

THE OLD SLATE INDUSTRY OF PEMBROKESHIRE AND OTHER PARTS OF SOUTH WALES

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This is a complete extract of this article by **Bill Griffith-Jones** 2002 (including 17 Tables although some of the latter are partial extractions only)

I. INTRODUCTION TO THE INDUSTRY

THE old slate industry of Pembrokeshire is now largely forgotten, but it must have been well-known during most of the 19th century and the early decades of the 20th, for its products were in demand in all parts of the British Isles, even in North Wales. This wide, if not heavy, demand must have been due to the attractive colouring of Pembrokeshire slates, ranging from purple-black to blue, green, grey, silver-grey, and even to the random rich orange and brown colourations of the 'rustic' slates. The best Pembrokeshire slate was of as good quality as the North Wales product, but it was not all good. Probably a higher proportion of the slate quarried in Pembrokeshire than of that in North Wales was used for slabs and carved products such as troughs and cisterns.

Meaningful production statistics for the Pembrokeshire industry are not available, but our estimate based on the few figures we have found and on the evidence of the numbers of workers is that the output was generally between 5 and 10 per cent of that of North Wales. While, therefore, the slate industry could not be said to dominate Pembrokeshire in the way it dominated the counties of Caernarfon and Merioneth, it was nevertheless sufficiently significant to dominate certain small parts of Pembrokeshire, notably Cilgerran and the parishes of Clydai and Llanrhian. Its fluctuations of fortune, which were probably greater than those of the industry in North Wales, must have brought great suffering to the people of those areas.

There were about 100 slate quarries (i.e. quarries of which the product was regarded as slate in documents or advertisements) in Pembrokeshire, including those just on the Carmarthenshire side of the upper reaches of the Eastern Cleddau river. They were spread over a wide band stretching from St. Davids through North Pembrokeshire to its eastern border as shown in the map. The industry also spread thinly into central Carmarthenshire, south and north Cardiganshire, and even into Breconshire, but there were only about 20 quarries involved, all quite small. **Table 1** lists and indicates the distribution of all the quarries or groups of quarries, dividing them into two classes, 'major' and 'minor'. While the division is to some extent arbitrary, the 'major' quarries or groups were those which had significant commercial exploitation and a sizeable production, while the 'minor' quarries were

those of small size and very limited commercial exploitation. In spite of this distinction, no fewer than 21 out of the 44 slate companies which are discussed and listed in **Part V** of this paper were concerned with quarries in the 'minor' group. The majority of the quarry operators were private individuals or partnerships.

Our earlier paper **1** gave a detailed gazetteer of the slate quarries in Pembrokeshire and its borders (i.e. all the quarries except group vii of **Table 1**) and some account of the physical features or archaeology of the quarry workings. **Table 2** gives a brief gazetteer of the quarries in group vii. The present paper is intended to be complementary to our earlier one, and is concerned with the history, the workers, the products, and the commercial structure of the industry. All this relates occasionally to the late 18th, but principally to the 19th and early 20th centuries.

For earlier periods our knowledge is slight. On the evidence mainly of slate fragments found in Roman quays at Caerleon in Monmouthshire, which were identified as waste from slate making and with their origin in the Preseli Hills of Pembrokeshire, Boon has postulated that there was a slate industry in Pembrokeshire or Carmarthenshire in Roman times. **2** In medieval times, slate had a widespread, although probably not intensive use; however, the main sources were apparently quarries in Devon and Cornwall **3** and there is little evidence of the use of slate from South West Wales. One likely case where Pembrokeshire slate was used was the probably-late-medieval roof of St. Barruch's chapel on Barry Island. **4** In the 16th and 17th centuries small quantities of slate and 'hilling stones' (the latter probably being of slate) were exported from Pembrokeshire, e.g. 11,000 slate stones (perhaps 3 tons) to Bristol in 1566, **5** 40M [see below for explanation] of slates (perhaps 10 tons) to Ireland in 1616, **6** and 36 thousand of hilling stones (say 9 tons) from Fishguard to Ireland in 1639. **7** It was in 1603 that George Owen **8** showed that there was then well-established and extensive slate quarrying in at least that part of Pembrokeshire around Newport and Nevern, and it is probably significant that the cargo of 1566 mentioned above was sent by a Nevern merchant in a Newport ship.

We have found no firm evidence of slate production in South West Wales during the early 18th century; even in the middle of the century (at a time when the North Wales slate trade was large) the activity was slight, for in 1747 there was no export of slate from South Wales as a whole and only a small coastwise traffic there amounting to 22,000 slates. **9** However, as may be seen from **Table 10**, slate production was certainly taking place in the later part of that century in the parish of Cilgerran, and probably also at Glog. Its main development was in the 19th century.

II. HISTORY OF THE MAJOR QUARRIES.

Sources for this study are scattered and fragmentary, and although we have unearthed several hundred items, they have proved inadequate for the writing of a satisfactory history of the industry and the quarries. It has seemed better, therefore, to present the main facts (relating to the major quarries only) in tabular form so that at least an outline of the history can be gathered rapidly, and a framework provided on which others may, in the future, be able to build. A full set of copies of our notes, maps, and plans has been deposited in the Dyfed Archives at Haverfordwest (ref. HDX/949).

Tables 3-11 summarise the history of the nine 'major' quarries or groups of quarries listed in **Table 1**, and appended to each table is a list of the relevant sources. It can be seen from the tables that the years of peak activity appear to be the 1860s and 70s, which were followed by a decade showing a peak rate of bankruptcies, this reflecting the general slump of that period. Otherwise, bankruptcies are distributed fairly evenly over the various decades and appear to be due more to over-optimistic investment and bad management than to fluctuations of demand. Even the great activity of the 1860s and 70s was probably largely due to the drive of one man, John Davies, an outstanding speculator and promoter of companies who brought a lot of capital into the industry - and into his own pocket. He is discussed more fully in **Part V**.

It is clear from the tables that in almost all cases there was a very great fluctuation in activity, even within a decade and often (as in **Table 3**) repeatedly over several decades. From the figures indicated here and from those in **Part III**, we can discern in the parish of Llanrhian (in which the quarries of Aberiddi, Trwyn Llwyd and Porth-gain lay) a 5-to-1 decline in the number of workers from 1851 to 1861, followed by a very large rise in 1864-6 as the St. Bride's United Co. got under way; this was followed by a decline to about the 1861 level in 1871 following the bankruptcy, then a 10-to-1 increase in the mid-1870s with the activity of the St. Bride's Welsh Co., and then a 5-to-1 decline by 1881 following its bankruptcy. The problems this caused to the population of the parish can be readily imagined. Fortunately, other quarry areas did not suffer quite as badly as this.

There is little information on the technical aspects of the working of the quarries. From the few inventories of equipment which we have found, it is clear that most of the major quarries used steam and/or water power, tramways, etc., and were adequately drained, often from well before 1850. Survival into the 20th century did not appear to depend on such factors, however, probably because the 20th-century demand for slates and slabs was low. Some of the more successful survivors were some of the small and quite unsophisticated quarries in our 'minor' category, such as several of those in group iii.

III. THE WORK-FORCE

It is difficult to make any accurate assessment of the size and skill-distribution of the work-force in the Pembrokeshire slate quarries and to compare the work-forces of the slate industries of South and North Wales. In principle, the fact that the census enumerations are available for 1841, 51, 61, 71 and 81 should make the task easy (if laborious), for these record names, addresses, age, place of birth, occupation and family relationships for all the population, parish by parish. There are, however, many difficulties in using this source of data, some of which, such as illegibility of writing and imprecision of age, are general and well-known. A special difficulty in the present study arises from the lack of a standard terminology for occupational descriptions. The prime example of this is the use of the word 'slater'. The Oxford English Dictionary gives only one meaning for this as far as the slate industry is concerned: 'one whose work consists of laying slates', i.e. one concerned with the application of slates to building, not with their manufacture. But in Pembrokeshire the word evidently meant someone concerned with making slates at the quarries. The exact nature of the work embraced by the word seems to vary, in the census returns, from place to place and from decade to decade, no doubt partly according to the whims of the enumerators and partly according to local fashion. For

example, in 1841, it appears that almost any skilled man working in the slate quarries was called a slater, whether he was breaking rock, splitting it, trimming the slates, sawing, etc. In 1851 this continued in most places, but some enumerators used the terms 'quarryman' or 'slate quarryman' equally indiscriminately. In 1861 there was less use of 'slater' and more precision in describing the occupation. In 1871 nearly all enumerators called all slate workers 'slate quarrier' or 'slate quarryman'; in 1881 there was some discrimination between 'slater' and 'slate quarryman', both terms often being used by the same enumerator. This confusion is curious, since we have ample evidence that the rates of pay were different for the different jobs in the quarries, as discussed below, and that therefore the distinctions between jobs were well-recognised.

In addition to the difficulties mentioned above, there is a doubt about unskilled workers. These were almost certainly always called labourers. The census enumerations naturally contain a large number of labourers in all parishes, but it is generally impossible to tell whether they were employed at slate quarries, in agriculture, or in other work. Quite possibly any particular man would be employed in these different areas at different times, according to demand. We have only a small amount of information on the ratio of labourers to skilled men at the slate quarries. One source is the record for Craig-y-cwm and Prescelly quarries in 1825-26, **10** and the wage books show roughly twice as many labourers as skilled men. Slaters and quarrymen were distinguished in the skilled group; slaters earned 2s. 3d. a day, quarrymen 1s. 8d., and labourers 1s. 4d. Another source, from towards the other end of the active period, is the record of the Teilo Vale quarry in 1913. **11** This shows wages ranging from 3s. 0d. to 4s. 0d. a day. Assuming that the range 3s. 0d. to 3s. 4d. represents labourers, and the range 3s. 6d. to 4s. 0d. represents quarrymen and slaters, then there were roughly equal numbers of labourers and skilled men. It seems safe to conclude that the total number of workers at the slate quarries was at least twice that which appears from the census enumerations. This leads us to a total figure for Pembrokeshire in 1871 of about 400.

The possibility that the number of people employed in the Pembrokeshire slate industry was at times actually much higher than the estimate of 400 cannot be discounted. We have already referred to the large fluctuations of activity, and mid-decade numbers may well have greatly exceeded those in the census years. For example, it was stated in 1877 that over 300 were then employed at the Abereiddi, Trwyn Llwyd and Porth-gain quarries in the parish of Llanrhian. **12**

It seems that the term 'slater' was not used in North Wales quarries. Neither Lindsay **13** nor Lewis, **14** in their books on the slate industry of North Wales, makes any reference to 'slaters', and Burn **15** uses the term only in respect of the man who lays a slate roof. Lindsay (p. 221) states specifically that the category 'quarryman' included those 'who worked in the slate mills and split the blocks into slates'. This difference in terminology leads naturally to the question: how inbred was the Pembrokeshire industry? **Table 12** gives data for an answer. It is based on the census enumerations which for the years quoted give an indication of the place of birth of each worker; for 1841 only whether born in Pembrokeshire or not, but for other years the actual parish of birth is given. It is apparent that for all the areas included in the table, except Llanrhian, the industry was extremely inbred, with almost all the workers being local men. Llanrhian is quite different, for in the big mid-century expansion of the Abereiddi - Trwyn Llwyd - Porth-gain group of quarries, the additional labour force was largely recruited from North Wales. The

expansion did not last, however, and another problem, unique to Llanrhian, arose in that there were many slaters' wives (and families) left in the area in 1861 whose husbands had left home, probably men from North Wales who might well have returned there to look for work.

It seemed worth while to try to determine the extent to which slate workers in Pembrokeshire continued in this occupation in the same area throughout their working lives. In principle it ought to be possible to do this with some accuracy from the census enumerations; but there are difficulties. The results of our analysis for three areas are given in **Table 13**, and they must be regarded as no more than an approximation to the true figures. The most obvious difficulty of the analysis is the large number of people with the same names; coupled with imprecision of age and even of parish of birth, this means that it is possible to follow through only a proportion of the workers with confidence. We think our figures are more likely to be high than low. It is therefore rather surprising to find such a small number of workers continuing in their employment for an extended period, especially in the parishes of Clydai, Penrhydd and Llanfyrnach where the Glog quarries seem to have maintained a rather unusual steadiness of activity. Of course, the first numerical column includes the men who appeared for the first time in the 1881 census, and it is probable that some of these would have continued at the quarries at least until the 1891 census; making allowance for these on the basis of previous proportions, the figures in the first column are reduced to 108, 109, and 130 for the three areas, and the conclusions remain much the same.

An interesting point about the work-force at the quarries concerns specialised peripheral workers such as smiths and carpenters. Several of the old quarry plans show smithies, and there are references to payments to smiths and carpenters. They would be required for making and repairing tools and trams, rails and buildings, etc. Yet in the census enumerations there never appears an occupation such as 'smith at the quarry'. Of course, there are smiths and carpenters, but nothing to associate them with a quarry. The most likely explanation is that they were general smiths and carpenters, employed casually at the quarries when there was work to do there. Perhaps none of the Pembrokeshire quarries was large enough to employ such craftsmen on a full-time basis.

IV. SLATE PRODUCTS AND THEIR TRANSPORT

Sizes, weight and prices of roofing slates

By the 19th century the various sizes in which roofing slates were made had become largely standardised, at least in Wales, and all the larger sizes had acquired the names of the ranks of the ladies of the nobility. When, in advertisements, there was reference to 'sizes' being available, it was these named sizes that were meant. These names, according to Lindsay, **16** started to become established in North Wales during the 18th century. By the mid-19th century, in Pembrokeshire, the names and sizes were as shown in **Table 14**, it being understood that a 'thousand' (often indicated by 'M') meant 1260 slates (although sometimes only 1200). Sizes other than those shown in the table would be supplied within these ranges, e.g. in 1855, Sealyham Quarry was advertising **17** a third size of Countesses at 18 x 10 inches, Lords at 16 x 10, and the 2nd size of Ladies at 14 x 8. The use of male ranks

was, however, very exceptional. In North Wales the smaller sizes of Countesses were sometimes called Viscountesses. **18**

Slates smaller than 12 x 6 were called 'locals' in Pembrokeshire, and were sold by the thousand of 1000. In North Wales, they were apparently called 'ton slates' because they were sold by the ton. **19** The latter practice seems the more sensible one, as the dimensions of locals were never, to our knowledge, stated in advertisements and price lists. In 1860, the Barry Island Slate and Slab Co. at Porth-gain advertised locals on a basis of square yards of cover, **20** which was a logical enough system, but evidently not generally adopted. In this example the price worked out at about 6d per square yard, which was little more than half the cost of cover using Countesses.

In the 20th century these noble names for sizes were largely abandoned in favour of a simple statement of dimensions.

Prices rose steadily as the years passed. As we have very incomplete data for Pembrokeshire, the list in **Table 15** includes, for purposes of presenting a more complete picture of prices, many based on North Wales and marked with an asterisk; however, our evidence suggests that the prices for similar products were generally a little lower in the South than in the North. Sizes for which prices are quoted are the largest in each group.

The anomalously-low prices for Prescelly Quarry in 1845 could reflect either the very remote location of the quarry or an inferior status for Pembrokeshire slate at that date.

Although Messrs Griffiths & Co. at Dolbadau Quarry were quoting for sizes in 1921, and also Mr. Williams at Clun-gwyn in 1929, in fact those quarries of Pembrokeshire and its borders which survived into the 20th century appear to have done little business in sizes, largely concentrating their manufacturing of roofing slates on 'randoms' and 'peggies'. The former were, as their name implied, not made to a particular size, but trimmed to random sizes within stated limits. For example, in 1923, Davies Brothers, the Agents for Precelly Green Slates at Gilfach Quarry, offered randoms in three length ranges, 14 to 26 inches, 9 to 26 inches, and 9 to 20 inches - also in two qualities, and either green or rustic in colouring. A roof would then be covered, normally, by using the larger slates for the lower courses, and the smaller ones nearer the ridge, giving a quite pleasing appearance. In these circumstances, slates were sold by the ton, with the number of square yards of cover (at 3 inches lap) stated but not guaranteed. For standard thin slates, one ton was expected to cover about 30 square yards; for second quality slates (3/8 inch or more thick), perhaps only 20. **21** Around the same period, P. F. Campbell at Tyrch Quarries offered only randoms (price approximately 7 to 9 shillings per square yard delivered to any railway station in England and Wales). **22** But at Gilfach, peggies also were offered, and similarly in 1912, the Teilo Vale Quarries had been offering randoms and peggies. (They made also a few sizes.) **23** Peggies were small slates from 9 to 13 or 14 inches long, giving the same cover per ton as randoms, but presumably at a lower cost. The range of width of randoms and peggies was never stated.

The manufacture of slate slabs and slab products

We have no information on the early manufacture and use of slate slab products in Pembrokeshire except for the fact that some older houses built of slate blocks - such as Temple Druid in the parish of Maenclochog - have hand-made slate sills and flags. It seems probable that the large-scale commercial development of slab manufacture took place in the middle of the 19th century. Our earliest reference to slabs is an advertisement **24** of 1848 for a sale at Trwyn Llwyd and Abereiddi of the stock of 'slates and flags'. The Barry Island Slate and Slab Co. was formed in 1855 and in 1860 was advertising, not only roofing slates, but also **25**

'Superior Slabs for Tombs, Headstones, Cisterns, &c., from 30 s(hillings), and upwards, per ton.

Excellent Flooring Slabs, Sawn Edges and planed surfaces, 22s. 6d. and 25s. per ton.

Mantlepieces, Window Sills, &c., made to order.'

The sawing of the edges and the planing of the surfaces was done by power-driven sawing and planing machines (probably water-powered at Porth-gain but steam-powered at Trwyn Llwyd).

Power-sawing was not universal at that date. In a report on the Temple Druid Quarry in 1874, **26** it was stated that slabs, window sills, etc., had been sawn by hand; it was mentioned that they were good for carving and enamelling. It was then proposed to erect a powerful water wheel to drive six saws and two planing machines.

It was recognised that the requirements of slate rock for slab-making and for splitting for roofing slates were different, and in 1864 there were two different but adjacent quarries at Dandderwen, namely the 'Danyderwen Slate Quarry' and the 'Danyderwen Flag Quarry'. **27**

The first reference to slabs at Sealyham Quarry was in 1855, **28** and in 1877 the production of slabs was to be developed using new water-powered installations; we have found no evidence, however, that these were actually provided.

At Summerton Quarry there is excellent archaeological evidence of water-powered sawing of slate, and there is a definite possibility that this could have started before 1830.

A report on Rosebush Quarry c.1880 recorded **29** that 'expensive machinery, saws, planes, etc., have been erected and work on a large scale (through that grand agent, a Turbine) . . . The slabs stand the chisel wonderfully, and for enamelling cannot be surpassed. We were allowed to visit and inspect Mr. Macaulay's office, where are some beautiful specimens in the shape of chess boards, ink stands, letter weights, etc., in which every coloured marble is represented'. The enamelling was done in London.

Not always, however, was the demand for finished products. In 1879 Cefn Quarries at Cilgerran had rough unplaned flags from 1½ to 3 inches thick and from 4 to 10

feet long for sale at prices varying from 6d. to 1s. per square yard. **30** In 1884, Cardigan Town Council accepted a tender from Cefn for paving slabs at 2s. 3d. per square yard. **31** In 1882, Cefn was advertising finished products as well: 'milk pans, window sills, doorsteps, hearthstones, linterns, and all sizes of slabs'. **32**

In the 1920's, Griffiths & Co. at Dolbadau Quarry **33** were supplying the same sort of range of products, including also pig troughs, cisterns, coffins (£3. 7s. 6d. without bottom), and urinals (£3. 5s. 7d. for one set of slate parts). Slab was then 13s. for a piece 6ft x 2ft; sills were from 1s. 6d. to 2s. 0d. per foot according to thickness. For many of these applications slate was attractive and suitable, being almost impermeable to liquids. Probably slate gravestones remain as the commonest relic of the slate-slab industry of Pembrokeshire and its borders.

A slate-slab industry developed in North Wales too, and no doubt was much larger than that in the South. It is believed, however, that it represented a smaller proportion of the whole slate industry in the North than in the South.

Transport

Transport of the slate from the quarries was generally by road through most of the period of slate production. When the South Wales Railway was extended from Carmarthen westwards into Pembrokeshire in the mid-1850's, slate which was to go to more distant parts was often taken to convenient stations such as Narberth Road (later renamed Clunderwen) from quarries such as Glog and Gilfach which were not too distant. Otherwise 'export' slate would be taken by road to a convenient harbour - Fishguard for quarries such as Sealyham, Cronllwyn and Bellstone, Cardigan for the quarries at Cilgerran or Glog, Blackpool (at the head of the Eastern Cleddau estuary) for Glog when the export was to be southwards. In the case of the coastal quarries at Aberiddi, Trwyn Llwyd and Porth-gain (which operated as one group), they naturally used sea transport very greatly, having their own harbour at Porth-gain. The small slate quarries in the cliffs near Dinas and Newport used small boats on the sea to take their slate to Newport harbour for transshipment. There were two other variations: horse-drawn tramroad transport was used from around 1850 between Aberiddi and Porth-gain, and river boats ('lighters') on the River Teifi between the quarries at Cilgerran and Cardigan.

The cost of road transport was high. In 1854 it was quoted at Glogue as 6d. per ton per mile. In 1865, road transport from Glog to Narberth Road station (about 10 miles) raised the price of Duchess slates from £7. 10. 0d, to £8. 8. 0d. per thousand (weight about 3 tons), and at Blackpool Quay (about 14 miles) the price was raised to £8. 15. 0d. In 1868, when the tramroad from Aberiddi to Porthgain was out of use, road cartage (about 3 miles) was 2s. 9d. per ton; the tramroad was stated to reduce the transport cost to about 6d. per ton.

This factor of transport cost led the proprietors of Rosebush and Glog quarries, when these quarries were expanded in the late 1860's, to organise and finance the construction of standard-gauge railways from the Great Western Railway (which had taken over the South Wales Railway). The railway to Glogue opened in 1873 and that to Rosebush in 1876, and doubtless both were beneficial to the slate industry. Both carried passenger traffic and both were later extended, but both had very chequered histories. **34** Certainly the amount of slate traffic was too small to make them pay; probably less than 10,000 tons a year each. The narrow-gauge Ffestiniog

Railway in North Wales, with lower capital and operating costs, carried over 100,000 tons a year at this period. **35**

V. THE SLATE COMPANIES

The typical method of setting-up a slate company

To understand much of the discussion and data which follow, it is desirable to have some idea of the way in which the slate companies were set up. There were about 46 slate companies over a period of about 3/4 century in South West Wales, and they were all different in many ways; nevertheless we could describe the setting-up of a typical company as follows.

Some enterprising businessman, usually from outside the area, would learn of a potential or actual slate quarry which was available for lease, and after inspecting the quarry or site, perhaps with the help of an expert from another quarry or even from another area, would negotiate with the landowner for a lease on the basis of an annual rental and/or a royalty on the slate sold. There would not usually be any immediate cash payment. Having obtained the lease, the businessman would then promote a company on the basis of a prospectus, the technical part of which would be a report in glowing terms of the prospects of the quarry by the expert already mentioned. The company would be duly registered, usually with an office in London, with a short list of subscribers who each committed a few pounds to the company and who frequently became the directors of the company. The authorised capital would be generally in the range £5,000-£80,000, divided into shares of anything between £1 and £500. The company usually entered into an agreement with the lessee of the quarry (who, it must be remembered, was the promoter of the company) to purchase his rights in the quarry for a large capital sum, usually partly in fully- (or partially-) paid-up shares in the company and partly in cash. The promoter thus made an immediate gain of the amount of the cash payment (since he had paid nothing but the legal costs in obtaining the lease), with a large potential further gain if the company really started producing slate. If there were machinery already at the quarry, the company would buy this at a valuation. Shares would be sold and calls made to provide the money required, and the directors would generally get generous fees if they attended meetings.

Such companies were limited-liability companies and were registered at the Companies Registration Office. Annual returns of shareholdings and negotiations were supposed to be made, and in many cases the official file is a mine of information about the company. In many other cases no returns were made. The files are now mostly in the Public Record Office. Reports and advertisements of the promotion of companies and of their progress also appeared in newspapers and more particularly in the *Mining Journal*.

There were also some companies of a private nature, with no official status, no limited-liability, and no shares offered on the stock market. It is very difficult to find out much about these companies.

Most slate quarries were not operated by companies at all, merely by a private proprietor or by a partnership. Such cases have been frequently mentioned in **Tables 3-11**, but are not covered by the present discussions.

With this introduction, it is hoped that the data presented in **Tables 16 and 17** will be immediately intelligible. It will be seen that we have recorded 44 companies concerned with slate in South West Wales. (Note that one company, the Corngafar and Trelodan Slate Co. Ltd., appears in both Tables.)

General view of the companies

For the quarries in Pembrokeshire and on its borders, **Table 16** shows 36 companies, of which 31 were properly-registered limited-liability companies. The total authorised capital of these 31 companies was practically £1 million (actually £936,180). As far as we can ascertain from the returns made by the companies the capital actually raised in cash was about £0.3 million (actually £297,105), but as so many companies failed to make returns (as indicated by blank spaces in Table 16), it must be assumed that the total cash raised was more than this, say at least £1/3 million. The prices paid, or contracted to be paid, for the purchase of the leases of the quarries totalled £166,000 approximately in fully- or partially-paid-up shares and £49,000 approximately in cash, for those cases where we know the figures. We are certain there were other cases where cash was paid, as indicated in the Table; and we think it highly probable that there were even more cases where shares and cash were paid but details not returned. There were cases where the shares forming part of the purchase price were quickly sold for cash, and we describe one such case later. Thus the promoters usually made money out of the company, even though the shareholders often did not.

(Note that as the Corngafar and Trelodan Slate Co. Ltd. operated one quarry in Pembrokeshire and one in central Carmarthenshire, and so appears in both Tables 16 and 17, we have allowed one-half of its authorised capital in the total for Pembrokeshire above, and one-half in the total for the other counties below.)

For the quarries in South West Wales outside Pembrokeshire and its borders, **Table 17** shows 9 companies, all properly-registered as limited-liability companies. The total authorised capital was £173,000, and as far as the official returns show, the capital actually raised was only £17,850. The total price paid, or contracted to be paid, for the purchase of the leases of the quarries was £25,200 in fully-paid-up shares and £12,634 in cash.

By far the majority of the companies were based in London, with directors from London or the Southern English counties, and with shareholders also largely from this region. The particulars given in **Tables 16 and 17** should be sufficient to assess the paucity of local, or even Welsh, influence.

Success and effective life of the companies

Some companies made no returns after initial registration. In some of these cases the Registrar of Companies would eventually write to the secretary of the company and occasionally received a reply to the effect that the company never really got

going; more often no reply appears to have been received. What financial transactions took place in such cases is not known; perhaps the promoter made some money, perhaps not. Perhaps some slate was produced, more likely not. Companies in this category are indicated by an asterisk in **Tables 16 and 17**.

It was possible for a company to be formed, make money for the promoters, and yet produce no slate at all. Only one of the companies in **Table 16** was in this category, namely, the Eskern Slate and Slab Quarries Co. Ltd. It is very probable that two of the companies in **Table 17** were in this category, namely the Llyfnant Slate and Slab Co. Ltd., and the Tyn-y-Garth Quarry Co. Ltd., but the evidence is uncertain.

By contrast, some of the companies were effective producers over a reasonable period. Those believed or known to have been producing slate over a period of about five years or more were

(a) **from Table 16:-**

- Barry Island Slate and Slab Co. Ltd., c 1855-1860
- Bellstone Slate Quarries Co. Ltd., 1881-1888
- Cefn Quarries Syndicate Ltd., 1894-1906
- Glogue Slate Quarries Ltd., 1919-1926
- Kilgerran Quarries Ltd., 1909-1920
- Rosebush Slate Co. Ltd., 1863-1868
- St. Bride's United Slate & Slab Co. Ltd., 1864-1869
- St. Bride's Welsh Slate & Slab Co. Ltd., 1875-1880
- Temple Druid Slate Quarries Co. Ltd., 1920-1925
- Tyrch Silver Grey Slate Quarries Co. Ltd., 1899-1908
- United Welsh Slate Co. Ltd., 1883-1890

(b) **from Table 17:-**

- Cwmere Slab Quarry Co. Ltd., 1904-1909
- Cwm Irfon Slate Quarry Co. Ltd., 1888-1896
- Glandovey Slate Co. Ltd., 1879-1884

All the other companies listed in **Tables 16 and 17** produced some slate, but for periods well under five years. One company, the Teilo Vale Green Slate Quarries Co. Ltd. (Table 16), formed in 1912, would probably have continued for five years if its activities had not been halted by World War I.

John Davies

Of the art of promoting a slate company, as described at the beginning of this chapter, the principal exponent was John Davies, who moved from Newtown, Montgomeryshire, to Blaenmarlais House, Narbeth, Pembrokeshire, in about 1863. One particular case of which full particulars are available is that of the Lily Quarries Slate and Slab Co. Ltd. Only a single quarry was involved, at grid reference SN 110262, in spite of the title of the company. On 1 May 1865 a lease to quarry over a specified strip of land extending from the Teilo Brook to Llangolman Farm (as shown on a map accompanying the lease) was granted for 21 years by John Phillips of

Newcastle Emlyn, Surgeon, to John Davies on the basis of a royalty of one-sixteenth with a minimum annual payment of £50. **36** John Davies then gave his 'address' as 38 Dowgate Hill Chambers, Cannon Street, and 18 New Bridge Street, Blackfriars, London. Then in a tripartite indenture of 19 December 1865 involving John Davies (now giving his address as Blaenmarlais House), John Phillips, and The Lily Quarries Slate and Slab Co., John Davies sold his lease to the company for £3,500 in cash immediately and £3,500 in fully-paid-up shares when the first shares were issued. So as Davies paid nothing for the lease in the first instance, he stood to make a profit of £7,000 over this purely paper transaction.

In the official returns, **37** John Davies was shown as holding 700 shares (each of £5) in February 1866; but he gradually sold his shares over the next two years and by August 1868 was no longer a shareholder in the company. It is not known at what price he sold his shares, but he must have obtained at least one or two thousand pounds for them. He evidently did not manage to obtain the £3,500 in cash immediately, for once he was no longer a shareholder he was making claims on the company for payment, and an Extraordinary General Meeting was held to discuss the matter. Presumably as a result, a call of £4 was made on 1770 shares, bringing in £6,637 according to the return of August 1868. It must be assumed, therefore, that Davies did eventually get his £3,500 in cash. The company resolved at a meeting in October 1868 that it should be wound up voluntarily.

Davies had probably already put this rather cynical plan into effect at Cronllwyn Quarry a year or two earlier, although fewer details are available. In this case, the Pembroke Slate Co. Ltd. in 1864 agreed to pay (we believe to John Davies) £4,000 in cash plus £6,000 in paid-up shares for the lease of the quarry, **38** although in this case we have not found the deed by which Davies obtained the lease. By 1866 he was no longer a shareholder of the company, having sold his shares; but we do not know if or how he obtained the cash payment of £4,000. The company resolved in 1868 to be wound up voluntarily. **39**

There were probably some ten or more other companies in which John Davies had an interest, probably of the same kind. A very conservative estimate of the money Davies made by the practice described above totals over £50,000.

Comparison of company and private-owner development

It is interesting to observe that, as far as the limited records permit a judgement to be made, there is little doubt that the achievements of the companies in developing the slate quarries were negligible in comparison with those of private owners. The only companies in Pembrokeshire which appear to have made any real investment in opening-up their quarries and equipping them with machinery were these three: -

- Barry Island Slate and Slab Co. Ltd. (Abereiddi, Porth-gain and Trwyn Llwyd Quarries, c 1855-1860)
- St. Bride's United Slate and Slab Co. Ltd (same quarries, 1864-1869)
- Glogue Slate Quarries Ltd. (1919-1926)

Their genuine efforts to operate effectively did not prevent their financial failure, but the other companies seem to have made little serious effort to work their quarries properly.

In contrast, there were numerous private owners or lessees who made effective investment in their quarries and operated them for reasonable periods. Among these in Pembrokeshire and its borders may be listed:-

- Goodwin and partner at Gilfach Quarry, c 1865
- Owen family at Glogue Quarries for many decades up to 1876
- Edward Cropper at Rosebush Quarries, 1869-1877
- Hugh Davies and Thomas Williams at Sealyham Quarry from 1876
- P. F. Campbell at Tyrch Quarries, 1923-1938

together with the whole sequence of lessees at the Forest Quarries in Cilgerran.

It is an interesting point that Davies and Williams at Sealyham were generally known as the Sealyham Slate Company, **40** and in 1880 (at least) their billheads gave the name 'The Sealyham Slate Quarry Compy'. **41** Yet they were legally never more than a partnership, and so have not been included in **Table 16**.

In the rest of South-West Wales outside Pembrokeshire, it appears that both the Pant-y-Gleien Slate and Slab Co. Ltd., and the Glandovey Slate Co. Ltd. (at Cwmerau Quarry) made considerable investments in their quarries, although the former company failed within about two years of its formation. The biggest development, however, was the later work at Cwmerau Quarry under the private partnership of John Jenkins and Peter Jones, lasting for 15 years or more from 1887.

The conclusion is clear: although the companies provide the bulk of the records, it was the private owners to whom the real development of the slate industry in South-West Wales was due.

GORDON AND MARY TUCKER

Birmingham

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Notes;

- 1 G. and M. Tucker, 'The slate industry of Pembrokeshire and its borders', *Indust. Archaeol. Rev.*, 3, 1979, pp. 203-227.

- 2 G. C. Boon, 'Excavations on the site of a Roman quay at Caerleon and its significance', *Cambrian Archaeol. Ass., Monographs & Collections*, 1, 1978, pp. 1-24.
- 3 E. M. Jope and G. C. Dunning, 'The use of blue slate for roofing in medieval England', *Antiquaries J.*, 34, 1954, pp. 209-217.
- 4 A. Fox, 'An account of John Storrie's excavations on Barry Island in 1894-5', *Trans. Cardiff Nat. Soc.*, 69, 1936, pp. 12-38, espec. pp. 19-20.
- 5 E. A. Lewis, 'Welsh Port Books 1550-1603', *Cymmrodorion Record Series*, 12, 1927, pp. 84 and 212.
- 6 Public Record Office, E190/1303/13.
- 7 *Ibid.*, E190/1306/9.
- 8 George Owen, *The description of Penbrokeshire* (sic), written 1603, published London 1892; vol. 1, pp. 81-82.
- 9 A. H. John, *The Industrial Development of South Wales 1750-1850*, Cardiff, 1950.
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- 11 Teilo Vale quarry records in possession of Mr. G. Nicholas of Tyrch, Pembs.
- 12 *Dewsland & Kemes Guardian*, 26 May 1877.
- 13 Jean Lindsay, *A History of the North Wales Slate Industry*, Newton Abbot, 1974.
- 14 M. J. T. Lewis, *Slate*, Gwynedd Archives Service, 1976.
- 15 M. Burn, *The Age of Slate*, Blaenau Ffestiniog, 1976.
- 16 J. Lindsay, op. cit., pp. 36-41.
- 17 *Pembs. Herald*, 19 Jan. 1855.
- 18 *The Builder*, 12 Aug. 1876, p. 792.
- 19 J. Lindsay, op. cit., pp. 82-83.
- 20 *Pembs. Herald*, 13 Jan. 1860.
- 21 Documents held by Mrs. Absalom at Llangolman, Pembs.
- 22 Documents held by Mr. G. Nicholas at Tyrch, Pembs.
- 23 *Ibid.*
- 24 *Pembs. Herald*, 31 Mar. 1848.
- 25 *Ibid.*, 13 Jan. 1860.
- 26 N.L.W., Haverfordwest (W & W), 7658.
- 27 *Ibid.*, 6005-6.
- 28 *Pembs. Herald*, 10 Aug. 1855.
- 29 *Ibid.*, 16 June 1882.
- 30 *Cardigan & Tivy-side Advertiser*, 2 May 1879.
- 31 *Ibid.*, 6 June 1884.
- 32 *Ibid.*, 5 May 1882.
- 33 Dyfed Archives, H'west R.O., D/HDX/458.
- 34 See J. P. Morris, *The North Pembrokeshire and Fishguard Railway*, Lingfield, 1969, and M. R. C. Price, *The Whitland and Cardigan Railway*, Tarrant Hinton, 1976.
- 35 J. Lindsay, op. cit., p. 174.
- 36 Dyfed Archives, H'west P.O., DX17.
- 37 P.R.O., BT/1166/2497C.
- 38 *Mining J.*, 1865, p. 47.
- 39 P.R.O., BT31/1035/1748C.
- 40 N.L.W., Haverfordwest (W & W), 19634.
- 41 Receipted bill in Dyfed Archives, H'west R.O.

Table 1.

LIST OF QUARRIES AND GROUPS OF QUARRIES

MAJOR

- 1. Porthgain (SM 812325), Abereiddy (SM 795315), Trwyn Llwyd (SM 832329).
- 2. Sealyham (SM 960275).
- 3. Bellstone or Prescelly (SN 079302, 080303 & 079304).
- 4. Rosebush (SN 078298 & 079301).
- 5. Eastern Cleddau Valley Group:
 - Gilfach (SN 130271); Cnwc-y-derin, alias Garn, alias West Gilfach (SN 126272); Dan-dderwen, alias Whitland Abbey (SN 126267 & 127265); Clyn-gwyn (SN 124260); Llwynyrebol (SN 127260), and minor associated quarries at SN 126269, 128268, 129263 & 131269.
- 6. Tyrch: Lower (SN 146294), Upper (SN 156296).
- 7. Glogue (SN 218328 & 221328).
- 8. Forest Group:
 - Carnarvon (SN 190450); Ffynon (SN 191449); Tommy (SN 191448); Bach (SN 192447); Gigfran (SN 193445); Forever (SN 193444).
- 9. Cilgerran Town Group:
 - About 11 once-separate quarries from Castle (SN 196431), Dolbadau (SN 198429), Pwdwr (SN 200428), Plain (SN 204428) to Cefn Group (SN 205429-208430).

MINOR

- (i) Nearly 20 quarries over a 30-mile-long band stretching from the St. Davids peninsula to Maenclochog, including the conspicuous Cronllwyn quarry (SM 985352) and the elevated Craig-y-cwm (SN 097311) at 1400ft. above O.D.
- (ii) Summerton (SM 991300), of which the industrial archaeology is especially interesting.
- (iii) About 13 quarries in the Teilo Valley, including at least 2 first opened in the 20th century (Teilo Vale, SN 106268, & Llyn, SN 112272).
- (iv) Dolmaen, alias Klondike (SN 167300).
- (v) 8 or 9 quarries in the Taf Valley apart from the major Glogue quarries, listed above.
- (vi) About a dozen quarries in the area stretching from the west side of the Dinas peninsula through Newport and Nevern to St. Dogmaels. These include some mentioned by George Owen in 1603.
- (vii) 7 in central Carmarthenshire, 2 in southern Cardiganshire, 7 in northern Cardiganshire and 4 in Breconshire.

Table 2.

LIST OF QUARRIES IN GROUP vii OF TABLE I

Central Carmarthenshire

Dates of working and other notes

Sources

Corngafr	SN 2622, approx.	c. 1800, 1860. Little development	1
Llwynypiod	SN 433229	c. 1880-1914. Small, but well developed.	2
Pantygleien	SN 465224	From before 1848 to 1867. Well developed.	3
near Eisteddfa Egwad	SN 535238	c. 1830	4
near Dinefwr	probably SN 603233	Mentioned in 1767	5
Coed-shon	SN 713256	Probably very old. Very shallow.	6
Pontarllechau	SN 727247	Mid-19th to early 20th century. Slate stone for building?	7

South Cardiganshire

Dates of working and other notes Sources

PontCeri SN 296419 Early 20th century. Coarse slate 8

Rosehill SN 193448 1819, probably also c. 1870-80 9

North Cardiganshire

		<i>Dates of working and other notes</i>	<i>Sources</i>
Tyn-y-ffordd	SN 757799	Early 20th century. Coarse slate.	10
Cadno, alias Pen Talwr	SN 741808	Early or mid-19th century, also early 20th.	10
Tyn-y-garth	SN 691946/692947	c. 1865-1885. Modest development.	11
Cwmerau, alias Dynin, alias Glandovey	SN 698960	1879-1909. Well developed.	12
Cwm-rhaiadr	SN 7596, approx. 1866?, 1883.	Small	13
Llyfnant	SN 723977	c. 1870. Small. (Strictly just over border in Monts., but access in Cards.)	14

Breconshire

		<i>Dates of working and other notes</i>	<i>Sources</i>
Cwm Irfon	SN 867477	1888-91; probably also later.	15
Penceulan	SN 869538?	1880s.	16
Alltyddinas	SN 9356, approx 1866.	Possibly only a trial.	17

Sources.

- 1. P.R.O., BT31/461/1779. *Mining J.*, 1860, p. 146.
- 2. Dyfed Archives, Carmarthen R.O., D/LL/4/198. *Mining J.*, 1883, p. 393.
- 3. N.L.W., Sale cat. 5 (Carms). P.R.O., BT31/1037/1746C. *Mining J.*, 1865, pp. 41, 749; 1866, pp.397, 729;1867, p.110.
- 4. 1st edn. one-inch O.S. map.
- 5. N.L.W., Add.MS 147C. Quarry shown on 1st edn. one-inch O.S. map.
- 6. 'Coed-Shon Quarry' shown on 25-inch O.S. map of 1906.
- 7. R. Hunt, *Mineral Statistics*, 1858, Part 2, p. 260.
- 8. *List of Quarries*, 1906, 08 & 12.
- 9. Dyfed Archives, Carmarthen R.O., D/LL/2/24.
- 10. *List of Quarries*, 1906, 08 & 12. Both quarries were owned by Cards. C.C. and probably used for road-fill.
- 11. P.R.O., BT31/1534/4870. *Mining J.*, 1883, p. 302.
- 12. N.L.W., sale cat. 144 (Cards); Pugh Cwmerau Deposit Stack 1. P.R.O., BT31/2521/13028; BT31/10900/82731. *Mining J.*, 1880, pp. 762, 773; 1884, pp. 499, 626. *Mineral Statistics*, 1886, p. 105; 1887, p. 81; 1889, p. 87; 1894, p. 103. *Card. & Tivyside Advr.*, 17 Dec.1886.
- 13. *Mining J.*, 1886, p. 237; 1883, p. 302.
- 14. P.R.O., BT31/2147/9924. *Mining J.*, 1869, p. 33.
- 15. P.R.O., BT31/4035/25726. *Mining J.*, 1888, p. 145. *Mineral Statistics*, 1888-91.
- 16. P.R.O., BT31/3139/18110. *Mining J.*, 1884, p. 112. *Mineral Statistics*, 1887, 1889.
- 17. *Mining J.*, 1886, 24 Feb.
- 18. *Mining J.*, 1906, 08 & 12.

Table 3.**PORTHGAIN, ABEREIDDY & TRWYN LLWYD QUARRIES**

<i>Date</i>	<i>Operator</i>	<i>Domicile or Registered Office</i>	<i>Quarries</i>	<i>Terms</i>	<i>Performance</i>
1838	John Jones	Local	Barry Island Farm (at least Abereddi)	Royalty 1/10th	Probably little slate worked.

1841	B. Hill, R. Norman & J. Barclay	London	Ditto.	?	Abereiddi & Trwyn Llwyd opened and worked.
1849	Ditto	Ditto.	Abereiddi & Trwyn Llwyd	Rent,£50 for 5 years, then £100 for 5 yrs. Then roy. 1/10th	Ditto. on a large scale (58 workers in 1851). Built railway A to Porth-gain
1855	Barry Island Slate & Slab Co	?	A., TL., & Porth- gain	?	Porth-gain opened, all 3 quarries worked Bankrupt 1860.
1861	J. F.N.Hewett & A. Grierson	Local	A., TL., & P.	?	Little production (12 workers in 1861).
1864	St. Bride's United Slate & London Slab Co. Ltd.	London	A., TL., & P.	Purchase of lease more than,12,000	Considerable investment in machinery. Relaid railway A to P. Voluntary liquidation1869.
1873	St. Bride's Welsh Slate & London Slab Co. Ltd	London	A., TL.,& P.	J. Davies sold to Co. for £25,000	Great expansion (300 workers in 1877). Bankrupt 1879.
1883	United Welsh Slate Co. Ltd.	Porth-gain	A., TL., & P.	J. Davies sold to Co. for 24,600	Little activity.
1889	Ditto., reconstituted	Manchester	A. & P.	?	Great expansion. Bankrupt 1891.

1889	J. B. Harries	Llanelli	TL.	Already owner of land	Worked quarry for about 3 years.
1895	Porthgain Granite, Slate & Brick Co. Ltd	Manchester	A. & P.	Purchase of lease £45,000	Bricks made from slate debris. Granite quarrying started. Slate working almost finished 1905.

Sources.

N.L.W., H'west (W & W),. 27021, Sale cats. 12 & 108 (Pembs). Dyfed Archives, H'west R.O., D/LEH66, 68, 69, 70; Scrap-book 'North Pembrokeshire Railway Agreements for Land'. P.R.O., BT31/996/1532C, BT31/2119/9665, BT31/366/18360, BT31/5618/39135. *Mining J.*, 1866, pp. 69,178, 274; 1868, p. 138; 1876, p. 1109; 1879, p. 953. *Pembs. Herald*, 31 Mar. 1848, 13 Jan. 1860, 7 & 14 Sept.1860, 23 Aug. 1861, 23 Jan. 1863, 11 Mar.1864, 15 Feb. 1889. *Dewsland & Kemes Guardian*, 14 Aug. 1869, 26 May 1877, 23 June 1877, 25 Oct. 1879. *Pembs. County Guardian*, 16 & 23 Mar., 14 Sept., 9 & 23 November. & 14 Dec. 1889; 22 Nov. & 20 & 27 Dec. 1890. *Card. & Tivyside Advr.*, 23 Feb. 1877. *County Echo (Fishguard)*, 17 Feb.1898. *H'west Milford Haven Tgh*, 26 Sept. 1860. *List of Quarries*, 1906, 08 & 12. Tony Roberts, 'About Porthgain', Abercastle, 1976. O.S. maps.Census returns, parish of Llanrhian. Tithe Awards, parish of Llanrhian.

Table 4.

SEALYHAM QUARRY

Date	Operator	Domicile or Registered Office	Quarries	Terms	Performance
1825 ?		?	Sealyham ?		1825 was reputed date of opening. Map evidence shows considerable working before 1848.

1848	Edward Watkin Scale	?	Ditto	?	Modest development until 1855
1855	Thos. & John Rees	?	Ditto	?	Bankrupt 1862. Quarry closed 1862-9?
1869	H. Davies, E. & S. Hughes	Local	Ditto	Rent ;100 p.a. +royalty 1/40th	Production re-established. Steam engines used. Partnership dissolved 1875.
1876	H. Davies & T. Williams as The Sealyham Slate Co.	Local	Ditto	?	Major re-development, including diversion , of river and new water power system. Partnership dissolved 1881.
1881	Hugh Davies	Local	Ditto	?	?
1883	Sealyham Slate Co. Ltd.	London	Ditto	Purchase of lease £15,000	Bankrupt 1886
1887	E. Harries	?	Ditto	?	Some production.
1890	New Sealyham Slate Co.Ltd.	Local	Ditto	Purchase of lease £3,300	Little production. Dissolved 1893.

Sources;

N.L.W., H'west (W & W), 12656-12663, 19581, 19634; Sale cat. 88 (Pembs). P.R.O., BT31/4657/30615. *Mining J.*, 1866, p. 114; 1883, p. 970. *Pembs. Herald*, 17 Sept. 1847, 19 Jan. & 10 Aug. 1855, 13 Jan. 1860, 30 May 1862, 8 & 22 Apr. 1870, 25 June 1875, 5 Sept. & 21 Nov. 1879, 24 Jan. 1890. *Dewsland & Kemes Guardian*, 9 Apr. 1870, 9 Aug. & 22 Nov. 1879. *Pembs. County Guardian*, 10 & 24 June & 9 July 1887, 22 Nov. 1890. *H'west Milford Haven Tgh.*, 1 Sept. & 13 Oct.

1886. *Card. & Tiveyside Advr.*, 1 May 1885. Kelly's Directory, 1884. O.S. maps. Census returns, parish of St. Dogwells.

Table 5

Bellstone (or Prescelly) Quarries

The columns headed Registered Office; Terms; Performance - have not been extracted

<i>Date</i>	<i>Operator</i>	<i>Quarries</i>
1825	J. F. Barham	Prescelly
1834	J. & L. Lawrence	Prescelly
1835	7 persons from Haverfordwest	'Quarries ... situate on Precelly Mountain in parish of Maenclochog'
1837	Thos. Rennie Hutton	Ditto (referred to as Precelly Q'y on back of deed)
1845	?	Prescelly
1846-52	?	Prescelly
1858	? (Robt. Jones, Manager)	Prescelly
1866	Bellstone Slate Co. Ltd.	Bellstone

1881 Bellstone Slate Quarries Co. Bellstone
Ltd

Sources - not extracted.

Table 6

Rosebush Quarries

The columns headed Domicile/Registered Office; Terms; Performance - have not been extracted

<i>Date Operator</i>	<i>Quarries</i>
1842?	Probably Rosebush (Reference to Q'y on land of Wm Young of Narberth)
1862 John Davies & Wm. Keylock	Rosebush
1863 Rosebush Slate Co. Ltd.	Ditto.
1869 Edward Cropper (died 1877)	Ditto.
1877 Sons of Cropper ?	Ditto.
1889?	Ditto.

1908 Morris Griffiths Ditto.

Sources - not extracted

Table 7

Eastern Cleddau Valley

The columns headed Domicile/Registered Office; Terms; Performance - have not been extracted

<i>Date</i>	<i>Operator</i>	<i>Quarries</i>
c. 1865 Many yrs	Messrs. Goodwins?	Gilfach
1864	John Davies, H. Ledgard & others	Dan-dderwen Slate/Dan-dderwen Slab
1865	Jas. Charles (manager?)	Cnwc-y-derin
1873	J. R. Price	Cnwc (alias West Gilfach)
1877	Cleddau Valley Slate Quarries Co. Ltd	Clyn-gwyn & Llwynyrebol
1883	Whitland Abbey Slate Co. Ltd.	Dan-dderwen
1896	Alfred Pritchard	Gilfach

1919	Precelly Green & Rustic Slate Co. Ltd.	Gilfach
1908	J. Absalom	Cnwc & Dan-dderwen
1920	Garn Green & Rustic Slate Quarries Co.(effectively J. Absalom)	Ditto
1928	--- Wheeler	Clyn-gwyn
1954	Absalom family	Gilfach

Sources - not extracted

Table 8

Tyrch Quarries

The columns headed Domicile/Registered Office; Terms; Performance - have not been extracted

Date Operator

Quarries

1864 Co. formed by J. Davies?

Lower Tyrch

1875 John Davies

Probably both Lower & Upper Tyrch

? F. J. Sellick

Both

1906-12 at least	Glogue Quarry Syndicate	Ditto
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1919	Glogue Slate Quarries Ltd.	Ditto
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Sources - not extracted

Table 10

Forrest Quarries

The columns headed Domicile/Registered Office; Terms; Performance - have not been extracted

<i>Date</i>	<i>Operator</i>	<i>Quarries</i>
Before 1766	Owner, John Symmons	One quarry 'in the hill'.
1766- 1836	3 generations of the Edwards family	No. of quarries gradually increased
1836-43	Thos. Lloyd	Bach & Gigfran
c.-1837	Jas. Mathias (Wm. Mathias by 1860)	Forever,
1837	Jas. Stephens	Tommy (also smaller quarries to north?)
1874	D. Sambrook & D. Owens	Tommy & Gigfran

1880 D.Owens Ditto.

Sources - not extracted

Table 11

Cilgerran Town Quarries

The columns headed Domicile/Registered Office; Terms; Performance - have not been extracted

<i>Date</i>	<i>Operator</i>	<i>Quarries</i>
1846	?	?
	E. Bowen & Wm.Stephens	
	J. Morgan & Jas. Stephens	
c. 1867	Bowen & Jones	Six separate quarries in Cefn group
	L. John	
	Wm. & Jas. Evans	
	Stephens & Sons	
	Owen Davies & Wm.Mathias	
c. 1867	B. Daniel & D. Griffiths	Pwdwr
	Jas. & John Griffiths	Dolbadau

	Sam. & Moses Griffiths	Upper Castle
	Stephens & Sons	Lower Castle
1877	Jeremiah Stephens	Plain?
1880	E. Gower & Co.	Cefn group
1894	Cefn Quarries Syndicate	Cefn group
1891	John Peters	Dolbadau

Before 1906-1938 Wm. Griffiths / Griffiths & Co Dolbadau

1909	Kilgerran Quarries Ltd.	Pats (one of Cefn group)
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Sources - not extracted

Table 12

NUMBERS & ORIGINS OF SPECIALISED WORKERS ENGAGED IN SLATE MAKING IN PEMBROKESHIRE

|..... *Place of birth*

<i>Quarries concerned (see Table 1)</i>	<i>Parish</i>	<i>Census year</i>	<i>No. of slateworkers</i>	<i>Same parish or group</i>	<i>S. Wales incl. same parish</i>	<i>North Wales</i>	<i>Other or not known</i>
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1	Llanrian	1841	8	?	7	0	1
		1851	58	8	16	30	12
		1861	12	1	4	7	1
		1871	17	7	11	6	0
		1881	27	5	16	8	3
							.
2	St. Dogwells	1841	1	?	1	0	0
		1851	7	1	5	2	0
		1861	5	0	5	0	0
		1871	10	0	5	5	0
		1881	4	0	1	0	3
							.
3-6	Llandilo/Llangolman/ Llandissillio/Llanyc	1841	13	-	-	-	-

efn/
Maenclochog/Myna
chlog du

1851	4	-	-	-	-
1861	9	2	8	1	0
1871	39	19	32	4	3
1881	9	5	8	1	0

7	Clydey/Penrydd/ Llanfyrnach/	1841	21	?	17	0	4
		1851	28	22	28	0	0
		1861	31	24	29	2	0
		1871	52	42	52	0	0
		1881	30	24	30	0	0

8-9	Cilgerran	1841	24	?	24	0	0
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1851	47	40	47	0	0
1861	63	50	62	0	1
1871	49	46	49	0	0
1881	60	48	60	0	0

Table 13

CONTINUITY OF EMPLOYMENT IN QUARRIES

No. of slate quarry workers appearing in at least given no. of successive decadal censuses over the period 1841-1881

<i>Parish</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Llanrian	116	175	3	0	
Clydey/Penrydd/ Llanfyrnach	117	35	12	4	1
Cilgerran	142	53	38	17	4

Table 14

Sizes and Weights of Slates

Not extracted.

Table 15

PRICES OF ROOFING SLATES IN WALES

Quoted in £. s. d. per M of 1200 or 1260

Year	Duchesses	Countesses	Ladies	Doubles	Place
1783-	1 12 0	0 16 0	0 8 6	#Port Penrhyn 1	
1798	3 10 0	2 0 0	1 0 0	0 11 0	# Port Penrhyn 2
1808	5 5 0	3 3 0	1 18 0	0 18 0	# Dinorwic Quarry 3
1826	7 15 0	5 5 0	2 5 0	0 18 0	# ditto
1826	5 17 0	3 17 3	1 12 7 1/2	0 16 0	# Glynrhonwy Quarry 3
1845	5 10 0	3 5 0	1 8 0	0 10 0	Prescelly
1854	6 0 0	4 4 0	2 10 0	-	Glogue
1855	7 0 0	4 15 0	2 5 0	-	Sealyham

18607 5 0	4 14 0	2 5 0	0 18 0	Porthgain
18657 10 0	-	-	-	Glogue
18679 10 0	6 15 0	-	-	#Welsh slate prices generally 4
1875 11 10 0	7 15 0	-	-	Ditto
192047 0 0	30 0 0	14 2 6	-	#North Wales 5
1921-	25 0 0	17 5 0	-	Dolbadau 6
1929-	19 1 8	-	-	Clyn-gwyn
1967 169 5 0	99 3 0	-	-	#Dinorwic 7

Notes

Refers to North Wales

Remaining Sources not extracted

Tables 16 & 17

A limited extraction only giving an effective alphabetical list of companies involved in the south west Wales slate industry with year of registration - the data **not** extracted is under the following headings -

Registration Office; Authd. Capital ; capital raised ; Amount paid for quarry-in shares/in cash; Residence of subscribers/directors; Reference

Table 16; SLATE COMPANIES IN PEMBROKESHIRE AND ITS BORDERS

Company & Registration Year

- Barry Island Slate & Slab c.1855
- Bellstone Slate# 1866
- Bellstone Slate Quarries 1881
- Cefn Quarries Syndicate 1894
- Cleddau Valley Slate Quarries 1877
- Corngafar & Trelodan Slate# 1860
- Cronllwyn Slate Quarry 1845
- Dolmaen Silver-Grey Slate # 1910
- Elwyn Valley Slate & Slab Quarries# 1882
- Esgern Slate Quarry # 1867
- Eskern Slate & Slab Quarries 1873
- Garn Green & Rustic Slate Quarries 1920
- Glogue Quarry Slate & Slab# 1873
- Glogue Metalline Brick & Tile# 1883
- Glogue Brick & Slate Works# 1890
- Glogue Brick & Slate Works 1895
- Glogue Quarry Syndicate before 1904
- Glogue Slate Quarries 1919
- Griffiths & Co. (Dolbadau Quarry) (pte co operating at least 1915-37)
- Imperial Welsh Slate # 1866
- Kilgerran Quarries 1909
- Lily Quarries Slate & Slab 1865
- Llandilo Green Slate (no record of registration - Muscott family at least 1895-1925)
- New Sealyham Slate # 1890
- Pembroke Slate 1864
- Precelly Green & Rustic Slate 1919
- Porthgain Granite Slate & Brick 1893
- Rosebush Slate 1863
- Sealyham Slate # 1883
- St. Bride's United Slate & Slab 1864
- St. Bride's Welsh Slate & Slab 1875
- Teilo Vale Green Slate Quarries 1912
- Temple Druid Slate Quarries 1920
- Tyrch Silver Grey Slate Quarries 1899
- United Welsh Slate 1883
- Whitland Abbey Slate 1883

Table 17: SLATE COMPANIES IN CARMARTHENSHIRE, CARDIGANSHIRE AND BRECONSHIRE

Company & Registration Year

- Cardigan Slate Quarries 1884
- Corngafar & Trelodan Slate # 1860
- Cwmere Slab Quarry 1904
- Cwm Irfon Slate Quarry 1888
- Glandovey Slate 1879
- Llyfnant Slate & Slab 1875
- Pant-y-Gleien Slate & Slab 1864
- Pencoylan Slate & Slab # 1883

- Tyn-y-Garth Quarry 1870

Indicates that no returns were made after registration