

same to a considerable distance. There is also 700 yards of a trackway made along the face of a rock and a wall eight feet thick built to the side next the river to defend it from the same. There is part of a stone weir made across the river of the great stream of Carrigleade, to raise the back-water to a proper height. All the said work is nearly finished; and had the fine weather continued, would have been completed before this.⁶

As a result of this encouraging statement the committee resolved that 'to make and complete a navigation from the end of the present work (at Carrigleade) to the remotest bounds of Knockbodly, being nearly three miles in length, will require a sum of £6,184. 18. 10d.'. Two years later, in November 1769, Semple informed the committee that there were now 4 miles completed, and that a further £4,742 was required to finish the line to Knockbodly.⁷

The activity which resulted in the formation of a private body of undertakers to continue the work of constructing the Grand Canal appears to have stimulated a similar group to apply for legislation to enable them to do the same with the Barrow, for on 22 November 1771 leave was sought to bring in the heads of a bill to do so; but this does not seem to have been enacted.⁸ The work seems to have proceeded in a desultory way under the direction of the Board of Inland Navigation, for in 1787 we find that the secretary of that Board was ordered by the Commons to produce accounts of moneys paid to James Oates and James Delahunte in consequence of the contract for completing and finishing the locks at Clohasty and Aughnagash.⁹

In 1789 another attempt was made to promote a company to complete the navigation. On 11 March of that year a petition was presented to the Commons and read, setting out that the petitioners were willing to undertake the work and finish it within ten years of 1 July 1789 on condition of receiving from parliament aid equivalent to £30,000, or £2,000 per annum for the term of seventeen years. They themselves proposed to provide by subscription a further sum of £30,000.¹⁰ The petitioners annexed to their scheme a plan, which was probably one of the surveys of the river made about 1786 by Colonel Charles Tarrant (later engineer to the Grand Canal Company) and C. Taylor.¹¹ They show the waterway to a scale of 140 yd to 1 in., and are remarkably accurate. One of these plans shows that a canal well away from the river was planned at Goresbridge. Semple and Omer seem to have contemplated a canalized river large enough to take

barges of 70 tons, and they did, in fact, build seven locks and the cuts leading to and from them on this scale before 1790.

At the same time, parliament received a petition from the Barrow boatmen alleging that they were being excluded from the Grand Canal between Monasterevin and Dublin, no boats carrying less than 30 tons burden being allowed on the canal. The boatmen said that they were prepared to accept the exclusion of all boats carrying less than 18 tons, which size boats were the largest that could play on the River Barrow during the summer 'in its present impeded state'. The Grand Canal Company alleged that the reason for excluding small boats was the insufficiency of the water supply.¹²

On 27 April 1789 it was stated that a bill was to be presented to parliament to enable the subscribers to the Barrow company to obtain possession of the river from the bridge of Athy to the tidewater at St Mullins, but this was not brought in. Later in the year, on 9 October, there appeared a detailed report on the navigation with plans by William Chapman, dedicated to the subscribers, and obviously prepared at their direction. He said that the boats then using the navigation were generally from 20 to 40 tons, and some larger, but that his new scheme would involve passing boats of 80 tons. Chapman proposed to have twenty-seven locks in all, nineteen of which were to be new. He estimated the total cost of the navigation at £39,400, but considered that it would certainly fall within £45,000, including a very high value for the land.¹³

The Barrow Navigation Company was incorporated by charter dated 5 May 1790, to complete the navigation. The charter gave the company 'free power and authority' to carry on and complete it by following the channel of the river or by lateral cuts or canals, which, however, should pass through or close to the towns of Carlow, Leighlin bridge and Graiguenamanagh, and also to make all such navigable off-branches as might be necessary. No specific stipulation was made as to the capacity of the navigation, but it is assumed that it was intended that the size laid down by the Board of Inland Navigation should be followed. Under the statute 29 Geo. III, c. 33 (Ir.), 1789, £20,000 in 4 per cent debentures was made available for the purpose.

Between 1790 and 1800 the work went ahead under Chapman's supervision, and it appears that the company agreed to spend, of their own money, £40,000 on condition of receiving the £20,000 loan.¹⁴ By 1790, it was reported, the entire trackway from St Mullins to Athy was finished. The original proposal was to render the river navigable for boats of 15 tons in summer and

30 tons in winter, but in the progress of the work, this was changed in order to enable boats to pass through the navigation from Youghal and Dungarvan to the Grand Canal without transshipping. Twenty-four new locks were designed 80 ft long and 16 ft wide, with 5 ft of water on the sills to admit boats of 80 tons burden. Of these ten were built and four of the original locks were taken down and reconstructed on the revised plan. The present dimensions of the locks, however, show that this scheme was never completed. One lock, indeed, Ballykeenan, the nineteenth, is only 13 ft 8 in. wide.

By 1801 the company was finding itself in financial difficulties and applied to the directors-general for aid. As a result of negotiations a contract was made between the company and the directors-general on 8 February 1803, whereby the former was to complete the navigation to the standard of a 5 ft depth at the driest seasons in consideration of a further grant of £27,500 (half the estimated cost) and certain tolls were to be reduced in consideration of an additional payment of £20,000.¹⁵ These sums, together with a sum of £11,620, half of which was likewise contributed by the directors-general, had been spent on the river up to February 1812, when a further survey indicated that the cost of completion was now £66,000. This survey was prepared by the company's engineer, Humphrey Mitchell, who in giving evidence before the directors-general, in June 1811, put forward a proposal for building a new sea-lock at Drummin Peninsula, 2¾ miles below the existing lock at St Mullins, to cost £10,055.¹⁶ He also intended to adhere to the basis of a 5 ft navigation depth, with a breadth of at least 42 ft water surface.

Having heard the evidence of the directors of the company, William Colvill, William Browne and Peter Digges La Touche, the directors-general agreed to make a new contract releasing them from their former obligations under that of 1803. A grant would be made of half the cost, this being estimated at £53,853. Killaly, who was also consulted, put it at £66,558. They also agreed to pay £5,810, being half the amount by which the company had exceeded their expenditure under the agreement of 1803. The company, in turn, agreed to finish the work within seven years, under a penalty of £12,000, 'or within ten years, in case the progress of the works be retarded by uncommon wet seasons, or extraordinary accident or difficulties'.¹⁷

Eighteen years later, the state of the river was still unsatisfactory. 'The very imperfect state of the navigation, the defectiveness of the works both as to execution and design (those only projected

by Mr Chapman excepted), must consume in their maintenance and repair the greater portion of any revenue arising therefrom'.¹⁸ At that time in dry seasons, 30-ton boats were laid up and trade was carried on in light vessels carrying about 10 tons each and drawing about eighteen inches of water. In 1838 it was said that 'the depth of water from Athy to Carlow is nearly three and a half feet during the summer and five feet in the winter months, being sufficient for boats carrying 50 tons. The principal interruption in the navigation exists between Carlow and St. Mullins, but it is available for boats of from 30 to 40 tons during six months of the year'.¹⁹

In 1841 Thomas Rhodes, the engineer to the Shannon navigation, prepared a plan and survey for a proposed sea-lock below St Mullins, the scheme mentioned by Humphrey Mitchell forty years earlier. Another survey by Christopher Mulvany in August 1853 recommended a similar scheme, but nothing was ever done. It is said that the abandonment of this new sea-lock was owing to the opposition of the barge owners, who would have had to pay extra tolls. Some preliminary work was done, it seems, for there is still a section of uncompleted trackway to be seen below the quay at St Mullins.²⁰

Apart from raising the level of the weir crests, staunching the weirs and dredging at one or two reaches, particularly above Goresbridge, nothing appears to have been accomplished under the 1812 scheme with the exception of the construction of a new lateral cut and lock at Clogrennan (the sixth lock) in 1834 to the designs of Killaly.

In spite of the imperfect state of the navigation, traffic on the river steadily increased. The following table shows the tonnage carried on the river from 1790 to 1877.²¹

| Year | Tons | Year | Tons | Year | Tons |
|------|--------|------|--------|------|--------|
| 1790 | 16,000 | 1815 | 44,588 | 1840 | 75,172 |
| 1795 | 22,412 | 1820 | 41,262 | 1845 | 88,854 |
| 1800 | 19,828 | 1830 | 58,100 | 1877 | 56,000 |
| 1805 | 23,834 | 1835 | 66,084 | | |

The traffic was very evenly divided, almost the same quantity moving up and down the river. The passage boats were not a success, nor were the hotels at Carlow and Graiguenamanagh, and the last passage boats from Carlow to Athy ceased to operate in 1809.

A great deal of the traffic was in grain or grain products, as the breakdown of traffic in 1835 shown on the next page indicates.²²

| <i>Up River</i> | | <i>Down River</i> | |
|--------------------------------|-------------|----------------------------|-------------|
| | <i>Tons</i> | | <i>Tons</i> |
| Merchandise | 3,444 | Merchandise | 4,021 |
| Corn, meal, malt and flour | 13,946 | Corn, meal, malt and flour | 17,084 |
| Imported coal | 2,660 | Irish coal | 3,903 |
| Timber | 2,722 | Irish culm | 2,727 |
| Flags | 8,878 | Turf | 4,253 |
| Slates and tiles | 1,244 | Manure | 749 |
| | | Limestone | 453 |
| Total | 32,894 | Total | 33,190 |
| <i>Grand Total 66,084 tons</i> | | | |

In the year 1835 the number of mills in Ireland rose to 1,882 and quite a number had sprung up along the Barrow where both water-power and transport were available, but soon many were forced to close down because, with their antiquated system of grinding, they could not compete with the cheap American flour which was flooding the country. The shipping companies were glad to bring the flour to Europe at very cheap rates because it provided useful ballast. Some of these deserted mills were later adapted as malt-houses.

The Barrow Navigation Company managed to pay an average dividend of 2½ per cent over the years, and in 1871, a dividend of 6 per cent was declared. In 1879, the directors decided to limit their trading to the river section south of Athy, because they found that they were paying the Grand Canal Company so much in tolls that it was no longer profitable to operate the service to Dublin.²³

The Barrow was one of the rivers considered by the Viceregal Commission on Drainage under the chairmanship of Lord Castle-town in 1885, and again in 1886 by the Allport Commission on Irish Public Works. Both these commissions deplored the amount of flooding in the Barrow valley, which they attributed largely to the navigation works. The Barrow drainage bills of 1888 and 1889 failed to become statutes, and nothing was done to relieve the flooding.

The Grand Canal Act, 1894, 57 & 58 Vict., c. 26, transferred the whole undertaking of the Barrow Navigation Company to the Grand Canal Company for the sum of £30,000, with an additional sum of £2,500 for movable plant, and thereafter the river became part of the canal system.

Sir Alexander Binnie, chairman of the 1905 Royal Commission

on Arterial Drainage, suggested in evidence before the 1906 Commission on Canals and Waterways that, as the navigation on the lower part of the river was unremunerative, it should be abandoned in order to facilitate drainage, and that a parallel canal should be constructed if it could be proved necessary.

In 1922 Professor Purcell, who surveyed the navigation on behalf of the Canals and Inland Waterways Commission, found no appreciable improvement in the state of the river from that reported by Mulvany in 1853.²⁴ Lt. Col. A. T. S. Magan, a director of Minch Norton, gave evidence before this commission. He said that his firm had maltings at Rathangan, Monasterevin, Athy, Bagenalstown, Barracore, Portarlinton, Levinstown, Milford and Ballykelly and that they were using the navigation to the extent of about 16,000 to 20,000 tons a year, but that they were experiencing frequent difficulties and delays because of its bad state. This firm still operates maltings at the first five places mentioned above, but for some years now they have used rail and road transport.

A drainage scheme, which was carried out by the Board of Works and completed in 1935, caused damage to the navigation and, following the hearing of a claim for compensation, the Grand Canal Company was awarded over £18,000 for temporary and permanent damage. The scheme, which caused a quick run-off of water from the upper catchment area, aggravated the difficulties of maintaining the navigation. The Grand Canal Company placed an 80 hp tug on the river to assist the barges during the winter floods, and over seventy winches with wire ropes were placed along the banks, but the operation of a regular service south of Carlow was found to be unprofitable and unsatisfactory and most of the traffic was transhipped at Carlow and forwarded by road. In 1950, as part of the Grand Canal Company's system, the navigation was transferred to CIE, who have continued to maintain the locks and carry out periodic dredging.

The financial history of this waterway can be shortly stated. Between 1759 and 1790, the expenditure through the Navigation Board, from public funds, was £23,500. In 1790 the Barrow Navigation Company was formed and received a loan of £20,000 in 4 per cent debentures on condition that it should raise another £40,000 from private sources. After expending £62,881, including the issue of £20,000, the work was still unfinished, and the directors-general agreed to advance a further £47,500 if the company raised £27,500. These sums, together with that of £11,620, half of which came from the directors-general, had been expended up to February 1812, and an estimate of the cost of completion at

that date was a further £66,000. The total outlay, then, up to that date was £239,000, or £7,029 per mile of navigation. The profits in 1812, according to the return made, were £2,589, or £76 per mile per annum, not including interest on capital subscribed by individuals or on loans obtained from the government. This represented £129,810 of public funds and £109,190 of private subscriptions. In 1922, it was estimated that the cost of making the river navigable for boats of the dimensions of those used on the Grand Canal, at all seasons, would be £60,000, including a new sea-lock.²⁵

The Nore Navigation

Like the Barrow, which it joins in county Kilkenny, south of St Mullins, the River Nore has its source in the Slieve Bloom mountains, to the west of Borris-in-Ossory and between that village and Roscrea, on the Leix-Tipperary border. Flowing north-east, the river passes through Castletown, near Mountrath, and then turns south, passing close to Abbeyleix and Durrow. Entering the county Kilkenny and skirting Ballyragget, it reaches the city of Kilkenny. Thereafter, its course continues southwards, past Bennettsbridge and Thomastown, and so on to Inistioge which marks the upstream limit of the tidal flow. Seven miles beyond Inistioge, the Nore joins the Barrow on its way to the sea in Waterford harbour.

In the course of its descent to the sea the river passes through a country of low varied hills to Ballyragget, but as it approaches Kilkenny the banks become higher. From an eminence called the Eagle Rock, nearly opposite the mouth of its tributary, the Dinan, there is a most extensive view of the surrounding countryside. Again, from the eastern bank above Kilkenny the view of the city is most striking. Below the city the banks are steep, and south of Bennettsbridge the Nore is joined by another stream, the King's River. Passing by the demesne of Mount Juliet, the whole of its course from here to Thomastown and Inistioge is most picturesque, the scenery being varied by ruined castles, the abbey of Jerpoint, and steeply wooded hills.

Like many other Irish rivers the Nore has always been subject to great floods. The bridge of Kilkenny was carried away in 1447 and again in 1564. On 2 October 1763 both the Kilkenny bridges were destroyed, and the damage done by the floods was estimated at £11,000. Several lives were lost and as the river rose in the night, Bennettsbridge and that of Thomastown were thrown

down, and two arches of Inistioge bridge were split; parliament granted the sum of £5,417 for the rebuilding of John's and Green's bridges, and the rest of the damage was repaired at the expense of county Kilkenny. Another flood did much damage in 1788. It began on the afternoon of 12 November; at Inistioge it rose about 15 ft above the normal level, and rose 5 ft in an hour after the bridge of Thomastown fell. There was a similar occurrence in 1797, this time with less disastrous results.²⁶

The idea of establishing a navigation from Kilkenny to the sea had always exercised the minds of those interested in canal projects. The tide flowing as high as Inistioge, with a 15-ft rise on springs, stimulated the notion that Kilkenny might be rendered accessible to coasting vessels. The fact that the Nore received specific mention in the statute 28 Hen. VIII, c. 22 (Ir.), 1537 (relating to the removal of weirs), shows that the river was regarded as being of importance as a navigable highway at that time.

An entry appears in the Book of Ancient Leases of the Corporation of Kilkenny dated 6 May 1581, of an agreement with Thomas Archer fitzWalter of Kilkenny to pay him the sum of £108 6s 8d if he 'shall make or cause and procure that pte of the ryver of the noyer that runneth and extendeth betweene the said town of Kilkennye, to be made passable fitt and servisable for boets of the full ladinge of one toun weight or to rowe swyme pase and repasse from tyme to tyme and at all tymes in somer and in wynter to and fro betweene the said townes of Kilkennye and Dourrowe . . .'. In return for completing the navigation from Kilkenny to Inistioge he was to be given the sole rights of the trade on this section of the river.²⁷

The statute of 2 Geo. I, c. 12 (Ir.), 1715, established a body of commissioners to render navigable 'the Nore and lower Brosney', north-north-west from Waterford and thence to Eyrecourt, but this scheme did not come to fruition, and it was not until 1755 that anything definite was done. In that year, a petition of several gentlemen in the county Kilkenny was presented to parliament,²⁸ in consequence of which the sums shown on the next page were granted for making a navigation.

Once again, this work was under the control of Thomas Omer, and the work on the site was supervised by William Ockenden. Two conflicting plans were put forward. Omer thought that the navigation from Inistioge to Kilkenny should be carried in the river bed, and would cost £16,000. Ockenden, on the other hand, favoured the building of a still-water canal 4 miles long, and carrying the navigation in the river for the remainder of the distance.