
THE COPPER MINES OF CORNWALL: PROPERTY AND PROFIT

John Symons, University College of Worcester

The aim in this paper is to examine the degree of success, or otherwise, which resulted from investment, or perhaps more correctly speculation, in the copper mines of Cornwall in the closing decade of the eighteenth century. This will demonstrate whether such investment resulted in returns appropriate to the procurement and maintenance of a country property.

Prior to embarking on the main theme of this paper it is appropriate to set it in the context of the conference by attempting to determine an approximate purchase price for a representative country house. It was not difficult to connect many of the adventurers, people such as Sir William Lemon, Lord de Dunstanville and Sir John St. Aubyn with their country estates, Carclew, Tehidy and Clowance respectively. Estimating a value for such properties was an entirely different matter. C S Gilbert provides a contemporary valuation for Robert Hoblyn's house, Nanswhydden in St Columb Major¹. Built in the second half of the eighteenth century, it cost £15,000 with an additional £15,000 for fittings and furnishing. This would have approximately doubled by 1800. The value of a number of other properties dating from the third quarter of the nineteenth century was found². Representing as they do the purchase price at that time, it was necessary to adjust them for a value more appropriate to 1800:

	Value	Year	Value in 1800
Carhayes Castle, St Michael Carhayes	£15,413	1852	£25,600
Kenegie, Gulval	£17,500	1866	£24,760
Nancoar, Creed	£5,750	1866	£8,135
Penquite, St Sampsons/Golant	£10,000	1868	£13,571
Tregenna Castle, St Ives	£55,000	1871	£77,819
Trengwainton, Madron	£33,000	1866	£46,700

Source: Twigger, R, *Inflation: the Value of the Pound 1750-1998*, Research Paper 99/20, House of Commons, 23 Feb 1999

These figures would suggest that a sensible price range for a property in 1800 would be between £10,000 and £40,000. The values of two properties known to me were also adjusted to 1998 prices, resulting in a value of £2.1 million for Trengwainton, and £1.1 million for Kenegie. The valuations for these two properties imply the conversions are of the right order of magnitude.

Returning to the main theme, the paper divides neatly into three sections:

- . Who were the adventurers?
- . How successful economically were the mines in which they speculated?
- . What were their gains and losses?

The source of the data explored in this paper is taken from the report, published on the 7th May 1799, of the Parliamentary Committee convened to inquire into the copper mines and copper industry of the United Kingdom.³ This inquiry was in response to a petition from the merchants and manufacturers of the Midlands, protesting at the high price of the metal. Whilst of little political importance, drawing no conclusions or making any recommendations, its particular value was in revealing the economic state of the two industries during the closing decade of the eighteenth century, in that it included a body of statistical data not to be found in any other single contemporary source of which the author is aware. The greater

part of the data referred to the performance of the Cornish copper mining industry, and included details of the output from each of upwards of 100 mines, the income received from its subsequent sale, the mines' operating costs, labour and material, and profit made and loss incurred, much of this for the years 1792 to 1798. In addition it included data relating to the outcome of the weekly ticketings for the six-month period commencing on the 6th of September 1798, plus the names of adventurers and their holdings in 16 of the mines. This evidence was furnished by one man, John Vivian of Truro, mine agent, merchant and adventurer.

The Adventurers

For each of the 16 mines, Vivian identified the adventurers, their shareholding, and whether they were merchants supplying that mine⁴. The purpose of this submission was to establish whether the merchant adventurer gained any pecuniary advantage from such sales to these mines. The 16 mines were:

Consolidated Mines	Cook's Kitchen	Crenver & Oatfield
Herland	North Downs	Penberthy Croft (1797)
Stray Park & Wheal Gons	Tin Croft	Tresavean
Treskow (1796)	United Mines	Wheal Hope (1792)
Wheal Jewell	Wheal Jewell West (1792)	Wheal Treasury
	Wheal Unity	

In the report it is stated: 'The Witness produces lists of adventurers in the Mines of Cornwall, which, he says, are made of recollection, but believes to be sufficiently accurate:...' ⁵ Vivian must have had a superb memory for he lists a total of 311 holdings in the 16 mines, or he had anticipated the question and prepared accordingly. The latter seems the more likely. As will be seen later there was duplication resulting from adventurers holding shares in more than one mine. Even with the elimination of this duplication there still remained some ambiguity, requiring further amendment to the numbers. Examples of such amendment included assuming J and James Kevill were the same person, or Col Rodd and Francis Rodd were the same Col. Francis Rodd of Trebartha Hall situated at North Hill, near Launceston. In other cases such assumptions could not be made, such as the inability to distinguish the initial of J Vivian as James, John, Johnson or Joseph Vivian. As a result of this consolidation a final total of 191 adventurers was arrived at.

There is no indication in Vivian's evidence as to the length of time the adventurers had held their shares. Many of these could well have been held from the beginning of the venture, and therefore encompassed the period 1792 to 1798. The majority of the holdings reflected the sort of division that could be expected if made at the outset of the venture, ie: $\frac{1}{16}$, $\frac{1}{24}$, $\frac{1}{64}$, whilst others were not so obvious, for example Mr Hole and John Williams each held $\frac{1}{32}$ nd of the whole, and $\frac{1}{64}$ th and $\frac{1}{256}$ th of $\frac{15}{16}$ ths of the shares in Wheal Gorland. Furthermore, there is no indication as to when these mines were established. For 14 of the 16 mines, the data supplied by Vivian embraced all seven years, suggesting these had been in operation for at least this period of time (the other two commenced sometime during this period). Finally, many of the adventurers had been involved in the mining industry for a period significantly longer than the seven years covered by the data. A number of them had been directors of the Cornish Metal Company at its formation in 1784, were also to be found on the subscribers' list to John Provis' *Copper Tables* (1801), and as signatories to a pamphlet of the Cornish Miners Committee, dated 23 Aug 1810.⁶ It is assumed, therefore, that the adventurers named by Vivian had held their investments for at least these seven years, or at least from the inception of the two mines which commenced during these years.

Of the 191 adventurers named, 126 were identified, although somewhat tentatively in a number of cases.⁷ An examination of the names would suggest that the majority were of Cornish origin. This is supported by the small number of out of county adventurers identified, who included three resident in

London; two the partners in the Soho Foundry, Birmingham, Matthew Boulton and James Watt; another Birmingham representative, the Birmingham Copper Company; and the only other out of county name identified, Lord Arundell of Wardour Castle, Sussex. The remainder represented a very broad cross section of Cornish society:

Bankers	9	Cornish and London
Clergy	13	
Engineers	6	
Landowners	13	
Legal	9	
Merchants	33	
Mine Management	12	2 pursers, 6 agents and 3 captains
Mineral lords	6	
MPs	11	
Peers & knights	7	
Sheriff	4	
Smelters	6	3 copper and 3 tin

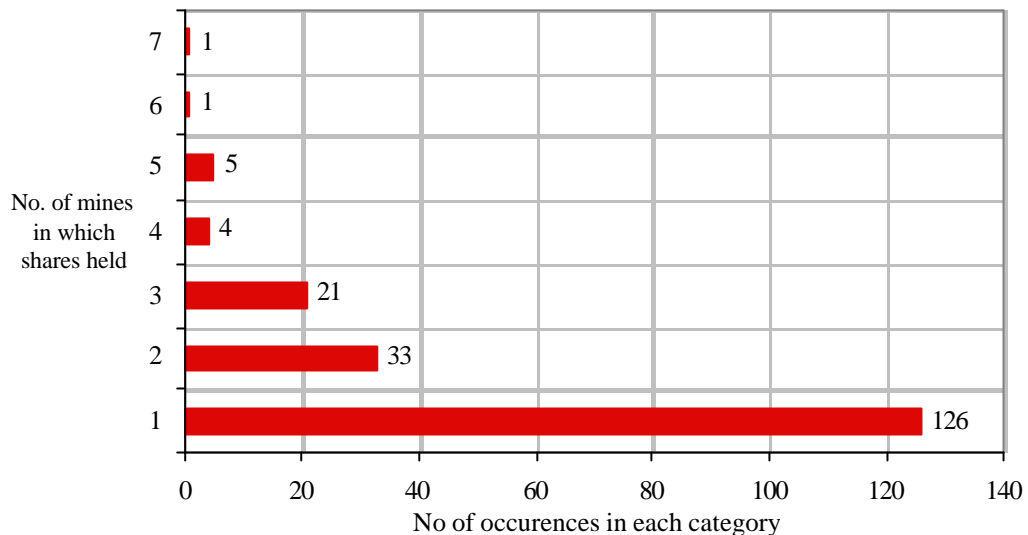
In addition 11 women were listed as holding shares. It was impossible to determine whether they were investing in their own right, in partnership with their husbands, or other members of the family. Some, no doubt, came by their holdings through inheritance.

A number of miscellaneous trades and professions were identified, namely: John Cole, a hatter from Redruth; Collan Harvey of St Day, cooper, draper, grocer, ironmonger and mathematical instrument maker; Robert Hichens, a London stock and insurance broker; J Holman, the Camborne boilermaker and iron founder; Gen. James Macarmick, onetime governor of Cape Breton, and subsequently a Truro wine merchant; finally, William Pearce, a hotelier in Redruth.

The list also included a number of well known landowners: Lord de Dunstanville of Tehidy, Sir Christopher Hawkins of Trewinnard, George Hunt of Lanhydrock, Sir William Lemon of Carclew, Sir Michael Noell of Penwarne, Col. Francis Rodd of Trebarths Hall, Sir John St.Aubyn of Clowance, and Rev. Henry Hawkins Tremayne of Heligan. Of the merchants the best known were probably the Foxes of Falmouth.

A final point to consider in respect of the adventurers has been the observation that adventurers spread their investments across a number of mines with the aim of off-setting losses against profit⁸. This was investigated using the data supplied by Vivian, and was not substantiated, as can be seen in figure 1. Those adventurers holding the larger number of shares in a range of mines were amongst the wealthier, and thus the large number holding only one or two shares were restricted in extending their holdings through a lack of wealth.

Fig. 1: Adventurers' Holding - 1792 to 1798



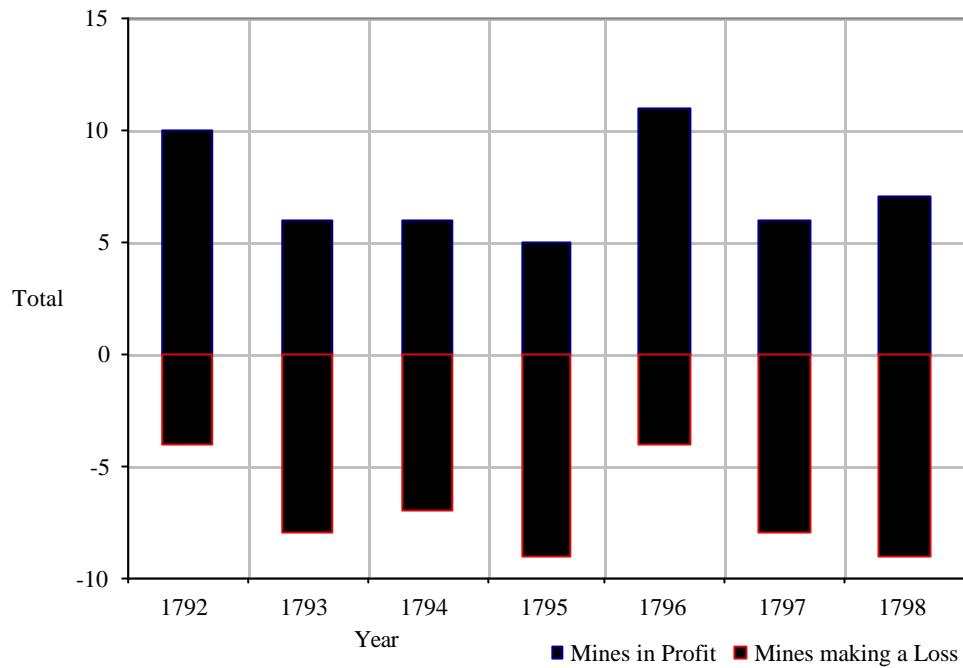
It is accepted this results from a small sample of mines.

The Mines

Vivian's first submission to the enquiry was a set of performance figures for the six months ending either in January, or February 1799⁹. Out of a total of 60 mines, he classified ten as old deep mines, costly to operate, producing in excess of 50 per cent of copper ore raised in the county, and operating at an overall loss. The second group of seven, producing approximately 40 per cent, all returned a profit. The remaining 43, whose combined output was not much over 5 per cent, all operated at a loss with only 13 raising any ore. Overall, only 13 mines made a profit in these six months, a performance which does not appear to hold out much prospect of a profit for the adventurers.

The more relevant data were the returns for the years 1792 to 1798.¹⁰ The number of mines named varied for each of the seven years, ranging from a minimum in 1792 of 64, to a maximum in the three years commencing 1795 of 76. Overall, 107 mines were named by Vivian, reflecting closures and new ventures. This total correlates well with those given by Richard Trevithick, Snr. in 1777 who in his account books listed 86,¹¹ and Richard Thomas in 1819 who listed 95¹². Turbulence in the industry is clearly demonstrated when it is realised only 33 of the 107 mines operated over the whole seven year period, of which 17 returned an overall profit.

Fig 2a: Performance where Adventurers known



Of the 16 mines for which Vivian supplied the names of the adventurers, eight were included in the list of the old deep, and by implication, the well established mines, four were from the group of seven profitable mines, and the remaining four from the group of 43 new losing mines. Of this last group, Wheal Hope and West Wheal Jewell were shown to be in existence from 1792 and could hardly be viewed as recent propositions. The other two were later arrivals, Treskow in 1796 and Penberthy Croft in 1797.

Figure 2 illustrates the performance of these mines. The number operating in each year is shown in figure 2a. Only in the final year were all 16 in operation. In the seven years, only in 1792 (ten out of a total of 14) and 1796 (11 out of a total of 15) was there a majority operating profitably.

Fig 2b. Performance where Adventurers known

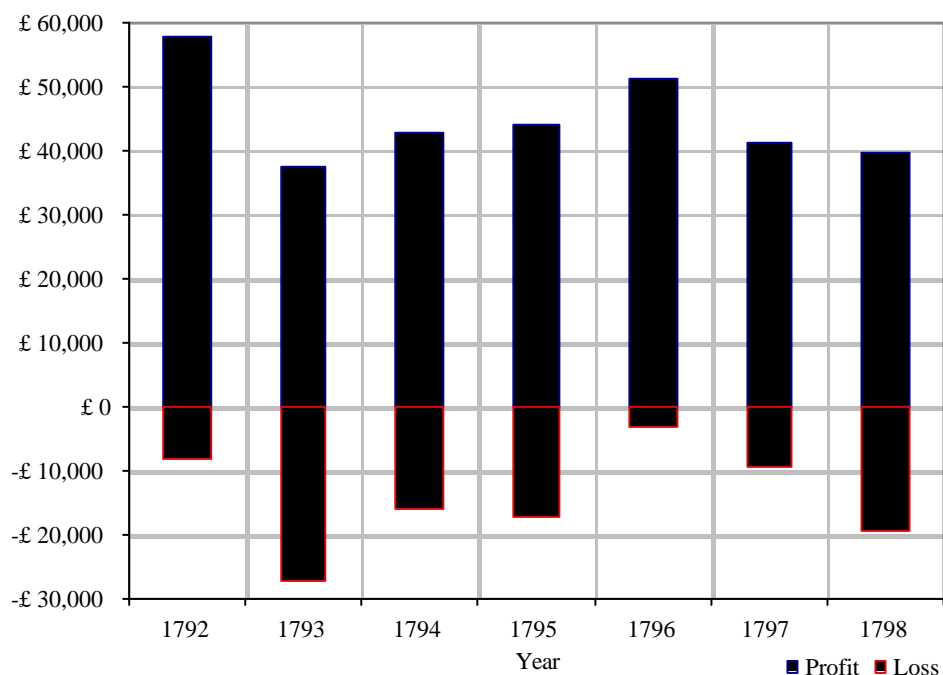


Fig. 3: Profit and Loss in those Mines where the Adventurers are Known

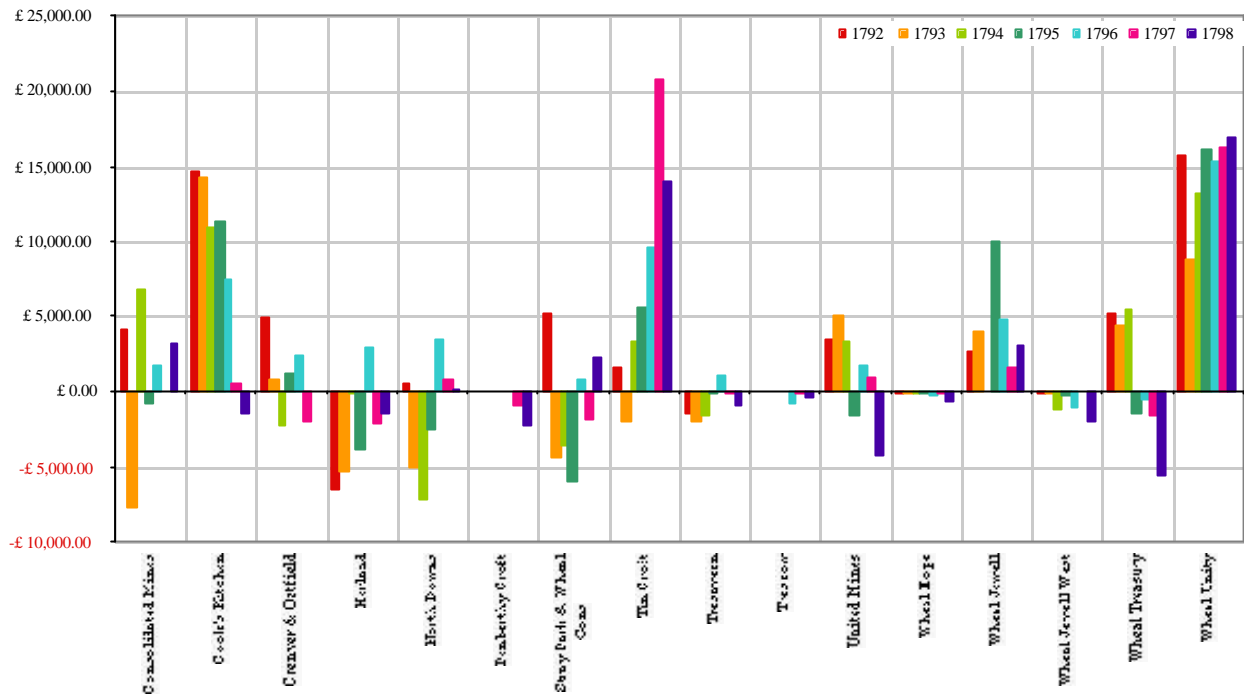


Figure 2b illustrates the financial performance of these mines, and presents an entirely different and more optimistic picture of the profitability of this group of mines. An overall profit was realised in each year, albeit marginal in 1793, regardless of the ratio of losing to gaining operations. This radically changes the adventurers' prospects for a profitable return on their investments, but indicates that overall profitability was dependent on a very small number of mines.

Not in any single year was the combined profit less than £10,000. Over the whole period eight out of the 16 mines returned a profit of £265,220. The remainder experienced a total loss of £50,174. Performance, however, was very patchy as can be seen in figure 3. Only one mine, Wheel Unity, achieved a profit in each year. Wheel Jewell remained in profit for six of the seven, no figure being available for 1794. The others made a loss in one or more years. Wheel Hope reported a loss in every year, as did West Wheel Jewell except for 1797 for which again no data was supplied. It is also clear from figure 3 that just three mines contributed the bulk of the profits: Cook's Kitchen (£57,750), Tin Croft (£52,635) and Wheel Unity (£102,206).

Adventurers' Profits

Turning to the third section of this paper, it is now possible to determine the profit or loss realised by each adventurer for each of the seven years for each and every mine in which he held a share. This was achieved by multiplying the return for each mine in each year by the adventurer's fractional share in that mine. This resulted in 106 adventurers out of a total of 191 sharing a profit of £216,548 over the seven years.¹³ The average gain for each was £2,043, with Sir William Lemon attaining the maximum profit of £26,430.26. Sir William's achievement was due to his good fortune in having a quarter share in the most profitable of all the Cornish mines at this time, Wheel Unity. Such astute investment came as no surprise after reading of the family's rapid rise to prosperity as related by Brian Elvins' in his engrossing article 'The Lemon Family Interest in Cornish Politics' in *Cornish Studies Seven* (1999). The remaining 85 shared a loss of £37,317 over the same period. The average loss was £439.22, with Messrs Geo C Fox and Sons suffering the greatest loss of £4,142.23.

The Fox's held shares in seven mines, Consolidated, Herland, North Downs, Tresavean, Wheal Gorland, Wheal Hope and Wheal Jewell. Of the seven mines only Consolidated Mines (£126.53), and Wheal Jewell (£ 1,338.10) achieved a profit over the seven-year period.

Figure 4 illustrates the gains and losses realised by the individual adventurers and it is no real surprise that the majority achieved gains and losses of less than £1,000.

The principal gains and losses were as listed below:

Gains

<u>Adventurer</u>	<u>Profit</u>	<u>Remarks</u>
Lemon, Bart, Sir William	£26,430.26	Of Carclew. Land and mineral lord. Banker. MP for Cornwall - 1774/80/84/90/96/1802/06/07/12 and 1818.
Vivian, Rev John	£23,541.58	Of Pencalenick.
Richards, Executors of P	£15,622.66	Adventurer in Dolcoath, Tin Croft mines, etc. Merchant. Partner in Messrs Lubbocks, bankers, London.
Walker, Rev Mr	£9,764.29	Vicar of St. Winnow
Vivian, Executors of Rev T	£8,517.17	-

Losses

<u>Adventurer</u>	<u>Loss</u>	<u>Remarks</u>
Fox and Sons, Messrs Geo C	£4,142.23	Falmouth merchants & bankers
Birmingham Company	£3,782.55	Birmingham Mining & Copper Co.
Carne, William	£1,778.20	Of Penzance. Merchant, Purser of Relistian Mine. Mine agent & Broker. Partner Cornish Copper Co. Banker.
Oxnam, Richard	£1,497.19	Merchant. Partner in Chyandour Smelter, Penzance, banker.
Buller, Mr	£1,303.38	Landowner & Quaker. MP for Cornwall.

Three of the five biggest losers were merchants. This would seem to imply that there was some validity in the commonly held assumption that those merchants involved in mining ventures were satisfied with the profits secured on sales, provided such profits were not exceeded by calls. On the other hand, Vivian identified a total of 25 merchants who supplied the mines in which they were adventurers. Of these 16 shared a profit of £47,598.25, whilst the remainder incurred a combined loss of £8,245.00.

	<u>Profit</u>		<u>Loss</u>		<u>Total</u>
	No.	%	No.	%	
Adventurers	106	55	85	45	191
Merchants	16	64	9	36	25

	<u>Profit</u>		<u>Loss</u>		<u>Total</u>
	Amount	%	Amount	%	
Adventurers	£216,548	85	£37,317	15	£253,865
Merchants	£47,598	85	£8,245	15	£55,843

This gives credence to Vivian's assertion that merchants supplying those mines in which they were adventurers were not reliant on profits from sales overcoming losses, notwithstanding the poor performance of the Foxes' investments and the others in the list of biggest losers. Overall, merchants did better than all adventurers combined. This runs counter to all that has been written on this subject, first alleged by William Pryce in 1776,¹⁴ and reiterated by so many writers thereafter.

This was not the only source of profit to the adventurers. Those who were mineral lords did exceedingly well. For example Lord and Lady de Dunstanville, whilst securing a profit of £6,696.42 over the seven years on their holdings in Cook's Kitchen and Wheal Gons & Stray Park, also received a further £9,625 in dues. It is therefore no surprise that: 'The late Lord de Dunstanville made money, as a landlord, faster from this (i.e. Cook's Kitchen) and the Old Pool Mine than he expended it in building Tehidy House, one of the finest seats in Cornwall'¹⁵

Conclusion

If the aim was to achieve gains commensurate with procuring and maintaining a country property, an adventurer would have had to be extremely fortunate. Profits were there to be made, but those of any significance were restricted to very few mines, and highly variable from year to year. Perhaps it is not inappropriate to close with two of the many hints to speculators:

To determine the number of shares you will take in a very promising mine, first consult your wife, then count your children, and lastly, calculate your household expenses.

And, being equally applicable to copper:

It is far easier to put tin into a mine, than to get tin out of a mine; and it is more likely that you will lose £100 than gain £10.¹⁶

A closing word of caution. Reliance has been placed entirely on the evidence of John Vivian. In such proceedings there is always some grounds for skepticism regarding the precision of evidence, but, as he stated in evidence, the data relating to the performance of the mines is taken from the individual company's cost books, this should attest to its reliability. On the other hand, the data relating to the adventurers comes with no such pedigree, further aggravated when it is recollected that Vivian was presumed to have recalled the lists from memory, yet with astonishing accuracy.

NOTES AND REFERENCES

¹ Gilbert, C.S. *An Historical Survey of the County of Cornwall*, vol 2, Plymouth, 1817 -1820, p.669.

² Polsue, J. *Parochial History of Cornwall*, vols 1 – 4, W Lake, Truro (1867 – 1872)

³ *British Parliamentary Papers: House of Commons Committee Reports X*, 5 April 1799, 651– 728, hereinafter referred to as *The Report*.

⁴ *The Report*, Appendices 25 – 31.

⁵ *The Report*, p.664.

⁶ National Library of Wales, The Vivian Archive, E66.

⁷ Sources used to identify the adventurers included: *The Report*, Appendices 25 to 31; Jenkin, A.K.J., *Mines and Miners of Cornwall*, 16 volumes, various publishers, 1961 - 1970; Rowe, J. *Cornwall in the Age of the Industrial Revolution*, Liverpool, 1953; Boase, G.C., *Collectanea Cornubiensia*, Truro, 1890; Gilbert, *Historical Survey*; Thorne, R.G. *The History of Parliament, House of Commons - 1790 to 1820*, London, 1986; Michell, F., *Annals of an Ancient Cornish Town being Notes on the History of Redruth*, Redruth, 1978; Pascoe, W.H., *C.C.C. The History of the Cornish Copper*

Company, Redruth, 1981; Harris, T.R. 'John Edwards (1731 - 1807) Cornish Industrialist', *Transactions of the Newcomen Society* 23 (1942 - 3), pp.13 - 22.

⁸ Phillips, J A and Darlington, J. *Records of Mining and Metallurgy*, London, 1857, p.199, reprinted in facsimile by Mining Facsimiles (nd); Rowe, *Industrial Revolution*, p.65.

⁹ *The Report*, Appendix 6.

¹⁰ *The Report*, Appendices 18 – 24.

¹¹ Titley, A. 'Cornish Mining - Account Books of Richard Trevithick, Snr', *Transactions of the Newcomen Society* 11 (1930-31), p.39.

¹² Thomas, R. *Report of a Survey of the Mining District of Cornwall from Chasewater to Camborne*, London, 1819.

¹³ These figures are less than those given previously as the sum of the holdings of the individual adventurers in the mines does not total unity. In other words, Vivian did not list every adventurer in every one of the 16 mines, the shortfall being in the order of 10 per cent.

¹⁴ Pryce, W., *Minerologia Cornubiensis*, London, 1778, p.174.

¹⁵ Raistrick, A (ed.), *The Hatchett Diary*, Truro, 1967, p.39; *Mining Journal*, 15 Mar 1856, p.180, cited in Morrison, T A. *Cornwall's Central Mines*, Penzance, 1980, 233

¹⁶ J R Leifchild, *Cornwall: Its Mines and Miners*, London, 1855.