronebane and Tigroney are taken together because for two distinct periods commencing in 1836 they were under the same owners, the Williams family of Perran-ar-Worthal, near Falmouth, who also owned the Perran Foundry. Consequently, it is likely that all their engines were built by that Foundry[7]. Cronebane is a long, straggly sett, which extends south-westwards from the Connoree boundary. It takes in two large open pits. The one nearer to Connoree is best explored from that direction by following signs to a local ancient feature called the Motte Stone. Looking down into the Magpie pit are some ponds and concrete ruins from a search for gold conducted by Feltrim Mining in the period 1985-1992.

---

[2] Plans and Sections of the Eastern Avoca (sic) Mines by P.H. Argall, 1879. The author is grateful to two Wicklow correspondents, Alan Thomas and John Higgins, for acquainting him with these.

[3] In Cornish parlance, inches of cylinder bore were quoted in preference to horsepower as a measure of the engine's size and capacity.

[4] Mining Journal December 5th 1857. The report also stated that the mine was raising 1,000 tons of sulphur monthly, plus a little silver.

[5] Mining Journal, August 16th 1862

[6] Mining Journal, March 14th 1868

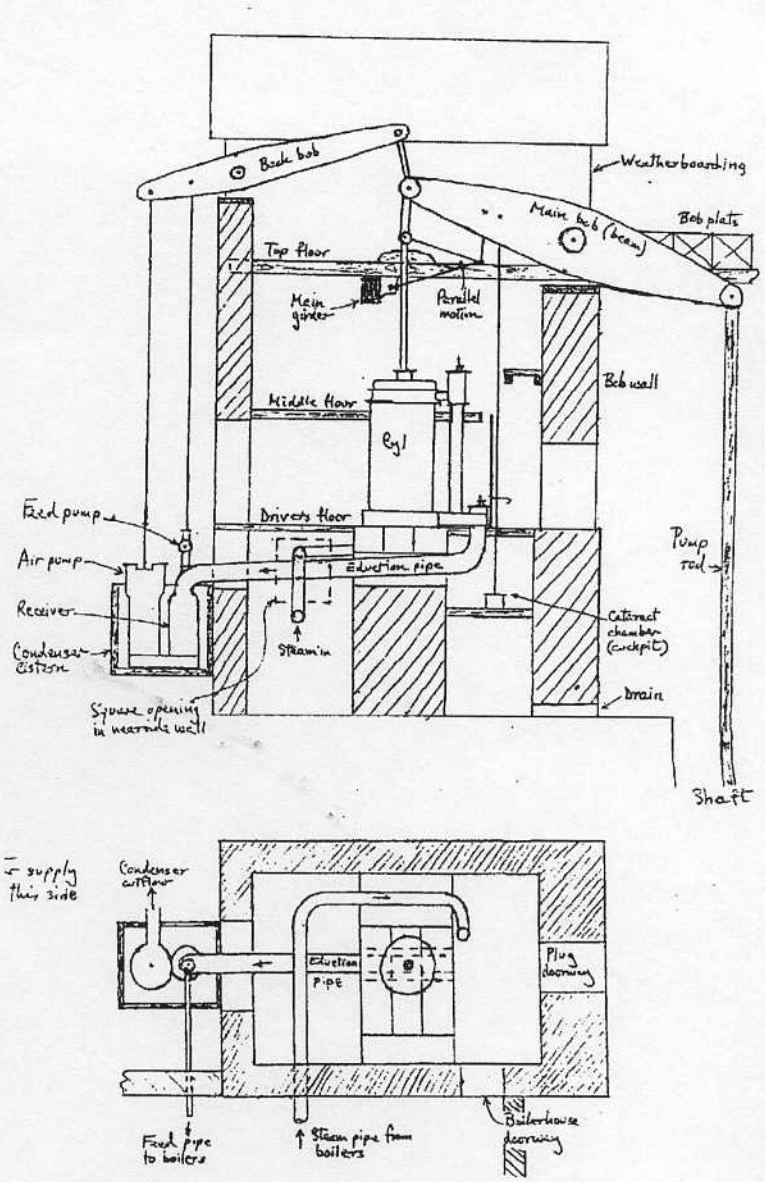
[7] Mining Journal frequently referred erroneously to the Williams' of Scorrier who were prominent Cornish mineral owners. The assumption that all Tigroney's and Cronebane's engines were Perran built was not entirely true as "West Briton" for August 5th 1836 advertised for sale a 24 inch engine, "new by Sandys Vivian with boiler and 48 head stamping apparatus".

There is a track running along the south-eastern side, which leads to the Cronebane pit, but it is recommended that the rest of the mine is explored from the other end, that is from Tigroney. On the hill slope down from the Cronebane pit are the remains of a modern crusher station, while lower down is an engine house with its bob-wall fallen. Almost certainly it housed a large rotative engine which pumped and hoisted from Baronet's Shaft some fifty yards away with which it is aligned. When David Bick visited the structure in the 1950's it was still accessible, and he measured the 4 cylinder bolt centres at 42 inches. This is exceptional and begs the question, how big was the engine?

Three rotative engines were advertised for sale at Cronebane at different times. The last was a 22 inch erected in 1872 and put up for sale with winding gear in 1880[8]. Earlier, in 1866, a 30 inch rotary pumping engine with a whim cage was advertised with "vertical and balance bobs for working flat-rods", together with a 24 inch "steam whim" and two boilers[9]. The 30" engine best fits the surviving house. Cronebane is accredited with an output of 60,995 tons of ore between 1808 and 1912.

Tigroney

Partway down (or partway up) the steep slope to the valley floor is one of the most impressively sited Cornish engine houses anywhere, and the largest encountered in Ireland. It contained Williams' 60 inch pumping engine and is separated from the Cronebane house higher up the hill by a band of trees. The structure is arranged sideways on to the hill, facing south, and has an extra tall brick top to the free standing stack. Moreover, the brickwork is featured with window-like recesses, not unlike two mine chimneys in South Devon.

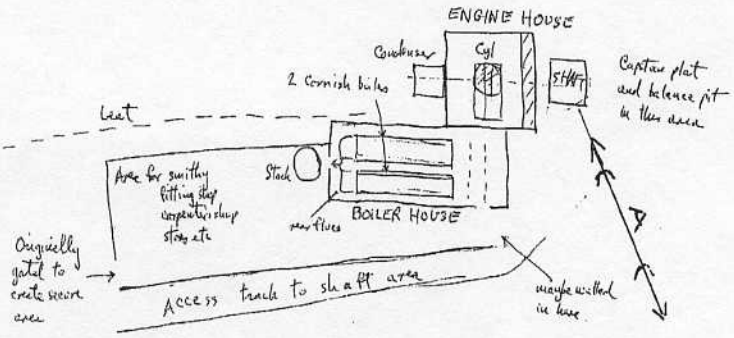


Plan and elevation showing the likely layout of Williams engine at Tigroney.

[8] Mining Journal, August 21st 1880

[9] "West Briton", May 18th 1866. "Flatrods" were horizontal rods used to transmit notion from an engine to pumps in a distant shaft. "Steam whim" means steam winding for hoisting ore from a deep shaft.

The engine itself in a non-standard Perran with an extra large cylinder bed beneath which is a tunnel. It appears that the engine's condenser, instead of being on front of the house next to the shaft, was to the rear. The tunnel would have been occupied either by the exhaust pipe, or by linkage to operate the injection cock feed pumps - possibly both. Air and feed pumps seem to have been driven by a separate bob as indicated on fig. 2. This strange layout is thought to be because cooling water for the engine's condenser came in at the rear along an existing leat built earlier to feed the mine's waterwheels. Traces of the leat can be seen on the hillslope north of the engine. There is no eduction opening in the bob wall so the condenser must have been elsewhere - at the rear outside the engine house appears most likely (fig. 2). As this area is full of rubble the location cannot be proven at present.



Schematic diagramme showing the layout of Williams Engine house. The line "A", lower right, is the putative line of the rods which pumped the shaft from the water-wheel on the Avoca before the engine house was built.

The engine is said to have been installed in the late 1850's and was for sale in 1865[10] but was not dismantled until 1884. The deep adit from Williams' Shaft can be seen discharging into the river beside the bridge, which takes the access road into the mine from the main road. Argall's section shows the shaft vertical to 40 fm below adit and on an easterly underlie to 90 fm. Pumping from this depth the engine must have drained Cronebane as well as Tigroney. The latter's quoted output for 1823-1913 is 25,658 tons.

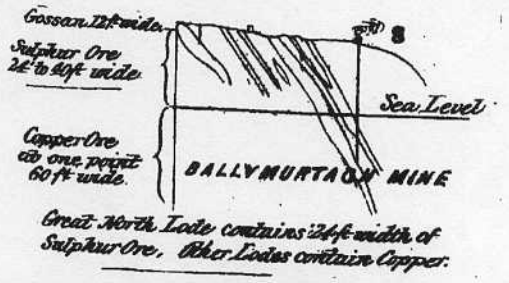


Figure 2. This sections is on a prospectus of the Carysford Mining Company of 1857

Approaching the two mines over the bridge and turning sharp left, a car can be taken up the first part of the zig-zag. At this point Williams' engine house is above the track on the right and is accessible (despite the fence) from higher up. Access may be easier once the current (late 1997) restoration work is completed, Continuing up past a sharp right-hand bend brings one to the Cronebane engine house, with the end of the open pit some distance beyond. From the high ground two chimneys of Ballymurtagh and Ballygahan mine across the valley should be visible.

Near the foot of the zig-zag are some modern mining remains. Close by the railway bridge are two large ore-loading tubs with the waste tips retained by timber "matchbox packs", such as the author has seen used for underground support in South Africa. At a higher level is the blocked up portal of a drift, which extends into Cronebane. Down by the river there is evidence of the undershot waterwheel which pumped Williams' Shaft prior to the engine. It takes the form of a stone arched culvert low down in the railway embankment through which flat rods transmitted power from the wheel and ran up the hill to the shaft. It is about fifty yards south of the railway bridge, on the river side.

---

[10] "West Briton", June 9th 1865. The engine was said to be nearly new and three waterwheels were for sale with it. Probably it carried on working as twenty years later it is believed to have been purchased by Harvey & Co. for reuse elsewhere.

Ballymurtagh and Ballygahan

Another steep zig-zag, but this time on the western side of the valley, leads up to Ballymurtagh[11]. It starts about 300 yards south of the hotel and is a public road. It is possible to take the car a little beyond an isolated house near the top. A winding track then runs to the left, skirting the edge of the huge pit which is being used for refuse. An engine house soon appears on the left. It appears to have contained a rotative engine, of which the author has found no record, but local people attribute it to Ballygahan mine which was situated down near the valley floor. The stack is, unusually, at the bob-wall end of the house. A trench running downhill from one side suggests that flat-rods ran down to a shaft now lost in the pit below.

Figure 3. Working the wide sulphur stopes at Ballymurtagh, c. 1850. (from *The Mines of Wicklow*, Anon, London 1856)

Further on, the track of an incline tramway, which used to serve Ballygahan is seen passing over a stone arch on its way to a waste tip on one hilltop. The main track turns right but a short detour under the arch leads to the faint remains of another engine. Probably a whim, it stood up the slope to the right. Returning to the main track, which runs parallel to the tramway, brings one to a tall stack and the base of a house of a small beam engine which drew wagons on the incline. The house itself was, sadly, demolished in the 1980's.

In the field beyond is the overgrown house of an all-enclosed beam whim.[12] This was possibly a 20 inch rotative engine supplied by Harvey & Co. to Ballymurtagh in 1836 and is presumed to have hoisted from Twin Shafts, as they were known. They can be found among the low bushes not far from modern concrete building ruins and have thick concrete caps over them. The whim shaft has remains of ventilation plant on it. The other, or Engine, shaft had a 50 inch sent out by Harvey in 1841[13]. The base of its stack stands beside the track. It is said to have been felled by sawing through, using a wire rope pulled alternately by two farm tractors! A surviving low wall beside a farm track close to it bears the hallmarks of being part of a miners' "dry" or changing house.

This area may soon change. Experiments are in progress with a view to planting over the waste tips. Ballymurtagh could do with further study. There is a story that "brass rods" from an engine were kept in the mine office in the 1950's. During the 19th Century the mine was worked for many years by the Wicklow Copper Mining Company and its resident director, Mr. Edward Barnes. It was 110 fathoms below adit by 1857. In the 1860's an important iron lode was discovered: in 1864 it was stated to contain 50% metallic iron[14]. In 1874 the 50 inch engine was still working with two 11 inch plunger lifts. The £1,100 profit for the first half of that year was a big drop on previous years[15]. It seems the working ceased in 1877, the end as far as the Cornish engines were concerned. An output of 92,615 tons of copper ore is on record for the period 1822-1875.

Ballymoneen: The engine site here consists only of the stack and rear of the house. The shaft lies some distance in front of the engine house so there must have been a small rotary engine here. Going from

---

[11] Ballymurtagh had its beginnings in 1780 when the Hibernian Mining Company was formed for working it. Mining Journal, December 5th 1857.

[12] By "all enclosed" we mean that the whole engine was inside the house with just the winding cage outside. The crankshaft being extended through the side wall. Most Cornish engines were arranged both half in and half out, like Williams' engine at Tigroney.

[13] Both engines appear in the Harvey Ledgers.

[14] Mining Journal, May 7th 1864

[15] Mining Journal, January 7th and October 31st , 1874

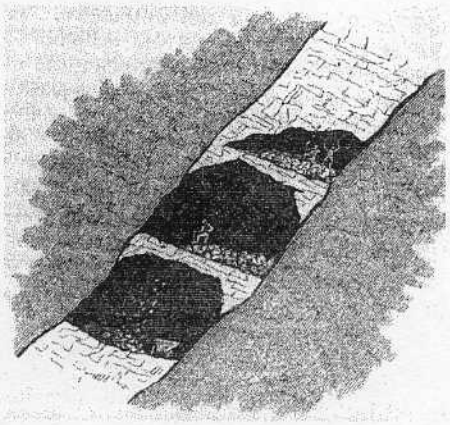


Figure 4 (as fig 4 above)

Avoca to Arklow, the site is accessed by taking the road after Ballymacadam Church of Ireland. Having passed a number of cottages after a mile and a half there is a lane to the left on which there are two bungalows. The engine house is on private property at the back of a milking parlour nearby. It was built by the short-lived Ballymoneen Sulphur and Copper Company which had, apparently raised enough money in London to purchase an engine. By August 1857 it had started to pump out older workings. The Captain there was a William Barkla who submitted regular accounts of this operation to the Mining Journal.

The reports continue over 1858 with variations on "ground not looking so good today" as well as mention of hard rock and foul air. Those interested are assured however that "small batches" of sulphur are being set aside" as development work continued. There is no record of sulphur or any other ore ever being sold from here and the inevitable happened.. There was still some sort of operation there in the Autumn of 1859 after which no more is heard of it.[16]

MISCELLANIA

ARTICLES RECEIVED BY THE ASSOCIATION

1. Mr. Ike Wilson of Cheshire has kindly donated a set of forty nine miscellaneous technical plans associated with the Tynagh mines of the 1970s. There is also a production book giving daily production of lead, zinc and copper along with assays and running totals between 15th November 1972 and 13th April 1973. Mr Wilson has also recently presented to Bunmahon tidy Towns Committee a full-sized restored mine wagon such as was probably used in the mines there. This is to be mounted at the approach to the village with and explanatory plaque.

2. Dr. Willie Nolan of Templeogue has presented, "*In memory of Thomas P. Lyng (died 1997) who taught the children of of Castlecomer's miners in Castlecomer primary school and wrote their history in Castlecomer Connections*", a copy of the book *Richard Sutcliffe, Pioneer of underground belt conveying* by R.J. and Edward D. Sutcliffe (Surrey 1948). Richard was born in 1849 on a farm on the Slievardagh coal district in Tipperary. Aged 18 he was offered a job at the Wolfhill colliery in Castlecomer. There and at the nearby Clogh he developed the skills that were stand him in such good stead when finally (after a brief interval mining at Slievardagh) he took himself off to Barnsley in 1885 and the beginning of a career that brought him fame.

THE PROTECTION OF MINING HERITAGE IN IRELAND

The mining heritage of Ireland faces a considerable number of threats to its physical survival in modern times, be it through deliberate interference or sheer neglect. While members are aware of the adverse impact of such activities as landfill and afforestation, the scale of this problem is generally not appreciated by those State authorities charged with the preservation of archaeological heritage. The Society can play an important role here by promoting awareness and by actively recording the dwindling physical and documentary evidence of past mining and quarrying. By doing so, it should be possible to raise the profile of mining heritage in Ireland to the point where mines and quarries are regarded no differently to churches, castles or megalithic tombs, in terms of the State's responsibility to protect and maintain.

---

[16] Mining Journal 1857, p 189, 277 and passim "British Mines"; p. 841 "Mineral wealth of Ireland II" by "A Mining Agent" (Barkla?): 1858, "British Mining" passim, repectively p. 337, 436 and 183 up to November:1859, p. 141, report General Meeting .: "British Mining" passim with gap from late June to September, finishing mid October.

In the Republic, there is currently a very strong body of parliamentary legislation dealing with the protection of archaeological heritage At the core of these powers is the National Monuments Act (NMA) which provides two State authorities, the Heritage Services branch and the National Museum of Ireland, with responsibility in this area. It is important that individual members of the Society be aware of this legislation which regulates many aspects of archaeological research in Ireland. Many provisions in the NMA will have to be built into a Code of Conduct to ensure the good name and responsible conduct of the Society. Finally, we must also examine the role which different State authorities can play in protecting mining heritage and their various responsibilities under the law.

THE NATIONAL MONUMENTS ACT (1930-94)

In 1930, the Irish government passed National Monuments Act, which was subsequently amended in 1954, 1987 and 1994. The latter amendments were necessary to provide increased powers to deal with the growing pace of site destruction in modern times and the threat posed by metal detecting, the looting of underwater heritage and the theft of antiquities. In recent decades, the authorities in both Northern Ireland and the Republic have been fighting threats to archaeological heritage on many fronts. The powers now contained in the NMA, together with a large State investment in inventory survey, means that legal structures are now in place to safeguard archaeological heritage for future generations. It now remains for us to ensure that mining heritage is fully included in this protection.

The Definition of Archaeological Heritage

The 1930 Act defined archaeological remains chiefly in terms of "monuments" and "objects", the former represented by surface or sub-surface remains "...the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic, or archaeological interest attaching thereto..."(1930, 2). The 1987 amendment expanded this definition to include the concept of an "archaeological area" It also expanded the definition of a "national monument" to essentially include all archaeological sites which are now regarded as "historic monuments". The latter is basically any site "...associated with the commercial, cultural, economic, industrial, military, religious or social history of the place where it is situated..." (1987, 1, 1). This definition is sufficiently broad for our purposes to include all mineral extraction sites. However, the 1987 amendment did place a 1700 AD cut-off date on sites to be covered by the NMA provisions, with a Ministerial power of discretion to include sites of more recent date. There is no such ambiguity with regard to portable objects, as the original broad definition introduced in 1930 still stands and includes any object of archaeological or historical interest.

As matters stand, all abandoned mine and quarry sites come under the terms of the NMA. though the State has adopted a discretionary approach with regard to sites post-dating 1700 AD. However, a small number of 19th-century mine sites and buildings have been included in the Archaeological Survey of Ireland and the State retains the power to include additional sites when it so pleases. Because of its arbitrary nature, the 1700 cut-off date can no longer be justified and this is particularly true of mine and quarry sites. It is important to stress to members of the Society that many mine sites in Ireland have a long, multi-period history of exploitation which cannot be dated definitively by documentary records. Accordingly, these mining and quarrying centres must always be regarded as potentially having a long antiquity, even if this cannot be proven on the basis of currently available information. For those sites of more recent date, it is clear that the spirit of the NMA covers all industrial and economic heritage in the Republic. In conclusion, all mine and quarry sites in Ireland are regarded by the State as of archaeological or potential archaeological heritage and so fall within the remit of the NMA legislation.

[NOTE: This acts as introduction to Dr. O'Brien's full analysis of legislation relating to mining heritage in the Irish Republic; the remainder of the text will be published in *Newsletter 7*. However, full copies of the article will be available for the A.G.M. and on application to anybody who wants the entire text together.]