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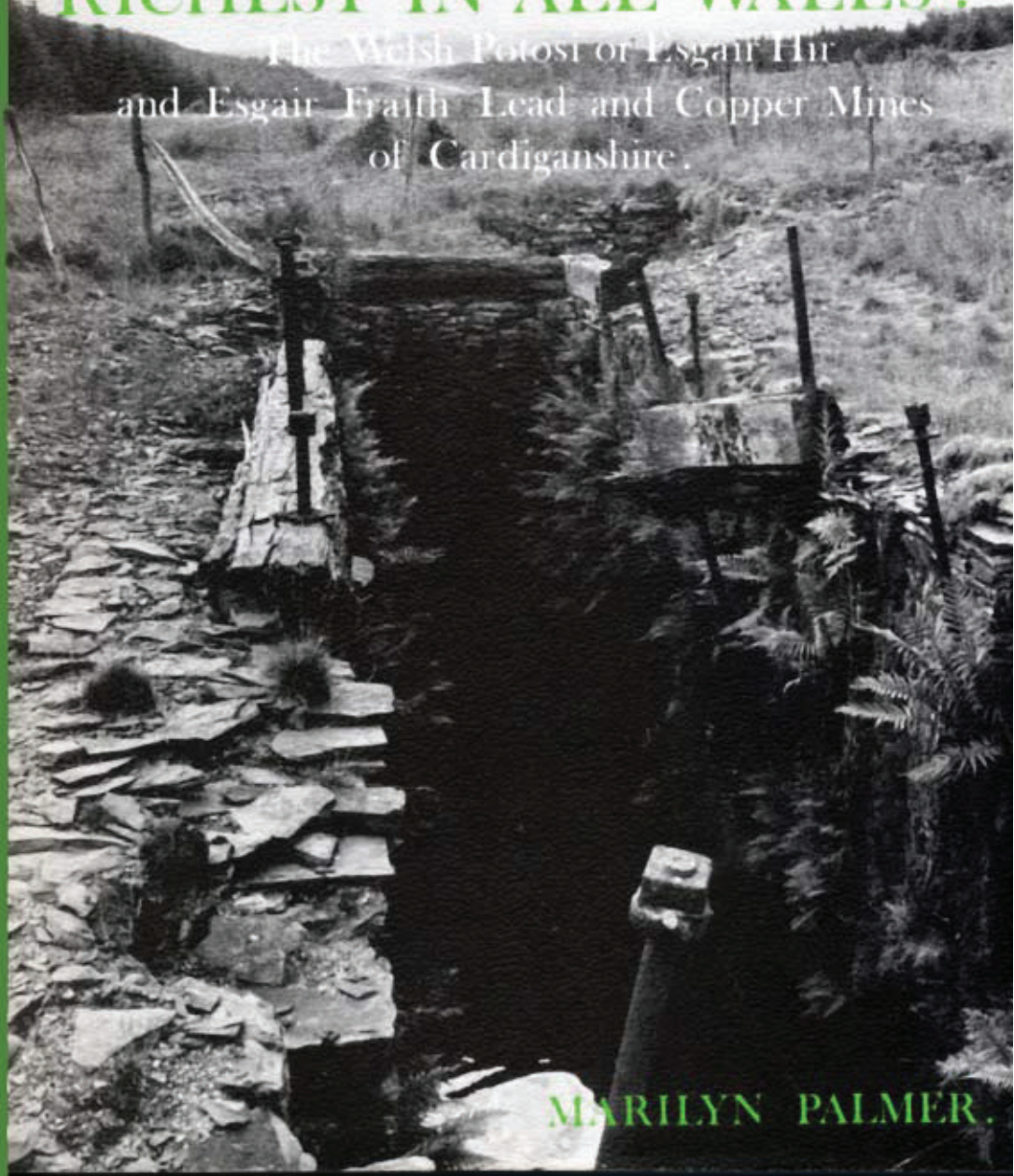

MARILYN PALMER.

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The Welsh Potosi or Esgair Hir and Esgair Fraith Lead and Copper Mines of Cardiganshire

by

MARILYN PALMER

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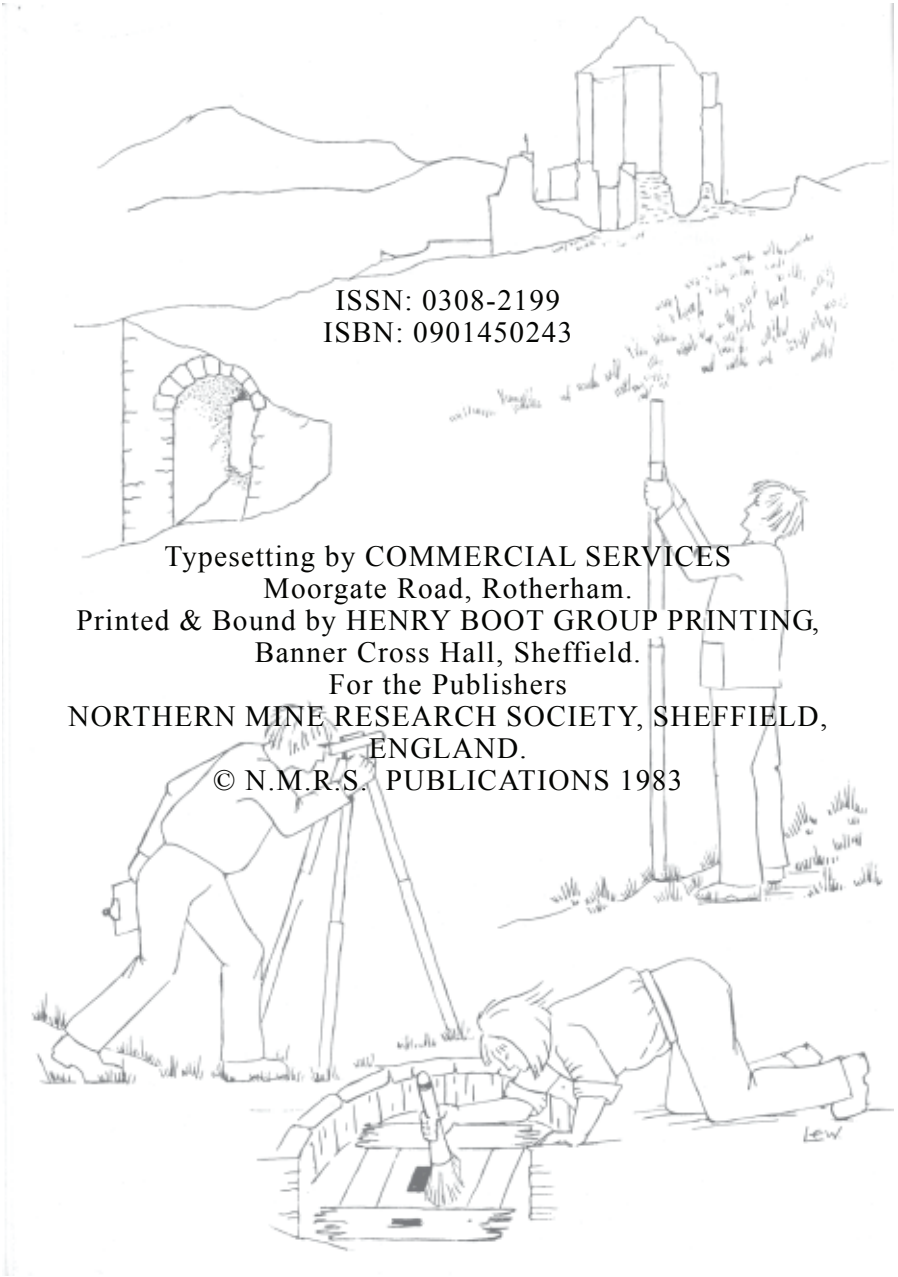

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"THE RICHEST IN ALL WALES"

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PREFACE

In 1976 my husband David and myself began teaching a three year part-time Certificate Course in Industrial Archaeology for the University of Leicester. We decided that, apart from local fieldwork, our students needed practical experience in an area different from their home area of the East Midlands and we selected a lead mining site for this reason. David Morgan Rees of the National Museum of Wales directed us to Esgair Hir and Esgair Fraith, since he regarded the surface remains there as in urgent need of recording. The area had been afforested and further damage to the surface evidence was likely. The Forestry Commission kindly gave us permission to work there in July 1978. The first field week was intended primarily as a training exercise for our adult students and only secondly as a means of recording the site. For this reason, we made use of equipment of the kind available to the average industrial archaeologist, for example tapes, a plane table and a simple level, not more sophisticated surveying apparatus. In the first year we concentrated on the surface remains, using techniques of building measurement, plane table survey and levelling. A limited amount of excavation was done, but the wooden structures revealed were so tantalising that they were backfilled and further work planned for the following year. The week's course in 1979 was devoted practically exclusively to excavating the dressing floor by the lower crusher house and another week was decided on for 1980. Unfortunately, a misunderstanding on the part of the Forestry Commission led to the area being destroyed a short time before work was due to begin. The record of the excavation is, therefore, incomplete, and it is intended to continue this kind of work on similar sites in Cardiganshire to enable comparisons to be made and conclusions reached particularly about methods used for crushing and dressing ore during the nineteenth century.

The drawings are, therefore, the work of many different hands, mostly inexperienced at this kind of work, David has re-drawn some of them for this publication, but copies of the others, together with the many photographs taken of the surface remains and the excavations, may be consulted at the offices of the Royal Commission on Ancient Monuments in Wales in Aberystwyth. The documentary research and writing I undertook myself since it proved too complex to organise as a class exercise, although long discussions have taken place on many points of interpretation. What, in fact, began as a training exercise developed into a critical study in industrial archaeology, and we hope that similar studies will be undertaken on other sites before it is too late.

We are grateful to the Forestry Commission for permission to work at Esgair Hir, to the Department of Adult Education, University of Leicester, for their continual interest in our industrial archaeological work and to the Department of Civil Engineering, University of Loughborough, for loan of equipment. The Librarians of the National Library of Wales at Aberystwyth were very helpful in producing maps and documents and Birmingham Reference Library in allowing access to

their copies of the *Mining Journal.* Mrs Mary Tucker kindly allowed me the use of her new index to the Druid Inn MSS.. David Morgan Rees, whose loss is still keenly felt by students of industrial archaeology in Wales, and Douglas Hague of the R.C.A.M., took an interest in our work, and David Bick's books, *The Old Metal Mines of Mid-Wales,* provided us, as so many others, with our first introduction to the Cardiganshire mines.

The students taking part in the field course and subsequent working visits were M. Ball, M.J. Bannister, Mrs K. Bentley, G.H. Bowler, K. Clafton, Mrs P.M. Davis, J.R. and Mrs S.M. Fletcher, R.E. Holmes, M.G. Miller, P.A. Neaverson, J.A. Selby, C.G. Strange, M.J. Tidd, J.D. Welding, R.A. and Mrs L.E. Williamson, R. Fullagher, G. Fitton and Roy and Joan Day of the Bristol Industrial Archaeology Society also joined us, and Roy Day drew Figure 9, and also Figures 7 and 8 from my rough outlines. The photographs were taken by J.R. Fletcher and David Palmer, who displayed commendable patience at being summoned from different quarters of the 1½ mile long site to record critical stages of the excavation. David generally supervised and co-ordinated the field work and I directed the excavations. For us, too, it was our first attempt at directing work of this kind and we are grateful to our students and friends for their energy, patience and good humour.

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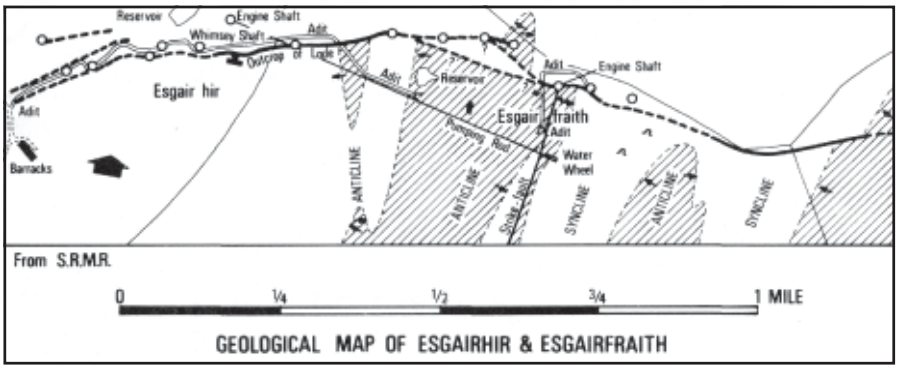
History Department
Loughborough University

INTRODUCTION

When George Borrow lost his way between Machynlleth and Ponterwyd in 1854 during his journey through 'wild Wales', he experienced warm hospitality in the offices of a mine situated in what he thought was a cold bleak spot. His hosts informed him that their mine was 'the richest in all Wales'. Esgair Hir maintained this tradition to the end, its numerous exploiters always recalling the heady days under the Company of Mines Adventurers when William Waller hoped to establish a mine as rich in silver as Potosi in Bolivia. Few seem to have made much profit from Welsh Potosi and many lost heavily during the time they leased it from the Pryses of Gogerddan. It is, however, a mining sett of considerable importance for two main reasons. Firstly, it was Sir Carbery Pryse's desire to work silver-lead newly discovered on his estate at Bwlch-yr-Eskir-Hir which resulted in the breaking of the monopoly of the Mines Royal, a monopoly which had hindered mineral exploitation during the seventeenth century. Secondly, the history of the mine during the nineteenth century reveals every facet of the kinds of speculation and fraud which dogged many mining concerns at this time. The story of Esgair Hir, then, is to some degree a microcosm of the history of many Cardiganshire mines.

Geology

The mining sett lies on the edge of the Plynlimon Ordovician rocks at their junction with the Silurian. The country rock is a bluish-green slaty mudstone which has been folded into a series of anticlines and synclines whose axes trend a little east of north. The main lode runs almost east and west, outcropping at the summit of the pass where the first pieces of ore were presumably discovered. It is very difficult to determine accurately the nature of the lode as many of the reports have been written by mining agents like Absalom Francis who wished to convince the public of the richness of the mine they were promoting. Certainly the lode



GEOLOGICAL MAP OF ESGAIRHIR & ESGAIRFRAITH

resembled a fracture zone rather than a single fault line and the mineralised area may have been as wide as sixty feet in places. The vein filling is a fault breccia cemented by quartz with some calcite, while at the Esgair Fraith end of the sett

there is considerable iron carbonate, obvious from the brown, rusty appearance of the dumps.

The ore is largely galena with some silver content, although not as much as most of the mining agents would have had their public believe. About seven ounces per ton of ore and nine ounces per ton of lead were the average amount of silver obtained, less than many other Cardiganshire mines. Chalcopyrite was mined at the Esgair Fraith end of the sett and blende can be found on the dumps. The ore occurred in vertical shoots, or 'pipes', narrowing downwards and separated from each other by barren ground. As can be seen from the map in O.T. Jones' report on the sett made in 1922, the shafts – which presumably followed the pipes – occur where the strike changes direction. Jones suggests that where this happened the rock was more fissured than usual, resulting in open cavities which were subsequently filled with mineral deposits. Although the lode is continuous for well over a mile, it is not productive of the minerals sought over its entire length. The way in which the pipes appear rich at the surface but narrow and disappear in depth also make exploration difficult, and these two facts may well explain the disappointment so frequently experienced by the miners at Esgair Hir.

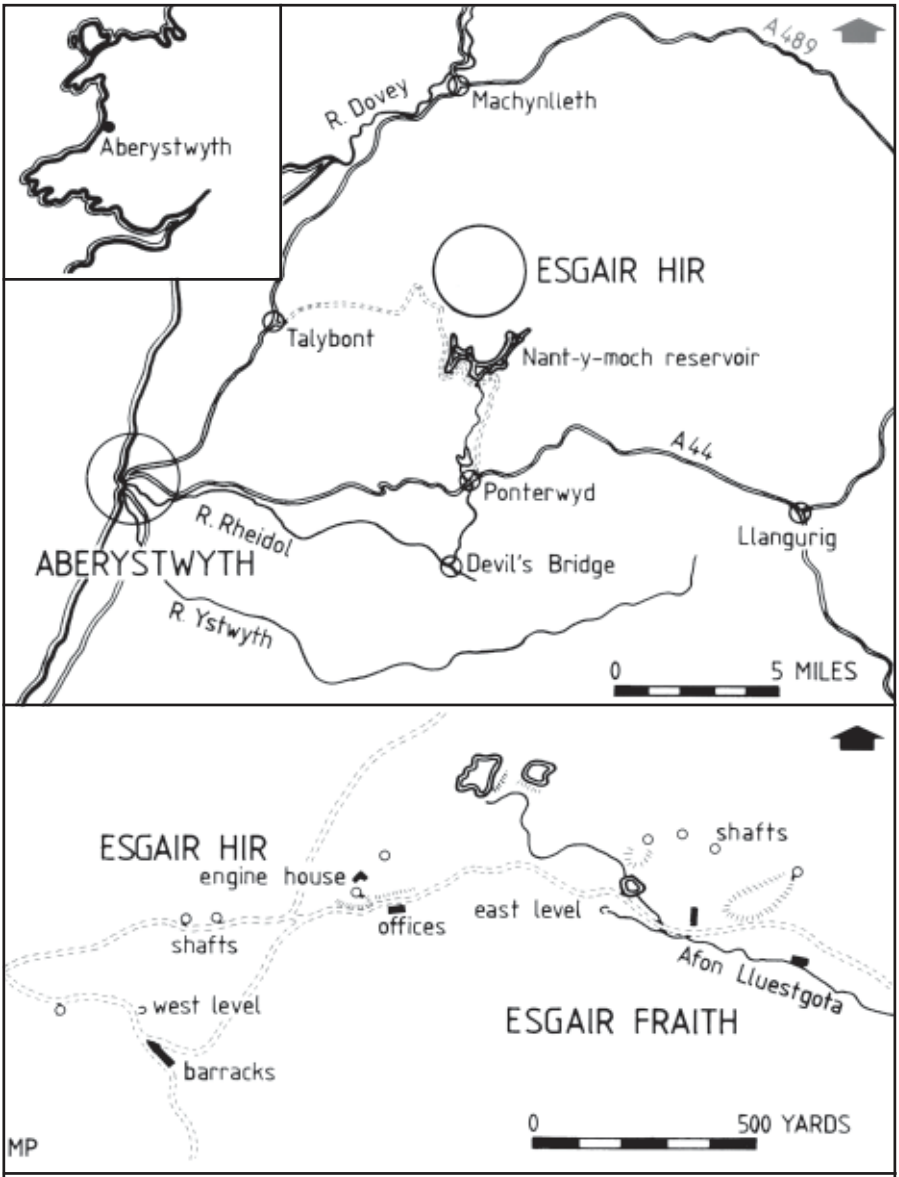


FIGURE 1 – LOCATION MAP

CHAPTER ONE

THE COMPANY OF MINES ADVENTURERS AT ESGAIR HIR

During the decade preceding 1690, an outcrop of lead ore was discovered at Esgair Hir, a bleak watershed at 1500' O.D. about 6 miles east of Talybont in Cardiganshire. The vein promised to be valuable, and the owner of the estate, Sir Carbery Pryse of Gogerddan, determined to work it himself. On January 1st 1690 he established a company, dividing the capital required into 24 shares. Of these, he kept 12 himself and sold the other 12 to shareholders including the Earl of Derby, later Duke of Leeds. The deed refers to "Bwlchyr Esgairhyr, being part of the said Lordship wherein certain Mines were then found, the Management of which required great Skill and Expense".[1] Pryse was challenged by Anthony Shepherd, lessee of the Mines Royal in Cardiganshire at that time, who claimed that as the ore was argentiferous, it could only be worked by his company. Pryse was accused of misleading the court by bringing a sample of ore from Derbyshire with a low silver content instead of the supposed highly argentiferous ore from Esgair Hir.[2] The details of the case, which resulted in the termination of the monopoly of the Mines Royal, have been described elsewhere and need not be discussed here.[3] Sir Carbery Pryse obtained a verdict enabling him to work his own mines, provided that the Crown and the Mines Royal could have the ore at a stated price. This condition was embodied in an Act of Parliament of 1693, but there is no evidence that the Mines Royal ever asserted their right to the ore from Esgair Hir.

Robert Hunt tells us that 'upon the passing of this Bill, Sir Carbery Pryse, anxious to communicate the glad intelligence to his mining friends, rode from London to Esgair Hir in forty-eight hours'.[4] He engaged William Waller, a mine agent from the north of England, and continued to work the property. He soon found, as many companies were to find later, that he needed more capital. In 1693, therefore, he redivided the capital into 4008 shares, retaining 2004 himself and dividing the others between members of his original company. The mines were made over to a group of 5 men led by Sir Francis Lawley on a 22 year lease, but Pryse was to remain chairman.[5] It was at this time that Waller drew up his famous estimate of the profit of the mines:[6]

"Six hundred men employed at the Great Vein till the Level be up, at 8s 6d per Tun, for getting, washing and making Merchantable, as it is now got, every two men must get above a Tun by week to make these wages, but at the rate of one Tun a week, the 600 men will raise 300 Tuns by week, and at fifty weeks, 15,000 Tuns by the Year:

This charge of getting is	£ 6,375. 0. 0.
Carriage to the River Dovey at 5s. per Tun	£ 3,750. 0. 0.

12d. per Tun by Water to the Port of Aberdovey,

and for landing it into Storehouses	£ 750. 0. 0.
15,000 Tun of Oar will make 10,000 Tun of Lead;	
smelting of this when our Mills are up, at 15s. per Tun . .	£ 7,500. 0. 0.
Charges	£18,375. 5. 5.
10,000 Tun of Lead, at £9 per Tun	£90,000. 0. 0.
Charges of getting, washing,	
carriage and smelting	£18,375. 0. 0.
Sinking shafts, and incidental charges	£ 1,125. 0. 0.
Clear Profits	£70,500. 0. 0"

He also calculated that several hundred more men could be employed once the levels were completed and the mines drained – although as can be seen from the calculations above he allowed very little for the expenses of opening up the mine. He repeated these calculations in 1698, when he wrote an account of the value of the mines to demonstrate to the partners that more capital was needed. It is in this *Essay* that Waller first compares Esgair Hir with the Potosi silver mines in Bolivia. His map of Potosi includes a small hill, called Young Potosi, which is intended to represent Bwlch-yr-Eskir-Hir where his new town was to be built:

"I doubt not, but in some Years, these Mines in Cardiganshire will give occasion for erecting as large a Town as that at Potozi which may deservedly be called by the name of Welsh Potosi; and, one Advantage at least, these will have over Potozi; that whereas that Mountain is Seventy Leagues from the Sea, here the Proprietors and Miners, for their encouragement, may have the delightful Prospect of seeing the Ships sailing into the Port of Aberdovey, to bring them ready Money for their Commodities."[7]

By 1698, however, it was clear that working Esgair Hir was not going to be easy. As all later companies found, the mines were difficult to drain and the rock was very hard. Pryse had died in 1694, and Waller complained that the [7] partners in the company would not raise sufficient capital to work the mines properly – a statement that is heard time and again in the history of these mines! He had been able to work them only intermittently since Pryse's death although he had discovered copper as well as lead and had therefore presumably explored to the east of his original workings. And so, in 1698, he urges the partners to remember their duty to employ the poor and to exploit the riches of which they are possessed by allowing the mines to be managed by Sir Humphrey Mackworth and his company of private adventurers.[8]

Waller had come into contact with Mackworth at what was stated to be 'an accidental Meeting' in 1697 at 'his Inn in Llanbadarn Vawre', near Aberystwyth, while Mackworth was making a journey from Glamorgan to Shropshire.[9] Mackworth was the owner of various industrial enterprises in south Wales,