

THE AVON NAVIGATION AND THE INLAND PORT OF BATH

Brenda J. Buchanan

Boats of burden used of old to carry goods from Bristol to Bath, until the river was obstructed by wears, mills, &c.¹

This observation by the late eighteenth-century historian of Bristol, William Barrett, shows the long-standing importance of the River Avon as a means of transport, and suggests that the problems of navigation arose not from any natural difficulties such as the river silting up or meandering in its course, but from the man-made obstacles presented by the construction of weirs to provide power and to facilitate fishing. These alternative uses must have been well-established by the middle decades of the fourteenth century for the removal of such barriers was first ordered in 1372.² In theory public rivers were common highways, maintained in the country by the owners or occupiers of adjacent lands, and in urban areas by the churchwardens of the parishes through which they ran such as that of St Michael in Bath.³ In practice, the importance of this source of power and food was so great that water was impounded for this purpose by barriers which then formed a great hindrance to trade such as that between Bristol and Bath, described in 1411 as involving the carriage of wine, corn, salt, wool, skins of wool, cloth and osiers.⁴

These problems came to be of more than purely local interest in the seventeenth century when the strengthening of the national well-being was sought through improvements which would help to make England strong in relation to her neighbours and competitors, especially the Dutch. This point was made by John Taylor, the waterman and innkeeper, poet and pamphleteer, who urged the removal of obstructions from English rivers in imitation of the 'industrious Netherlanders'. He claimed that:

Thus men would be employ'd, and horse preserv'd
And all the country at cheape rates be serv'd.

and asked the rhetorical question,

Shall private persons for their gainfull use
Ingrosse the water and the land abuse?⁵

Taylor was no taproom theorist for in 1641 he travelled by scull between the Thames and the Severn, and published that year a description of his undertaking. The experience of sculling along the Avon between Bath and Bristol led him to recommend in the *Last Voyage* that locks should be made 'at west Hanham weare, and at Kenisham (with 4 or 5 places more) for the river doth offer God's blessing to the peoples mouthes, if they would but open their lippes to receive them'.⁶

John Taylor's endeavours also gave rise to the suggestion that it might be possible to provide a link between rivers by means of a navigable cut, a far-sighted idea which was developed in the 1650s by Francis Mathew, who again emphasised that if England were to become a great nation she must imitate the then commercially supreme Dutch. He wrote that,

The River Avon of Bristol may be ... made navigable from Bristol to Calne, or to Mamsbury in Wiltshire, and by cutting a graft of five miles, or thereabout ... may take its journey ... from Mamesbury to Leshlade in Oxfordshire, and there salute the river Isis already navigable, which so delivers itself into the Thames, and bring the trade of Ireland, the rich fruits of Cornwall, Devon and Somerset, Mendip Hills, and Wales ... as well as the intervening countryes, to the Cityes of Bristol and London ... and back again at will.⁷

But despite the example of the industrious Dutch, who were much admired for their hydraulic skills; the French, who built canals throughout the seventeenth century; and the Germans, whose Frederick William Canal, named after the Great Elector, was opened in 1669, the practical English concentrated on the more mundane task of making rivers navigable. This was achieved first in the south with schemes such as that for the Wey Navigation from the Thames to Guildford (1651-3), and then later in the north, where the newly awakening economic activity led to undertakings such as the improvement of the River Don that began in 1726. The work on the Bristol Avon in the 1720s was therefore against this trend,⁸ although the delay was in no way due to a lack of interest in the idea.

Throughout the seventeenth century, schemes to improve the navigation of the River Avon were promoted and failed. By Letters Patent from James I in 1619 for example, the Mayor and Corporation of Bath secured the right to make the Avon navigable between their city and Bristol, but nothing came of this, nor of other schemes floated in the 1650s and 1660s.⁹ Perhaps feeling that at the end of the century some special achievement must be recorded, the Corporation of Bath made a sustained effort in

the 1690s to secure an Act of Parliament authorizing the improvement of the Avon. Leave to initiate proceedings in Parliament was granted on 30 December 1695, and on 29 January 1696 the Corporation agreed that one of its members, Mr Robert Chapman, should travel to London to solicit the Bill.¹⁰ The course of this proposal may be traced in the Journal of the House of Commons. After the second reading there was a very close division of the House, with 81 votes for the yeas and 74 for the noes. The Bill was then committed to thirty-eight Members of Parliament (including Lord Pawlet as a rare Somerset peer), to which number could be added all those serving for the counties of Somerset, Wiltshire and Gloucestershire. Petitions from the region began to flow in, twenty in all. These are doubly interesting, both as evidence of the enthusiasm with which the parliamentary procedures, only fully established with the accession of William and Mary in 1689, were now being embraced, and as an indication of the conflicting interests locked in battle. Opponents of the Bill ranged from the gentry and farmers who feared for the value of their land and of their goods at market, to the owners of six of the mills on the river (producing dye-woods, grist and paper, and fulling cloth), who feared for their livelihood, as did the bakers of Bristol. The trading interests were in favour, as was shown in petitions from (in the order received), Warminster, Corsham, Chippenham, Calne, Devizes, Bradford, Trowbridge, Frome, Phillips-Norton, Bristol and the parts of Gloucestershire near Bath. But the old vested interests won and the proposals fizzled out.¹¹

However the Corporation of Bath succeeded in promoting another Bill, which reached the statute books in 1712 (10 Anne c.2). Their success in securing this legislation may be interpreted as part of the shift in influence beginning to take place as the towns and ports, so dependent on the development of transport systems, asserted themselves against those whose interests lay in maintaining the *status quo*, like the old landed order and the millowners. The Act shows the extent to which the fortunes of Bath, especially as a growing fashionable resort, were felt to be tied up with the facilities provided by both the river and the roads, for the preamble states that the opening of a river passage between Bath and Hanham Mills near Bristol will be

very beneficial to Trade, commodious and convenient for the Persons of Quality and Strangers (whose Resort thither is the principal Support of the said City of Bath), advantageous to the Poor, and convenient for the carriage of Free-stone, Wood, Timber, and other Goods and Merchandizes, to and from the said Cities and ports

adjacent, and will very much tend to the employing and increase of Watermen and Seamen, and be a means to preserve the Highways near and leading to the said City of Bath (which formerly being made ruinous and almost impassable are now repairing at a very great Charge).

But the 'new order' remained somewhat diffident about expressing its influence, perhaps because Bath Council's corporate status made it difficult for it to act decisively in matters such as the essential negotiations with riverside landowners. That problem and the continuing opposition of millers, farmers, maltsters and road carriers, as well as of those dependent on the resort who felt that the promised 'great Concourse of People' might be detrimental to the well-being of the aristocratic visitors, meant that the Council found itself unable to capitalize on the legislation it had secured. It was therefore not until these powers were handed over to a group of independent and entrepreneurially-minded proprietors in the mid-1720s that the improvement of the River Avon began.

On 17 June 1724 the Corporation agreed to grant the powers conferred by the act of 1712 for making the Avon navigable from Bath to Hanham's Mill to a new body of proprietors.¹² They met in Bath on 31 December 1724 and appointed as their treasurers Dr Charles Bave (a Bath physician), Thomas Attwood (plumber and glazier of Bath) and Ralph Allen (of whom more later). Their assistants were to be Thomas Tyndall (a Bristol merchant and shipowner who had established logwood mills at Swineford), Milo Smith (a stone quarrier, later bought out by Ralph Allen), Francis Bave (brother of Charles and a Bath apothecary), and John Hobbs (a Bristol timber merchant).¹³ The last-named is often credited with the leading role in this enterprise,¹⁴ but that judgement may give him more credit than he deserves. John Hobbs certainly had an eye to the house-building market in Bath, and he also seized the opportunity in 1725 to contract to provide timber for the locks, but by November of that year he was already falling behind with his dues, and he had died by the early 1730s. He was replaced by Joseph Jones, another Bristol timber merchant, so the Bristol connection remained a small but important part of the proprietorship. As well as Hobbs and Jones, it included two copper manufacturers, Robert Coster of the Bristol family firm and Dr John Lane, a lawyer concerned with works in Swansea; John Hickes, an African trader; James Hardwick, who later negotiated with the riverside owners and may have been an attorney; and Thomas Tyndall, already noted. The leading representatives of the

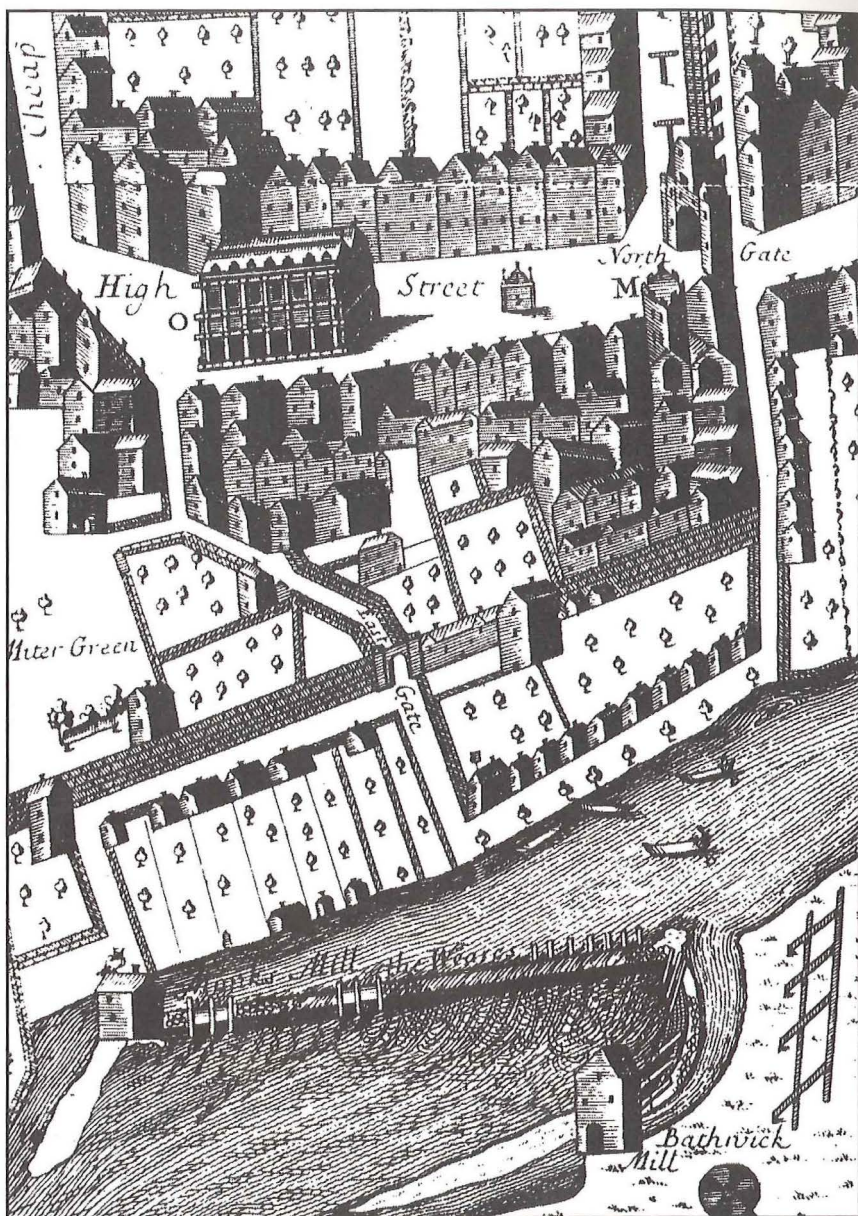
Bath interest included its Members of Parliament, Field Marshal Wade and John Codrington, and leaders of its local aristocracy, the Duke of Beaufort and his brother Lord Noel Somerset. They, together with three other gentlemen, signed the deeds of conveyance from Bath Council in March 1725.¹⁵ Despite the importance of these men, and of those making up the Bristol group, the proprietors came to be dominated by Ralph Allen, who was not only an initiator of the venture but was also of continuing significance as its chief treasurer. He was a successful Bath entrepreneur with a lucrative control of the mail by-passing London. To this source of profit must be added his stone quarries whose market stood to be extended beyond Bath by the improved navigability of the Avon, in which he had therefore a considerable personal interest.

The thirty-two shares were initially limited to one per proprietor, with capital to be called up as work on the Avon progressed. This would have limited Allen's influence, but he overcame the restriction in an ingenious manner. From the surviving documents it is possible to show that he also enrolled as proprietors his wife Elizabeth, mother Gertrude, nephew Philip, sister-in-law Sarah Hudson, and brothers-in-law Anthony Roderick Buckeridge and Charles Holder. When the last-named withdrew, that share was taken over by Ralph's brother Philip, and on his mother's death her share went to his father.¹⁶

As has been noted, Ralph Allen was appointed one of several treasurers at the first meeting of the co-partners on 31 December 1724. But his seniority was demonstrated at the next meeting on 1 January 1725, when it was decided that a newly-purchased iron chest should be 'lodged in ye poste offis or in ye dwelling hous of Mr Ralph Allin as he Shall find moste Convenient'. The iron chest deserves mention for it shows how finances were handled in this region for much of the eighteenth century. When the proprietors answered a call for funds in September 1725 for example, £420 was 'put in the Chest' as part of the sum of at least £12,000 which passed through Allen's hands in the first ten years of the venture. The image of his private and public affairs being funded from many such coffers is not fanciful. His biographer Benjamin Boyce writes that the architect John Wood's fears about the financing of the great mansion of Prior Park in the mid-1730s were lulled when 'Allen led him into the room where he kept his money and opened chest after chest full of guineas'. Boyce feels this story to be 'not a little improbable', but the evidence from the minutes of the Avon Navigation suggests the likely accuracy of Wood's observation, although the chests may have contained more than Allen's personal reserves.¹⁷

In addition to the capital sum invested by the proprietors, Ralph Allen also had responsibility for handling the revenue from the tolls, authorized by the Act of 1712 and levied on goods and passengers carried by vessels using the improved River Avon. In the 1730s these averaged over £700 per year.¹⁸ The reward for handling such current funds was the opportunity to put them also to private use, and although there is no suggestion of malpractice on Ralph Allen's part, others had lower standards, as was discovered in 1786 after the deaths of the then joint treasurers, Leonard Coward, linen draper, and Richard Attwood, plumber.¹⁹ This experience notwithstanding, the tolls levied on users of the Navigation provided a steady source of income, above £1,000 per year in the later 1760s and 1780s, and early 1790s. But although efficiently run the concern remained a local one, with the proprietors deaf to the pleas for an extension towards London which surfaced intermittently, especially from the Bristol merchants anxious to extend their area of trade. They had no success until the early 1790s when, due to the easier investment conditions of those years and the contagion of the 'canal mania', the Kennet & Avon, Somersetshire Coal, and Dorset & Somerset Canals were all promoted in moves which are however beyond our present scope.

Meanwhile, having called up the first round of subscriptions, the proprietors quickly embarked upon their task of making the river navigable. The weir at Pulteney Bridge was to mark the limit of their efforts, and although this structure has since been rebuilt it still provides a reminder of the barriers of earlier times. Two mills formerly operated here, one on the abbey and one on the Bathwick side, both drawing water from above the dam by means of leats or culverts in a pattern which was repeated at intervals along the course of the river. The traditional response to such weirs had been to haul boats around the obstruction, or to wait until millers were willing to release a 'flash' or flush of water by removing paddles set between stakes of wood (such as may possibly be seen in fig. 1), to equalize levels. Both methods were unsatisfactory and the engineering solution adopted on this and other Navigations was to by-pass the weirs by the construction of lateral cuts, where vessels could be held securely in pound locks whilst water levels were adjusted. The extent of the problem facing the proprietors may be seen in fig. 2, which shows the length of the river concerned. The Avon is tidal to Hanham, but from that point to Bath, cuts and locks had to be made to negotiate the following changes in waterlevel: Hanham (a few inches); Keynsham (6ft 10ins); Swineford (3ft 1in); Saltford (3ft 10ins); Kelston (3ft 1in); and Weston (9ft 3ins).



1. Detail from Joseph Gilmore's *Plan*, 1694, showing the weir (possibly with a flash lock) which was to mark the upper limit of the Avon Navigation.



2. The River Avon made navigable to Bath, 1724-27. (From Archibald Robertson, *A Topographical Survey of the Great Road from London to Bath and Bristol* (1792), plate 11)

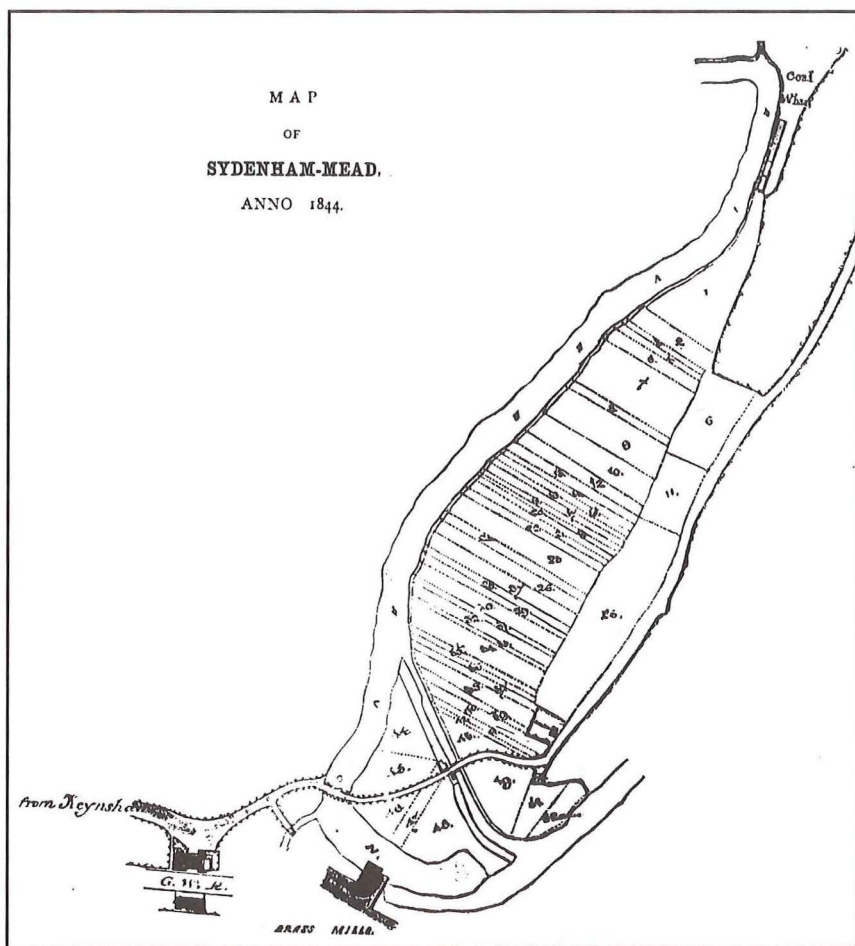
At their meetings in March and April 1725 the proprietors agreed to employ John Hoare of Newbury in the 'Direction and Chief management of the Works', and they wrote asking him to bring 'Proper Instrumts ... for taking of a Thorough Survey of the River. To mark out all the Grounds wch will be anyway made use of in this undertaking and to prepare an Estimate of the whole Expence'. He was offered 9 guineas per week for his attendance and journeyings, for which two days per week were allowed. In recognition of the fact that after his successful work on the Kennet Navigation (1718-23) John Hoare's expertise was much in demand, it was agreed that his assistant Mr Downs should be in charge in his absence, thus establishing Hoare as an early consulting engineer.²⁰ Work was to start first at Hanham Mill, for which timber was to be purchased by John Hobbs, together with a boat or barge of 15 to 20 tons for the 'Service of the Works'. Edward Marchant was to be chief mason there, and to do any other 'Casual Business which may be required of him at the Lime Kilns, Quarrys, Locks &c For two Guineas a Week during his attendance'. In May 1725 the proprietors supported an experiment to determine the best way of raising heavy materials, by crane or by haulage. They ordered 'that one Tackle or Winless be put up and made use of at the Cut by Hanham's Mills and that the Sloptes now made Use of in that Place for the Dispatch of that Work be Likewise Continued that it may by Experience appear which of these Methods is most Expeditious and Serviceable to the Undertaking'. The proprietors were clearly anxious to start securing some revenue from the tolls as soon as possible, for on 5 October 1725 they resolved that 'the lock at Hanham Mills be open'd with all Expedition and that fourpence p Tun be demanded for all goods passing through the said Lock'. They were authorized to charge 5s per ton and 6d per person on the whole Navigation, so 4d per ton would be a fair charge for a very limited service.

Hanham was within Bristol's rather than Bath's sphere of influence. Its mills mentioned above supplied that market with flour; from 1698 the Bristol Water Company piped and pumped water from this site to Crews Hole and thence to a reservoir at Lawrence Hill, helping to provide for the city for a century; and several wealthy Bristol merchants settled here, including from the 1630s the Creswick(e)s at Hanham Court.²¹ This litigious family and other landowners created difficulties for the proprietors, which show that in addition to the engineering challenges they also had to face problems arising from the need to acquire land for locks, wharves, bridges and watercourses. To help resolve these problems however they were able to look for advice to certain special

commissioners, named in the original Act of Parliament. These were all men of substance in the region, whose number could be supplemented by further nominees of similar standing in place of those who had died, and whose function was to adjudicate on the value of property taken or damaged. It is a measure of the importance attributed to this function that forty-five eminent gentleman attended the first meeting on 23 April 1725. The list from which they were drawn included the Duke of Beaufort, the mayors of Bristol and Bath, and well-established country gentlemen such as Henry Creswick Esq. of Hanham. By 22 November 1725 he had made known his objections to what amounted to the compulsory purchase of three-quarters of an acre of his land in Sydenham Mead, for the purpose of building a wharf at Keynsham. The undertakers of the Navigation decided that a legal instrument for conveying this property must be speedily engrossed, so that the land could be included in the commissioners' inquisition into all the difficult cases, which was due to be held. The dispute was resolved by this means, but had there been no system of arbitration, established by Act of Parliament and administered by social equals, to which both landowners and undertakers could appeal, then the work on the Avon Navigation would have proceeded much more slowly.

The cut which was eventually made through disputed land at Sydenham Mead is shown in fig. 3. This section of an estate map also shows the great brass mills at Keynsham, established in 1708, together with the weir which allowed water to be diverted to service the eight undershot wheels that supplied power to the works.²² This was the second lock to be tackled by the proprietors, and here the engineering problems were exacerbated by flooding. On 5 October 1725 the Committee were presented with a letter sent on 18 September on their behalf by Thomas Attwood, Ralph Allen and Francis Bave to Mr Hoare of Newbury, explaining that:

The Water breaks in so fast upon the Low part of our Work at Keynsham that there is an absolute Necessity for the screw or some other Engine to be Erected at that Place. Mr Downs's letter will acquaint you with the Draught of the Three Common Pumps that are now upon that Place wth his Sentements of the additionall helps that is Necessary for the Draining of the Work, but that no disappointment may retard an affair of this Consequence we have sent Mr Marchant on Purpose with this letter who will acquaint you fully with the manner of the obstruction, advise with and be directed by you for the Imediat removall of it, and as the works in that Cut are now in



3. Estate map of Sydenham Mead, 1844, showing the weir serving the brass mills and the cut through private property owned in part by the Creswick family. (From H.T. Ellacombe, *History of the Parish of Bitton* (Exeter, 1883), plate vi)

considerable forwardness we must desire that you will soon be with us to direct ye finishing of that and Hanhams Lock, but if your affairs upon the Newbury River will not admit of your speedy attendance here, we must desire you to give Mr Marchant full directions for his Proceeding til we can have your Personal Assistance that our Undertaking may not Suffer by any Unnecessary delays.

[*A postscript notes:*] We hear that there are now some Screw Engines upon the Newbury River and not in use, if there shou'd be any that would be of Service to us we must desire your assistance for a reasonable Purchass, this appears to us the Speediest Method.

On 1 November the Committee ordered that Mr Hoare should give instructions 'to Mr Padmore for a Draught of the Gates to be erected at Keynsham', and asked for a review of the siting of the wharf at Keynsham, which they thought inconvenient. This may well have been because of the then still unresolved difficulties caused by Henry Creswick. Perhaps it was these planning uncertainties, plus the flooding at the Keynsham Lock, together with the onset of winter, that caused the Committee to order on 9 November 1725 that 'the Whole Work be Suspended till a proper Season offers the next Spring and that Mr Hoare or Mr Downs do forthwith make a Draft of the River from Swinford to Bath and make out proper Places at Swinford and Bath for the Wharfs to be made there'.

Upstream of Keynsham the mills at Bitton, mid-way between Bristol and Bath, presented lesser problems because they were sited on the River Boyd rather than the Avon. Although only a small tributary of the main river it provided power for several undertakings, most notably the Bitton Mill brass works. This arrangement meant there was no weir across the Avon requiring the construction of a lock; however a wharf built for the shipment of goods drew the mills of the Golden Valley into the network using the Navigation. Bitton is also of more general interest because from 1758 to 1765 the architect John Wood the younger rented a house here, situated between the church and the Avon, and called The Rectory. There are intriguing hints that changes he made here anticipated some of his later work at, for example, the Upper Assembly Rooms in Bath. Despite the attractions of the village, and its location on the turnpike road between Bath and Bristol, it is difficult to see why Wood chose to live there. There was a slight professional link as his father, John Wood the elder, had been associated with the construction of the Avon Navigation, though probably without the responsibilities that have sometimes been claimed for him. Payments 'for diging' in the middle months of 1727 for example show a concern with manual work, at a time when the Bristol engineer John Padmore was through his technical skills playing an important part in the execution of the 'grand design'.²³ Wood the younger may however have been drawn by a longer-standing connection, arising from the origins of the family. These have always been a mystery, and it used to be suggested that Wood the elder came from Yorkshire or Cheshire. It now seems that his father

George and a brother worked for him in Bath, suggesting a more local if still unspecified background. Firm evidence is lacking, but it may be significant that the Bitton parish registers from the 1620s to nearly 1720 show entries relating to a Wood family, including as a matter of particular interest a George Wood, whose daughter was baptized in 1674.²⁴ Perhaps like other skilled craftsmen they moved from the countryside in the early eighteenth century, into an urban market hungry for their talents.

After the suspension of activities other than surveying in November 1725, work was resumed in the following spring and a lock and wharf were soon underway at Swineford. Here the mills causing the obstruction were owned by Coster's Copper Company, and progress was eased by the fact that a family member of this partnership, Robert Coster, was also a proprietor of the Navigation. Costers had taken over a 'double tucking mill' in 1709, adapting it to function as a rolling mill for the company which later became the Joseph Percival & Copper Company, and then the John Freeman & Copper Company. In 1840 new premises were added under the last-named owners and most of the surviving buildings date from then, having become in turn a lead works, a flock mill and most recently a light engineering plant.

It is entirely typical of the manufacturing units along the whole line of the river that buildings should be modified and their function changed over the years. In the approaches to Saltford, for example, a leather mill on the south or Somerset side of the river had been transformed into a paper mill before the premises were acquired in the late 1780s by the Bristol Brass Company, possibly in order to secure the water rights across the whole river. This was desirable because their mill, on the northern or Gloucestershire side, which had been a fulling mill before becoming a copper and brass battery mill, had substantial power requirements. Battery work stopped here in the 1840s but two annealing towers still survive. To by-pass the fine curving weir the Saltford lock was built on the Somerset bank of the river. The papermaker's house survives as *The Jolly Sailor Inn*. Further upstream, at the other end of the village, the now-restored brass battery mill remained in operation in the first quarter of the twentieth century, sheet brass being rolled here in the 1920s. The by-passing of its weir led to the building of Kelston Lock on the Gloucestershire side, after which the route goes upstream to Bath, past the villages of Weston and Twerton.

On the western outskirts of Bath, river traffic was impeded by two weirs which served mills engaged in the textile and metals industries, at Weston on the north bank and Twerton on the south. The proprietors of the Navigation decided on a bold straight cut on the Weston side, which

isolated a pocket of land in the course of by-passing the weirs. A small bridge still gives access to what became known as Dutch Island by its association with the continental workers employed in the manufacture of copper and brass at the nearby Weston Mill. By 1813 edge-tools were being produced there, and by 1840 a logwood mill had been established. Later however this became the site of one of the major cloth mills which contributed so much to Bath's prosperity in the nineteenth and first part of the twentieth century, the others being at Twerton.²⁵

The completion of the Navigation at the end of 1727 was marked by the building of a quay downstream of the old Bath Bridge, on the town side of the river, though this location was only chosen after serious consideration had been given to other locations upstream of the bridge. For some years from 1629 a site was reserved for the construction of a harbour when the Avon was made passable, on the town side of the river by the ditch (marked by a line of trees on the front cover illustration) above Bath Bridge. In the 1720s a quay by the present Recreation Ground was considered but there were obvious disadvantages in requiring vessels to sail under the bridge, although Ralph Allen operated his own wharf at nearby Dolemeads, to which, from 1731, stone was brought by the tramway from his mines at Combe Down. That for the early building of Bath had then only to be taken across the river to Monks Mill and rolled up a sloping road made for the purpose. The Avon Navigation quay was finally completed in 1729 below Bath Bridge. John Wood observed that the 'Key ... a large Terrass ... extending four hundred and eighty three Feet in Length, by ninety seven Feet in Breadth, in one Part, contains eleven Houses', presumably warehouses.²⁶

The system of locks, cuts and wharves was now complete, and the only other major works of construction concerned the New Bridge and the towpath, both of which came after the initial work had been undertaken.

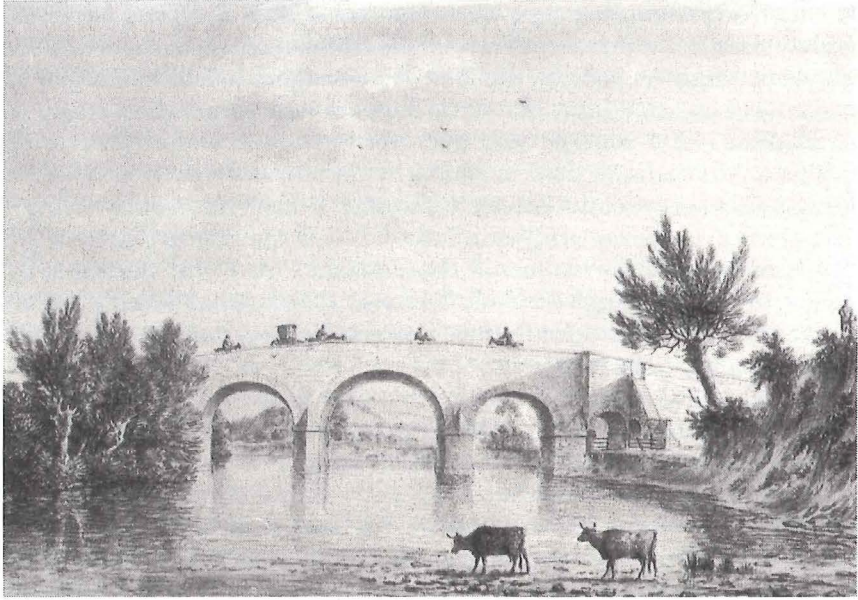
The New Bridge did not form part of the initial plan for the Avon Navigation because the Act of 1712 had allowed the proprietors a choice. They were either to:

preserve and maintain the Ford called Newton's Ford (as it now is) fit and convenient for Horses, Waggon, and other Carriages to pass over, or else build and erect, at their own proper Costs and Expences, a bridge over the said River Avon at or near the said Newton's Ford, fit and convenient for Horses, Waggon, or other Carriages to pass over, and keep the same in repair.

It is not surprising that they chose the first option for fords were still widely used in the eighteenth century, until the increase of the weight of goods in waggons and the number of passengers in coaches began to make them impracticable. But when the river was deepened as an aid to navigation and it became clear that Newton's Ford would have to be bridged, the task fell to the Navigators by the terms of the Act despite the growing tendency for the county authorities to meet this responsibility.²⁷ The upkeep of country bridges in Somerset was sometimes placed in the hands of the turnpike trustees of the road concerned, with costs met by the county, but although the Bath Trust was already established it had as yet no role in this matter for the link between the Upper and Lower Bristol Roads was still to be turnpiked.²⁸

The work of construction was undertaken in the mid-1730s, and on 18 January 1736 a payment of £851 4s 6d to Ralph Allen 'for the Newton Bridge' was recorded in the current Cash Book. This was 'as pr contract' and included stone steps to the bridge, and a wall along it.²⁹ Ralph Allen's Clerk of Works, Richard Jones, later stated in his manuscript autobiography that he had 'built the New Bridge over Newton, which was done in two years to my desire',³⁰ a claim which may come to seem more like an admission in view of the fate which befell the structure in 1774. Incessant rain in early March led to a great flood, such that after four days, as was reported in the *Bath Chronicle* of 17 March 1774, the water was nearly 12 perpendicular feet above the bed of the river, the Avon Street area was submerged, the lower road to Bristol was like a 'rapid river', and the centre arch of the New Bridge at Newton had given way, preventing any passage over it. This disaster affected the Bath Trustees closely because the turnpike link between the Upper and Lower Bristol Roads, in which the Newton Bridge played an essential part, had been established in 1759. They therefore commissioned an investigation by Mr Esau Reynolds of Trowbridge.

Mr Reynold's report, presented in July 1774, reassured the Trustees that the road they had built on either side of the bridge was not a detriment to it but a support. The bridge had fallen because of inherent weaknesses. It 'was not built of a sufficient Breadth, neither was the Height enough from the under side of the Center Arch to the Roadway over it'. The Trustees informed the Proprietors of the Navigation of this report and asked for their proposed plans and costings. They learnt that the Navigators were considering a rebuilding and widening which would extend the bridge to 24 feet across 'from Outside to Outside' and said that if this were undertaken they would build and repair the land anchors, and pay one-third of the rebuilding costs. The offer was rejected.³¹ It has hitherto seemed likely that the Navigators



4. The first Newton Bridge from a watercolour by Anthony Devis, entitled 'In the road from Bath to Bristol'. (Reproduced by courtesy of the Harris Museum and Art Gallery, Preston Borough Council)

preferred instead to repair the original bridge to lesser specifications, especially as in the early 1830s it had to be substantially worked upon and widened.³² However, the paintings of Anthony Devis, exhibited at the Victoria Art Gallery in Bath in December 1993, may throw new light on this problem. Devis was a travelling landscape artist who satisfied the tastes of his patrons with delicate but realistic paintings of their houses and estates, and kept alive his own interests with informal works executed 'in the road'. One of these, undated, shows a bridge 'in the road from Bath to Bristol', for which the first Newton Bridge with its flight of steps (to the right in fig. 4), parapet and high central arch, essential for the passage of boats but prejudicial to its stability, seems the most fitting candidate.³³ Indeed, once this link has been suggested it would seem to follow that John Wood's description of the bridge in the mid-eighteenth century as spanning the river with three arches, of which the height of the middle one above the approach roads rendered the whole not only dangerous but also 'the shadow of a good Design ignorantly applied',³⁴



5. The North Parade, Bath, showing men hauling a barge on the River Avon. Dated 1773, this tinted etching is one of a set of eight by John Robert Cozens. (Reproduced by courtesy of the Victoria Art Gallery, Bath & North East Somerset Council)

refers to the first bridge rather than its elegant and surviving replacement. If so, it may be that in the Devis painting we have found the previously unidentified first Newton bridge.

The second work of late construction concerns the creation of a towpath in the early nineteenth century. Before that, movement downstream was generally aided by the current, and upstream by the use of sails to harness the prevailing westerly winds. When that failed, men were roped up to haul the boats. The Act had given the Navigators powers to set out 'Towing Paths and Ways for Men, for haling or drawing of Boats, Barges, Lighters', but the clause included no reference to horses. By chance an illustration of this procedure is included on one of the many paintings of Bath in the eighteenth century (fig. 5), but the only account of it found so far comes from the diary of an American visitor to London in the mid-1730s, who travelled up the river to Twickenham for a fine lunch which included 'Salmon Caut in the river Thams', green peas and a bottle or two of wine. He noted that in the higher reaches the large flat-bottomed barges of about 120 feet or longer had:

a mast About 30 feet long Situated Pretty nigh the middle of the Vessel, at the top of which there is a ring through which they reave the rope and fasten it to Something at the stern. The other End goes to the Shore; it is about 100 faddom long. By this rope men with Sort of Collers made on purpose, which goes under one Arm and over t'other and fastened to the rope, pull the boat along. To Some of these Barges they have 16 or 18 men, to others not more than 6, and, when the[y] Come to a Certain hight where the stream runs too strong for the men, they Hire horses to Draw in the place of men.³⁵

But on the Avon that alternative was not available until the passing of the amendment Act of 1807 (47 Geo III c.129). The advantages seem obvious, and were set out by the proprietors of the Kennet & Avon Canal Company (not those of the Navigation who remained opposed to the innovation), in a petition of February of that year. They argued that:

if power was given to make a Horse-towing Path from Bath to Hanham's Mills, to haul Boats, Lighters, and other Vessels, with horses and other beasts, the said river would be navigated with greater expedition, certainty and convenience, and at less expense.³⁶

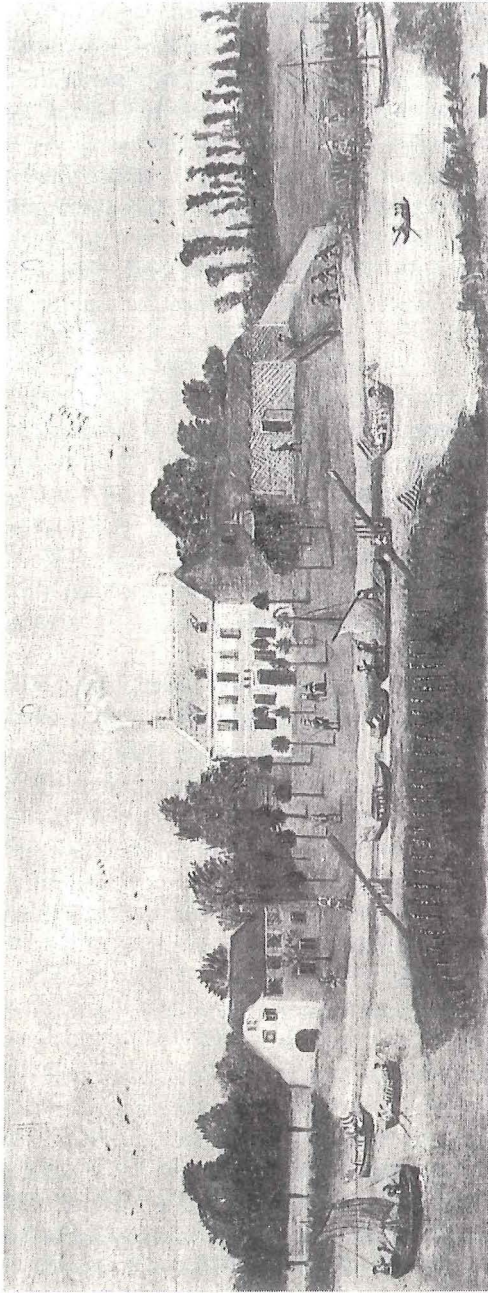
It would also of course confer an advantage on their own special concern, the Kennet & Avon Canal, built over the years 1794-1810 in order to create a great west-east link between the navigable rivers Avon and Kennet, and so between Bristol and London.

The Commons Journal shows that the petition was referred to a small committee of the House which included Mr Charles Dundas, MP, JP, and Chairman of the Kennet & Avon Canal Company. But despite this favourable circumstance all did not go smoothly, for on 24 April 1807 an opposing petition was received which showed that the local landowners and major manufacturers based on the river had doubts about the Bill. The former feared that the heavy horses would have an adverse effect on their land, and asked that their fences should continue to the water's edge although this would require them to be jumped – a proposal not as improbable as it might seem in view of Constable's portrayal of the *Leaping Horses* of the River Stour. The manufacturers united in opposition included 'Messrs Harfords & Bristol Brass Company, Messrs John Freeman & Copper Company of the said City of Bristol, Messrs Pollard, Jackson & Schimmelpenning of the said City of Bristol, Drysalters, Messrs Francis Naish, Clothier, and Ebenezer Browne the yr, Clothier, both of the parish

of Twerton, Somerset, and Richard Sheldon Collicott, of the parish of Weston, said county, Clothier'. Despite these representations the Act received the Royal Assent on 14 August 1807, but only after the Commons had accepted two amendments introduced by the Lords. The first stated that the horse towing path was not to be made or used until the Kennet & Avon Canal had been completed and made navigable between Newbury and Bath; and the second said that the proprietors were not to make use of any part of any building on the line of the new towing path without first purchasing the whole, if the owners wished. And so, on the Avon Navigation, the 'strain, force and pain' of man haulage at last gave way to horse power.³⁷

The goods hauled on the river in one-masted barges of 40 to 140 tons at such severe personal cost included copper and brass from Cornwall and South Wales for the manufacturing firms mentioned, with the finished products carried back to Bristol; building materials such as iron and slate from Wales, pennant sandstone paving slabs from Bristol, and deal from the Baltic and Scandinavian countries; ironware for cooking utensils and kitchen ranges from Coalbrookdale; coal from South Wales; grain and other food from the Midlands; and luxuries such as wine, chiefly from the Iberian Peninsula. That the commodities carried were for domestic as well as commercial consumption is shown by Dr Charles Bave's cargo of port wine from Lisbon in 1731, bought through the Bristol merchant John Lason.³⁸ But the Avon Navigation acted as more than a conduit by which bulky goods could be brought upriver more cheaply from coastal and international sources, it also allowed the inland city of Bath to act as a true port by extending the markets to which its goods could be despatched by water. This meant for example that for eight decades before the Kennet & Avon Canal was built, the splendid freestone used in many of the public buildings and great houses of the eighteenth century could be carried away by river. Charges were imposed on goods according to the tolls set out in the Act. They were not to exceed 5s per ton from Hanham Mills to Bath, and to be modified proportionately for 'any greater or lesser Weight or Distance of Place'.

The comparable rate for passengers was 6d, a provision which serves to remind us that the Navigation was conceived as a way of providing transport for passengers as well as goods. The superior speed offered by stage coaches from the later decades of the eighteenth century and railways from the 1830s, came to detract from the service offered by rivers and canals, but in the early years of the Avon Navigation an important form of transport was provided for the public. The person credited with



6. 'A View of the Jolly Sailor at Saltford Weir and Lock' on the Avon Navigation; English Provincial School, c.1728, oil on panel. (Reproduced by courtesy of A. Csaky)

making the first journey between Bristol and Bath was Lord Falmouth, on 3 January 1728, the works having been completed late in 1727. The Navigation received not only the noble but also the royal seal of approval a few months later when on 9 May 1728 the Princess Amelia, daughter of George II, whose dislike of road transport was well known, made the journey to Bristol in what was described as a 'roomy wherry', decorated for the occasion. Indeed, the smooth journey offered by the waterway seems to have been so attractive that even before the whole Navigation was finished, river boats were plying their trade on completed sections. *Farley's Newspaper* of 2 September 1727 for example, records an accident to 'the new Passage Boat between Bristol and Twerton'.³⁹

We are fortunate that something of the bustle and excitement of the early days survives in a painting of naïve charm which hung for more than 260 years at *The Jolly Sailor* inn, formerly the miller's house, at Saltford weir. As fig. 6 shows, the artist has attempted to depict not only the miller's house with its sloping lawn, but also the lock with its steps up from the river and the keeper working the downstream gate. The level of activity on the river suggests that the painting dates from at least 1728, when it was fully navigable. On the right, men are shown hauling a vessel into place for the lock, whilst the barge to the left of the picture has the advantage of the wind and the flow of the river, removing the need for manual effort. The flags with their different emblems perhaps identified the various firms which operated regularly. The two boats within the lock are representative of the traffic on the river. A cargo-carrying barge is dragging a smaller one, perhaps bearing blocks of stone, and a passenger boat with its cabin lies aft.⁴⁰ That passengers travelled in comfort is confirmed by an announcement in the *Gloucestershire Journal* of 15 April 1740, that Samuel Tonkins had added three new boats to his stock, 'with a house on each, with sash windows'. Two boats plied daily, the journey took about four hours, and the fare was one shilling. The Tonkins family remained in business for some time, the *Bath & Bristol Guide* of 1755 for example recording that 'Wherries for Pleasuring, and for Bristol, may be had of Mr Tonkins, at the Vernon-Inn, near the Bridge, Bath'.

Despite the success of these early years the proprietors of the Avon Navigation failed to take any interest in the schemes floated between its opening and the construction of the Kennet & Avon Canal at the end of the eighteenth century, to make the river accessible to its higher reaches, to Melksham or Chippenham. This unwillingness to extend their business may be understandable in terms of the welcome financial returns already secured by their waterway monopoly between Bath and Bristol, but in

the long run it meant that the Avon Navigation ceased to have a future as an independent body. Control was gradually assumed by the Kennet & Avon Canal Company by the simple expedient of buying up shares as they became available. By 1796 they held a majority, though to their frustration one shareholder held out until the 1860s.

As with all social and economic changes which can be portrayed as operating to the public good as well as providing a private profit, the 'improvements' here described brought disadvantages as well as advantages. The regulation of the river by the introduction of tolls on what had rightly been seen as a public right of way, of the same standing as the King's Highways before the turnpike trusts began to exercise their control over them, enraged some of the poorer members of local society. Not only were the tolls an affront, but the river improvements also allowed little local monopolies to be broken, to the disadvantage of such as the Kingswood colliers who objected strongly to the coal which could now be brought cheaply into the Bath area from across the Severn estuary. And just as there were outbreaks of destructive violence against the apparatus of the turnpike trusts, especially the gates and tollhouses, so also the gates and locks on the river were threatened and attacked. Once again, some of the gentry were known to support these complaints, and it may place Henry Creswick of Hanham's quarrels with the Avon Navigators in a broader perspective if it is noted that a few years later, in 1734, he was obliged to write a letter asserting his innocence of this serious charge. Matters culminated in 1738 with the wrecking of the lock at Saltford, but although the rioters claimed that 300 men had wrought the damage, and that 1,000 were ready to act to stop the transport of coal by water, the movement died down.⁴¹ Perhaps because these structures were less easy to tackle than those on the roads the destruction was neither so great nor so widespread, but this strong opposition serves as a reminder of the human perspective within which all changes to an established order should be viewed.

The completion of the Avon Navigation thus had a profound effect on the life and economy of Bath, challenging long-established markets and local monopolies and opening up the city to the stimulus of new patterns of national and international trade. As William Mathews (or Matthews), publisher of one of the longest and most complete series of directories in the country observed in the first *New Bristol Directory, 1793-4*, the river improvements had established Bath as 'a proper inland Port'.⁴²

Notes

- 1 William Barrett, *The History and Antiquities of the City of Bristol* (Bristol, 1789), pp.53-4.
- 2 Graham Boyes, 'The Legislative History of River Navigation and Canals, 1275-1603', *Journal of the Railway & Canal Historical Society*, Vol. 29, No. 136 (1987), pp.65-78.
- 3 W.T. Jackman, *The Development of Transportation in Modern England* (Cambridge, 1916), Vol.1, pp.22-8, 157-210; Rt. Rev. Bishop Hobhouse, *Churchwardens' Accounts of Croscombe, Pilton, Yatton, Tintinhull, Morebath & St Michael's, Bath, 1349-1560* (1890), pp.xv, 160, 170.
- 4 Boyes, 'Legislative History of River Navigation', p.77.
- 5 Quoted by T.S. Willan, *River Navigation in England, 1600-1750* (Oxford, 1936), p.6; see also his short account of 'Bath and the Navigation of the River Avon', *Proceedings of the Bath & District Branch of the Somerset Archaeology & Natural History Society* (1936), pp.139-40.
- 6 *John Taylor's Last Voyage* (1641), p.4.
- 7 Francis Mathew, *A Mediterranean Passage by Water from London to Bristol ...* (1655), quoted by Jackman, *Development of Transportation*, Vol. 1, pp.186-90.
- 8 Willan, *River Navigation*, pp.11-15.
- 9 John Latimer, *The Annals of Bristol* (Bristol, 1900-08), Vol. 1, The Seventeenth Century, pp.71, 268-9; Willan, *River Navigation*, pp.24-51, also 'Bath and the River Avon', pp.139-40.
- 10 Journal of the House of Commons, Vol. 11, 1693-97, 30 December 1695; Bath Record Office (BRO), Minute Book of Bath Council, Vol. 3, 1684-1711, 29 January 1695/6. Until the reform of the calendar in 1752 the New Year began on Lady Day, 25 March. In the footnotes both styles are shown, but in the text of the article the year is taken as running from 1 January.
- 11 Journal of the House of Commons, Vol. 11, 1693-97. 28 entries relate to this proposal, from 30 December 1695 to 26 January 1696/7.
- 12 BRO, Bath Council Minute Book, Vol. 4, 1711-28, 17 June 1724.
- 13 Public Record Office (PRO), Rail 805, Minute Book of Proprietors of the Avon Navigation, Vol. 1, 1724-27, 31 December 1724.
- 14 See, for example, Kenneth R. Clew, *The Kennet & Avon Canal* (Newton Abbot, 1968, second edition 1973), p.18.
- 15 PRO, Rail 805, Minute Book, Vol. 1. On 16 March 1724/5 it was decided to send the deeds to Oxford to be signed. By omitting to adjust the calendar Clew places this event and the engagement with John Hoare which followed, in 1724 rather than 1725, see *Kennet & Avon*, p.18.
- 16 PRO, Rail 805, Minute Book, Vol. 1, 31 December 1724, 2 February 1724/5, 1 December 1725. Further details of meetings and construction work are from the Minute Books unless stated otherwise.
- 17 Benjamin Boyce, *The Benevolent Man* (Cambridge, Mass., 1967), p.72, n.32.
- 18 See R.S. Neale, *Bath, 1680-1850* (1981), Appendix A, pp.384-90, for the revenue from the Avon Tolls in the eighteenth century.
- 19 Clew, *Kennet & Avon*, pp.21-2.

- 20 It is the view of the eminent civil engineer A.W. Skempton that John Ho(a)re was 'in the first rank among the navigation engineers'; see 'The Engineers of the English River Navigations, 1620-1760', *Transactions of the Newcomen Society*, Vol. 29 (1958), p.46.
- 21 Latimer, *Annals of Bristol*, Vol. 1, pp.468-9. For the Creswickes' lawsuits see W.J. Robinson, *West Country Manors* (Bristol, 1930), pp.82-3.
- 22 Joan Day, *Bristol Brass, a History of the Industry* (Newton Abbot, 1973) provides information on this and other brass and copper mills on the Avon. For an introduction to some of the surviving features and facilities on the former Avon Navigation, see Niall Allsop, *The Kennet & Avon Canal: a User's Guide to the Waterways between Reading and Bristol* (Bath, 1987).
- 23 PRO, Rail 805, Accountant's Records, Journal Vol. 20, 1725-63, fo.27. In his *Essay Towards a Description of Bath* (1749, second edition 1765, reprinted Bath, 1969), p.241, John Wood notes that he used labourers formerly employed on the Chelsea Waterworks for the digging of the Weston Cut, and that the time required was much reduced by their 'real Use of the Spade ... unknown in, or about the City'. In view of the advanced equipment used on this project this is an extraordinary claim, and raises the question of what was meant by the 'real Use of the Spade'. Wood's association with the Navigation was in any case short-lived, for when 'difficulties' arose in relation to that part of the Cut where the lock was to be built, the work of construction was assumed by Edward Marchant and his workmen. A Quaker of Bath, Marchant proved to be a reliable chief mason and contractor for the Navigation. Wood's short contract was terminated in July 1727. On the neglected engineer John Padmore, see R.A. Buchanan & Neil Cossons, *The Industrial Archaeology of the Bristol Region* (Newton Abbot, 1969). In addition to the Avon Navigation he worked on Ralph Allen's tramway and its cranes, the Great Crane for Bristol Docks, the construction of Sea Mills Dock near Bristol, and an 'atmospheric engine' to pump water from Hanham.
- 24 The most recent study, by Tim Mowl & Brian Earnshaw, *John Wood, Architect of Obsession* (Bath, 1988), makes no reference to a possible Bitton connection, but see C.P. Ketchley, 'John Wood the Younger of Bath and Bitton', *The Bath Critic*, Vol. 2, No. 7 (1952), pp.264-5.
- 25 See the article by Nicholas von Behr in this volume.
- 26 I am indebted to Mrs Marta Inskip for details of the 1629 and later transactions re this site. For an assessment of Ralph Allen's tramway, see Buchanan & Cossons, *The Bristol Region*, pp.202-3. For Wood's note on the quay, see his *Description of Bath*, p.331.
- 27 Jackman, *Development of Transportation*, pp.144-6.
- 28 For information on the Bath Trust, see B.J. Buchanan, 'The Evolution of the Turnpike Trusts: lessons from a case study', *Economic History Review*, 2nd series, Vol. 39 (1986), pp.223-43 and 'The Great Bath Road, 1700-1830', *Bath History*, Vol. 4 (1992), pp.71-94.
- 29 PRO, Rail 805, Accountant's Records, Cash Book Vol. 23, 1725-44, fo.49.
- 30 W. Gregory, *Ralph Allen and Prior Park* (Bath, 1886), reproduces this

- manuscript *verbatim*. See particularly p.39. I am grateful to Mr Philip Wooster for this reference.
- 31 Somerset Record Office, D/T/ba, 7, Minute Book, 1770-76. Entries for 2 July, 20 & 27 August, 10 & 17 September 1774. A committee to organize the making of a road each side of the New Bridge was appointed by the Turnpike Trustees on 2 March 1776.
- 32 Bryan Little, *Bath Portrait* (Bath, 1961), p.93; R. Angus Buchanan, 'The Bridges of Bath', *Bath History*, Vol. 3 (1990), pp.1-21.
- 33 The exhibition catalogue entitled *Anthony Devis (1729-1816)* was compiled by Stephen Whittle, Keeper of Fine Art at the Harris Museum and Art Gallery, Preston, Lancashire. I should like to thank Mr Whittle and his colleagues for their advice, especially that the painting may date from the mid-1770s to mid-1780s. It may therefore have been painted just before the bridge collapsed.
- 34 Wood, *Description of Bath*, p.372.
- 35 Robert Hunter Morris, 'An American in London, 1735-1736', diary edited by Beverley McAnear, *Pennsylvania Magazine of History and Biography* (1940), Vol.64, p.200.
- 36 Journal of the House of Commons, Vol. 62, 1806-07, 27 February 1807.
- 37 Willan, *River Navigation in England*, p.99.
- 38 W.E. Minchinton ed., *The Trade of Bristol in the Eighteenth Century* (Bristol, 1957), p.29.
- 39 Latimer, *Annals of Bristol*, Vol. 2, pp.161 & 164.
- 40 For a fuller account of the painting, see Brenda J. Buchanan, 'A View of the Jolly Sailor at Saltford Weir and Lock, near Bristol', *BIAS Journal* (Bristol Industrial Archaeological Society, 1993), Vol. 26, pp.20-1.
- 41 Robert W. Malcolmson, "'A Set of Ungovernable People": the Kingswood colliers in the eighteenth century', in John Brewer & John Styles eds., *An Ungovernable People: the English and their law in the seventeenth and eighteenth centuries* (1980), pp.104-5,114-6; Wood, *Description of Bath*, pp.368-70.
- 42 William Mathews, *The New History, Survey and Description of Bristol ...* (Bristol, 1794), p.33.

Acknowledgements

I should like to acknowledge the help received over the years from archivists at the Public Record Office, and the City Record Offices of Bath and Bristol; curators of the Victoria Art Gallery, Bath; and librarians at the Bath City Library and Bath University Library, especially the staff of the Inter-Library Loan and Graphics Departments at the last-named. And a special word of thanks to Angus Buchanan for sharing yet more field work in good spirits.