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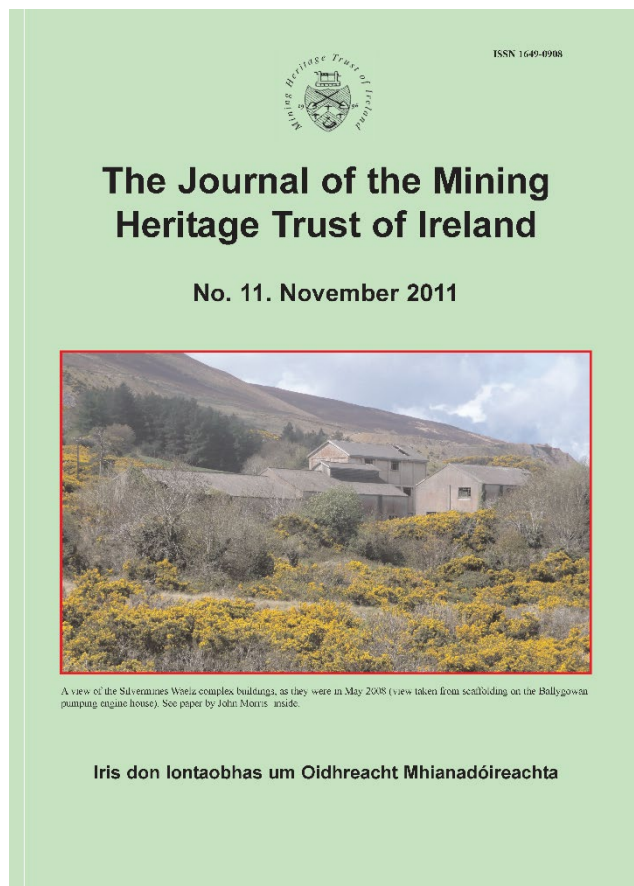
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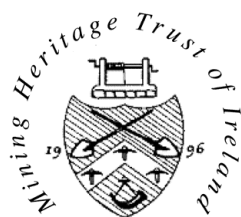
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# BALLYMURTAGH MINE, AVOCA: A HISTORY

by Des Cowman

**Abstract:** This was the largest of the mines on either side of the Avoca River with a history of continuous 19th century mining for over 60 years and almost 300 years of sporadic mining as indicated by the simplified tabulation below. Copper was the main mineral extracted up to 1840 when huge quantities of pyrite were mined along with some iron. Between 1904 and c. 1939 ochre was the main product from there with copper once again the main mineral in the second half of the 20th century.

DATES	COMPANY OR OWNER	COMMENTS
Pre 1691	John Howard and daughter Mary	Mary married Adam Kyan
1691-c1750	Probable sporadic mining.	Kyan gave lease to one Whalley.
c. 1775-'90	Leased to Anglo-Welsh company	Acrimony
1790-'98	Hibernian Mining Company	J.H. Kyan and Camac brothers.
1822-'85	Wicklow Copper Mining Company	Edward Barnes manager to 1872
1904-'39	Various leases	Ochre
1942-'47	Worked by Government agency	Pyrite
1955-'62	St. Patrick's Copper Mines	Owned by Mogul of Canada.
1969-'82	Avoca Mines Ltd..	Owned by Discovery Mines of Canada.

The purpose of this article is to show the extent to which Ballymurtagh mine was exploited for profit by these various owners where surviving evidence allows such to be done. Issues such as mining society have been dealt with elsewhere (Cowman 1994) and are not replicated here. Relevant articles already published in this Journal are just summarised. *Journal of the Mining Heritage Trust of Ireland*, 11, 2011, 25-34.

## BALLYMURTAGH UP TO 1798

The only evidence for 17th century mining was that John Howard left the mine there to his daughter Mary in 1691. She married Adam Kyan and hence the mine came into the possession of that family many of whom continued to use the word Howard as middle name (HP 23). There is no record of what mining took place there up to about 1750 when it closed "on account of some difference between Mr Whalley and the company" (Henry 1753, p. 50). The result of whatever mining had taken place before this had left the Avoca River highly polluted (Stokes, Pocock 1852, p 159-160) and indeed by 1800 all fish life was reported to be dead (Shaw Mason 1818). John Howard Kyan inherited land and mine in 1766 and later decided to develop the mines, ambitiously also getting a lease on Cronebane across the river (HP 23). Furthermore, he decided to smelt the copper and got Parliamentary grants to do so in 1783 and 1785. The result was later dismissed -

The expended and immense capital on a succession of expensive but useless surface works consisting of large smelting works on the sea-shore near Arklow where coal could not be landed except for summer months; of building five large conical kilns for calcining ore in only costly projects" (Griffith 1828).

Clearly professional expertise was required and by coincidence such was at hand. Roe & Company had just lost their lease on Parys Mountain and sought a new source of supply for their

smelter in Macclesfield. A deal was done in 1786 for a royalty of one eighth and a down-payment of £1,500 for a long lease on Kyan's mines (HP 23). Within a year Roe & Co. hit a rich vein in Cronebane and they seem to have committed themselves to that, changing their name to the Associated Irish Mining Company. Kyan seemed to have been irked that his own mine was being ignored - AIMC spent only two days' working there in 1788 worth 3/4d (Ms 16306, noted in Dec. 1778). A contemporary referred to Ballymurtagh being closed due to "dissention among the proprietors" (Anon 1788). AIMC formally surrendered their lease there in October 1790 (HP 36) prompting Kyan to rework it himself.

Presumably his smelting extravaganza had depleted his finances so December 1790 he brought in as partners the Camac brothers, John and Turner. Something of their radical background has already been published in this Journal (Dickson, 2006). They brought only £1,500 for a two third stake (HP 36). The new entity was to be patriotically incorporated in 1792 as the Hibernian Mining Company (Irish Statutes 1792) and they remained as landowners of Ballymurtagh for almost a century. The rancour between Kyan and his Anglo-Welsh neighbours of AIMC manifest itself in petty aggrandisement such as when during testing at Ballygahan (which forms a "C"-shape around Kyan's mine) an operative stepped across the line and Kyan shouted at him that he was not wanted there (Ms 16306). The copper-rich mine water from Ballymurtagh running downhill through Ballygahan was being harvested by precipitation (copper accumulated on iron left in wooden troughs) by AIMC.

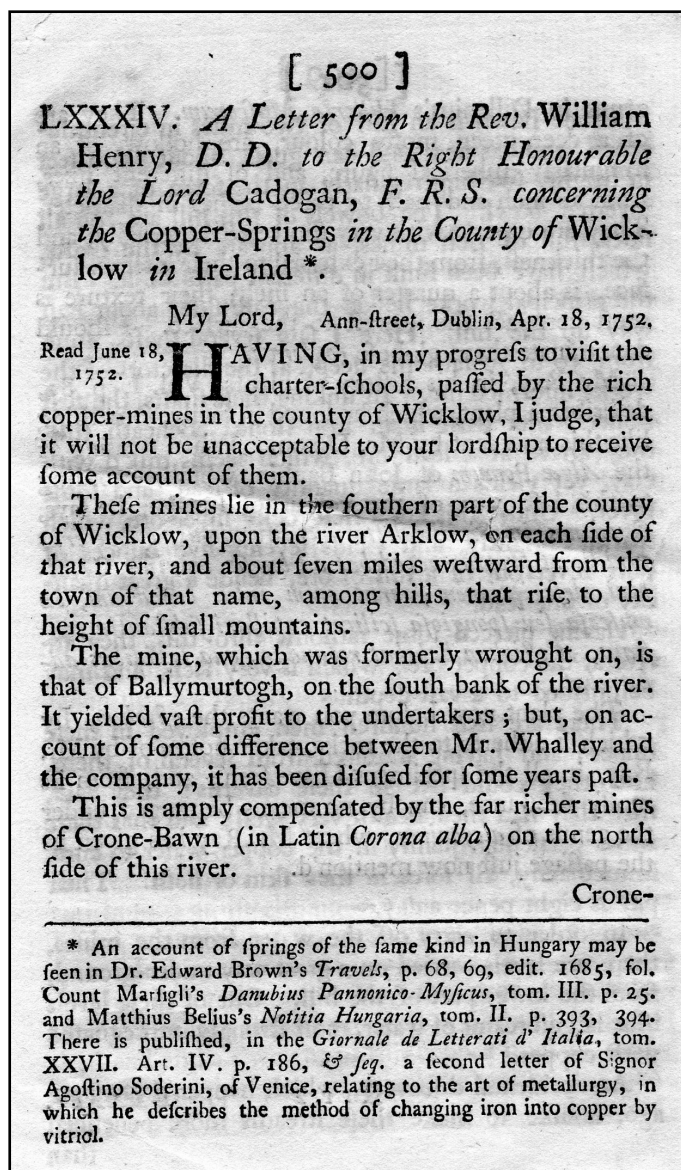


Figure 1. The first known printed account of Avoca mines by W. Henry, 1753.

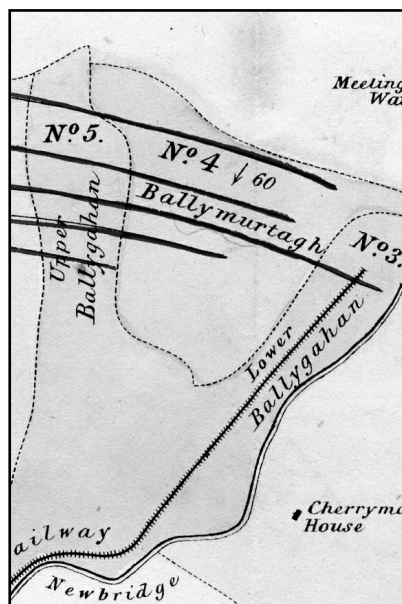


Figure 2. Plan of 1856 showing the relationship between Ballygahan and Ballymurtagh.

These had been vandalised by the agents of one particular suspect who presumably regard the flow from Ballymurtagh as his (Ms 16306). The most spectacular conflict, however, was symbolic as already narrated in this Journal (Morris 2003). In brief the "Battle of the Tokens" related to the fact that AIMC had been issuing tokens in Macclesfield due to a shortage of small coinage and continued to do the same at Avoca. Kyan and the Camacs saw this as a challenge and rolled out 185 variations of patriotic tokens between 1792 and 1798. While this was happening four partly unrelated events happened in 1795-c1800 which impacted locally.

(i) Political tensions arose from the French Revolution of which the Hibernian Company were advocates, especially the Camacs. Militias were being established all around the country and the brothers set up a cavalry and infantry unit comprising mostly miners. "A most dangerous body of men" according to one local loyalist (Parnell 1796). AIMC across the river expressed its loyalty to the crown with uniforms with a fife and drum band (Ms 16306). When revolution did break out in the area in 1798, there were other priorities than the advancement of the mines.

(ii) Gold had been discovered in streams running north from Croghan Kinsella to the south-west in 1795 and the local people flocked to pan there. However, all gold was vested in the monarch, George III at the time, and the loyal uniformed Cronebane (AIMC) militia were ordered to help to drive the locals away and to discover the source of the alluvial deposits for the enrichment of George the Mad. This story and the failure to discover such has already been told in this Journal (McArdle 2003). However, it must have looked at that stage that the future was in gold rather than copper.

(iii) In early 1796 there was a parting of the ways between J.H. Kyan and the Camac brothers with writ and counter writ (HP 36). Details are not clear but it appears that Kyan won. John Camac wound up in debtors' prison (Dickson 2006, p. 39). Strangely, Turner was still in Dublin in 1802 as his son William was born there then. Sometime thereafter they went to his wife's people in Philadelphia (www.ancestry.com). Thus the major investors in Ballymurtagh departed.

(iv) Such copper as could be cheaply dug out of all the Avoca mines was probably exhausted. In the uncertain markets created by the Napoleonic wars investment was unlikely. Ballymurtagh mine lay idle for about 25 years and its competitors across the river for almost 35

What were the consequences of the Hibernian Mining Company's endeavours at Ballymurtagh? Two short term successes are recorded. Kyan's legal victory gave him the huge £2,500 worth of ore sold from there up to the 1796 dispute (HP 36). A Swansea source refers to 32 tons of almost pure (92 ½ rich) copper sold from there (Grant-Francis, 1881). However, a contemporary reports on local belief that a surely exaggerated £60,000 had been spent before any such was raised (De Lacotayn, 1786-'87). Other evidence is more negative about the efficiency and practicality of the Hibernian company. They successfully applied to dig an impossible canal from Arklow to Glenmalure with an extension to Castlecomer to transport coal

in 1792, with costings for tolls, etc. (Irish Statutes, 1792). Of course it was never built. Lack of attention to smaller detail has been indicated through the "grotesque mistakes on their tokens" (Morris 2003). Thirty years later a respected observer (Griffith 1928) said of this operation -

Little attention was paid to actual mine working so that access to the ore was ill contrived and the expense and difficulty of raising the ore from the botts unusually great. They used a very primitive and inefficient method of draining the mines by a series of wooden pumps one above the other worked by a series of men - a most precarious and uncertain system and in itself sufficient to prevented all well-doing but retard the progress in bringing the miners to the more productive beds beneath (Griffith 1828, p 20).

To judge by this only shambles of mining was left by 1798 and later reportage from 1822 seems to bear this out. However, there were unexplained sequels before then. Kyan (presumably) advertised sixteen share of £100 each in HMC in *The Morning Chronicle* of London (2nd May 1803). This may not be connected to a London-based company of nine men (including a William Camac) being formed to buy the two-third shareholding of the defeated Camac brothers. Some financial activity, not necessarily mining, took place from 1805 when each of the shareholders was asked to contribute £10 each plus £20 each two years late. All did, except William Lane who acted as treasurer. He claimed that the company owed him money and took legal action against the other eight. That was not resolved until 1811 when he was awarded £583. Rather than contribute over £70 each they handed the mining lease over to Lane (HP 36). No more is heard whether this proved as asset of a liability for him.

The abandoned mines at Ballymurtagh and Ballygahan remained in the ownership of the Hibernian Mining Company which was never dissolved nor sold. Effectively however it was in the sole ownership of the Kyan family. Another John Howard Kyan inherited the holes in the ground in 1804 on his father's death. An observant younger son seeing how mine-water-from Ballymurtagh preserved wood, eventually (1832 and '36) took out a patent on the "Kyanisation" process. It was commemorated in doggerel thus (DNB) -

"Have you heard, have you heard  
Anti-dry rot's the word?  
Woodwork will never wear out thanks to Kyan, to Kyan,  
He dips in a tank, any rafter or plank  
And make it as immortal as Dyane"

## WICKLOW COPPER MINING COMPANY: THE COPPER PHASE 1822-C.1850.

On either side of Ballymurtagh is Ballygahan, Upper and Lower, which Henry Hodgson started mining c. 1818. He and Cheney Brady had a lease there since 1791 (HP 23). That there were two Hodgsons on the board of Roe & Co who had a lease of Ballygahan from 1786-1790 presumably is not just a coincidence (Ms 16309). There was a logic for Hodgson to seek access to the intermediate Ballymurtagh which was still await-

ing court proceeding from the Kyan-Camac split (where, Lane, etc. fit into this is not clear). By 1822 Hodgson got permission from the Court of Chancery to lease the mine from the bankrupt Hibernian company as well as their dockside at Arklow (Anon 1856, p 47). Monies were raised through eight investors pledging themselves to six thousand £5 shares in a new entity, Wicklow Copper Mining Company (HP 23, June 1827)). As was usual with new companies, the £5 did not have to be paid immediately but through a series of "calls" when money was needed for development. However Ballymurtagh began to make money after only half the £5 had been called (MJ 1863 p 668, sorting out confusion about this) so the original eight and descendants went on to make a great deal of money from modest investment over the next forty years. A further £1,000 was given as a loan by the Board of Works (Lewis, 1837). Management of the operation to sink to the bottom of the old workings was given to Hodgson's nephew, Edward Barnes (Anon 1856, p 48). The company secretary was W. Hodgson Wright (another nephew?).

Between 1822 and 1827 a moderate output of ore is reported from Ballymurtagh - presumably what could be got at cheaply. During the three year gap in production thereafter decisions were probably being made as how to proceed with the ruined mine. Production soared from 1833 (but see fig 1) so that by the end of 1834 the company was able to pay a 6% dividend to shareholders (MJ 1835, p 141). While rapid surface developments seem to have taken place over the next six years, as usual with Ballymurtagh, the details are contradictory. By the end of 1835 they were 600 feet deep and being pumped by a 30 inch engine, ore being raised by a steam whim with another being built plus a crushing engine (MJ 1835, p 137). A slightly later accounts paint a somewhat different picture with a 45 inch winding engine and 50 inch engine used for crushing and winding (Lewis 1837; OS Name Books 1838). Typical of the contradictory records a more authoritative report states the pump engine was a thirty inch in 1838 and that there were two steam whims (Harveys, letter). However, another version off this has a 20" engine invoiced in 1836 (Cunwick 2002). The 1840 O.S. map shows three engines, a wheel beside a "copper reservoir", a calcining kiln and dams with a mill.

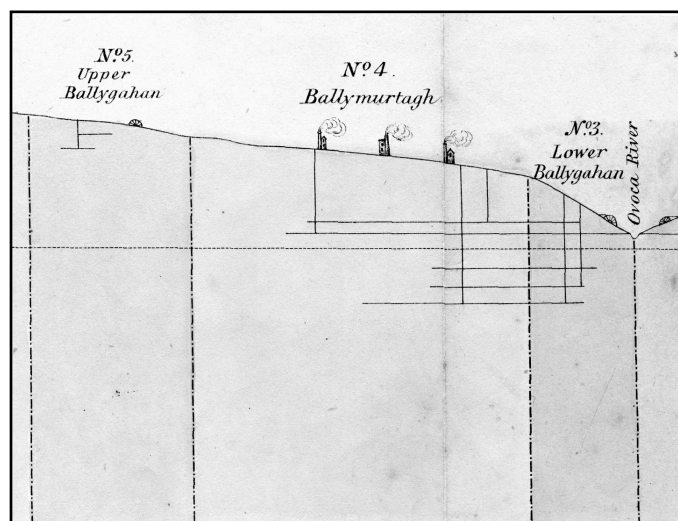
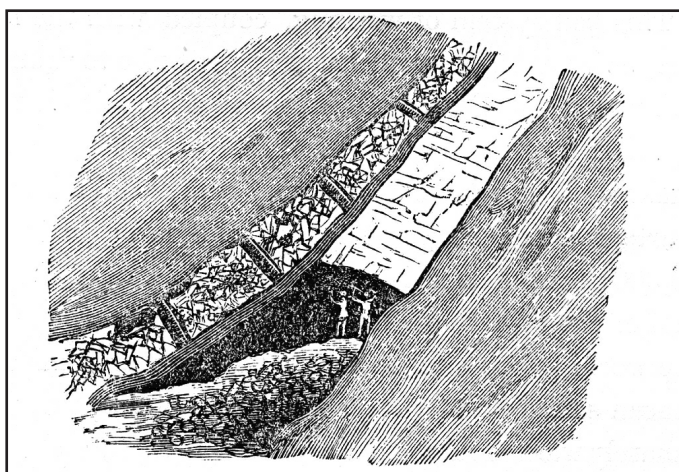


Figure 3. Section of 1856 showing three engines at Ballymurtagh.





**Figure 4. Illustration from Anon 1856 showing miners working on sulphur lode not conscious of the old deads above them.**

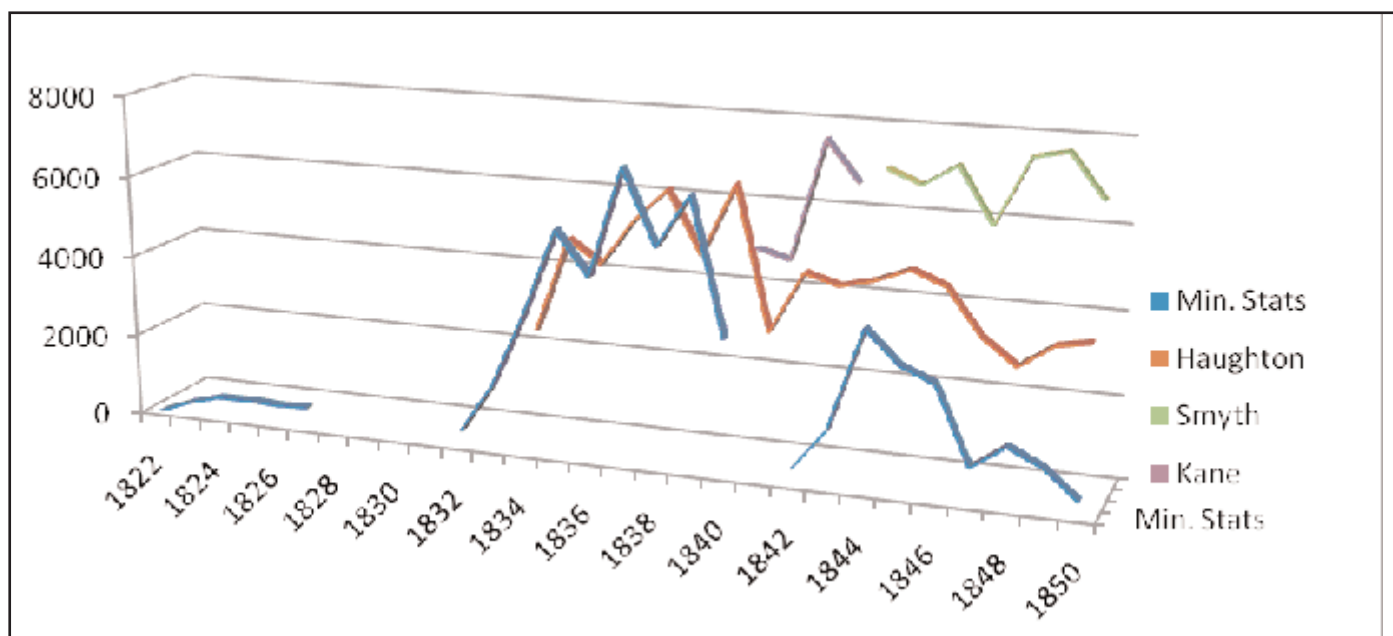
Sometime in 1835 they had a near disaster. The miners, alerted by the fact that the rats were leaving the mine, followed and most were clear before 30,000 tons from the roof of the 18 fathom level crashed down. Eighteen men trapped in a level were subsequently rescued. A dip in production 1835-'36 was probably due to reinstating the mine. An even worse run happened on St. Patrick's day 1845, while the miners were out celebrating. Old deads (Hibernian MC?) crashed through the levels, swallowing up even surface buildings (Anon 1856, p 91-93).

Little normally survives about the qualities a mining captain requires to run a mine. Captain Moyle there refers to the qualities manager Barnes demanded in 1838. The mine captain must be able to "cast all small brasses and cast and fit all small jobs that's required to keep the engine and machinery in order, and particularly one that can draw such sketches as may be required to order any part of an engine or machinery ----. But above a steady and well-conducted man as no other than a man of good conduct will answer here. (Harvey, letter).

After about 1838 there are gaps and inconsistencies in reportage as indicated in Fig. 5. The drop and disappearance in the official Mineral Statistics is because they recorded only sales in Swansea whereas the company acknowledge that it had other outlets for its ore (MJ 1846, p 188 and see table 1). The company provided all three with statistics from the mine; Kane acknowledged company secretary Wright and Smyth thanked Barnes. This last shows that up to 1845 about half the ore raised was sold in Swansea but "other ports" feature more strongly thereafter. For instance in 1848 and 1850 some 1317 and 339 tons respectively were shown as sold in Swansea (a little less than the MS figures of 1449 and 370 tons) while in those years 6304 and 6415 tons were sold elsewhere (Smyth).

In 1844 the Hibernian Mining Company in the persons of John Howard Kyan jnr. and his sister, still had about one third stake holding in the mine. They seem to have mortgaged some of this to an entity called The Patriotic Insurance Company (HP 23). This may reflect Kyan's perennial money problems although he was said to be bankrupt and owed WCMC money. He attended their meetings but refused to transfer any shares (HP 36). By 1849 they were both dead and he left his stake to his son Edward. The company declared this somehow in breach of a 1791 agreement "either in ignorance, forgetfulness or in fraud" (HP 23). The resolution of that anomaly remained fifteen years into the future.

As the first C implies, WCMC was established to mine copper. The pyrite there was regarded as a nuisance, as it formed a flaky unstable back to the copper vein (Argall 1880). From 1839 this suddenly became valuable.



**Figure 5. Contradictory statistics on Ballymurtagh copper tonnages sold. 1822-1850 from Min. Stats. (broken blue line); 1834-'50 from Haughton (red); 1840-'43 from Kane (purple); 1844-'50 from Smyth (green).**

WCMC PHASE 2, 1840-'85; PYRITE, COPPER AND IRON

The source of most of the sulphur used in industrial sources in Britain was Sicily, owned by the king of Spain. A complex stand-off between him and Britain in 1839 caused a banning of sulphur exports (Thompson 1995) so that the Avoca pyrite as a source for sulphur assumed a sudden value. One anonymous source said that Ballymurtagh was about to close when Hodgson sent a sample of pyrite to market and both mines then realised what a valuable asset they had (MJ 1858 p 134). The first cargo from Ballymurtagh was exported to Deeside in December 1839 (Barnes 1864, p 10) and was highly remunerative at 37 shillings per ton and remained profitable even when the price dropped over the next ten years to 20 shillings (Haughton 1853, p 283). In the first heady months, it was later said, even the roads were dug up too get at their sulphur trunking (Ryder 1888, p 744). Within 18 months from 500 to 1,000 carts were reported to be employed daily hauling the bulky ore to Wicklow or Arklow "with a vast number of coasting vessels conveying it thence to Dublin" to be transferred to cross-channel boats which would not have been able to enter either of the poor local harbours (Roper 1841). Transport to Arklow seems to have been improved by 1850 with rails being laid along the Avoca, the carriages being pulled by horses or cattle (Webb 1851, p. 29). However, no statistics on sulphur output from Ballymurtagh are available for another 15 years.

The problem of statistics reoccurs even though there is an apparently reliable breakdown of what was exported from both Wicklow and Arklow from all the Avoca mines. However, there is no provenance for this and it is reproduced below (Table 1) not on the assumption of accuracy, but because it comes from a source not readily available (GSI digital file MR0056[1] p 93: ms p 391). It shows fluctuating tons of pyrite, mainly going through Arklow after 1844: while there are similar fluctuations in copper the pattern is mainly of decline with Arklow not

Year	PYRITE (Tons)			COPPER (Tons)		
	Wicklow	Arklow	TOTAL	Wicklow	Arklow	TOTAL
1840	27,172	13,004	40,176	7,065	4,365	11,429
1841	40,823	36,565	77,388	1,764	3,376	5,140
1842	20,494	19,963	40,457	5,406	5,776	11,182
1843	19,995	19,191	39,186	4,292	4,545	8,837
1844	15,772	19,189	34,961	4,892	5,270	10,162
1845	9,573	24,445	39,018	4,854	5,042	9,896
1846	10,815	25,245	36,060	3,958	4,350	8,308
1847	10,619	29,889	40,508	1,919	2,886	4,805
1848	15,462	25,777	41,239	307	3,600	3,907
1849	19,103	26,524	45,627	142	3,800	3,942
1850	24,221	49,823	74,044	1,493	2,836	4,329
1851	29,399	73,039	102,438	41	2,023	2,064
1852	30,770	67,218	97,988	444	2,358	2,802

Table 1.

becoming dominant until 1848. No doubt there were logical reasons behind this which the sources do not reveal. It is also a simplified version as the company's own reports refer to sales of "coppery pyrite" and precipitate.

By 1850 a new level, Margaret's, opened up access to new copper and pyrite resources. An easily quarried haematite lode, 52% rich in iron, and worth fifteen to seventeen shillings per ton in Swansea had been discovered on top of Ballymurtagh hill (Haughton, 1853, p 280-281; Anon 1856, p 51). However, thirteen years pass before there are any statistics on this trade so this phase of mining is even more problematic to analyse than the earlier one. Table 2 gives the limited recorded prices for each of the three minerals sold from Ballymurtagh. Pyrite was by far the most valuable product. It probably accounts for the original £5 (nominal) shares selling for £43 in 1852 (MJ 1852 p 80) and then shot up to £72 in 1854 when dividends of almost £8 per share were paid (MJ 1855, p 108). The collapse the following year was attributed to supply ships returning from the Crimean War picking up pyrite from Rio Tinto in Spain (WCMC report March 1855).

Something of what the shareholders were told about the company's fortunes is set out in Table 2 below from 1854 to 1870.

In 1857 with that war over, the company reported that it could hardly keep up with the demand for pyrite and there is reference to "urgent and pressing" demand for deliveries with 35,000 tons (over 100 tons per working day) being raised that year. "The present remunerative price" allowed 30/- per £5 share to be paid in both 1857 and 1858 (WCMC reports). Director Barnes was up-beat about the prospects in 1860. A new engine was being erected and by arrangement with the Hibernian company the pier at Arklow was being extended to accommodated the "first class steam barge" that had been commissioned (MJ 1860, p 656 ). It was launched on 25th September 1860 according to a report in the next day's Belfast Newsletter. Imaginatively named "Ballymurtagh", it was 70 feet long and could transport 500 tons. Strangely, no more is reported about this barge but what Barnes failed to say was that it should have been unnecessary as the Dublin-Wicklow line had been available since the previous year and had been incorporated into Hodgson's line from Ballygahan. However, WCMC did not use it and six years later were still transporting their huge tonnages to Arklow by horse-drawn rail carriage (MJ 1865 p 289). The complexities of the relationship between the mines and the railway company have been explored in this journal (Waldron, Sheehan and Wilson 2004). Not until 1st January 1867 did they eventually sign a ten year contract to have their ore brought by rail directly to Dun Laoire for shipment (IB 5th April 1867 p 97).

The early 1860s brought technical and structural changes for WCMC. Innovations in 1860 included a new engine (MJ 29 Sept 1860). Much detail is available about progress underground but it is not the purpose of this article to pursue such apart from oddities like hitting what seem to be giant geodes at an unspecified time. They also came across a cavern with a lake which they explored by raft before draining it. Air was a problem and had to be driven through pipes (Barnes, p 8 &11). By the mid 1850s water was pumped to adit level by a 50 inch engine and ore raised to surface by a 30 inch engine which also

DATE	SELECTED COMPANY ACTIVITY	DIVIDEND	SOURCE
1854		nil	MJ 1855 p 43
1855	Positive developments. First shipment iron	?	WCMC 3/55
1856		12/6d	MJ 1857 p 48
'57/58	"present remunerative price for pyrite". Searches for new copper lode unproductive.	30/-	WCMC
Mar. '61	New engine	52/6d	WCMC
Sep 61	"at no former time – did prospects of production present a more permanent and satisfactory appearance –"		WCMC
Mar. '62	Depressed ore price; sales just cover expenditure.	nil	WCMC
Mar. '64	Price recovery	6/-	MJ 1864, p 329
1865	Still carting to Arklow, "cheaper than rail"	?	MJ 1865, p 289
1866	Puddling furnace and rolling mill for iron. New steam engine. "Embarrassing scarcity of labourers"	14/-	MJ 1866, p 248 & 641
1868	Depressed prices for pyrite.	6/-	MJ 1868, 290&752 p
1869	Foreign pyrite "flooding" the market.	5/-	MJ 1869, 260&749 p
1870	Iron sales holding.	2/6	MJ 1870, p 895

**Table 2. Reports of directors to shareholders.**

YEAR FROM 1 <sup>ST</sup> MARCH	1857/58	1858/59	1860/61
Ore Sales	£43,002	£46,006	£44,461
Miners' pay	£16,868	£16,898	£17,179
Total turnover	£43,068	£44,085	£44,833
Dividend per share	30 shillings	30 shillings	52.5 shillings

**Table 3. Selected financial details on WCMC (Half-annual Reports).**

crushed. Three other engines are mentioned but no details given (Anon 1856, p 51-53). Possibly, in anticipation of the railway settlement, the double handling with kibbles was replaced in 1862 by an incline up which wagons could be hauled. New launders were installed for the more efficient harvesting of valuable copper precipitate (FJ 26th May 1863). That year also it was agreed, after long negotiations to merge the WCMC with its landlords the Hibernian Mining Company (HP 32) but because of legalities the first meeting of the joint company did not take place until April 1864 (FJ 3rd May 1864) although trouble still lay ahead. The expanded WCMC continued to prosper and the MS for 1866 show nearly 50,000 tons of pyrite being railed and shipped (i.e. about 1,000 tons per working week) along with copper and iron.

Table 3 represents the only reasonable accurate account of the company's financial activities and shows stability between 1st March 1857 and 30th April 1861. However, if such figures were available for the late 1860s a different pattern would emerge. Pyrite accounted for about three quarters of the value of ore sales here and the last recorded sales of copper ore (as distinct from precipitate and copper pyrite) was 100 tons in 1857/58 (WCMC reports). Most of miners' pay (this does not include directors' fees, etc.) must have made an enormous contribution to the local economy although there is no means of measuring

the benefits from Ballymurtagh and the other local mines. The total turnover is simply a measure of WCMC's activities which in today's values would be in the millions. For any of the eight original shareholders still in possession of shares for which they had paid two pounds, ten shillings in 1832 (MJ 1863 p 668), these years alone gave them a more than doubled return of well over £5 and some would have more than one thousand shares. While there were more modest returns over previous and following years, Ballymurtagh would have made such shareholders very rich indeed.

The other Avoca mines benefitted from the same boom which strangely resulted in a labour shortage for them all (Cowman 1994, p 779). Inexplicably, there was a drastic fall in the population of Ballymurtagh (more so than the other mining townlands) from 410 people in 1851 (70 Houses) to 229 (44 houses) ten years later (Census 1991, summary p. 1096-7). The company did note "scarcity of labour" in 1861 (WCMC March 1861). From 1866 WCMC due to "the scarcity of labourers" tried to induce them to stay them by building cottages and providing gardens. That this did not work was blamed on the "ignorance" of the locals and no more cottages were to be built from 1868 (MJ 1866, p 641). Maybe it actually did work as the population dropped by only 17 in that decade and two extra houses are recorded (Census 1891).

In 1866 shareholders were told of a bold move - the company had built a puddling furnace to smelt its iron and rolling mills for sheet and bar iron. Plate had already been sold (MJ 1866, p. 441). There is no further reference to this worthy endeavour. However, by 1868 a fertiliser factory was set up in Wicklow (MJ 1868, p 767) and while there is no mention of its relationship to Avoca mines, a successor factory in Arklow had a close, though short-lived, relationship with Ballymurtagh. It is mentioned in 1870 as agreed to be purchased by WCMC for £15,000 and that is was producing vitriol (sulphuric acid), iron oxide and some copper from Ballymurtagh pyrite waste. An Octavius O'Brien was thanked for this initiative. It coincided with better prices for pyrite during the Franco-Prussian war of 1870 (MJ 1870 pp 860 & 895)

Unrecognised at the time was competition from foreign mines. A mid 1860s depression in pyrite prices coincided with the American Civil war. The directors assumed this was the cause explaining to shareholders that "*Mining operations of any description are liable to interruptions such as then present and we cannot be expected to form an exception*". (WCMC report 2nd 1865). This was not the international context of Avoca mines' difficulties - cheaper brimstone from Rio Tinto and else-

where was increasingly penetrating the British sulphur industry. Meanwhile the copper lode had been exhausted the last 100 tons being sold in 1857/58 although precipitate was still being sold as well as small quantities in the pyrite (WCMC reports).

Ballymurtagh also had internal difficulties as was discovered after the death of Edward Barnes in 1872 following 45 years of management, possibly explaining anomalies within the statistics mentioned above. Ores had been overvalued, for instance worthless pyrite was valued at £4,000. His management had been "most defective in every department --- no checks, no supervision". The accounts were "very unsatisfactory" and some were missing (FJ 12th Dec 1872). Seeking other scapegoats for the company's problems, the directors blamed the workers: "*the state of the labour market has interfered with the profitable results of the company's business*" (MJ 1872 p 1000). However, the shareholders did not believe this as their following meeting was marked by "strong and impolite language" (MJ 1872 p 1860). The shadow of Barnes dominated debates with accusations of "deliberate attempts at falsification" (MJ 1872 p 1088).

Such problems continued into 1873 when the auditors refused to sign off on the accounts (MJ 1873 p 1184). Simmering in the background was a fifty one year old financial problem relating to the Hibernian Mining Company. Turner Camac's descendants in America had claimed retrospective entitlements to dividends from WCMC which were eventually assessed at £5,239 (MJ 1874 p 456). This wound up in the court of Rolls in 1872 with judgement for Camac (FJ 12 Nov. 1872). This was obviously disastrous for the fortunes of a declining company. They tried to sell the chemical plant in Arklow for which they had paid £15,000 (MJ 1873 p 1158) but two years later there were no takers (MJ 1875 p 1128).

Meanwhile, though shareholders were being assured that everything was ready for "when a revival of trade takes place", the evidence on the ground was of the mine being run down (MJ 1874 p 1200). A breach within the mine in 1875 was what probably finally doomed the operation (MJ 1875 p 1128 & 1133). The last recorded meeting of shareholders was held in June 1876 (MJ 1876 p 647). Nevertheless, small tonnages of pyrite were sold from Ballymurtagh up to 1885 and iron up to 1889 (MS) though who the beneficiaries were, go unrecorded.

Meanwhile WCMC must have managed to sell Arklow Manure Company which now in turn bought WCMC. They lasted only two years before going into liquidation in 1887 (HP 41, 42 & 44). Factory and mines were auctioned (FJ 16th Nov. 1887) but presumably there were no bidders for such liabilities. Thus ignominiously did this once highly successful company fade out. Footnotes to the censuses of 1881 and 1891 explain that the decline in population in Ballymurtagh and adjoining townlands was due to "decline in the mines". By August 1887 one observer commenting on both Ballygahan and Ballymurtagh wrote: "*All the shafts are closed up and nothing is to be seen on the surface but refuse and detritus of the old workings. The engines etc. have been removed from both mines; the engine houses and other buildings are falling into ruin and the water wheels are partly dismantled and falling to pieces. In fact such a scene of desolation it would be hard to conceive*" (Cruise 1888 p 31)).

The consequences for the local mining community are not formally recorded. Incidentals survive - "*The young men emigrated and many of the old people and children sought refuge in the much detested workhouse; those who escaped this institution have since engaged in a continuous and most pitiful struggle with starvation*" This source suggests many sought work in the equally fraught mining districts in England where they were "scarcely welcome visitors" (Ryder 1885, p 746). Others emigrated to America and indeed when one enquirer visited Avoca in 1887 he claimed that he could find nobody there who could tell him about mining traditions ((Cruise 1888, p 31 ).

## 20TH CENTURY MINING - OCHRE AND COPPER

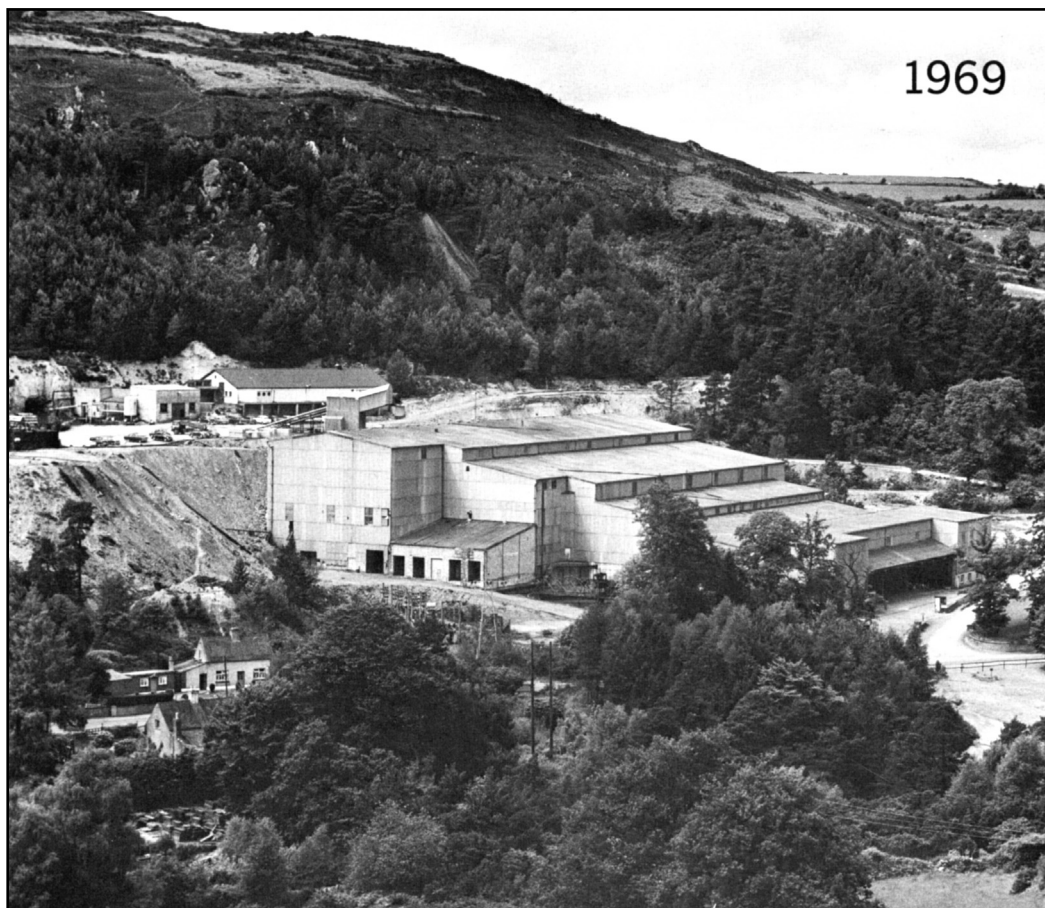
In 1897 Edmund Spargo of Liverpool expressed interest in Ballymurtagh getting a three year lease to develop its ochre potential. Nothing came of that, apparently (HP 51). The lease was bought about 1900 by the nearby Cronebane Mining Company which had been raising ochre there since 1899. The owner was an A.C. McGregor between 1891 and 1913. His Cronebane operation possibly ran into difficulties by 1905 (workforce dropped from 38 to 9) so he turned to Ballymurtagh and formed a partnership with the Via Gellia Colour Company of Matlock Bath to raise ochre (presumably for paint) from 1904 in a small scale operation (maximum employed, 13) which ended in 1907 (MS).

Meanwhile Ballymurtagh and Ballygahan had been bought in 1902 by Londoner Benjamin Newgass (HP 59). He may have been responsible for inviting a Bristol company to set up an operation there in 1910, but this was a very small operation employing maximum six up to closure in 1913. Strangely the Via Gellia company were back there again in 1915 but seem to have made an arrangement with London financiers General investment and Trustees Ltd. who are cited as "owners" in 1916 but over the next few years ownership had passed back to the Matlock Bath company (MS). Somebody commissioned a report in 1920 (Mackey) which advocated resuscitating the pyrite works to supply the fertiliser factory in Arklow (a new one?). It is difficult to know what was going on here or when that operation finished but possibly around 1920 as a "syndicate" was said to be about to recommence mining in 1925 (II 31 Aug 1925). No more is heard of that.

Ballymurtagh remained in the possession of Newgass and in May 1927 he granted a lease to Irish Ochre (HP 76). Strangely he also leased mining rights there in 1928 to a duo comprising General Investors and Lord French (HP 77). The consequence was the enrichment of members of the legal profession over the next ten years (HP 79-83). Irish ochre had invested in Ballymurtagh as an impressive range of "practically new" surface material was auctioned off as "up to date machinery --- in full working order" (II 9 & 23 Nov. 1929). Closure seems to have been due to a report from one Palmer who "definitely recommended the cutting of further expenditure and abandonment of the property" (Palmer 1929).

One of the contestants must have started working the mines there because when Ballymurtagh and Ballygahan were offered for sale in June 1939 there was a complete lot of surface min-





*Figure 6. Cover illustration of Avoca Mines from the 1969 Annual Report.*

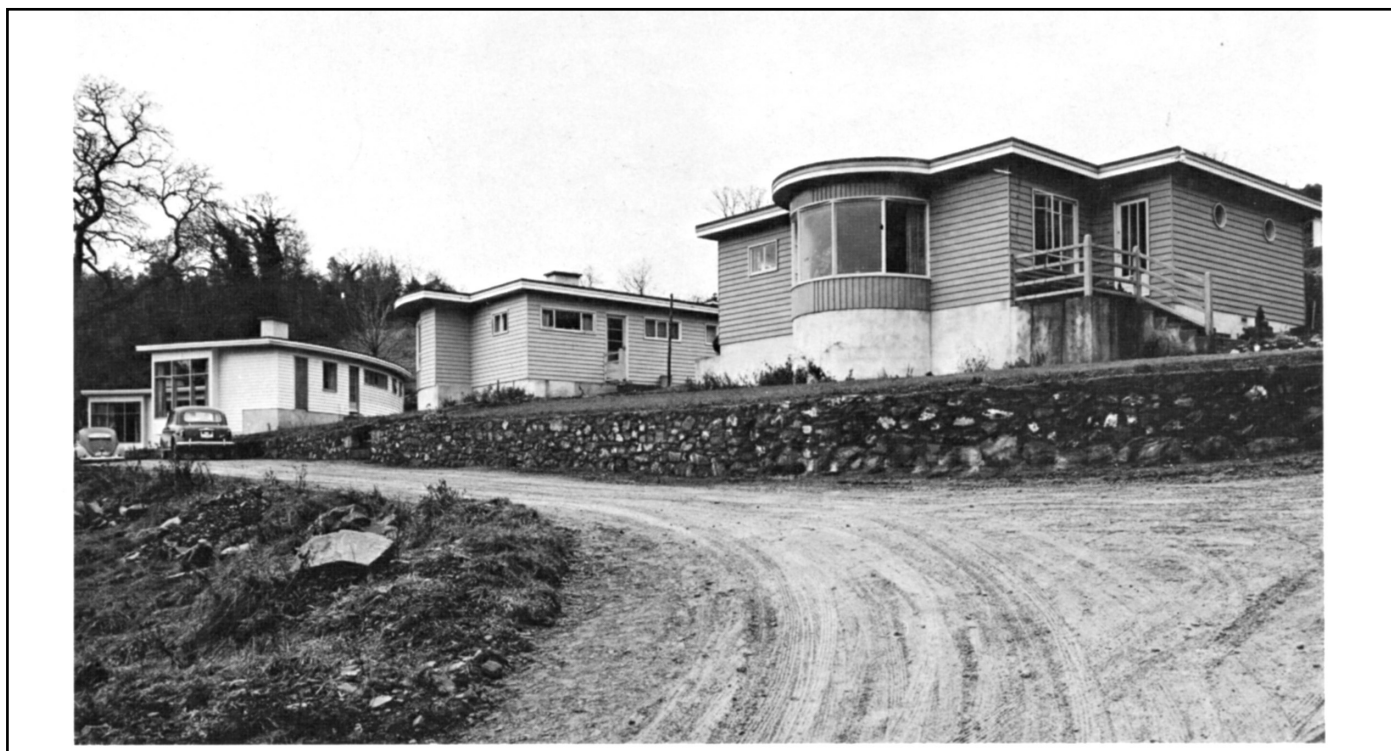
*Figure 7. Below. Avoca Mines: Office and mill buildings in the foreground.*

— Photos by George Hunter.



ing machinery such as 100 hp engine, crushing plant, kilns, electric equipment, etc "in good order" (II 27 May 1939: HP 87 & 89). There were no takers! (IP 27 May 1939). Newgass died about this time (HP 94) and it may have been thus that it defaulted into the ownership of the Irish state.

Over the war years a government agency, Minerals Exploration and Development Company (Irish form shortened into Minerai Teoranta) was set up and apparently mined pyrite for sulphur between 1942 and 1947. A floatation mill had been established there in 1946 (IP 31 July 1946) but the mine closed the following year. Then followed extensive testing of Ballymurtagh by



**Figure 8. Staff residences at Avoca Mines.**

Minerai Teoranta and continued until late 1954 (Wilson 1956). They pumped out the old mine and with diamond drilling revealed that dissipated in the walls of WCMC workings were large quantities of low-grade copper (Wilson 1956). Based on this, they invited tenders: Mogul International of Canada were successful. With government tax incentives, they set up St. Patrick's Copper Mines Ltd.. When a processor for copper concentrate was opened in 1958 it was predicted that £2.5 million worth of copper would be sold from there annually. That was exactly the sum of money that had to be invested by the Irish Government to keep the mine open! It closed in 1962 with a loss of 500 jobs. Forty men were kept on to keep the mine pumped and maintain equipment for the next 18 months when it was abandoned (II 12 Feb. 1964). It was later said they failed because they did not "have a full understanding of the range and nature of old men's workings" - i.e. those of WCMC (Platt 1974).

Five years passed before another Canadian company, Discovery Mines heading a consortium, took a lease and established Avoca Mines Ltd. in 1969 (Platt 1969). In two minor operations they opencast on ore that would have been too low grade for WCMC. The new company also reworked their old spoils: "The copper grade of the heaps is ore by modern standards". In their major operation, however, they pumped out the old workings and established a deeper wide mine on low grade (1% or less) ore (Platt 1974). The current writer was brought in 1977 by lorry down a winding incline to the 2,100 bottom where there was a crushing plant, the result being conveyed by conveyor belt to the surface. This was courtesy of manager Jim Platt who was very interested in the previous history of the mine. It closed five years later and Ballymurtagh mine is now unlikely to have a future "history".

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