

THE PAPER MILLS OF WHITEBROOK, MONMOUTHSHIRE

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INTRODUCTION

IT IS, at first sight, hard to believe that the extraordinarily beautiful Whitebrook valley, with its steep, well-wooded valley sides, attractive houses, cottages and gardens, was formerly a hive of industry. The White Brook itself has three main source streams, all rising at an altitude of about 700 ft.; these join at the hamlet of Hoop, and then drop over 500 ft. in one and a half miles to the confluence of the White Brook with the river Wye about 10 miles above its mouth. With a good flow of water and this large head, it is not surprising that the brook has been used as a source of power for centuries. There have been no fewer than fifteen dams built on the White Brook and its tributaries, although not all have been used for power and not all are ancient.¹ The remains of two water-powered corn mills still stand, one derelict and one built into a house. The five paper mills which are the subject of this article used water from their ponds for both power and the actual processing of the raw materials.

Apart from a probable corn mill in the fifteenth century², the first recorded industry in Whitebrook was a wire works established as a branch of the famous Tintern wire mills, which were opened by William Humphrey in 1567.³ It is not known where the Whitebrook wire works were situated. Grey-Davies³ states that the ponds in Whitebrook 'which . . . now enhance the gardens of elegant residences' indicate the sites of wire works and were used, not only for power, but for the 'watering process' which was a kind of curing process for the iron to 'purge and purify away the sulphur'. This is effectively a statement that one or more of the later papermills was built on the site of the earlier wire works, and is quite credible. The actual date on which the wire works opened appears to be arguable; Grey-Davies claims 1607-8, but Rees⁴ suggests around 1595 as a more likely date. The works closed down around 1720.

Presumably the valley was then quiet until paper making started around 1760.

THE PAPER MILLS

Paper making originated in China, was first practised in Europe in the twelfth century, and reached England in the last decade of the fifteenth century, when a mill was established near Hertford.⁵ The real beginnings of the English paper industry were, however, laid by John Spilman around 1588. Rhys Jenkins⁶ says:

¹ D. G. Tucker, 'The embanked ponds of the Penallt-Whitebrook-Redbrook area and their industrial uses', *Severn and Wye Review*, vol. 1 (1971), pp. 50-58.

² Y. R. H. Probert, *The Parish of Penallt* (1958, 1966; available from The Vicarage, Penallt, Mon.).

³ T. G. Grey-Davies, 'A Metallurgical History of the Valley of the Wye', *Metallurgia*, Vol. 72 (1965) pp. 153-8.

⁴ William Rees, *Industry Before the Industrial Revolution* (Cardiff, 1968), p. 629.

⁵ A. H. Shorter, *Paper Mills and Paper Makers in England, 1495-1800* (The Paper Publications Society, Hilversum, Holland, 1957), p. 27.

⁶ Rhys Jenkins, 'Observations on the rise and progress of manufacturing industry in England', *Trans. Newcomen Soc.*, 7 (1926-7), pp. 1-16, esp. p. 9.

'John Spilman set up a great mill at Dartford in Kent, bringing over workmen from Germany. Possibly he was not aware of it, but there were paper mills already at work in various parts of the country. The industry had been started at Hertford as far back as 1496, but this venture was discontinued, although very good paper was made. Spilman's mill, however, if not the first set up, was a school from which paper makers spread over Kent and other parts of the country'. Spilman was able to make high-quality white paper, but many mills made only brown paper.

The spread of paper-making over the country was relatively slow, and did not reach Monmouthshire until the first part of the eighteenth century. The earliest record of paper-making in this county appears to be that of Rolling Mill (or Ruthlin, as it is now called) near Rockfield in 1722,⁷ although the mills in the Moun-ton Valley near Chepstow were not far behind.⁸ Thus paper-making was well-established in Monmouthshire by the time the first mills were operated in Whitebrook.

The history of the Whitebrook mills is surprisingly hard to unravel. Shorter's paper⁹ on papermills in Monmouthshire has very little to say on the early years in Whitebrook, but we can with some confidence state that paper-making started in Whitebrook around 1760, and we know the names of no fewer than nine paper-makers active there between at least 1773 and 1791. The author has extracted a list of the names and dates of 68 paper makers appearing as such in the parish registers of Penallt and Llandogo between 1773 and 1895. He can supply a copy of this list on request. Paper-making came to an end probably in the late 1880s. By 1803 there were three paper mills, by 1816 there were four. By 1846-7 there were five and possibly six according to the Tithe Maps. Shorter's rather limited, but useful, evidence (based on Excise Letters) to some extent supports the idea that there were six mills. The sites, and remains, of the upper five mills are still clearly identifiable, and of one the external fabric remains almost intact. The names of the first five mills, working down the brook, were towards the end of the nineteenth century, as follows:—

<i>Name</i>	<i>Grid Reference</i>
Fernside	SO 516072
Sunnyside	SO 519071
Clearwater	SO 532067
Wye Valley	SO 535066
The Glyn	SO 537066

It is probable that if there was a sixth paper mill, it was 150 yards or so below the fifth.

In Appendix I is given a summary of all the actual evidence regarding the history of these mills which the author has been able to discover. In Appendix II, a schedule of paper manufacturers (i.e. lessees or proprietors) is given based on the evidence in Appendix I plus that of Shorter¹⁰. It is disappointing that, in spite of

⁷ A. H. Shorter, *Paper Mills in England*, p. 216.

⁸ Ivor Waters, *Chepstow Miscellany* (The Chepstow Soc., 1958), pp. 27-41.

⁹ A. H. Shorter, 'Paper-mills in Monmouthshire', *Arch. Camb.* CII (1953), pp. 84-86.

¹⁰ As f.n. 9.

the large number of separate pieces of evidence, no clear detailed history emerges. Many more deeds, account books, etc. are needed, but if these still exist they are probably in private hands and not available for research. One thing which helps the identification of the mills mentioned in the documents is that the first two in the list above straddle the boundary between the parishes of Penallt and Trellech, and the last three are in the parish of Llandogo. That part of the valley which is in Penallt is generally referred to as New Mills when it is required to distinguish it from White Brook in Llandogo. Nevertheless, there is the greatest difficulty in identifying mills referred to in the documents, and much of Appendix II has to remain rather vague.

The buildings of Fernside Mill remain externally intact, and make a most beautiful scene. Beside the mill pond stands the mill-owner's attractive house, enlarged from an earlier cottage which can still be recognized. Below this and adjacent to the road stands the main mill building, of three storeys. The mill machinery and plant was installed in the lower two, and the top storey is a drying loft of open slatted construction. Back from this building stands the former stable block, and beside the mill is a series of stone-built water tanks at ground level. It is not certain that these tanks were associated with paper-making, and they may have been constructed much later in connection with a trout-rearing business. It is indeed fortunate that this mill has been preserved, and is likely to remain so. The name 'Fernside' was apparently a later one, the first reference to it so far discovered being in 1868, when the owners were Green and Company. The absence of chimneys and suitable places for steam engines in this mill suggest that it was never modernized when other mills were converted to steam power (Pl. VIII*a*).

Of Sunnyside Mill itself and its numerous outbuildings there remain only the footings of some of the walls, now incorporated in the ornamental gardens below the former mill-owner's house, which is now renamed 'Traligael' and considerably altered. One very interesting structure remains intact, however; this is a large stone chimney stack on the southern slope of the valley about 400 ft. away from the mill and about 100 ft. above it in elevation. It must have been connected to the mill by a long underground flue, presumably either to produce a better draught or to carry away noxious fumes.

The third mill, Clearwater Mill, is nearly a mile down the valley from Sunnyside, and it is clear from the site and remains that this was a large mill. Only some ruins remain (Pl. VIII *b*), the shell of a rather fine building with arched windows, a handsome stone chimney, and part of what seems to have been the wheel pit for a water wheel. On the brook, above the mill, can be seen the remains of an old mill-pond with a now-collapsed dam-wall across a narrow part of the valley bottom, and a stone-lined leat running to the top of what we have just described as the wheel-pit. As this is not shown as a pond on the 25-inch O.S. map of 1880/1921, it has clearly been disused for a very long time, probably at least a century. It is clear that one of the early mills was at this site, and this was its mill-pond and the stonework referred to above as a wheel-pit could be part of the original mill. It is possibly also significant that a supply of water coming down the valley side, and at one time conducted by an iron pipe (parts of which can still be seen at the roadside above the mill), possibly to a turbine, now emerges by what is probably its old

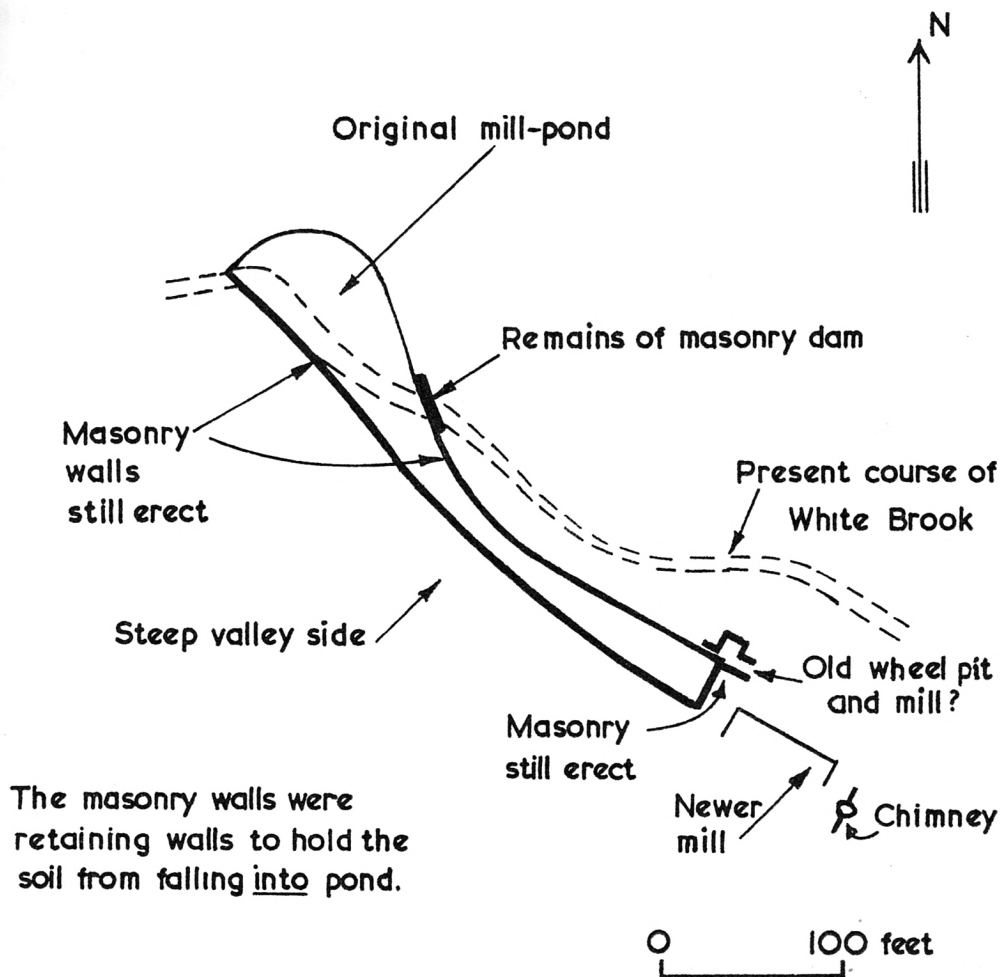


Fig. 1. Layout of the mill-pond for Clearwater Paper Mill; based on survey of present-day remains, confirmed by Tithe Map.

channel just in the right position, at the end of the old leat, to drive a wheel in the wheel-pit. It is possible, therefore, that there were three stages of water power: (i) water wheel driven by water from the White Brook, (ii) water wheel driven (or augmented) by water from the valley side, and (iii) turbine driven by water from the valley side. Steam power was probably also introduced here at some time, as at some of the other mills.

The fourth mill, the Wye Valley Mill, is about 600 yards below Clearwater Mill, and again is ruinous (Pl. IX *a*), including several iron window frames. Water power was obtained from a very small mill-pond with a long stone dam which

extended along the northern side of the valley to form the mill leat; this pond is now dry, disused and overgrown.

Like the other mills, Clearwater and Wye Valley Mills had (and still have) very attractive owner's houses.

The fifth mill, The Glyn, to which the only positive reference is the Tithe Map, was a couple of hundred yards nearer the mouth of the brook, and here too there are some remains. Its mill-pond is quite derelict and not shown as a pond on the 25-inch O.S. map. The mill-owner's house is now called Whitebrook Farm.

The sixth mill, as previously suggested, is the least certain of all, and there is no positive reference to it. But the Tithe Map makes it clear there was a mill of some sort just below the fifth paper mill, and the remains of the pond can still be seen, with some traces of the buildings.

In association with the lower mills there was a warehouse (or two) on the banks of the River Wye, and it is fairly certain that these were near where the White Brook enters the river, grid reference SO 538068. There are at present the ruined walls of one building (Pl. IX *b*) and the footings of another just to the north of the old railway cottage and 100 yards north-east of Tump Farm; these were according to the Tithe Map certainly warehouses, and so were almost certainly those appertaining to the paper mills, although the name of the occupier was different. There were quays (of some kind) on the river bank.

The names of the upper five mills as used here are those shown on the Ordnance Survey map surveyed in 1879 but revised in 1918. When they came into use is not known, but they were not the names by which the mills were known in the early part of the nineteenth century, nor are they used in the Tithe Maps and Apportionments of 1846-7. The names Fernside (applying to *both* the upper mills), Clearwater and Wye Valley were used in the report of Green's bankruptcy in 1875; no reference to the names Sunnyside and The Glyn other than that on the O.S. map has been found. In 1888, Fernside and Sunnyside were referred to in the sale notice as Upper and Lower Fernside Mills. It is quite probable that the names Sunnyside and The Glyn were never applied to the mills themselves, but only to the houses. It is quite possible that the name Wye Valley Mills (always used in the plural) applied to two mills, i.e. included The Glyn.

PROBABLE COURSE OF DEVELOPMENT

No clear picture of the details emerges from the evidence so far discovered, but the general course of development was evidently something like this:

A considerable activity developed in the last thirty years or so of the eighteenth century, numerous paper makers came into the district, and Kingsmill Grove became the owner. His family must have settled in Whitebrook for we hear of William Grove there in 1802, and another Kingsmill Grove of Whitebrook (presumably his son) was buried at Llandogo in 1828. He owned three mills in 1803, which presumably included the one later known as Clearwater. John Brown operated the two lower mills for his firm of Pountney and Co. of Bristol, while Thomas Turner operated the uppermost one. By 1805 the 'new erected Mill House and Brown Paper Mill . . . in the Parish of Llandogo' had already been operated

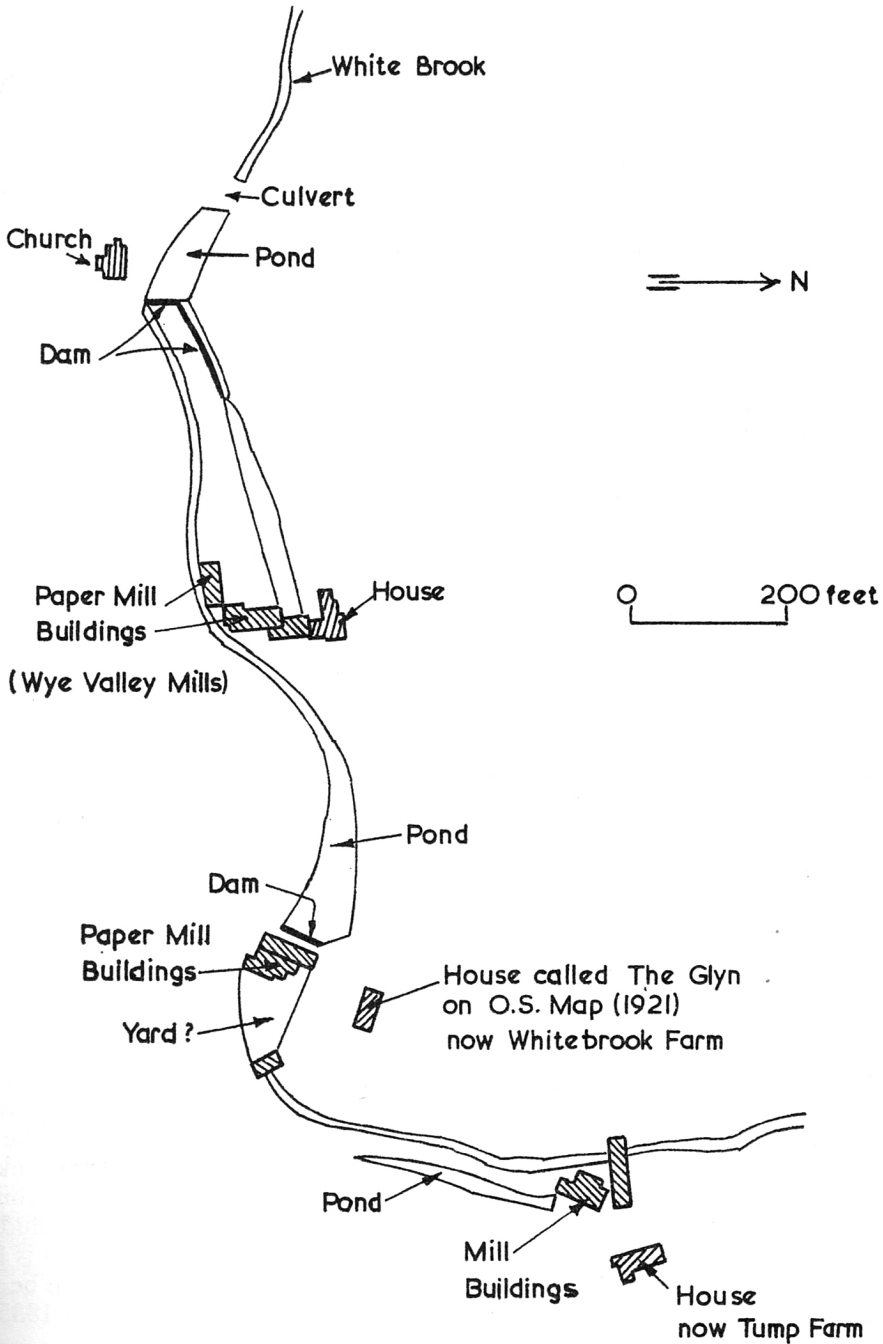


Fig. 2. Layout of the three mill-ponds at the bottom end of the White Brook, below Clearwater Mill; based on Tithe Map with partial confirmation and clarification from present-day remains.

by John Morris for a period; and as in 1807 the 'Lower Mill' was also taken over by John Morris, the newly-erected Brown Paper Mill could have been either the one later known as Clearwater, or that known as Wye Valley Mill.

By 1816 there were four mills in Whitebrook, but it seems impossible at present to say precisely which four they were. It seems likely that the last mill to be built would be the highest, and this assumption has been made in the tentative identification of Appendix II, i.e. it is assumed that Fernside had not been built by 1816. The two upper mills of the four must have now passed to John Brown.

Presumably this expansion of the paper business, coupled with Bradney's statement that in 1810 the mills were flourishing, indicates successful commercial operation during the first decade of the nineteenth century. It is, however, clear from Morris's deal of 1821 and the statements in the deeds of 1826 that his business was by then in a very poor way, if not actually bankrupt and abandoned, and his equipment in very poor repair. There is, indeed, every indication that the paper-making business was running down badly from then on. It is surely significant that although there were still numerous paper makers in the area, yet when their sons got married they almost never were shown as paper makers themselves. Nearly all the names of paper makers appearing in the parish registers after 1837 are those of bride's or bridegroom's fathers; there are hardly any paper makers baptising children or getting married. In other words, nearly all the paper makers were elderly. This lack of recruitment to the industry must mean that it was either a very unpleasant occupation (which was probably true enough) or that the industry was seen to be declining—or (probably) both.

Evidently there was still a good deal of activity in 1860, and Bradney's statement that paper-making in Whitebrook had been abandoned by then (with the mills in ruins) must have been quite erroneous. (There is, however, evidence that the industry was at a very low ebb in 1851,¹¹ and the Tithe Maps of 1846-7 show the three (or four) lower mills as unoccupied.) The number of workers shown on the account and time books for 1859-61, while no doubt less than applied in the first quarter of the century, was still sufficient to operate a mill effectively.

By 1868 the uppermost pair of mills was known as Fernside and operated by Green and Company, who also operated Clearwater and Wye Valley Mills. There must have been some hope of recovery through modernization, since steam power was introduced around 1865, and the large hillside chimney at Sunnyside indicates some substantial change in the power and/or processing there. The statement that 100 tons of material was handled each week indicates a good scale of operation. It is understood that there was also talk of a branch railway line from the Wye Valley Railway which was opened in 1876. But by then Green was bankrupt, discredited and dead, and it is evident that the local hope that traffic from the mills would be increased was never realized. The mills are no longer included in directories from 1877 onwards, and hardly any reference to paper makers is found in the parish registers after 1874—certainly none that can with confidence be taken as proof of continued activity. Yet we find from a legal agreement of 1885 that

¹¹ As f.n. 9.

Messrs. Wilson, described as paper makers, at Fernside Mills, were apparently still operating the mills. The mills and their contents were finally put up for sale in 1888. The inclusion of the 'beam engines' in the sale is remarkable, and it would be interesting to learn more about them.

It is clear that the uncertainties of this history, in spite of the large amount of evidence that the author has collected, remain very considerable. It is not certain that there were ever five (let alone six) mills operating at the same time, although it is certain that there was simultaneous operation of four. It is not known which was the first mill to be built, nor which was the first to be abandoned, although this was probably the lowest. It is not known exactly when paper was first made in Whitebrook, nor exactly when it ceased to be made. Even the names of the mills are not properly understood. It is to be hoped that further documents will come to light which will clarify the history.

It is interesting to consider why the Whitebrook paper mills should have had such a struggle to keep going at a time when the general demand for paper was obviously increasing. Although a detailed answer is difficult to give, it is certain that this was only part of a general trend in industry which has been clearly stated by Coleman:¹² '... in the paper industry, as in other industries, the Industrial Revolution brought a fall in the number of producing units as a concomitant of an increasing output; and that change became apparent in the third decade of the nineteenth century... so soon as the economies of scale opened up by the larger mills began to tell, so did small vat mills disappear... it was mainly the mills in the remoter areas which disappeared'. The modernization of the Whitebrook mills around 1865 evidently came too late to be effective.

A brief note on the actual process of making paper is given in Appendix III.

ACKNOWLEDGEMENTS

Thanks are due to my wife for much help in reading and transcribing old documents; to the Rev. W. R. Rhys for access to the Penallt registers; to the Rev. W. R. Thomas for access to the Llandogo registers; to the staff of the 'Monmouthshire Beacon' and at the County Record Office, Newport, the Reference Library at Newport, and the National Library of Wales at Aberystwyth, for ready assistance; to Mr. Ivor Waters and Mr. H. W. Paar for some useful references; and to Mr. K. Kissack and Mr. B. Stevens for access to the collections in the Monmouth Local History Centre. The author recognizes that much useful research on Whitebrook had been done by the late P. G. Harris of Monmouth, with whom he was able to have a brief discussion in September 1969. Unfortunately Mr. Harris's death a few weeks later dashed any hopes of collaboration, and the author has no access to Mr. Harris's notes and scripts. The photographs of Fernside and Wye Valley Mills were taken with the kind permission of the respective owners.

¹² D. C. Coleman, *The British Paper Industry 1495-1860* (Oxford, 1958), pp. 219-20.

APPENDIX I

Summary of Evidence regarding History of the Whitebrook Paper Mills

(N.B.—* indicates that the evidence is quoted directly from Shorter's book¹³ and not from the original documents. The additional evidence from Shorter's paper¹⁴ is not included in this Summary, but has been incorporated in Appendix II).

Year

- 1761 *A paper mill was insured by William Williams, stationer, of Monmouth.¹⁵ It was in the tenure of William Jones. As Shorter lists this item under 'Whitebrook Mills' it is assumed that he was satisfied that it referred to Whitebrook.
- 1772 John Aram's map¹⁶ shows 'The Paper Mill' at the site of what was later called Clearwater Mill. This therefore was almost certainly the first of the paper mills at Whitebrook. •
- 1773 On 31 May, George Williams, Paperman, of parish of Penallt was married to Catherine Walters.¹⁷
- 1774 On 9 May, Josiah Bedall, Papermaker, was married to Jane Pritchard, Widow, both of the parish of Llandogo.¹⁸ From then until 1791, seven more papermakers were married at Llandogo.
- 1774 *Richard Edwards, a labourer, ran away with money received from Mr. Williams, of Monmouth, for the use of the Company at Whitebrook Mills.¹⁹
- 1774 Shorter²⁰ considers that Kingsmill Grove, paper maker, of Bristol, may have taken over the mill about this time.
- 1793 Heath²¹ refers to: 'At five miles, WHITEBROOK, the Paper Mills of Mr. GROVE, of BRISTOL'.
- 1802 *The death was reported of the widow of Mr. William Grove, of Whitebrook Paper Mills.²²
- 1803 Heath²³ refers to 'WHITEBROOK . . . three large PAPER MILLS, The property of Kingsmill Grove, esq., of Thornbury . . . The present occupier of the Upper Work is Mr. Thomas Turner—of the two lower mills, the house of Pountney and Co. on the Bridge, Bristol, conducted by their partner Mr. Brown, who here resides. The whole of their manufactory is consigned to the above city, to which it finds a ready, as well as cheap, water conveyance, and from whence they receive their raw materials'.
- 1805 Kingsmill Grove leased²⁴ to John Morris the 'new erected Mill House and Brown Paper Mill' with outbuildings, etc. 'situate at Whitebrook in the Parish of Llandoga . . . and then in occupation of said John Morris', together with other facilities, for an annual rent of £80 tax paid.

¹³ A. H. Shorter, *Paper Mills in England*, p. 216.

¹⁴ As f.n. 9.

¹⁵ Sun Fire Insurance Policy 181138, 12 March 1761.

¹⁶ Usk and Trelleg Survey 1772, Trelleg Manor section, Map No. 6, Badminton Papers, National Library of Wales.

¹⁷ Register of Marriages, Penallt, 1765–1805.

¹⁸ Register of Marriages, Llandogo, 1755–1812.

¹⁹ *Gloucester Journal*, 14 March, 1774.

²⁰ As f.n. 13.

²¹ Charles Heath, *Tintern Abbey* (Monmouth, 1793).

²² Felix Farley's *Bristol Journal*, 26 June 1802.

²³ Charles Heath, *Tintern Abbey* (Monmouth, 1803).

²⁴ Recited in deed of 1821; see below.

- 1807 Kingsmill Grove leased²⁵ to John Morris the 'Millhouse and Paper Mill called the Lower Mill with the small messuage or dwelling house wherein Richard Nicholls did then dwell with the courtyard drying house offices Outhouses Sheds erections buildings machinery cistern pound reservoir', etc. for an annual rent of £107.
- 1810 Bradney²⁶, writing in 1913, says 'In 1810 the owner of these mills was Kingsmill Grove of Thornbury in Gloucestershire, messrs. Brown and Morris being the proprietors of the works which then (1810) were in a flourishing condition'.
- 1810 *The partnership was dissolved between Kingsmill Grove, John Brown and Kingsmill Grove the younger under the firm of John Brown & Co., paper makers.²⁷
- 1816 *There were four paper mills at Whitebrook; two were held by John Morris and two by John Brown.²⁸
- 1821 Brown Paper Mill and Lower Mill leases sold by John Morris to William Cowley of Thornbury, esquire, for £140.²⁹
- 1826 William Grove Cowley of City of Bristol, Paper Maker leased to Samuel Tipper of London, Paper Maker,
- (i) the 'Mill House and Brown Paper Mill' with outbuildings, etc., 'now and for many years past in occupation of John Morris, papermaker', and also other property.
 - (ii) also 'Mill House and paper mill called Lower Paper Mill' with outbuildings, etc.
 - (iii) also warehouse 'with the Lofts over' situated on the Banks of the Wye also in occupation of Morris.
 - (iv) also water and other wheels, presses, vats, machinery, utensils, implements . . . headwears, millponds, millpools, cistern pounds, reservoirs, floodgates, banks, streams, watercourses . . . etc.
- all for £280 a year clear of all taxes and rates. Tenant to be responsible for maintenance of everything except roofs, stanchions and outside walls. Tipper was allowed £150 out of first year's rent to repair the premises and equipment, which Cowley was to insure for £3000.³⁰

Contents of Paper Mills were listed thus:

Brown Paper Mill:—

- Water and other wheels
- 2 Engines not lined with lead and out of repair
- 2 Stone Vats not lined with lead
- 2 Stone Chests not lined with lead
- 2 Old vat Presses
- 2 Old dry presses
- Cyder Press and other Implements thereto
- 4 Rag Binns

²⁵ *Ibid.*

²⁶ J. A. Bradney, *A History of Monmouthshire* (London, 1913), Vol. II, Part 2 (The Hundred of Trelech), p. 222.

²⁷ *London Gazette*, 5 June 1810.

²⁸ Excise General Letter, 8 October 1816.

²⁹ Deed of Sale, 5 May 1821, John Morris to William Cowley. Monmouthshire County Record Office, Npt 6867 (M443.3).

³⁰ Deed of Lease, 28 September 1826, William Grove Cowley to Samuel Tipper. Monmouthshire County Record Office, Npt 7058 (M443.3).

Lower Mill:—

Water wheel out of repair and other wheels
 1 Engine lined with lead
 1 Engine totally worn out and of little value
 1 Vat lined with lead
 1 Vat Press middling condition
 2 Pack presses middling condition
 1 Sizing Press
 1 Dry Press
 Sizing Copper

1828 On 11 May, Kingsmill Grove of Whitebrook was buried at Llandogo,³¹ aged 55. This must have been the son or nephew of the Kingsmill Grove who owned the paper mills in their early days.

1835 Pigot's Directory for 1835³² gives under Monmouth:—

Papermakers: Edward Johnson, Whitebrook
 Samuel Tipper, Whitebrook
 William Williams, New Mills

and it would appear that Papermaker here means a Master Papermaker or Paper Manufacturer.

N.B. Samuel Tipper was described as Paper Manufacturer of Whitebrook when his children were baptized in 1834 and 1835.³³

1841 George Lloyd of Whitebrook was shown as Paper-manufacturer when Ellen Lloyd, daughter of George and Elizabeth Ann Lloyd was baptised, 22 November 1841.³⁴

(N.B. This designation is unique in Penallt registers—it similarly occurs only once in the Llandogo registers—and must be regarded as distinct from the common description of Papermaker, which in these registers clearly means a craftsman).

1841 William Williams of Whitebrook was shown as Paper seller when his child was baptised.³⁵

1842 & Pigot's Directory now gives³⁶

1844 Papermakers: Edward Johnson, Whitebrook
 George Lloyd, Whitebrook
 William Williams, New Mills.

1846–7 Tithe maps and apportionments for Llandogo³⁷ and Penallt³⁸ give information as follows:

(N.B. the names of mills are used here for identification only; they were not used in the documents):—

Fernside:—Mill-pond shown; also building where mill now is, but mill not specifically mentioned; 'House Garden and Orchard' adjacent were owned by the executors of William Williams, and the occupier was James Dale.

³¹ Register of Burials, Llandogo, 1813–87.

³² *Pigot and Co.'s Directory for Monmouthshire*, 1835.

³³ Register of Baptisms, Llandogo, 1813–66.

³⁴ Register of Baptisms, Penallt, 1813–69.

³⁵ Register of Baptisms, Llandogo, 1813–66.

³⁶ *Pigot and Co.'s Directory for Monmouthshire*, 1842, and *ibid.*, 1844.

³⁷ Tithe Map and Apportionment for the parish of Llandogo, Nat. Lib. Wales.

³⁸ Tithe Map and Apportionment for the parish of Penallt, Nat. Lib. Wales.

Sunnyside:—as for Fernside; owners were Duke of Beaufort *and* Edward Johnson, occupier was James Dale.

Clearwater:—pond evidently still a pond (i.e. coloured blue) but mill buildings much smaller than on later O.S. map. Entered as 'Mill Garden and Pond', owner Philip Jones, Esq., 'in hand'.

Wye Valley:—pond still a pond, but no leat shown to mill. 'Dwelling, Mill, Building, etc.', owner Duke of Beaufort, 'in hand'.

Additional paper mill:—entered as 'Paper Mills, Ponds, etc.' with pond coloured blue, owner Duke of Beaufort, 'in hand'.

Another possible paper mill:—entered as 'Mill Pond and Buildings', with pond coloured blue, owner Duke of Beaufort, 'in hand'. (This could, of course, have been any kind of mill.)

Warehouse and yard:—on river bank, as later shown on O.S. map.

Entered as 'Warehouse and Yard', owner William Clifford, Esq., occupier Philip Williams.

- 1850 Slater's Directory gives³⁹
James Dale, paper maker, New Mills.
- 1850 Bradney⁴⁰ says, referring to Whitebrook, 'By 1850 the manufacture of paper was entirely given up, and the mills in a state of ruin'. This statement, evidently intended to suggest that paper-making had died finally by 1850, is clearly incorrect, and it cannot have been true that the mills were in a state of ruin then.
- 1853 Paper Mill at Whitebrook to be sold by auction at Newport.⁴¹
- 1859 Wages and Time Book,⁴² claimed by County Record Office to be for Clearwater
-61 Mill, show around 25 men to be on the books at one time, and up to about a dozen women to be employed on rag cutting and paper sorting. Men's normal daily hours of work were 12 and total weekly hours normally about 72; even when T. Watkins did 24 hours one day, his weekly total was only 74. But one week Box did 12 + 18 + 18 + 18 + 20 + 18 = 104 hours for which he was paid as for 8 days 8 hours. Pay ranged from 1/4 to 3/6 per day during the week ending 24 November 1859, but on 29 June 1860 N. Williams was paid at the rate of 4/- a day and got £1.4.0d. for the week; and by August 1860, wages of up to 5/10 a day were being paid.
- Women were paid on a piece-work basis. For cutting rags the rate was 9d. per cwt., typical amounts cut ranging from 3 to 8 cwt. per week, so that weekly earnings ranged from 2/3 to 6/-. For sorting paper the rate was 1/- per score of reams, and in the week ending 7 April 1860 Mrs. Robbins and Mrs. Morgan between them sorted 280 reams and earned 14/-. There is no record of the number of hours put in by the women workers.
- A very important point arising from the wages book is that there are occasional references to Upper Mill. For example, at the end of the wages account for 3 August 1860 there appears the entry of Beach, Williams and Vaughan working at Upper Mill. Now one thing which seems reasonably certain is that Clearwater Mill was never the 'Lower Mill' of the early documents, and it therefore seems

³⁹ Slater's Directory for Monmouthshire, 1850.

⁴⁰ As f.n. 26.

⁴¹ Gloucestershire County Record Office, D639/5.

⁴² Monmouthshire County Record Office, D396.254.

most improbable that the books appertain to Clearwater. They could just possibly be for the Lower Mill, or Wye Valley Mill. It is more likely that the books appertain to Sunnyside Mill, in which case the Upper Mill would be Fernside Mill; both these mills are in the parish of Penallt; and if this is the correct association, then it could be concluded that these two mills operated as one organization as early as 1860; they certainly did so later.

about

- 1865 Steam power introduced at Whitebrook.⁴³
- 1867 Clearwater Paper Mill advertised for sale with '... a turbine wheel of about 70 horse power ... considered a saving of about £2000 annually in coals'.⁴⁴
- 1868 Slater's Directory shows, under Monmouth⁴⁵:—
Paper manufacturers: Green & Co., Fernside Mills, Whitebrook, also William Roberts, manager, Whitebrook Paper Mills.
- 1867 Several attempts to sell the mills are reported.⁴⁶
- 74
- 1871 Post Office Directory (Kelly's) for 1871 shows:⁴⁷
Green & Co., paper mfrs., *Ferndale* (!) Mill under the parish of Llandogo!
(The errors are rather large, and it is hoped, not typical of Kelly's work!)
- 1872 James Bevan, aged 39, buried 21 June, 'scalded to death at the Paper Mills'.⁴⁸
- 1873 Both Joseph Basson and his father John were paper makers at Whitebrook.⁴⁹
- 1873 Clearwater Mill again offered for sale.⁵⁰
- 1874 Wye Valley Paper Mills and Fernside Paper Mills, with wharf and three barges, offered for sale.⁵¹
- 1874 Blanche, daughter of John and Hannah Robbins, of New Mills, baptised 5th July. Father's occupation, 'Stoker at the Paper Mills'.⁵²
- 1875 Extract from local newspaper⁵³:—
'The following memorial, which has been numerously signed by the inhabitants of Llandogo and Penallt is to be presented to the directors of the Wye Valley Railway Company:—
'We the undersigned, beg respectfully to urge the need of a station at Whitebrook in addition to, or in lieu of, the proposed station at Bigswear, and to call your attention to the following facts:
(1) . . .
(2) Whitebrook is the only one of the three places named which has any regular trade capable of producing a considerable goods and passenger traffic. The paper mills at Whitebrook are the long-established industry of this locality, and for the last ten years (since steam power has been introduced), they have

⁴³ *Monmouthshire Beacon*, 13 November 1875 (see quotation under 1875).

⁴⁴ *Chepstow Weekly Advertiser*, 2 November 1867.

⁴⁵ *Slater's (Late Pigot and Co.) Royal National Commercial Directory for Monmouthshire*, 1868.

⁴⁶ As f.n. 9.

⁴⁷ *Post Office Directory for Monmouthshire*, 1871.

⁴⁸ Register of Burials, Penallt, 1870 to present.

⁴⁹ Register of Marriages, Llandogo, 1837 to present.

⁵⁰ *Chepstow Weekly Advertiser*, 19 September 1873.

⁵¹ *Ibid.*, 10 November 1874.

⁵² Register of Baptisms, Penallt, 1870 to present.

⁵³ *Monmouthshire Beacon*, 13 November 1875.

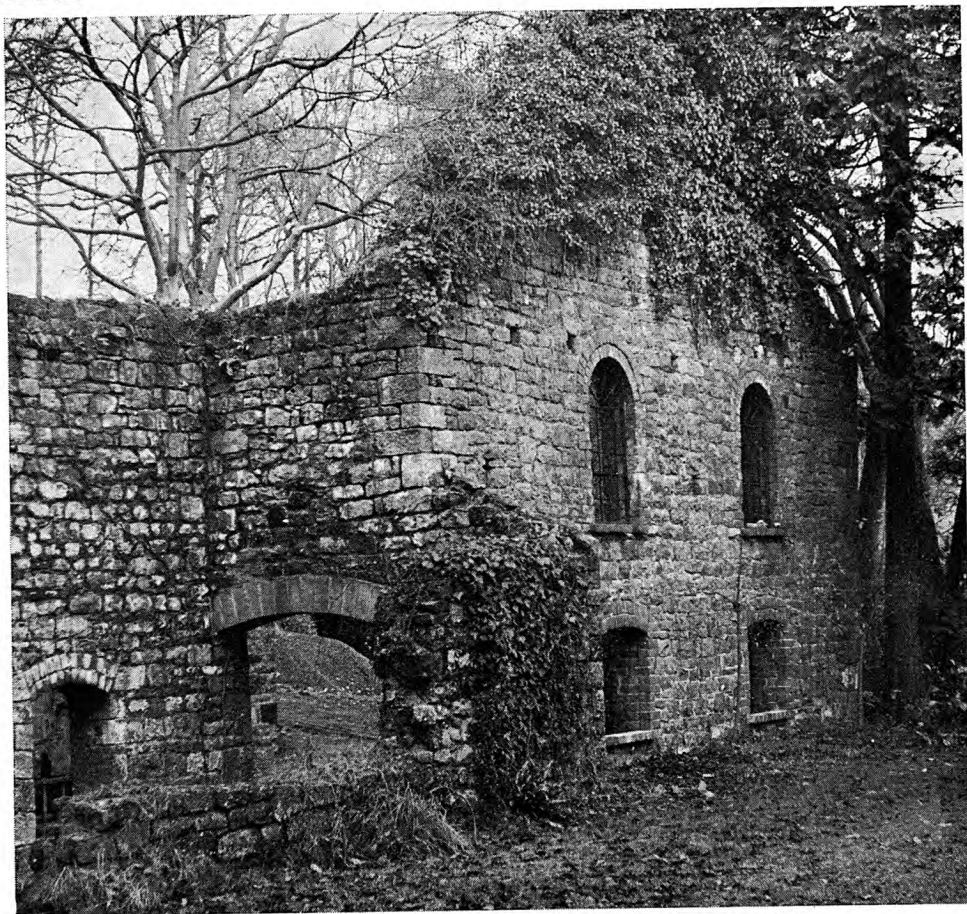


(a) Fernside Mill in 1970.

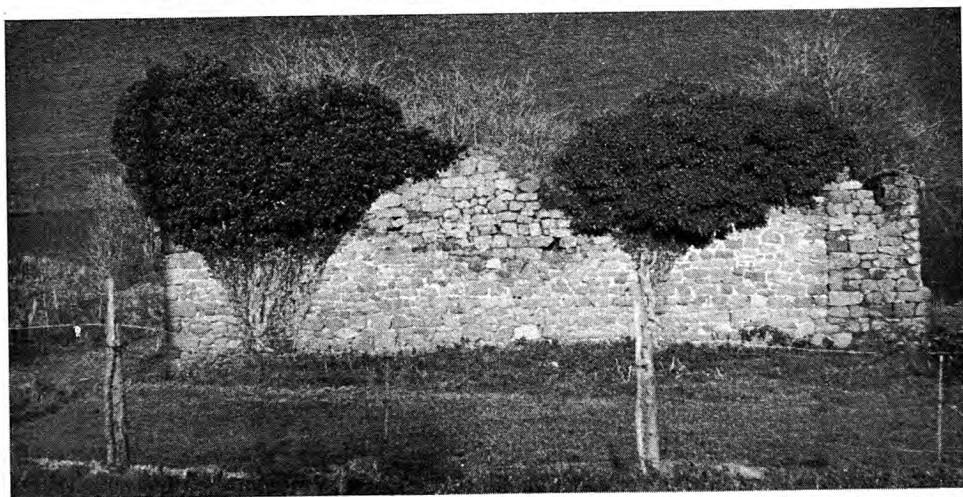


(b) The ruins of Clearwater Mill in 1969.

PLATE IX



(a) Ruins of the former Wye Valley Mills, taken in December 1970.



(b) Ruins of the former warehouse near the mouth of the White Brook, mentioned in the Tithe Maps and Apportionments, and probably the one mentioned in the Lease of 1826, taken in December 1970

given rise to an average haulage of over 100 tons of material and produce per week. The traffic from this source is likely to be renewed, and will more probably be increased than diminished”.’

(The optimism in the last sentence unfortunately proved to be unwarranted!)

1875 Liquidation proceedings reported in local newspaper⁵⁴ stated that Mr. Green, ‘a paper manufacturer, in a large way of business, in the valley of the Wye’ was bankrupt. ‘Mr. Green had there, before his liquidation, three paper mills, called the Fernside, the Clearwater, and the Wye Valley Mills. The Fernside mills he held as tenant of Mr. Barrett, the defendant, under a 21 years lease; the Clearwater Mills were held under Mr. Banner, and the Wye Valley Mills under the Duke of Beaufort. During the time he held these mills as a paper manufacturer, Mr. Green spent a large sum of money on machinery which he placed in them. Under the lease which he had of Clearwater Mill, he was entitled, as a tenant, to remove the machinery he had put there with his own money, and in the event of his substituting any machinery for what he found already in the mill he was to be entitled to take away also. That being the state of things, Mr. Green, in April 1873, having got into difficulties, was compelled to file a petition for liquidation by arrangement’. The original rent was £750 a year.

1875 It was reported in a local newspaper⁵⁵ that legal action was proceeding because it was alleged that George Courthope Green, who was now dead, and had been a paper manufacturer, and occupier of three mills in Whitebrook, had deceived Arthur George Judd into putting £5000 into the business by representing that the business produced £2000 to £3000 a year.

1877 No reference to paper manufacture in Owen’s Directory of this date,⁵⁶ or in any subsequent Kelly’s Directory.

1876 Wye Valley Paper Mills Co. operating for ‘fine printings, small hands, -78 cartridges’.⁵⁷

1879 Fernside Mills, operated by W. H. Trapman, making ‘printings’.⁵⁸

1885 Fernside Mills, operated by Wm. Wilson and Co., making ‘browns, grocery’.⁵⁹

1875–1890 With the above exceptions, the Paper Mills Directory shows no paper manufacture at Whitebrook during these years.

1879 Ordnance Survey maps,⁶⁰ 25 ins. to 1 mile, surveyed in this year, show the five mills in existence, with the upper two both separately named ‘Fernside Mill’, the middle one ‘Clearwater Mill’, and the name ‘Wye Valley Mills (Paper)’ appearing between the lower two, although the name ‘The Glyn’ also appears adjacent to the lowest mill.

Note that in the 1918 revision of these maps, the name ‘Fernside’ appears (without the word ‘mill’) only against the uppermost mill. The name ‘Sunnyside’ appears against the site of the lower Fernside mill, but no mill buildings are shown. Then follow ‘Clearwater Mill (disused)’ and ‘Wye Valley Mills (disused)’ and the name ‘The Glyn’ as before.

⁵⁴ *Ibid.*, 4 December 1875.

⁵⁵ *Ibid.*

⁵⁶ *W. E. Owen and Co.’s General and Commercial Directory for Monmouthshire, 1877.*

⁵⁷ *Paper Mills Directory.*

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ 25-inch Ordnance Survey Maps, County Series 1881: Monmouthshire XIV.16, XV.13 and XXI.1

- 1880 William Marshall was shown as a Paper maker when his son James Marshall (widower) of Llandogo Parish⁶¹ was married.
- 1885 On 5 August the son (age 30) of James Hislop, Paper maker, was married at Llandogo.⁶¹
- 1885 An agreement was made with the Duke of Beaufort 'to allow the Messrs. Wilson of Fernside Mills in the parish of Penalt, papermakers, the use of a shoot for conveying water at Whitebrook in the parish of Penalt'.⁶²
- 1888 Advertisement in local newspaper⁶³:—

Messrs. FULLER, HORSEY, SONS, & CASSELL

Are instructed to SELL BY AUCTION
on the Premises

on TUESDAY, AUGUST 28th

At 12 o'clock precisely, in Three Lots,

the

FREEHOLD PAPER MILLS, known as the Upper and Lower Fernside Mills, situate at Whitebrook in the County of Monmouth, about 4 miles from Monmouth and 12 from Chepstow.

Lot 1.—The LOWER FERNSIDE MILL,

brick and stone built, with tiled and slated roofs, Comprising Receiving and Sorting Room, Bleach Mixing Room, Esparto Boiling Room, Beating Engine Rooms, Machine and Finishing Rooms, Engine and Boiler House, Chimney Shaft, Size House, Carpenter's and Smith's Shops, Evaporating Shed, Gas Holder, and Foreman's Cottage, with Garden, the whole occupying an Area of about Nine Acres.

Lot 2.—A DETACHED FAMILY RESIDENCE known as

Fernside House, situate on the Whitebrook and Monmouth Road, with kitchen and Flower Gardens, Fish ponds, ornamental woods, &c. The Upper or Vat Mill with stables for Ten Horses and several plots of Land, the whole occupying an Area of about 5 Acres 2 Roods.

Lot 3.—A PLOT OF FREEHOLD LAND,

with Brick and Stone-built Store, opposite the Lower Mill, with a frontage of about 65 ft. to the Whitebrook Road, and an Area of about One Acre.

The supply of water to each Mill is constant and pure. The Wye Valley Railway runs at the bottom of Whitebrook, which gives facilities for the carriage of raw materials and manufactured goods.

A *second advertisement* followed immediately below the above, addressed to PAPERMAKERS, ENGINEERS & Others.

The same firm were auctioning on the same day:—

PLANT, MACHINERY, and EFFECTS.

Comprising a 68-inch PAPER-MAKING MACHINE, with DRYING CYLINDERS, 68-inch REAL-CUTTING MACHINE, 8 CAST-IRON BEATING ENGINES, 3 POACHING ENGINES, 4 HORIZONTAL ENGINES, with CYLINDERS, from 6 in. to 12 diameter, 2 BEAM ENGINES,

⁶¹ Register of Marriages, Llandogo, 1837 to present.

⁶² Catalogue of Badminton Papers, Group II, Nat. Lib. Wales, ref. to document No. 8371 dated 1885.

⁶³ *Monmouthshire Beacon*, 25 August 1888.

with 25 and 15 inch Cylinders, Oscillating Engine, 3 Double and Single Flue Steam Boilers, Wright's Patent Steam Boiler, 30-horse Power Elephant Boiler, 25-horse Power Turbine Wheel, Water-Wheel 25 ft. Diameter, Rag and Esparto Boilers, Bleach Mixers, 3 Iron Evaporating Pans, Pumps, Pooley's 5-ton Weighbridge, Shafting, Pulleys, Valves, Piping, &c.

1895 On 1 January the daughter of William Gaulder, Paper maker, was married at Penallt.⁶⁴

N.B. This last case does not prove that paper making was still being carried on at Whitebrook, as the abode of the father is not given in the marriage registers, and he might be resident elsewhere—or retired. Indeed, it is certain that paper making had ceased.

APPENDIX II

Schedule of Paper Manufacturers in Whitebrook

Mill	'The Glyn'	'Wye Valley'	'Clearwater'	'Sunnyside'	'Fernside'
Date					
1803	Mr. Brown	Thos Turner			
1805		John Morris			
1807	John Morris				
1816	John Morris	John Morris		John Brown	
1821/3	Wm. Cowley	Wm. Cowley			
1826/7	Sam. Tipper	Sam. Tipper	Sam. Tipper(?)	John Brown	
1829	Sam. Tipper	Sam. Tipper	Sam. Tipper	James Welch	
1832	Sam. Tipper	Sam. Tipper	Sam. Tipper	Wm. & Mich. Welch	
1835	Edward Johnson & John Evans	Sam. Tipper			Wm. Williams
1839		Geo. Lloyd		Geo. Lloyd	
1841					
1844	Edward Johnson & unoccupied	Geo Lloyd unoccupied			Wm. Williams
1846/7			unoccupied	James Dale	James Dale (& Sam. Matthews)
1850	Sam. Mathews			James Dale	
1868				Green and Co.	
1875		Green and Co.		Green and Co.	
1885				Messrs. Wilson	

(N.B. This schedule combines the information in Shorter's paper⁶⁵ with that of Appendix I. The identification of the various mills is very uncertain; indeed, Shorter suggests that there may have been six mills, and the field evidence is not against this.)

⁶⁴ Register of Marriages, Penallt, 1837 to present.

⁶⁵ As f.n. 9.

APPENDIX III

A brief note on paper making in the period concerned

The process of paper making is in essential principles a very simple one⁶⁶, ⁶⁷. The raw material is something of a fibrous nature, and linen and cotton rags, straw, esparto grass and wood have all been used. They are reduced to a pulp by a beating process and mixed with water to distribute the fibres. The pulp is spread out over a wire mesh, the water is drained off, the sheet of paper is removed, pressed, dried, and if necessary smoothed. This can all be done by hand, but machinery was introduced in Europe from about the twelfth century in the form of a stamping mill for beating rags, comprising a number of mortars and pestles, the latter being operated by arms moved up and down by tappets; the power source was man, water, or wind. In the late seventeenth century a machine called the Hollander was invented by the Dutch; a revolving cylinder fitted with knives reduced the rags to pulp much more quickly than stamps.

At first the disintegration of the rags was assisted by fermentation, but the practice of boiling the rags was introduced and speeded up the process. The pulp was fed to the vats, and these were usually heated.

The paper was formed on the wire-mesh mould fitted in a wooden frame. This was dipped into the vat, removed and drained. A 'paper-mark' was often introduced by using a wire bent to the required pattern and sewn into the mould. The sheets of paper were interleaved with felt cloths, and when the pile reached 144 sheets, it was squeezed in a press. The paper sheets were then pressed again without the felts. If the surface was not smooth enough, it was smoothed by a fine stone. It was then hung in lofts to dry.

Machinery for manufacturing the paper in long lengths was introduced by the Four-drainers in Britain from 1803.

Sizing of the paper was common.

Straw was introduced as a raw material component in 1800, esparto grass in about 1855, and wood pulp in the 1870's.⁶⁸

Bleaching by chlorine compounds was introduced at the end of the eighteenth century.⁶⁹

A very full and detailed history of papermaking (as a technical subject) is found in the volume by Hunter.⁷⁰

It is evident from the documents cited in Appendix I that in 1860 the main raw material in Whitebrook was still rags; and the sale notice of 1888 makes it clear that the use of esparto grass had been introduced in the later years of activity in Whitebrook. Evidently also the mills had been considerably modernized and mechanized.

⁶⁶ T. K. Derry and T. I. Williams, *A Short History of Technology* (Oxford, 1960), pp. 231-4.

⁶⁷ J. Overton, 'A note on technical advances in the manufacture of paper before the nineteenth century', in *A History of Technology*, ed. C. Singer *et al.* (Oxford, 1954-58), Vol. III, pp. 411-16.

⁶⁸ W. T. Berry, 'Printing and related trades', in *ibid.*, Vol. V, p. 713.

⁶⁹ A. and N. L. Clow, 'The chemical industry', in *ibid.*, Vol. IV, p. 255.

⁷⁰ Dard Hunter, *Papermaking* (London, 2nd edn. 1957).