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THE COAL OF GLADSMUIR

W.S. HARVEY

SYNOPSIS

The writer brings to light - through the medium of an old accounts book - details of mine drainage, labour force, ventilation and day to day business of a small mid 18C colliery in East Lothian, Scotland.

In the archive of the University of Glasgow is a small book containing the accounts of the Coal of Gladsmuir for the period June 1759 to December 1962.¹ It was not bound as a ledger but was ruled as such and on each double page was entered the week's business:- the earnings from the coal sold at the pithead; the wages paid to the colliers and the oncost workers; and the value of the coal sold on credit: the "trusted coal". A system of double entry was used as may be seen from Fig.1. There are no annual summaries, so it is probable that the balances were carried forward to another account kept by the colliery owner.

FIG 1.

An Account of the Coal of Gladsmuir from October 13th to the 20th. 1759.
Alex Ramsay. Coal Grieve

			Debit
to Great Coals. Loads	807 @ 4d	13 9 -	
to do sold of Small	179½ @ 2½d	1 17 4	
			15 6 4
Balance per Contra		£6 19 2½	
Colliers share Trusted Panwood		16 3¼	
			7 15 5¾
Deduce Trusted Coals.-			
Mrs Nesbet	5 loads	1 9	
Baillie Blair	6 do	2 1	
Mr Gall	5 do	1 9	
Peter Dudgeon	5 do	1 9	
John Herrot	10 do	3 6	
Add Trusted			
Panwood	156	£1 12 6½	
			2 3 4½
			5 12 1¼

Although entirely concerned with the colliery's accounts the book tells something of its business and its labour force and their rewards. It also points to methods of mine drainage and ventilation used in the small coal pits of the mid eighteenth century; hints at a local labour shortage; and raises questions as to the interpretation of mining statistics.

Gladsmuir is a village in the parish of that name in East Lothian, Scotland. In the eighteenth century it was in an area of wild moorland, but today it straddles the

A1 road between Tranent and Haddington. It is on the eastern edge of the Lothian coal fields whose richer seams lie towards Edinburgh. In the mid eighteenth century these seams were being worked by some of Scotland's most innovative coal masters; an impetus which later moved west. Near Gladsmuir only thin seams approach the surface though these were worked from medieval times.²

At first sight the accounts seem the essence of simplicity, so a valuable record of output and profitability. Examination shows the reality is more complex. The colliers were paid for coal sold and as gangs whose numbers were not specified and they enjoyed additional payments not always clearly allocated. The credit transactions were also less than certain, and the debtors' accounts must have been kept in other books. An attempt to trace the history of some of the 'trusted coal' transactions suggest payments were of term made towards the debt, rather than to settle it; some accounts could run for years and some do not appear to have been settled at all. It could be these belonged to suppliers of goods to the colliery, or to the owner's estate, and there was some arrangement whereby payments were taken in coal.

There are no entries for rent so the colliery was probably worked by the landowner. His name is not mentioned but other references suggest he was one of the Baillies of Lamington.³ The running of the colliery was in the hands of his Grieve: Alexander Ramsay. The *grieve* was a person of some importance on a Scottish estate, being responsible for paying bills as well as making up the accounts. The Gladsmuir pits also had an *oversman* and, for some of the period at least, a *check*. The latter was described as, the coalmaster's eye upon the extent of what is wrought',⁴ although a century later he could have been appointed to look after the colliers' interest.

The Gladsmuir Coal was a small concern with an output of around 1000 loads a week, 89 tons,⁵ and employing on average 15 colliers. Its main market was in great coal, but some small coal – panwood – was also sold. Gladsmuir is some distance from the Firth of Forth where there was a large demand for coal for salt making, so much of the small coal probably went for lime burning. Great coals were the large lumps insisted on by the Scottish householders of the time. There are no records of the sale of the middle sized coals called chows or chews. But as these were an inevitable part of the colliers' output the men and their bearers were 'paid chews' each week as an oncost; a flat rate of 5d (2p) to each collier and 2½d (1p) to each bearer. The movement of the chows can only be guessed at, probably most were left underground.

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The colliers were paid for the small coal sold on credit - the trusted panwood, by a curious arrangement whereby they eventually received the whole earning of 2½d (1.0p) a boll; the griever seemingly acting as the in agent. The accounts show the men got 1¼d a boll in cash when the coal was sold, and as much again was set aside for them when the buyer settled his account. The final payment

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may have been made at the annual 'pays'. This was at the end of March or early April, and seems to have been the occasion for a small festival for the colliery provided casks of ale.

A small drift mine may have been worked in 1762, but the main operations were in stair pits. There was a succession of these; each being abandoned in turn and a new site chosen. In June 1760, four men worked for eight days 'boring ye well at Hodges'.⁶ For this they were paid £1-12-0 (£1.6) and the grieve recorded they found a seam of coal 25 inches thick, 62 feet down. On the 19th July, a squad of 'sinkmen' were given a cask of 'stool ale' when they began work on a new pit.⁷ The shaft took six weeks to sink and the sinkmen were paid £5-10-0 (5.5) in total. Once at depth, the Gladsmuir colliers were paid 1/- (5p) per fathom to mine from the shaft foot into the seam.

The accounts do not describe how the pits were worked, but references to the colliers 'rooms' indicate the coal was mined room and pillar. There are many references to payments for various operations in the 'leven room'. The term could just be a local expression for the 'level room', a passageway shown in an eighteenth century mine section as out across the coal seam at the lowest point.⁸ On the other hand, it has been suggested that the term may have some connection with the practice of moving water in the mine by 'laveing' or bailing.⁹

The colliers employed their own bearers, traditionally female relatives, to move the coal to the bottom of the shaft and up the stairs to the surface. The entries show each bearer moved about 90 loads, 8 tons, a week. This enormous output is confirmed by a contemporary reference which claims – 'an industrious collier and one bearer will throw out 80 to 90 loads a week'.¹⁰

The colliers regular wages were for working the coal sold. Everything else was paid as an overhead, an oncost. Gaters received a flat rate of 1/- a day to cut away enough of the rock to keep the gates-passageways-clear to the low rooms. The colliers themselves were paid extra when they had to work foul coal; cut through the intrusive dykes that bedevilled the East Lothian coalfields; or deal with a loose roof. They might also be paid for what was essentially labouring work; assisting the carpenters with the stairs, and moving spoil or water.

There are numerous references to moving water, but none which indicate just how the pits were drained. A recurring oncost was for 'laveingwater' at 3/- or 3/6 (15p or 17½p) per week. Laveing or bailing water with a shovel or cupped hands was a traditional way of draining a room, and is well described by the minister of a parish near Gladsmuir –

Having followed the seam as far as they can for water, they make a dam rising above the level or a orifice or ditch cut from it, and by leaving the water over it, it gradually escapes to another placed some way above.¹¹

The pit being worked when the entries begin seems to have used a gin for lifting water. There are payments for driving it; 7 days at 12 hours a day; ‘couping water from ye gin’, and ‘couping ye gin bucket’. It might be supposed that the gin raised water up the shaft, but payments to colliers for ‘assisting with ye gin in ye leven room’, suggest it was sited below ground. Payments for repairs show it had a ‘tress’ – trestle, and a ‘winles’ – windlass, and it seems to have been some sort of crane, rather than the vertical winder used at the pithead of later collieries.¹²

The gin proved expensive for the payments relating to it amount to £8-7-5 (£8.37) over a period of 18 weeks, on average 9/4 (46p) per week, about 1/3 the usual weekly oncost. A hand pump was in use in a later pit. It cost 12/- (60p) to make, and must have been worked in the mine as one hand pump could not have lifted water up the shaft. (13) There are references to its use over a period of 27 weeks at a total cost of £7-4-7 (7.23), so at 5/5 (27p) a week it proved cheaper than the gin.

For much of 1762 there are no references to payments for moving water. There was a payment of 3/6 to a collier for ‘working 3 yds of a mine into ye brekin.’ ie a brake or bank. It is tempting to think this was the start of a drainage adit, and the colliery was moving from primitive methods to level drainage. However there are no referen~es to support this notion. In any event, the terrain at Gladsmuir is not hilly, and the contours of the 6" OS do not indicate any dales or valleys near the Gladsmuir – Hodges area to have provided a portal the required 20 metres or so below the level of the moors. It is most likely that the mine in the brake was a drift, an ‘in gaun e’en’, to follow some outcrop of the coal seam.

The author is left with the impression that water was only moved about within each pit; being lifted from the working rooms and pounded behind dams made among the deads. A payment made for clearing ‘a gate upon ye crap of water’, may refer to such a dam.¹⁴

Foul air had also to be dealt with, and there are references to payments made for taking down flag stones and laying them ‘to carry air’. Presumably they were laid over trenches in the floor. There are also references to clearing ‘throughers’, i.e. passages made for ventilation through the deads. There was probably some degree of convection current up the shaft, but payments for ‘kindling ye lamp’ suggest a brasier was something hung there to improve the air flow. Fortunately the Lothian coals were free of methane.

The named colliers were paid 1½d (.62p) a load for their share of the coal sold at the pithead. At first sight these entries seem to refer to individuals, but the oncost payments for chews show there were more colliers working than those named. If this number is equated to the total paid weekly to the men, then the average wage per collier was about 8/- (40p) This is less than that quoted from other sources, for Duckham lists wages of 15/ to 20/- for the 1750s, and Hamilton 12/- for [49] an average colliers’ wage a decade later.¹⁵

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Low wages at Gladsmuir might explain the evidence of a considerable labour turn-over. Out of the 27 colliers named in the account only six can be said to have worked regularly during the period, and three worked less than a month. Table I. Payments made for 'seeking colliers at different coal hills', and towards the removal expenses of new men, all point to a movement of colliers around the local pits. This seems at variance with the legislation which bound a Scottish collier to the pit where he began work, and perhaps points to the sort of pressures that eventually ended this system of serfdom.

The entries also show there were fewer bearers than colliers; often as few as two to three. References in the Statistical Accounts indicate one bearer to a collier was the acceptable minimum, and Duckham, in his study of the Scottish Coal Industry, makes no mention of pits worked with fewer bearers than colliers. Although the colliers must have been primarily affected; for they employed the bearers and they were only paid for coal at the pithead, the situation also affected the colliery's output, and there are references to men being paid for 'seeking bearers'. It could be that a woollen mill at nearby Haddington, reopened in the 1750s, provided an alternative outlet for female labour.

References to specific numbers of bearers need not mean that only that number moved the coal. A girl would have needed time to develop the skill and stamina the task required, and in the East of Scotland children as young as five years worked below ground. A contemporary reference to a colliery having 'children innumerable' points to a labour force not always included in recorded figures.¹⁶ When the minister of Gladsmuir referred a collier and a bearer working 90 loads of coal, he probably closed his eyes to the fact that they may have had two or three children with them. He would not have found this self deception difficult; as Professor Smout remarks, the labours of the colliery children 'defies belief'.¹⁷

Most of the output from Gladsmuir probably went to local households. There were 340 families in the parish in 1794,¹⁸ so even decades before, their needs were probably met by other collieries as well. Only the names of those who bought the 'trusted coals' are given, and those recorded during the twelve months beginning December 1759 are listed in Table 2. The quantities they bought show considerable variation, but the average consumption, 270 loads, 24 tons, per household is probably a reasonable figure for a market among the landed gentry. Working from the Statistical Accounts and Gazetters, the author has identified some of the addresses and the in distribution is shown in fig 2. The grouping to the east of Gladsmuir, away from other collieries, seems predictable. More distant addresses are the three houses to the North, and Lord Belhaven's seat at Beil which is to the east of Haddington and more than 16 KM from the Gladsmuir pits. It may be all three had parts of their estates nearer Gladsmuir, and the coal they bought was for 'second' homes or their tenants.

The Account Book for the Coal of Gladsmuir presents a, perhaps indistinct, picture of a local industry: exploiting a local resource for local markets, and too small for its circumstances and methods to have been worthy of contemporary interest.

There must have been many little concerns like it in the eighteenth century. Very few of their records remain, and the present article emphasises there is much we do not know about what might be termed as vernacular mining.

Appendix.

Prices and Wages at the Gladsmuir Colliery.

Great Coal sold for	4d per load of 200 lbs
Great Coal sold on credit for	4.1/6d per load
Small Coal-Panwood-sold on credit for	2½d per boll
Colliers paid	1½d per load of Great Coal
	1¼ per boll plus credit
	another 1¼ for Small Coal
Oncosts	
Gating	1/- per day
Mining	1/- per fathom
Wrights and Joiners paid	10d per day
Labourers	6d or 7d a day
Bearers	4d a day
Boys working the gin	4½d a day

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Table 1. Table 2.

The named Colliers and the periods they worked (approx.) Recorded purchasers of coal. December 1759 to December 1760.

Thomas Archibald	20 weeks	Totals purchased in loads.	
George Broday	4 weeks	Mr Veitch	134
David Bowman	24 weeks	Lord Blantyre	Bolton & Lennoxlove
			1 & 2
			82
Thomas Brown	13 weeks	Mr Perrie	126
William Chalmers	Regularly	(Hay of) Drumelzer	Westfield 3
William Cornwall	25 weeks	Mr Gall	Southfield 4
James Crookson	28 months	Mr Burns	66
Henry Duncan	3 weeks	Charles Miln	260
John Duncan	15 weeks	Mr Gordon	198
Adam Ferm	21 weeks	Lady Blantyre	828
Robert Fermer	Regularly	Lord Colston*	381
George Fish	Regularly	Peter Dudgeon	East Craigs 5
James Fish	27 months	Baillie Blair	204
David Gray	12 months	Mr Cochrane	Muirfield 6
William Hog	Regularly	John Thomson	12
John Howie	13 weeks	Mr Kinlock	625
George Hutchinson	Regularly	Mr Nesbit	Yester 7
John Hutchinson	21 months	Mrs Nesbit	& Dirlton 8
Robert Keneday	11 months	Mr Buchan	503
John King	Regularly	Alexander Kerr	197
James Lamb	9 weeks	John Herriot	Gullane 9
Thomas Logen	8 weeks	Lord Belhaven	Beil
Richard Meek	1 week	Mrs Murray	Laverocklaw 10
William Selkirk	2 weeks		120
James Stoks	25 weeks		
John Thomson	5 weeks		
Nicol Wilson	3 weeks		

*Lord Colston is not listed in the Scottish Peerage, which would have given his address. The title was perhaps an honorary one.

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Contra.	Loads	Bolls			
by cash paid Geo Fish	134	18	18	7½	
by do paid Wilm Chalmers	129	3	16	5¼	
by do paid Wilm Hog	89	3	11	5½	
by do paid Thomas Archibald	137	6	17	9	
by do paid Thomas Logan	30		3	9	
by do paid John Howie	18	38	6	2½	
by do paid Geo Hutchinson	91	54	17	-	
by do paid David Gray	27		3	4½	
by do paid Wilm Cornwall	56		7	-	
by do paid Robt Fermer	96	57	18	11¼	
by do paid Thomas Brown	-		-		
	807	179	£5 19	6½	

Oncost.

by cash paid Grieve and Oversman			10	-	
by do paid three Gaters each 6 Darg			18	-	
by do paid Thomas Brown and Son for laving water and coupling ye gin buckets			6	6	
by do paid one bit of candle for do				6	
by do paid John Fish for draving do			2	6	
by do paid Wilm Nesbet mending ye Stair				5	
by do paid one bit of candle for ye Grieve				6	
by do paid Chews to 16 Colliers and 12 Bearers				9	2
			£2	7	7
			£8	7	1½
Balance gained this week			£6	19	2½
			15	6	4

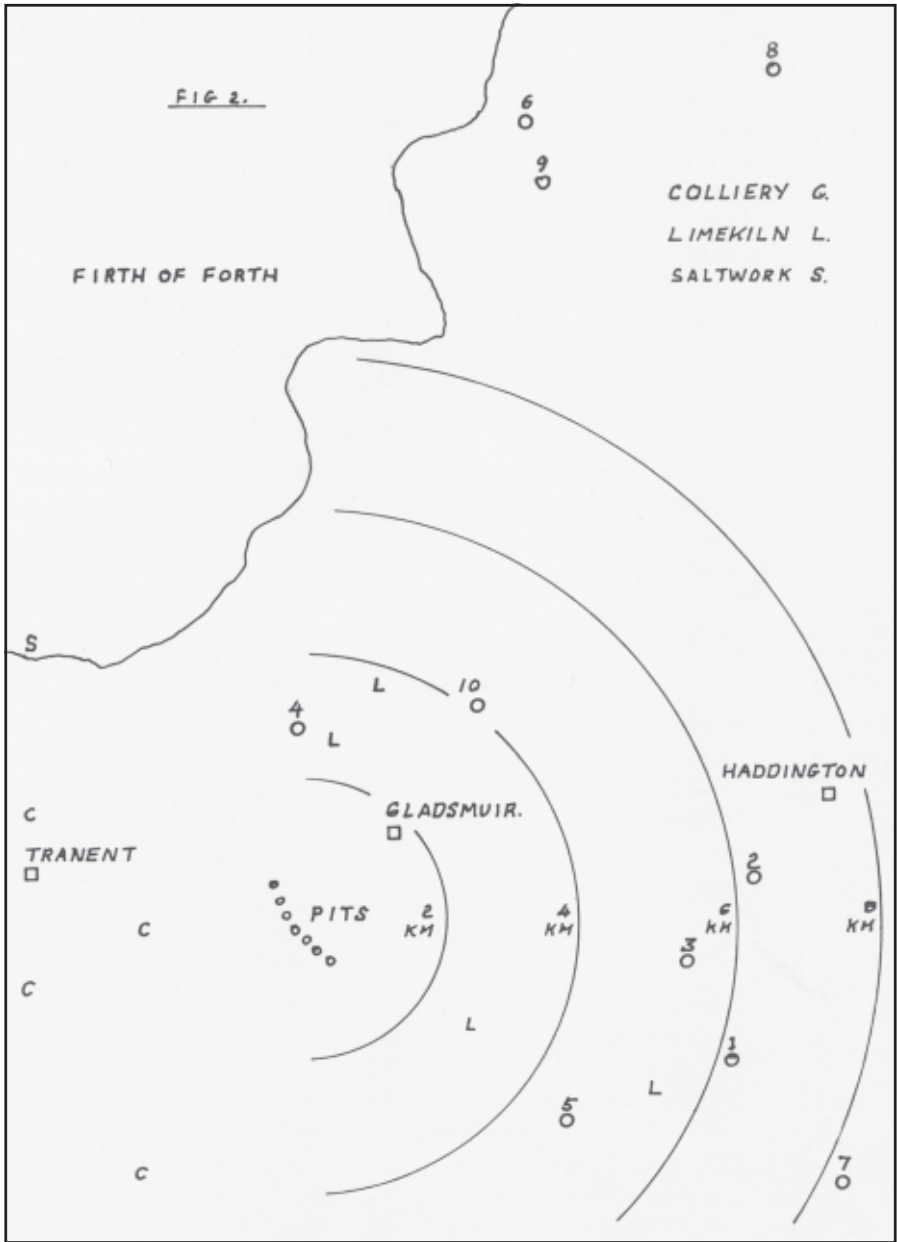
[51]

References.

1. The Account Book of the Coal of Gladsmuir. UGD.111/1/1 Research was carried out in a History Workshop run by the University of Glasgow, Department of Adult and Continuing Education, 1982-3. Time was limited so a commitment to statistical details was avoided, and the author looked for references to the working of the colliery; its labour force; and its markets.

Thanks are due to the class tutors, Mr Michael Moss and Dr. Derek Dow for their help and encouragement.

2. Old Statistical Account of Scotland. (OSA) Vo17. Parish of Gladsmuir. pp.316-322. Also, Baron Duckman. *A History of the Scottish Coal Industry*. Vol 1. Newton Abbot. 1970 Chap 1. and passim.
3. New Statistical Account. (NSA) Vo12. Parish of Gladsmuir. p.177 Also, W. Macfarlane. *Geographical Collections*. 1906 Vol.1. p.373



4. Duckham. Op cit. p.118.

5. The load at Gladsmuir was equal to 200 lbs. (90.7 kg) OSA. Op cit p.318

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6. The use of the word *well* to describe a trial shaft seems unusual. However the OED quotes its use as sometime describing a shaft sunk by the defenders of a fortress to seek an enemy's tunnels.
7. The phrase 'sod cup' was used in England about the same time. See J.A. Aked The Cost of Sinking the Hanging Hey Pit. *British Mining*. Vol 1. p.19 1975

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8. Duckham. Op cit. Plate 49.
9. Conversation with G. Downs-Rose, Scottish Museum of Lead Mining.
10. OSA. Op cit. p.318
11. NSA. Vol 12. Parish of Tranent. p.285
12. The OED describes one type of gin as a device with three legs and a winch drum between two of them.
13. Evidence to the Commission of Children's Employment refers to a boy using a hand pump to lift water from the 'underbottom' of the pit so as to keep the 'men's room dry'. Quoted in T.C. Smout. *A History of the Scottish People*. Collins/Fontana. 1872. p.411.
14. *Crap* is an example of the problems facing the researcher in old MSS. Did the writer mean *crop*, in the sense of a bird's crop: a container. Or is it indeed *crap*, an old Scots word for the highest part of something; in this case perhaps the highest dam of ponded water.
15. Duckham. Op cit p.265. And Henry Hamilton. *An Economic History of Scotland in the Eighteenth Century*. Oxford. 1963. p.369.
16. J. Barrowman. Slavery in the Coalfields of Scotland. *Transactions of the Federation Institutes of Mining Engineers*. Vol XIV. p.274. 1897-8.
17. Smout. Op cit. p.410. Professor Smout devotes part of chapter 17 to the condition of the coal miners, and gives a bibliography.

Note. That East Lothian pits were among the worst offenders. Even by 1841 239 women and girls were employed underground, some of them as young as six years of age. The following year a Bill was promoted prohibiting the use of female labour underground and limiting the starting age of boys to thirteen.

18. OSA. Op cit. p.316

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