Some Gloucestershire Ironmasters

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Abstract

A number of ironmasters operated between Bristol and Gloucester from late in the 16th century into the 19th century. The main works were at Mangotsfield, Tortworth, Frome, Framilode and Gloucester. Here are traced the careers of the most important of the entrepreneurs — Arthur Player, Roland Pytt, John Purnell and William Montague.

Introduction

The most important ironworking area in Gloucestershire has always been the Forest of Dean, and research has tended to concentrate there, largely ignoring the ironmasters who operated between Bristol and Gloucester (Fig 1). In Gloucester itself Dean iron was fabricated, and at Domesday there were rendered bars of iron and 'One hundred malleable iron rods for nails for the king's ships'. In the twelfth century, Giraldus Cambrensis wrote of the Severn as flowing through Gloucester '...famous for its ironworks and smithery'. There are various accounts of the city supplying nails and horseshoes in the middle ages, made with iron from the Forest of Dean; a rental of 1455 mentions a number of metal tradesmen, including eight smiths, twelve cutlers, and five wire-drawers.

From time to time small amounts of iron ore have been raised from Gloucestershire's other coalfield, to the north of Bristol. At Domesday six men of Pucklechurch paid a rent of ninety pigs of iron to the Abbot of Glastonbury. At that time Pucklechurch included the parishes of Westerleigh and Absom and Wick, and it was probably from Wick that the ore was obtained. Haematite lodes in the fissured Pennant Sandstone are known to have been worked at Iron Acton and Frampton Cotterell. Rudder (1779) says 'The great quantities of iron-cinders lying about in several places, shew that here were formerly iron-works, which probably ceased for want of wood to carry them on, for here is still great plenty of ore; hence it has sometimes been called Iron-Acton, to distinguish it from Acton-Turville'. In the 19th century (*c*1873) a variety of ores were reduced at Ashton Vale, including Argillaceous and Blackband ores brought from workings on Kingswood Hill (Anstie 1873, 99), and there were blast furnaces at Westbury.

Arthur Player

Arthur Player was an extraordinarily energetic entrepreneur in the reign of Queen Elizabeth I. He laid the family fortunes well, and his descendants were to own and successfully work coal in and around Kingswood Forest in the area of Frampton Cotterell, Mangotsfield, Iron Acton and Westerleigh for some two hundred years. He seems to have been particularly active in the years between 1595 and 1600. In 1595-6 he bought (and two years later sold) the manor of Deynton which certainly included coal, lead ore, and, incidentally, Pucklechurch. In 1598 he bought the manor of Lorrenge further north (Leonard Stanley, Cam, Stinchcombe, and Berkeley) but sold it in the same year. He was granted rights of coaling by Sir Henry Berkeley in the Forest of Kingswood and the wastes of Bitton. He already owned the manors of Siston and Mangotsfield, but these he sold in 1598, shortly afterwards leasing back that of Mangotsfield with '... the right to dig for stone, iron, and cole or any other things ... with the free use of any levell or levells' (GRO D421 T130).

It is interesting that iron is specifically mentioned in the lease, because Arthur Player was either about to work, or, more likely, was already working, iron in Mangotsfield. The manor house was Cleeve Hill, and a Player, presumably Arthur, was living there in 1600. It was to become the family home of the Players for generations; more than a hundred years later his great-great-grandson, living there, would write in a memorandum book 'My father has been told, but he hardly believes it, that his great-grandfather dug up all the hill before the house for iron ore, which was blown att the mills thence (or hence) call'd the Iron Mills, and that he destroyed most of the wood, this side of Kingswood in that work' (GRO D421 E66). This corresponds with action taken by Bristol Corporation in December 1600 which decided to renew an appeal to the Privy Council, made in the previous year, for the suppression of the 'Iron Mills' set up at Mangotsfield by Arthur Player and others, it being alleged that the extensive destruction of these woods had raised

the price of timber to the injury of 'poor craftsmen' (Latimer 1900, Vol 1, 8). The complaints about such an extensive destruction of timber suggest the use of a blast furnace. We do not know at present the site of this operation. However, the first edition Ordnance Survey map suggests a possible position for such a furnace, within half a mile of Cleeve Hill House (which no longer exists), where deep cliffs edge the river Frome at Frenchay. At ST 644778 there is the name 'Iron Mills', and there was certainly a building there in the 19th century where tools and implements were made. This operation had amalgamated in 1810 with the lower works further down the river, known as the Frenchay Iron Company; built in 1760, the company was established in the following year. Before the amalgamation, in 1798, the upper mill was a grist mill in the tenancy of James Brown (Elliott 1936, 63). The place must have been connected with iron at an earlier date, because in 1743 there was a poor rate levied on 'Mr Brown ... For ye Iron Works' (occupier John Parker) (Jones 1899, 193).

The site at Tortworth

Tortworth lies at the very northernmost edge of the Bristol Coalfield, just north of Cromhall, which has long produced coal. The site of an ironworks at Michaelwood, Tortworth, was suspected by Arthur Dunn, while researching into the origins of early American ironworks. He (pers comm) had found slag by the Little Avon at SO 699948 close to a wood known as Iron Mill Grove. Since it was close to Beveston, the home of John Berkeley, Dunn had sought documentary evidence about the site, which might throw light on this ironmaster, who went to the Virginia settlement in 1621 specifically to exploit the local iron ore. He set up works at Falling Creek, but the year following, before the works were fully operational, he was killed, along with his workers, by Indians, in the massacre at the Berkeley Plantation in March 1622.

Sources in Gloucestershire Record Office make no mention of Berkeley, but provide the history of a large and hitherto unsuspected ironworks complex. The writings of John Smyth of Nibley, steward to the Berkeley family (and an investor in the Berkeley Plantation), show that there was a furnace in the area in 1610. In his *Lives of the Berkeleys* he says 'One Thomas Hacket ... erected both a forge and furnace, bringing his ore out of the fforest of Deane' (Smyth 1883). He purchased wood from nearby Michaelwood for his charcoal. He does not appear to have operated the furnace for much more than a year, and it was generally thought that he made a financial loss. Thomas Hacket was later connected with the Mineral and Battery Works (Hart 1971, 12). In 1677 this company sub-let concessions to work in the Forest of Dean to Sir Basil Brook, George Mynne, and Thomas Hacket, who erected forges at Whitebrook and Bradley.

When Hacket ceased to operate at Michaelwood he assigned the works to Sir William Throckmorton, who was no more successful. He seems to have been on bad terms with Sir Edward Winter, who had owned a furnace near Lydney since 1604, deriving his ores from the same areas of the Forest, and who objected to Sir William 'entring in to his trade of iron making soe near his doors'. Sir Edward's son was the royalist ironmaster Sir John Winter. Sir William Throckmorton of Tortworth, as he was then styled, married Cicely, the daughter and co-heiress of Thomas Baynham of Clearwell, and their son, Sir Baynham Throckmorton, another royalist, had many ironworking interests in the Forest of Dean. John Smyth's wording is not easy to interpret, but it suggests that Winter managed to prevent Throckmorton from obtaining his charcoal supplies from Michaelwood and, after operating the furnace for about twelve months, he sold with the loss of about £1000, to 'Two citizens of Bristol'. It appears that the ironworks were at an end by 1612.

The earliest documentation for Tortworth in the Gloucestershire Record Office is dated 1660, when Sir William Ducie leased to John Coxe of Cherington a 'Water mill ... lying in Tortworth ... commonly called by the name of the Iron Mills', together with various named fields which can be identified from later plans. This is only 48 years after Throckmorton's furnace closed, and Sir William Ducie reserved free liberty for himself and his heirs ... 'to erect and build Iron Mills where they formerly were built and stood'. Six years later John Coxe had added a paper-mill to the site; and in 1684, when his brother Richard paid Edward Ducie Morton 'Three guinea pieces of gold' for the transfer of the lease, the main mill was described as a 'Water Corn Mill ... commonlly known by the name of the iron mills', and the paper mill, obviously of less importance, appears at the end of the deed (GRO D340 T137 [4] [11] and T142 [3]). There are no further papers of interest until 1714, when letters make it clear that Matthew Ducie Moreton was thinking of availing himself of the option to build iron mills on the site (GRO D340a C21).

Most of the letters are from John Hanbury, of the family with ironworking interests in Pontypool. But the first is from a John White, and it may be relevant that John Coxe's daughter Mary married a George White. On 3rd March 1714 White wrote '... permit me Sir to tell you if you have thoughts to go on with ye building of ye furnace it is now a very proper time to begin, ye man yt waited upon you last will make ye water course for thirty pounds and be ready at your command as also, Yours'. On 26th March a letter came from John Hanbury at Pontypool about workmen: 'I have sent Richard Limerick and am in hopes he will prove as good a servtt. to you as he has to me indeed I think I can say he is as ready with his head and hands as he is slow with his tongue — he has brought

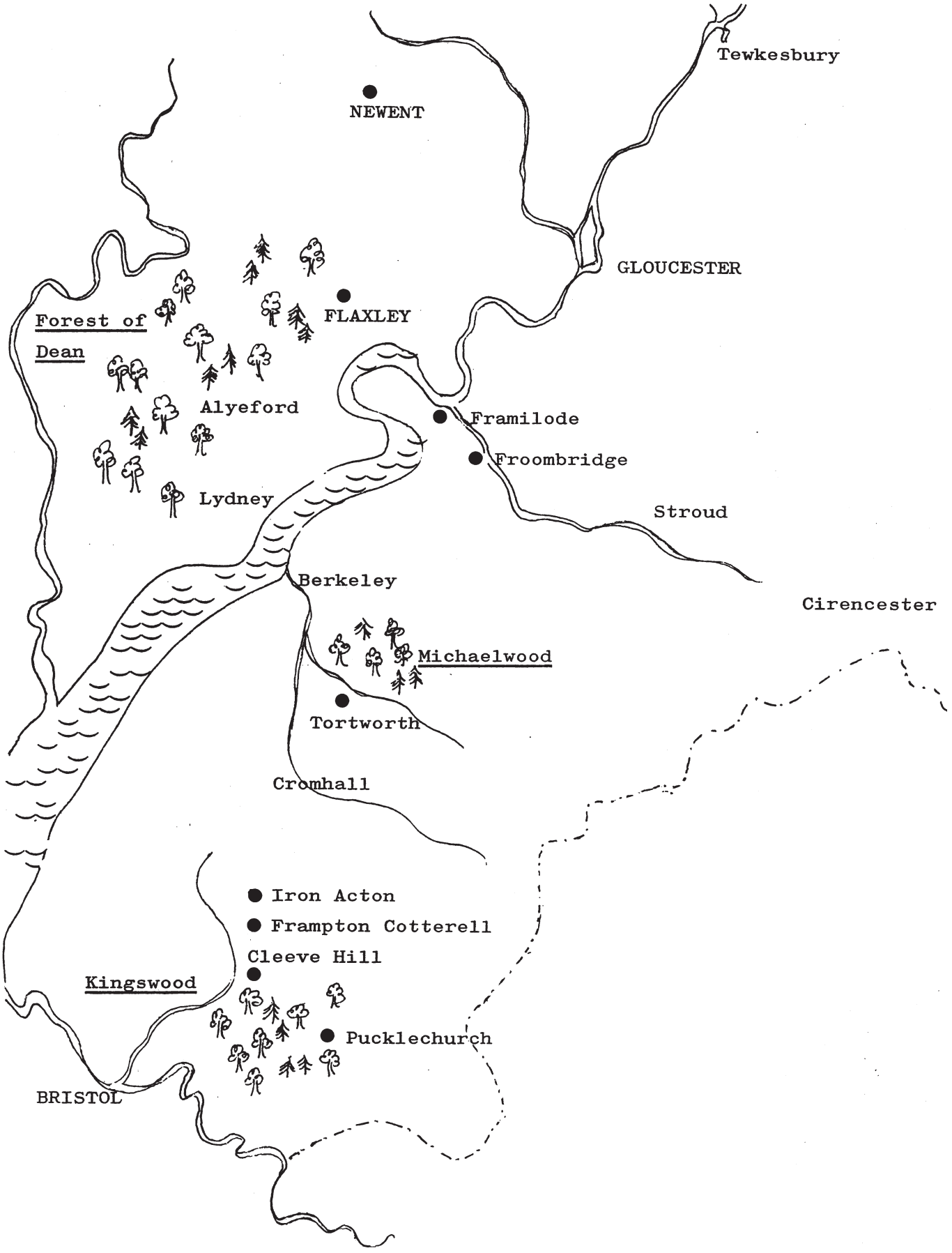

Fig 1 Sketch map of sites referred to in the text

some rough cutters with him which are very scarce at this time of year'. Limerick appears to be a foreman or supervisor, but 'not writing a good hand has made him desire that he may not meddle with any cash'. Timber is mentioned, but the 'rough cutters' may be for cutting wood for charcoal rather than for building. Hanbury adds 'If you proceed on a forge this year I will leave orders for any help you want here'. There follows an undated letter 'I am favoured with yours by Limerick he gives me a very good acctt. of the place you design for your forge ... we have completed the wheel and the Trows and the Whole Engine Work to worth about nintie pound the roof a house carpenter may make'.

It is clear from preceding and following letters that this water wheel and machinery can hardly have been for the forge and is likely to have been for the furnace; which, if the advice of White in early March was followed, would by now have been well under way. Whether Limerick was supervising the building of the furnace is not clear, but presumably the wheel and machinery could have been for operating bellows, and the wooden roof for covering the bellows house. In June Hanbury writes 'As to the iron work for the forge I talked with Limerick and my people about putting it at P Poole and we agreed it was absolutely necessary that you put up a large smithy hearth with you and have iron drawn of pretty near size at P Poole and then finish and filled [filed] up at Tortworth and you may send R Limerick to order the necessaries'. 'I am concerned at some difficulty you might have in getting workmen ... honest men will be very unwilling to leave either settlements and masters and all masters hard to part with good workmen. When I come ... I will pick for you as well as I can'. Later, he writes 'I am very glad to hear the forge proceeds'. Some of the workmen were obviously coming from Wales; a letter dated 24th August 'The bearer Dan Davies desires to be recommended to be your finer. All I know of him is that he is of the right breed his father and brothers very good workmen he served an apprenticeship to the Trade and says he is ready to work a trial against any one of the Trade — he is a batchelor and if he should not be approved of you may part with him at a weeks notice without the trouble of bringing or removing a family. I thought you should not loose the opportunity of this offer'.

These letters throw light on the beginning of the ironworks, but there is no further description for 31 years, when, in 1745, they were leased to Rowland Pytt, ironmaster of Gloucester. At this time not only the Iron Mill Grove site, but also Damery Mill, a little further east, upstream, was brought into the ironworking complex. Many improvements seem to have been envisaged and we see something of the results on an estate plan of 1760 (Fig 2). Lord Ducie undertook, providing it did not cost more than £600, that before September 1746 he would repair and 'enlarge the ironwork and the house wherein it stands' and set up a chafery there complete with plates, hammers, anvils, bellows, and other necessary implements and tools. The wording is slightly ambiguous as to whether a finery was also to be included. What is clear is that two 'good sufficient and substantial' fineries for forging and making bar iron would be set up in the former Grist Mill, and colehouses and lodgings for workmen would be provided. If £600 was not sufficient to complete the proposed works, Rowland Pytt and his heirs could effect them and keep them in repair, delivering them over in good working order at the end of the lease. Pytt was to buy his wood from Lord Ducie at 5 shillings for every horse 'as shall ... go on the woods ... where the cordwood shall be so recorded and coled for carrying away of the same'. Lord Ducie would provide wood for making hurdles and cabins for the use of the charcoal burners.

Roland Pytt was the son of a woollen draper, and appears to have started commercial life in Gloucester as an ironmonger (*c*1713). By the time he took over the works at Tortworth, he already had extensive ironworking interests in South Wales and the Forest of Dean. He had taken a lease of a tin works near Aberdulas, Glamorgan (Unysygerwn) in 1731; he was leasing the Lydney furnace and forges (1740 and perhaps earlier) and in 1742 the Redbrook furnace and two forges at Lydbrook, which he leased from Lord Gage at £200 a year. In the year that he took over Tortworth he made a further lease of the Lydney furnace and two forges, Pill or Lower Forge, and New or Middle Forge, for 21 years at £120 a year.

Rowland Pytt had a son of the same name, born in 1727 and presumably brought up to the trade from an early age,

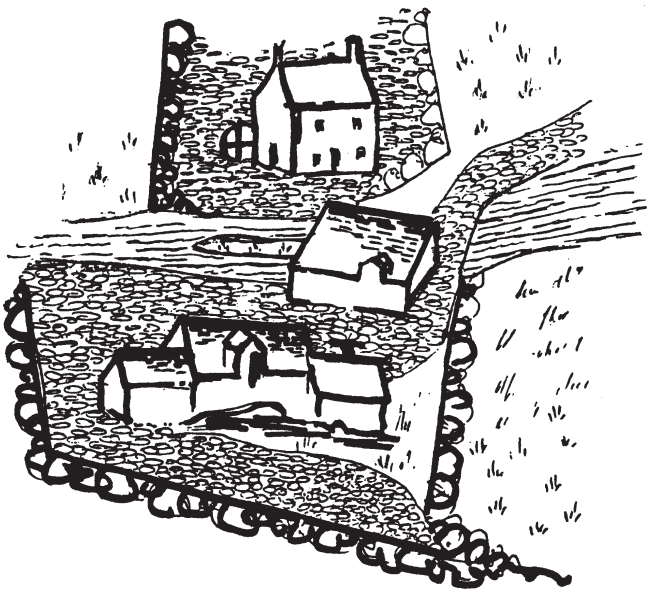

Fig 2 Impression of the Tortworth site from an estate plan of c1760 (GRO)

for in 1747, styled 'of Newland', when he could have been little more than twenty, he took over the Tintern Wire Works, in partnership with Thomas Farmer. Finding the Wire Works 'inconvenient for the expeditious making of wire', they introduced new machinery and adopted a different method of working. Previously the workers had not agreed to such a change, but in October five men made an agreement on wages to draw out wire in eight different sizes '... the same as drawn at the Pont-y-pool wireworks.' (This agreement is given in full in *Archaeologia Cambrensis* for 1863). In the same year Rowland Pytt 'of Gloucester and Tintern' leased the Melin Cwrt furnace in the Nedd Valley, in the Neath, Swansea area, and in the following year (1748) a forge at Aberavan. This later passed to the Fitt-Lewis, and Coles, Lewis and Co partnerships; the reasons for this become clear when we find that Rowland Pytt the younger married the daughter of William Coles, ironmaster, of Gloucester. In 1750 he was made a freeman of the City, and in 1756 Rowland Pytt senior died.

The younger Pytt appears to have continued operating the various family enterprises, and we have a first-hand account of his character and business efficiency when the lease for the Redbrook forges and furnace became due for renewal. In 1761 Lord Gage was anxious to obtain a higher rent, but his steward, Creed, wrote urging the renewal of the lease to Pytt on similar terms as before. There is a familiar ring about his comments on the iron trade in general, which '... never was in a worse pickle than it is at present, nor ever was there such a prospect as now of its still growing worse without the least hope of mending'. He comments on the growing importation of cheap foreign iron, which '... will be to the end of time your lordship may rest assured'. He observes the growing popularity of smelting with coal instead of charcoal '... a scheme that succeeds beyond expectation, and great numbers of furnaces are erected within these few years that blow with no other sort of coals, and I am informed it sells for as much money per ton into 20s. What prospect then my lord is there that the English iron will ever bear the price it has hitherto done'. He also believed that Mr Pytt has been 'an extreme good tenant. When he repairs any part of the works he minds no expence and does everything as though the premises were his own. At the time of the general calamity when the hail storm broke down the forges at Lidbrook and did him other considerable damage he built it more substantial than it was before, and I dare say the whole loss and expense amounted to upwards of £1,000' (Hart 1971, 76-77). Before any arrangements on the lease were finalised, Rowland Pytt died; Mr Creed's letter provides an epitaph: '... who all the world acknowledges is a very good judge of the iron trade ... a person well beloved in this country (every individual of which is the better for him)'.

John Purnell and the Froombridge Company

At this time, only a few miles to the north east, a new ironworking enterprise was taking form. The beginnings were modest: a partnership agreement was drawn up in 1759 between Joseph Faithorne, brazier, and John Purnall, who each put in £150, and Thomas Smith who contributed £70, for 'Drawing vending and disposing ... of all sorts of wire' at Rivers Mill, and '... also in the mill and mill housing in Dursley' (GRO D 2193). Only a year later they took over the mills at Froombridge (SO 769073) in Frampton-upon-Severn, and by 1761 the partnership had settled down to Joseph Faithorne, John Purnell, and his cousin William Purnell, each partner bringing in £700 in goods or money. They were not only dealing in all 'sorts of wire' but also making 'Bar Iron from Sow or pig-iron' (GRO *ibid*).

From the time of William's entry into the partnership, his father John Purnell of Dursley seems to have taken an important part in financing the firm, either by providing money by mortgages on part of the profits, or by purchasing mills which he leased to the partnership. The Purnell family fortunes had been built up in the woollen-textile industry. Two John Purnells are mentioned in the documents, which can cause confusion; they were cousins, as their grandfathers had been brothers. Although they shared grandfathers of the same generation, the elder John, of New House, Dursley, was 27 years older than John Purnell of Froombridge, the ironmaster. The latter had been born at North Nibley in 1731 and married Elizabeth Hayward, daughter of the local vicar in 1761. Three daughters were born to them in successive years from 1762, and another, in 1767, died in infancy (pedigree in map drawer in GRO).

By 1765 John Purnell of Dursley seems to have acquired not only Froombridge (or Fromebridge) Mill, which was already leased to the partnership, but also Ayleford tilting mill, on the other side of the Severn. This he also leased to the partners, each of whom brought into the business a further £2000 at this time. Ayleford, which is shown on Isaac Taylor's map of 1777 as Oileyford, is just south of Bradley Forge and Soudley. This they converted into a wire mill and worked until 1783. It was not the first time that wire had been made in the area, for Nicholls maintains that it had been drawn by hand at Soudley as early as 1565 and a wire drawer was listed at nearby Newnham in 1608.

The company was growing, not only in size, but in reputation. In 1766 John Purnell was granted a patent (No 854) for a machine for making ship's bolts, round rods of iron and steel, and wires of various sizes. On 8th September the *Gloucester Journal* contained the following report 'It is no less to the credit of this country than to the honour of the ingenious man himself, that his Majesty had

been pleased to grant a patent to Mr Purnell, one of the proprietors of the wire-mills at Frombridge, in this neighbourhood, for his new-invented improvement in the making of iron and steel wire. This is a trade that a few years ago was entirely in the hands of the Prussians, but the total stop put to their manufactures during the late war, in which their sovereign was so much engaged, obliged the English to set up works to supply their own consumption — What progress they have made in it the above will fully evince'.

A few weeks later a further opportunity for expansion arose with the death of George Wilding. The *Gloucester Journal* of 13th October stated: 'On Monday died, justly lamented, Mr Wilding, Master of the iron mills at Framilode in this County; whose judgment and integrity in business made him a useful member of the public, whilst his good sense and friendly disposition formed the agreeable companion and valuable neighbour in social life'. Framilode on the River Severn is only about two miles west of Fromebridge; within twelve months George Wilding's widow was leasing the mills to 'John Purnell ironmaster and William Purnell gentleman'. They were permitted to add forges and mills but were to leave intact 'the grist mill ... and the two slitting mill water wheels with the cog wheels and engine plants' (Tann 1967, 138).

In 1778 a new deed of partnership was drawn up, and trading was carried on under the name of the Froombridge Company. The firm was now worth about £21,000 and was spread over six parishes, Frampton-upon-Severn, Frethern with Saul, Eastington, Moreton Valence and Newnham, all the mills in their use being either in their possession, or in their occupation as tenants to John Purnell of Dursley, William's father. They also added Baldwins grist mill (slightly west of Framilode). The Company were now involved not only with the making and vending of bar iron and pig iron and iron and steel wire, but also copper and brass wire, doubtless to supply the Gloucester pin makers. Rudder (1779) notes of Fromebridge, 'at this place also there is a brass work lately erected'. In 1790 the mill was itemised as 'a rolling mill, tilting mill and block mill all under one roof' with a 'wire mill and offices adjoining', and a 'brass nealing house' (Tann 1967, 142). After acquiring the Framilode mills the company used them for the manufacture of black, or tin, plate. It was probably one of the mills in this complex that Henry Hathaway 'Tin Plate manufacturer' had already operated *c*1775 (Bigland 1791).

The Fromebridge Company was well situated both for obtaining iron and coal from the Forest of Dean, brass probably from the Bristol Brass Company (Day 1973, 129) and for supplying local industries with the materials needed for their own manufactures. It was adjacent to a still-flourishing textile industry whose cards (hand tools in which small wires were set into a wooden back used to card out wool before spinning) were manufactured in Dursley, Stroud, and Wotton-under-Edge. The company had easy access to the ports of Bristol and Gloucester. The latter, throughout the 18th century, was the main centre for pin-making (using brass wire) for America, and for fish-hooks (of steel wire) for Newfoundland. Tewkesbury, further up the Severn, was a stocking-making town, relying on knitting machines, each containing hundreds of little wire hooks. It is not surprising that Rudder (1779) could speak of Fromebridge as 'one of the largest and compleatest works in the Kingdom', or that it should be of sufficient importance and influence for the Macclesfield Company (in 1796) to decide to draw its own wire to the same gauges 'as those employed at Bristol and Fromebridge' (*Encyclopaedia Britannica* 3rd edn)

By 1786, John Purnell's health was failing and had been the cause of delay in preparing the specification for another invention which he wished to patent. Writing to his solicitor, he said it was not always in his power 'to give the subject that attention it requires'. He asks for a swift reply that he may 'catch every opportunity of strength thought necessary for that purpose' (Gloucester Collection: City Library 13415 SF 16.2, 1-19). He maintained that he had, after 'great study, labour and expence' experimented and 'brought to perfection a new method ... of shingling welding or preparing iron of a much purer quality and in larger quantities by the application of a more effectual machine than has ... hitherto been attained'. He used the common air or reverberatory furnace bringing the metal to a perfect state of fusion by agitating it in the fire. As it gradually cooled it was still kept stirred and then removed from the furnace, about 14 pounds at a time, on light-weight dished shovels with turned-up edges. The loop, or piece, of iron was placed on a plate between the furnace and the rolls, where it was given a few blows with a sledge-hammer to bring it into the shape of a rough wedge. It was then taken to an iron plate placed centrally in line with a pair of iron rollers, sixteen inches long by fifteen inches diameter, and, using the edge of the shovel to give blows against the thickest side of the wedge, was forced between the rolls. It then fell into a cistern through which a continual stream of water passed; meanwhile another loop was being prepared. By these means the whole charge of three to five hundredweight could pass through the rollers in about fifteen minutes (Gloucester Collection: City Library 13413 MS SF 16.2; 13415 SF 16.3[2]). The process appears to be exactly the same as that patented by Henry Cort two years previously (1784), except that it eliminated one time-consuming and fuel-costly section altogether. In Cort's system the metal was melted and worked in a reverberatory furnace, and, after partial cooling, was formed into balls and hammer-forged into bars, before being reheated and passed through rollers.

The vital sentence in John Purnell's specification is 'my new invented method of passing it while in fusion through a pair of rollers instead of shingling under the tilting hammer or any other method now in use'. The patent implies that the reverberatory furnace for melting cast iron was already in normal use. Purnell had patented rollers for making iron rods and wires as early as 1766. The scene was set and it seems highly likely that he was already experimenting with the puddling process, as indeed (according to Percy (1864)) were the Cranages and Peter Onions, well before Cort's Patent of 1784.

During 1785 half the Fromebridge works had concentrated on trials for Purnell's new system. It was an expensive business — 15 tons of bar iron from 20 tons of pig, if half the rent of the premises and interest on capital were included, had cost £7882.10s. One thousand tons of pig at £5 a ton had been utilised; carriage to Framilode had cost £500 and to Fromebridge and back to Framilode £262.10s. Six furnace men had been involved at 15 shillings a week, six at 10 shillings and six boys at 5 shillings. The two rollers were each paid 15 shillings and their assistants 10 shillings; two furnacemen at the balling furnace 12 shillings and assistants 9 shillings, two hammermen 21 shillings and assistants 9 shillings.

John Purnell sought a payment of 10 shillings a ton from the Company for his invention, but it appears that shortly before his death 'on a further trial of the invention it did not prove so beneficial' and forfeiting any benefit to himself and his heirs, he desired that if the patent could be granted to William Purnell, it might prove some compensation in the future for the large sum of money already expended. Before the patent was passed, John Purnell was dead (*ibid* 13414 SF 16.3 [1]).

In 1800 William Purnell went into partnership with a kinsman, William Veel. They prospered, but Purnell died in 1805. The estate passed to his grandson Bransby Cooper, a minor of fourteen, and the company continued with Veel and the young Purnell as nominal partners. No reference has been found to wire making at Fromebridge after 1809 (GRO D 2193). At Framilode, however, the problems of Purnell and Company seem to have been overcome, and they continued until 1824, when they offered to let the mills, which at that time had an annual capacity of 23,000 boxes of tinplates. They maintained that they had the reputation of 'furnishing the best plates in the market' (GRO 135.2). The premises consisted of two water mills for rolling black plate, a 24 hp Boulton and Watt steam mill, for rolling black plate, a cold rolling mill, a turning mill and bloom furnaces. By 1832 the mills are marked on the OS map as a forge, and by 1841 the island site was empty, described as waste (Gloucester City Deeds 349-373).

William Montague

There are in the Gloucester Record Office a series of deeds (Gloucester City Deeds 349-373) through which it is possible to trace a continuity of ironworking on the same premises in Gloucester from the mid-18th to the late 19th century. The documents refer to three separate but adjoining properties, comprising a dwelling house and garden, offices, warehouses and workshops, which covered land from Westgate Street back to the Quay. The site is recognisable in Kip's drawing of 1712, since it included the land on which stood the smaller, and most easterly, of the two glasshouses, later used as a limekiln. The house and garden were immediately to the east of the angled lane named 'Quay Lane' in Hall and Purnell's map of 1780, and later as 'Turnstile Alley'. Behind the house, which stood sideways on to Westgate Street, was a yard with brewhouse and cellar alongside; from this yard a passage and lane led to the blacksmith's shop, warehouse and yard 'whereon lime kilns lately stood in Dockham' (*ibid* 356). The base of the kiln (formerly the glass house) was turned into a workshop and known as the Round House. In 1756 this yard on the Quay was used as a coal yard, and was in the occupation of Wiliam Coles, an ironmonger, the father-in-law of Rowland Pitt the younger. Gradually the leases for all the premises mentioned above were taken over by John Coles, wholesale ironmonger, presumably William's son. He married Susannah Elton and, in a marriage settlement, set up a trust fund of £2000 for any children of the union. Susannah, however, died, and John married Charlotte Beddicott.

At some time before his death in 1799 John Coles took into partnership William Montague, and in his will was concerned that Montague should be able to carry on trade in the same place by paying a reasonable rent, also leaving him a loan of £10,000 for seven years at 5%. According to Counsel (1829), William Montague established a foundry in Gloucester in 1802, which is mentioned again by Rudge (1811). Neither give the location, but Montague must have moved slightly further down Westgate Street, as the address of the ironworks in directories is 'the island', which indicated land between Westgate and Foreign bridges. By 1812, the whole of the original premises were in the hands of Ping and Fairweather, ironmongers, who had two smithies operating in the round house. The business and premises were sold in 1869 to William Stout, iron merchants 'Monger and Stout'. By 1901, as the 'Iron and Hardware Co. Ltd', the firm were occupying 73-77 Westgate Street and the Quay, and were advertising hand and power machines for screwing, drilling, mortising, punching, shearing and tyre bending — 'The largest stock in the West of England'.

William Montague was typical of Gloucestershire ironmasters in his interest in the Forest of Dean, and by

1824 he was, with associates, leasing the furnace at Parkend under the name of the Forest of Dean Iron Company. By 1826 Montague and John James of Lydney became the sole lessees; they erected another furnace with an enormous 51-foot-diameter water wheel weighing 60 tons, whose components had been cast at the Gloucester Foundry; the reservoir to supply the furnace covered 40 acres. In later years (1847) Mushet was to commend their iron, writing that 'the Parkend hot-blast iron possesses amazing strength. Mr Montague, of Gloucester, the proprietor, has cast railway girders of the most unusual power, in proportion to their scantling: I have seen pigs of his iron deflect from 1 to 2 ins ere repeated blows could produce a fracture'.

From 1827 William Montague was also connected with the Cinderford Ironworks, together with Moses Teague, Fraser and Church; the last-named was also his partner in the wholesale Ironmongery business in Westgate Street in 1820 (Hart 1971, 121, 127 and Nicholls 1966, 227). It was iron from the Forest enterprises that supplied the Gloucester foundry, which according to Counsel (1829) had 'been gradually improving to the present time, in the neatness and excellence of its productions, as to be equal, if not superior to any other in Great Britain ... Mr Telford, Mr Smirke, Mr Rickman, and many other scientific persons have visited this establishment, and have expressed their admiration of the various articles produced there. Mr Telford declared to the proprietor, that he had seen all the iron foundries, of any consequence, in Europe, but that he had never met with any castings superior, and very few equal, to those at Gloucester'. There seems every probability that Montague's Gloucester foundry, and his smiths, must have been responsible for much of the architectural ironwork in Gloucester. He was operating during the years when the Spa area, in particular, was being built, which contains many fine examples; but proof is so far elusive. That he supplied the ironwork balconies for what is now 45-53 Pittville Lawn, Cheltenham, is verified in papers relating to the bankruptcy of the builder Millward in 1837, who owed money to William Montague and Charles Church, for ironwork supplied (pers comm Dr S Blake: Cheltenham Museum and Art Gallery).

William Montague died suddenly on 19th August 1847, aged 78, in Leicester. He was a Justice of the Peace for Gloucester, and son of John Montague of Cookham, Berks (obituary *The Gentleman's Magazine* and *Gloucester Journal* 21st August).

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Original sources:

Deeds relating to the Tortworth Estate of Lord Ducie are in the Gloucestershire Record Office (GRO) as detailed in the text.

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