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**AN ACCOUNT OF A MINE ADVENTURE BY JOHN ROYLE ON THE
GWYDIR ESTATE
1775 - 1784**

A DIGEST by J.S. Bennett (Welsh Mines Society)

Lead mining on the Gwydir Estate had been prosecuted by the Wynn's of Gwydir through several decades during the 17th century, but interest had died when the estate passed out of their hands in 1677. Very little, if anything, was done until 1751, when the then proprietor, Peregrine, third Duke of Ancaster, introduced a mining expert. Dr. Diederick Wessel Linden, into the area, and activity was re-commenced.

This persisted with mixed success until the period of John Royle's adventure — at the most a hundred or so tons of ore may have been raised in a year through the 1750s and 1760s, but generally much less. One of the most persistent of the Adventurers was Francis Lloyd, and when John Royle became the Duke's agent in 1766 he administered the Duke's 1/8th share of Lloyd's mine.

This evidently whetted his appetite - hence his own venture in 1775. It is certain that Lloyd's efforts were continued until at least 1775, and fragmentary evidence exists in the Porth yr Aur manuscripts, suggesting activity during the early 1780s in the Nant Gwydir mines, though it does seem probable that Royle's was the most significant venture on the estate during those years.

The "Account of a Mine Adventure Begun by John Royle" survives in the Ancaster Estate papers, and the following is a digest of the account which throws an interesting light on the development of a small mining venture of that era.

Work began in February 1775, when the first payments noted in the Account Book were for miner's wages paid during that month and it was principally on the miners' wages that expenditure was made during the early months of the venture.

Later in the accounts Royle measured the mine, which makes it possible to deduce that the workings began effectively from scratch with the Sinking of three shafts, probably on top of the vein which ran North-South, and later the driving of at least two levels.

The trials were clearly encouraging, as from July 1775 the accounts began to embrace a much more varied work force as the infra-structure of the mine was developed. Entries are found for money spent on making the smithy, sawing wood, cutting drains, making a road to the works, etc., and there are also charges for washing and weighing lead ore, though this was not a major activity at that early stage, and the ore was probably accumulated at a store place in Trefriw.

During the first year between twenty and thirty men and boys were employed at one time or the other on various tasks, probably a couple of dozen at anyone time, and with only a small preponderance of miners and their young assistants.

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During the early stages payment was made by wage, either for a week, or for the number of 8-hour “stems” completed. The more senior miners were paid a maximum of 14 pence for an 8-hour day with rates falling by stages to 5 pence a day for the boys.

Men engaged in felling trees, sawing and performing cooper’s work, received anything between 9d and 1/3d a day, probably relating to the particular task allotted to them. The ore washers received from 1/-d to 1/4d per day, and the smith received 6/-d a week.

There were various costs for materials. some of which were charged to the miners. i.e. candles and gunpowder, and some borne by the proprietor of the mine. These were charged as follows:-

Gun powder 1/-d per lb.
Candles 6¼p per lb.
Rope 5p-5½p per lb.
Shovels 1/6d each
A wire sieve 3/6d
A pair of “trousers and the making” (Possibly miners’ short, moleskin over trousers.) 3/7d
A barrel 2/-d
Cibles (Kibbles) 1/d each

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As the undertaking became established so the pattern of terms of employment began to change towards a bargain system rather than a wage system and in 1776 the following bargains were struck:-

February 1776 - “Set John Summers and Benjamin Edwards 7 yards to sink the shaft plum down at 45/-d a yard. They to pay for the candles and powder and me to find the tools and sharpening. They to be off the bargain, if they please, after 3½ yards.”

April 1776 – “Evan Griffith and Morris David to drive 20 yards at 40/-d the yard.”

On April 13th 1776 the mine was measured and the entry in the Account Book reads:

“From the uppermost to the middle shaft difference in level is 25ft 6in and from the middle to the lower shaft is 26ft 6in and the depth of the lower shaft is 27ft 6in. Measured 13th April 1776. John Royle and Edward Roberts. Total of level – 26 yards, 1ft. 6in.

By the 16th May, when the outstanding bargains had been paid, and the level extended to 28 yards, a total of £281. 11. 11½d. had been expended on the mine but, whilst some ore had been dressed, there is no evidence of any sales.

The period of highest expenditure on the mine now followed and by 27th October 1777 the total expenditure had risen by a further £693. 1. 3d. to a total of £974. 13. 2½d. During this period the work was done, almost exclusively, on the bargain system and it is interesting to see from the examples below that quite considerable differences in the prices per yard for driving levels or sinking shafts were agreed. This must have related to the particular difficulties encountered on each bargain, and also whether the miners would be making money from the bargain by raising lead ore whilst driving.

25th April 1776 “Set a bargain to sink in the bottom of the level at 32/-d the yard.” and Morris Price and three partners to drive 4 yards in the level at 30/-d a yard.

22nd May 1776 “Bid’em a guinea a yard - if they do not make wages I am to make it up to them.”

June 1776 “Paid Rice Morris & Partners for raising 11½ tons of lead ore at 84/-d ton and sinking 2½ yards at 10/-d a yard.”
(Note the reduced payment for sinking where there is a payment for ore raised.)

November 1776 “Agreed with Job Jones to wash the ore for 1/2d a ton.”

In January 1777 Rice Morris drove several yards of a new level at £1 per yard, but two bargains in February – with Lewis Morris and Partners and with Richard Nuttall – were both struck at 25/-d per yard.

In April 1777 “Set John Mason & Partners to drive 4 yards in the great shaft and pay them 50/-d per ton of merchantable ore they may get and 20/-d per yard for driving North.

In October 1777 a particularly interesting agreement was drawn up between John Royle and Elias Evans and his partners to drive a level to the vein, the level to be 5ft high and 3ft wide or more. The sum agreed was £45 and by May 25th 1778 £30 had been paid. Unfortunately the length of the level to be driven was not recorded, but the dimensions make it clear that “economical mining” was still the pattern in the driving of levels.

The number of men engaged in driving bargains seems to vary between 1 and 5. In the most favourable circumstances even the smaller teams appear to have achieved over two yards progress in a week, but this rate of progress does not improve in the ratio of the men employed – possibly due to the physical problems of working a 5ft high and a 3ft wide level! In some of the bargains the progress dropped to around 1 yard per week – probably a reflection of the hardness of the ground although flooding or ventilation problems may well have been an influence.

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During the period under consideration there were several other interesting entries made, reflecting the work being done and materials used.

During May 1777 Rice Morris was paid for raising water, and the smithy was slated, and in June Rice Morris was paid again “for placing timber, etc. and securing the roof of the work from falling in”.

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During August 97lbs. of tools were weighed to Evan Griffith and his partners and 140lbs. to Rice Morris and his partners. Two hammers, 2 buckers, 2 shovels were in the possession of the washers. William Morris received 10/-d for making 2 barrels, 3 cibles (sic) and one pitcher. The barrels would have been intended for raising the water from the mine and the cibles for carrying ore.

During September 1776 Royle paid the miners from “Paris” Mountain for work £2. 1. 0d and they used half a pound of candles and two pounds of powder. During October 1776 purchases were made of clay, slates, timber and coals, but there is nothing to suggest that any mine buildings were constructed other than the smithy.

Two shovels bought from Rice Morris and his partners in December 1776 cost 3/- and other purchases that month included two new riddles and two “wheelbarrow trundles”.

Rice Morris had been working for several weeks prior to this date in a new trial and was beginning to drive a new level. Whether the wheelbarrow trundles were for carrying materials in the mine, i.e. wheelbarrow level, or not, is not clear.

By April it appears that the vein had been reached and purchases of cibles, a barrel and air pipes were made, as well as iron for the buckers and shovels, rope and German steel. A store room at Trefriw was constructed by William Roberts and William Morris, and a pool made for washing the ore – 28 tons of which were weighed during that month.

During the summer the production of ore reached its peak and expenditure was incurred in washing the ore and obtaining new barrels for loading it into a vessel which would carry it to the Smelters in Flintshire. In August 101 tons of ore were washed.

Royle sold his first lead ore in June 1776, when he obtained £8. 5. 0d. for 2 tons 15 cwt. of waste and £97. 5. 7½d. for 14 tons 3 cwt. of ore. In November of that year he sold a further 30 tons of ore for £222, or £7.8. 0d per ton. During 1776 Royle looked into the economics of ore smelting which he calculated to be very profitable but he evidently decided against proceeding on his own account.

120 tons 17 cwts. were sold between May and September 1777 comprising 5 tons 17 cwts of round ore and 115 tons of small ore, and they were sold to Messrs Pigot and Panton at Nant-y-Moch.

There was a marked reduction in activity during the ensuing 7 years to July 1784, if one may judge from the number of entries in the Mine Accounts Book, or the record of lead ore weighed, and after July 1784 there are no further entries. Lead ore weighings were as follows:-

October – December	1777	–	39 tons
	1778	–	16 tons 12 cwts 2 qts
	1779	–	9 tons
	1780/81	–	No weighings
	1782	–	72 tons
	1783	–	129 tons 13 cwts
June – July	1784	–	4 tons and 12 cwts.

During this period Royle himself did not appear to be as directly involved in payment to the workmen and direction of their efforts, rather to simply let bargains for ore getting in the works as they stood, although during 1778 he did pay for:-

A wire sieve.	3/3d
6 cibles and 2 wheelbarrows.	10/-d
A barrel to wind water.	5/-d

In the earlier part of the year a small amount of ore was weighed from three bargains, but this was to be the last until Evan Griffith was paid for raising 9 tons in September 1779.

During June 1779 a bargain was let to raise ore for £3. 13. 6d. a ton and a second one to raise ore for £3. 10. 0d. a ton, and during September of that year a total of £4. 15. 0d. was paid to the ore washers.

An interesting name which appeared in the accounts for 1779 was that of Christopher Harker, a man whose family was to appear constantly in the mining records of the area for several decades.

From mid 1780 Christopher Harker and Partners received regular weekly allotments of money until April of 1781. These were described in the accounts in the first case as “wages”-but later during the period as “payments on account”.

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The bargains which were struck with Harker were:-

19 June 1780	“Let Christopher Harker and Partners a bargain at £3. 13. 6d a ton.
30 September 1780	“Agreed that Christopher Harker, Owen Owen, Robert Owen and Robert Roberts Clawddgwyn “to raise ore until May next for 3 guineas a ton and to allow them 5/- a yard for sinking a new shaft – I am to allow them 5/- a week subsistence and to the Smith 2/- a week subsistence

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if they employ labourers. I am also to allow 4/- a week for each labourer, the whole to be accounted for until the end of the bargain and to be towards paying 3 guineas a ton for the ore to be raised.

October 1780 They are to have £4 a ton until 1st February 1781.

6 February 1781 “Set Christopher Harker and Partners a new bargain to raise 12 tons of ore at 4 guineas a ton to continue constantly either to work or forfeit the whole unpaid.

The variation in the terms – £3. 13. 6d per ton raised to 3 guineas a ton with a payment for sinking, and then the subsequent increase to £4 and then 4 guineas a ton, imply that the venture was not attractive to Harker and his partners, who had to be encouraged to stick to the bargain or forfeit all. In the event, between February and April £7 was paid on account after which the work was eventually left and there was no record of any lead ore being weighed.

After the collapse of this effort there is no evidence of activity until an entry for June 1782 when ore was weighed from three sources.

8 tons 6 cwt 2 qrs	–	Mr. Ellis’s ore
6 tons 3 cwt 2 qrs	–	Mr. Royle’s ore
5 tons 2 cwt 0 qrs	–	Robert Roberts and Partners’ ore.

This last weighing from Robert Roberts, is interesting as some details have been recorded – the costs in raising the ore were £15. 7. 3d. and this was settled with the miners partly in cash and partly in corn, barley or beef. (This was a common practice elsewhere in the Principality and often bitterness was engendered by inflated values being placed on the goods being offered in lieu of cash, although there is no evidence to suggest that Royle was guilty of this deceit.)

William Price received 10/- for washing this ore - not a good rate in comparison with earlier years.

Also in June 1782, work was begun by Messrs. Owen, Owen and Roberts, to raise ore for J. Royle for £6 a ton.

Later in the year – on October 16 – 4 miners were being paid 1/- per stem to raise lead ore at 20/- per ton royalty and Black Jack at 7/6d per ton royalty. (This is the only reference throughout the accounts to Black Jack, and there is no evidence that any ore was raised or weighed.)

There are no further entries relating to bargains but there are further statistics for weighings and for sales to the smelters. Below are the listed lots of ore sold between March 1782 and July 1783.

1. March 2nd 1783 “Sent 10 tons 2 cwts 2 qrs to Nant-y-Moch.
I am to receive £10. 5. 0d. clear of all deductions.”
2. 4 September 1782 “Sold to Pigot 20 tons 19 cwt at £10. 15. 0d per ton.”
3. 10 October 1782 “Sold to Smith of Gadlas 19 tons 1 cwt at £10. 10. 0d
and £11. 10. 0d.”
4. 7 February 1783 “Sold to Gadlas 20 tons at £10. 5. 0d and £11. 5. 0d.”
5. 13 March 1783 “Sold to Nant-y-Moch 24 tons 3 cwt 2 qrs at £10. 5. 0d
and £11. 5. 0d.”
6. 15 July 1783 “Sold to Smith or Smedley 24 tons 3 cwt at £9 and £10.”
7. May 1783 “Sold to Gadlas 24 tons at £8.15. 0d and £9.15. 0d.”
8. July 2nd 1783 (Smelter not named) - 23 tons 2 cwt at £8.

The smelters are in Flintshire and the two prices probably relate to round ore and small ore, though Royle does not indicate how much of each he sold or how much he received for the various lots.

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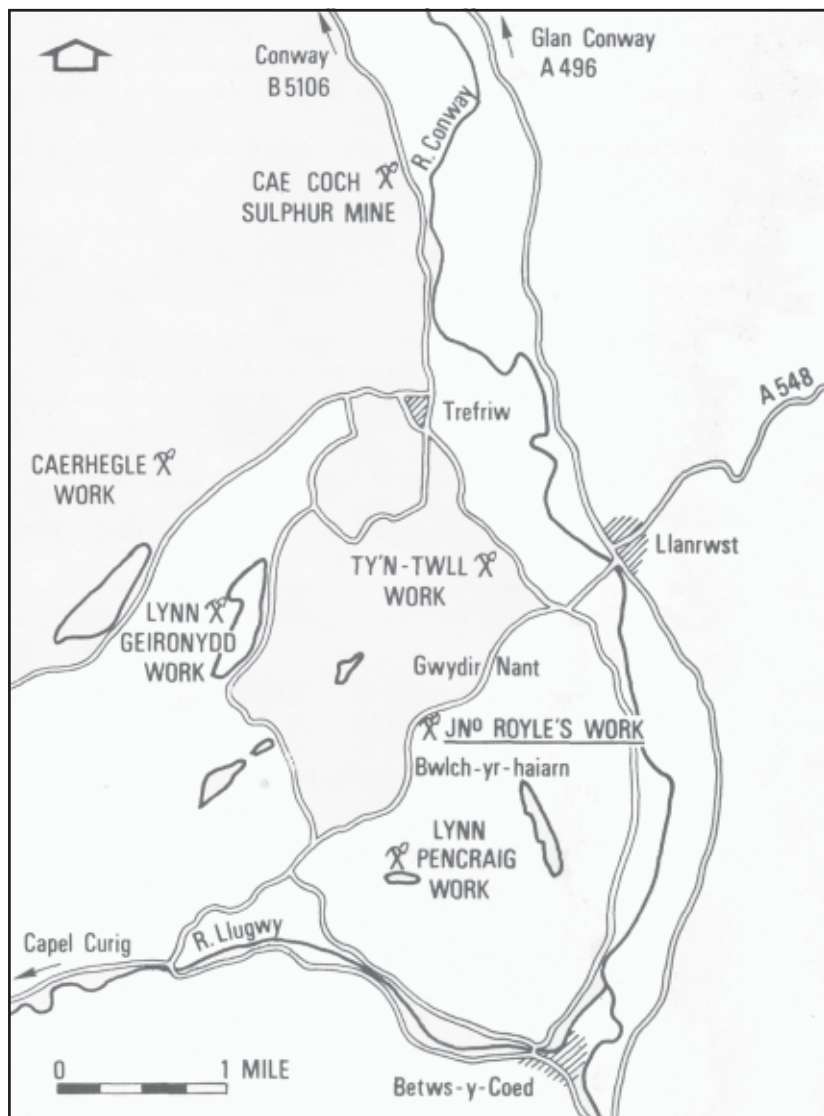
On 8th August there remained 19 tons 10 cwt of ore in the store house at Trefriw and from that time onwards until the end of the account on July 17 1784 only a further 10 tons or so were raised.

In conclusion it may be said that after the initial outlay the venture must have been reasonably encouraging and after the relatively substantial sales in 1777 there must have been some profit showing. Unfortunately, this state of affairs did not persist, and on 27th September 1779 Royle noted that the mine account was then a debtor to cash expended, £500.

In the later years the mine was probably worked on tribute, with the miners being allowed so much for each ton raised. This would obviously reduce the proprietor's expenses, but inhibit the proper development of the mine, which would become increasingly expensive to maintain in a workable condition as it became deeper, and, as probably happened, when the richest and most accessible pockets of ore had been extracted.

The particular interest of these accounts lies in the repeated detail of wages paid, calculation of bargains, cost of materials and prices obtained for ore, giving a special insight into the local mining economics of the 1780s.

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The probable site of Jno Royle's adventure in Gwydir Nant, with some other contemporary sites.

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