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AN 18TH CENTURY LEAD SMELT MILL AT BLACKHALL, HEXHAMSHIRE, NORTHUMBERLAND

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SYNOPSIS

Papers formerly belonging to Mrs Mary Lorain and Sir Lancelot Allgood, in the archives of Northumberland Records Office, have revealed some of the history of a lead smelt mill that was built towards the end of the 17th century at Blackhall, near Ordley, in Hexhamshire, south Northumberland. The mill had two hearths, and smelted ore mined on Alston Moor, the lead from the mill was transported to Blaydon on the Tyne. Had the papers not survived, all knowledge of the mill would have been lost, as it has escaped the attention of all writers on the subject.

The lead industry was in decline at the beginning of the 18th century, so much so that the inhabitants of Allendale Forest grieveship petitioned at the Quarter Sessions, in July 1711, to have the poor cess paid jointly with the other Allendale greiveships, so that the burden of out of work miners would be shared, on the grounds that the whole parish benefitted when the lead trade flourished, and should therefore "be equal in our suffering now when it seems to decline."[1]

Lead prices were stable at about £12 per ton for the first half of the century, rising to £17 per ton for most of the 60s and into the 70s, then returned to £12 per ton in 1780, only to recover to £20 per ton for most of the rest of the century.

Politically the north was unstable, with the 1715 rebellion in favour of the Stuarts, the failure of which resulted in several of the Catholic Northumbrian gentry losing their lands to the Crown, including the Radcliffes who forfeited Alston Moor.

Despite the adverse circumstances it was still possible to make lead pay, the Governor and Co., otherwise known as the London Lead Co., developed their business throughout the century, starting in a relatively small way and becoming a major contributor to the industry by the end of the century. Others made major investments and failed; the Earl of Carlisle and Co. started operations on the 22nd June 1771, and despite considerable investment, sold their mines to the Governor and Co. on the 26th June 1798. The situation is summarised by Thomas Ramsay writing in 1782, "Out of 200 or 300 leases of mines, not more than three or four show a profit and last year scarce any but the Quaker Company did well",[2] the Quaker Company is the Governor and Co.

Location of Blackhall Mill

The smelt mill was built towards the end of the 17th century, some time prior to 1695. It was built in the grounds of Black Hall, on the north bank of Rowley Burn, NY 932 584. All that remains of the mill is a low mound surrounded by a spread of slags. The area apparently had a tradition of lead smelting; about one kilometre to the north is a farm called Smelting Syke, NY 928 593, and one kilometre to the ESE, on the east bank of the Devil's Water, NY 941 580, Dukesfield Smelt Mill, was built at about the same time as Blackhall Mill.

Mill Ownership

In the 17th century Blackhall was the property of the Swinburn family, and the mill was probably built by them. An indenture dated 23rd October 1695,[3] records the sale of the mill by John Swinburn and his wife to Timothy Davison and Nicholas Ridley, merchants of Newcastle upon Tyne.

The mill is next mentioned in the will of George Pantoune of High School dated 8th February 1749,[4] he left his share of the mill to George Marshall of Wall town and William Soppit of Corbridge. Ann Armstrong, widow of Christopher Bell and Elizabeth Blenkinsop, widow of George Marshall (?) sold a half share of the mill to Sir Lancelot Allgood on 26th February 1762,[5] who sold his half share to Robert Vasie and Anthony Hewitson on 21st November 1780.[6] Anthony Hewitson was an agent for Mrs Loraine in 1771.[7]

Who owned the other half share of the shares remains a mystery, one possibility is that it was the Loraines. A letter from Mr John Westgarth to Mr Robert Allgood dated 13th July 1765,[7] implies that Mr Allgood had control of Blackhall Mill at that time. Similarly the presence of receipts for payment of poor cess, church cess and county bridge cess for 1772 and 1773, as well as land tax for 1773 and a bill for blacksmiths work,[8] in the papers of Mrs Mary Loraine shows that she was responsible for the mill at that time. The indenture of the 21st November 1780 states that the mill, that had been in the possession of George Pantoune, was then in the possession of Robert and Mary Loraine, and at the time of sale had passed to George Loraine.

It should be noted that the Allgood and Loraine families were related by marriage, Sir William Loraine of Kirkharle married Hannah, elder daughter of Sir Lancelot Allgood of Nunwick, and Lambton Loraine, brother of William, married Sir Lancelot's second daughter, Isabella. Unfortunately the relationship with Mrs Mary Loraine is not known.

Mary Loraine died January 8th 1779, and there are no records of the mill being used after that date. Work done in 1778 was recorded as smelting old wastes or slag, and smelting cutting, as well as washing 131 bings of ore; this could have been a clearing up operation.

The Mill Equipment

The only information regarding the equipment at the mill relates to the second half of the century. A brief reference in a letter written on 13th July 1765 indicates that Sir Lancelot Allgood was using one of the two hearths of the mill.[9]

A bill dated 1778 for smiths work done by Thomas Hoggart,[10] and an account of work done at the mill by Wm Dunwoodie in the same year,[11] shows that the mill had facilities to wash and weigh ore, and a stamp mill, probably to crush grey slag. Mr Hoggart's bill also mentions an axeltree and a bellows house, the former item probably belonging to a waterwheel necessary to work the bellows and the stamp mill.

The mill is located below a race that took water from a dam across the Rowley Burn to Blackhall Corn Mill; this was the source of power for the smelt mill, though it seems probable that the mill was taking advantage of an existing supply.

The Source of Lead Ore

The only known source of ore smelted at the mill was Alston Moor. W. Wallace[12] records that Alderman Ridley had leases of Nentsberry Middle Vein, Middle Syke, Brownley Hill and Haggs bcforc Alston Moor was settled on the Greenwich Hospital. According to his will, Mr Pantoune owned leases of lead mines on Alston Moor. Colonel Liddle writing in 1737,[13] stated that a Mr Panthoon (sic) was agent

for Mr Haley who worked Carrs Vein East of Nent. Robert Loraine, husband of Mary, also worked mines at Nenthead. He died in 1752. Mary retained an interest in the mines until she died in 1779; the last record of her involvement is the sale of Old Carrs, west of Nent, by the trustees of Mrs Loraine in 1780.[14]

Mary Loraine held half the shares of Thorngill Lead Mine in the 1760s, Sir Lancelot Allgood having the other half. Mrs Loraine's share of the output from Thorngill Mine in the three years 1765-1767 was 1596 bings, and it is recorded that 2263 bings 3 hundredweight of Thorngill ore due to Mrs Loraine was delivered to the mill in 1766-1768.

Most of Sir Lancelot Allgoods Thorngill ore was smelted at Allendale Mill, though 31 pieces of his lead were carried from Blackhall Mill to Blaydon in 1767.[15]

Transport

At that time, all transportation of ore and lead in the region was by packhorse. A horse carried two pieces of lead. The number of pieces per fodder varied between 16 and 20, a Newcastle fodder was equal to 2352 lbs (1068 kgs), thus it will be seen that a packhorse carried from 235 to 294 lbs.[16,17] Nenthead Mill, on Alston Moor, produced 20 pieces to the fodder in 1737, and Dukesfield Mill made 16 pieces per fodder in 1751.[18] The cost of transporting lead ore from Thorngill Mine to the mill is not recorded, but the cost of transporting 31 pieces of Sir Lancelot Allgood's lead from Blackhall Mill to Blaydon, a distance of about 16 miles, was £1 6s 9d.[18]

The Selling Price of Lead

The following list gives the price paid for lead smelted at the mill, sold by Mrs Loraine.[19]

DATE		PRICE PER FODDER		
		Refined Lead	Common Lead	Slag Lead
December	1770	–	£14 15s 0d	£14 0s 0d
June	1771	–	£15 0s 0d	–
July	1772	£14 0s 0d	–	£13 10s 0d
May	1774	–	£12 17s 6d	–
December	1774	–	£13 2s 6d	–
August	1775	–	£14 2s 6d	–
April	1778	£13 5s 0d	£13 2s 6d	£12 17s 6d
September	1778	–	£12 15s 0d	–

Mrs Loraine's lead brought about 30s less than the Governor and Company's lead,[20] which probably reflects the very high quality of Governor and Company's product.

Lead and Zinc Content of the Slags

Three samples of slag have been analysed by Mr K. Scott, the results of which follow:

Description	% Lead	% Zinc
Glassy black slag	8.7	9.3
Vitreous grey slag	4.3	2.8
Dull black slag with bubbles	4.0	10.5

The samples were collected at random, and no interpretation can be placed on the differing appearances.

The high zinc content is compatible with ores derived from the Nent valley.

Units

1 Bing = 8 hundredweight = 896 lbs = 407 kgs

1 Newcastle fodder = 20 pieces = 2352lbs = 1068 kgs

(A piece varies between 16 and 20 to the fodder. At Nenthead Smelt Mill in 1737 there were 20 pieces to the fodder, i.e. 1 piece = 117.6lbs = 53.4 kgs.[21]

£1 = 20 shillings (s) = 240 pence (d) = 100 pence (p)

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