

ART. III.—*The Lancaster Canal.* By JOHN F. CURWEN,
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WHEN London, the largest city in Europe, possessed no public docks upon her river, when heavy coaches lumbered along from the thinly inhabited suburb of the West End to the outlying villages of Chelsea, Kensington, Marylebone and Bermondsey, when the roads of the country were reckoned the worst in Europe, over which it was impossible for wheeled traffic to travel at a greater speed than four miles an hour and when everything had to be carried by pack-horses—then the business men of Lancaster and Kendal were seeking for some easier method of conveying their merchandise and of obtaining their needs.

With the exception of the main road from Lancaster and perhaps the cross road *via* Ambleside to Cockermouth, the lines of transit in this part of the country were little better than pack-horse tracks, which were abandoned for fresh ones when through depth of mud they became impassable. Even when in later years it was attempted to adapt them for wagon traffic, they were little improved; for stones were just thrown loosely into the larger holes, over which the wheels were supposed to jolt, only to find themselves buried the deeper in the mud beyond.

We have a glimpse of the condition of our main road south at this period (1768), given by Arthur Young in his "Tour," who "most seriously cautioned all travellers who may accidentally purpose to travel this terrible country to avoid it as they would the devil, for a thousand to one but they break their necks or their limbs by overthrows or breaking downs Between 'proud

Preston' and Wigan I actually measured ruts of four feet deep, floating with mud and passed three carts broken down in those eighteen miles of execrable memory." In winter, he says, "it would have cost no more money to make the roads navigable, than to make them hard." (Smiles, *Lives of the Engineers, Early Engineering*, p. x).

Unfortunately, neither Gray in 1769 nor Pennant in 1773 enlighten us upon the condition of the roads they traversed, so that, even if we look upon this as somewhat exaggerated, we are bound to accept it to a certain degree.

Other descriptive Ramblers to the Lakes all came later, after the great twenty years (1760-1780) when no fewer than 600 Acts were passed authorising the construction of new "turnpike" or "turngate" roads throughout the country.

But our story opens before that period, and there can be no doubt that it was owing to the wretched condition of the roads as also to the limited amount of burden that could be placed upon a pack-horse, that the conception of inland water-carriage was due. The lesson had been learnt from the sea. It was so much easier and actually cheaper to bring foreign goods to Lancaster, Milnthorpe or Whitehaven, than to bring English goods by land from Wigan, Manchester or Birmingham.

Only some ten years before our promoters were at work, the Duke of Bridgewater was engaged upon England's first modern canal, and so behind were we in engineering skill that his Grace had to employ a workman of the poorest origin to survey and scheme out the course. James Brindley, the wheelwright of Sutton near Macclesfield, could scarcely sign his name; he certainly could not write, and yet he was a man so endowed with common sense and ingenuity that he was already looked upon as a clever constructor of water-mills. As yet there was no special class trained to the profession of engineering; Perry was but a sea-captain, Smeaton an attorney's

clerk, James Watt a maker of instruments, Stephenson an engine brakesman, Telford a working mason, whilst Brindley was by business a wheelwright, and Rennie a millwright. They were the servants of necessity; when some great work had to be done they rose to celebrity simply by their practical workshop knowledge and patient determination to overcome all obstacles.

And so to James Brindley our seekers went, only to find unfortunately, that his life's work was nearly done. It is recorded that he commenced the survey himself, but that owing to ill health, the task had to be relinquished to his pupil. Our Vice-President, Mr. J. Rawlinson Ford, has recently presented me with a plan of this survey, inscribed, "A Plan of the intended Navigable Canal near Ecclestone in the County Palatine of Lancaster to Kendal in Westmorland; Surveyed by Robert Whitworth; Engraved by Thomas Jefferys, Geographer to his Majesty, 1772." And from it we find that at first it was suggested to cut the line (a) from Ecclestone *via* Longton to Penwortham, in order to cross the Ribble, and from thence trailing westward nearly as far as Kirkham, back again to Plumpton, and so along northward passing to the *west* of Garstang, Lancaster and Borwick, to a place called "Tewitfield,"* a little way beyond; a total distance of $54\frac{1}{2}$ miles.

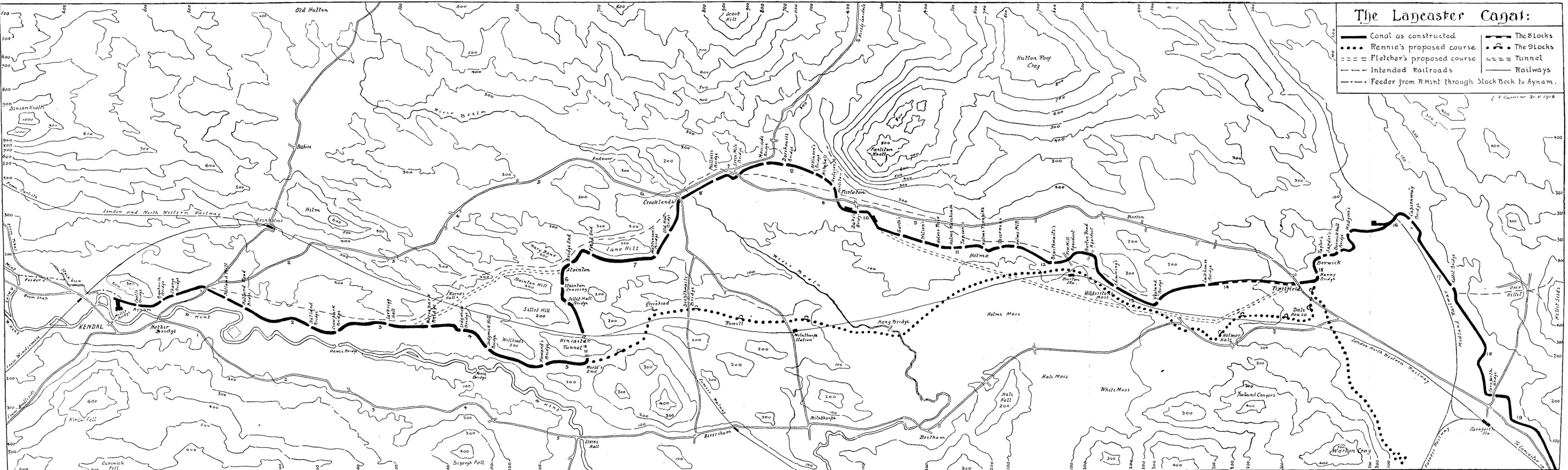
As the line however, was attended with some difficulties, Whitworth was asked to try a higher line, which he did by taking (b) a shorter bend westward and by locking up 24 feet to Sidgreave. From thence he took a course to Salwick Hall, eastward again to Hough and so along northward, passing to the *east* this time of Garstang and Lancaster and with a long hair-pin bend, nearly to Halton, onward to "Tewitfield;" a total distance of $55\frac{1}{2}$ miles,

* Tewit, Teufet, Tewet, Peesweep, Puet,—the Lap-wing. "Pewit in the north of England is called Tewit, or bastard plover." 1688, Holme, *Armoury* ii, 254.

The Lancaster Canal:

- Canal as constructed
- Rennie's proposed course
- Fletcher's proposed course
- Intended Railroads
- Feeder from R.Mint through Stock Beck to Aynam.
- The 8 Locks
- The 9 Locks
- Tunnel
- Railways

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which, as he observed, " notwithstanding the 24 feet rise, is the easier and better line." Entering the hill country, Whitworth found it necessary to rise very suddenly, from the (a) line 86 feet, or from the (b) line 62 feet. From the head a level course of sixteen-and-a-quarter miles was taken, *via* Holme, Farleton, Crooklands and the Hincaster Tunnel to Nether Bridge at Kendal on very much the same line as the canal exists to-day. One cannot but pause with admiration at the clever way in which this survey was made, and that without the aid of our modern scientific instruments.

For one reason or another, however, the Committee were not satisfied, and so sought further advice from different people, hoping for an improvement on Whitworth's higher (b) line. Several years after, when Samuel Gregson published a printed letter to the Committee, (dated 30th January, 1792), he reviewed the history of these long negotiations, stating how they had tried various plans for crossing the Lune, one of which was by taking the line as far up as Halton Scars, but that each surveyor had come to the conclusion that it was necessary to drop to the same level as Whitworth proposed; in like manner how various lines had been tried on either side of Preston to cross over the Ribble. The chief objection taken to the scheme, however, appears to have been that the course did not extend south enough to tap the coal-fields around Wigan. During this delay (1785) one enthusiast, whilst denouncing in a pamphlet the wretched condition of the roads, in such words as, " May we all scorn to plod through the dirt as we long have done," writes, " A lime stone and coal country ought to have a communication with each other, as both those articles are necessary for the convenience of life, the demand for them will always subsist and pay more tunnage than every other article that may be navigated on a canal." *

* " A cursory view of a Proposed Canal from Kendal to the Duke of Bridgewater's Canal, leading to the great manufacturing town of Manchester, giving a particular account of the internal native productions in the line, together with the advantages that will accrue to the public," etc.

No definite advancement was made, however, until the 4th June, 1791, when some thirty merchants and traders of Lancaster addressed a letter to the Mayor, setting forth the advantages which their rival, the town of Liverpool, derived from inland navigation and how that it placed them in "so decided a superiority in the vend of their imports as greatly to diminish the commerce of this town of Lancaster unless some means can be found to meet them in the market upon more equal terms." The letter concludes with a request that the Mayor will convene a public meeting to consider the several surveys. There can be little doubt that young Rennie was selected as engineer at this meeting. It is no small thing to realise that upon our Canal the promoters not only consulted and secured the services of Brindley but also of Rennie, a man who, in later days made his name famous when he carried the Rochdale and Todmorden Canal right over the Backbone of England, and even more so when he erected the wondrous Breakwater at Plymouth.

I am indebted also to Mr. Ford for a copy of Rennie's survey, which bears the following inscription:—"Plan of the proposed Lancaster Canal from Kirkby Kendal in the County of Westmorland to West Houghton in the County Palatine of Lancaster; Surveyed in the years 1791 and 1792 By John Rennie, Engineer. Engraved by W. Faden, Geographer to the King, 1792."

In this scheme the suggestion was accepted to tap the coal-fields of Wigan, and thus make the canal of twice the value to the districts along its banks. The cutting was to form a level distance of fifteen-and-a-half miles to a place called Clayton Green, thence to lock down 222 feet on to an embankment and aqueduct across the Ribble. From Preston it was suggested to follow the (b) line of Whitworth's plan as far as the Calder river where Rennie desired to branch round the north side of Greenhalgh Castle to the village of Garstang, and so, by an aqueduct

over the Wyre, northward to join the (b) line again at Cabus Nook, and thence through a remarkable deep cutting at Ashton, near Lancaster, with slight variation to Tewitfield—a level distance of some $42\frac{1}{2}$ more miles. Here there was to be a branch of $2\frac{1}{2}$ miles cut to the foot of Warton Crag for the sake of tapping the limestone of the district.

In order to shorten the course through Westmorland Rennie struck a line across the mosses rising by five locks at Dale House and Holmer Hall and from thence *via* Hilderstone Moss-side to Hang Bridge; with four more locks he made direct for Hincaster, a distance of nine miles and rising in all 65 feet. To approach the gunpowder works at Sedgwick it seemed still necessary to tunnel beneath Hincaster Hill, after which a level course of five miles completed the line as a canal, with an additional mile to the river Mint, opposite Mint House, as a feeder: a total length of $75\frac{1}{2}$ miles with a fall of 222 feet from the south and 65 feet from the north. It was intended to place the canal head at Kendal just south of Nether Bridge, but the enlightened Corporation of the time came forward and offered to build at their expense the necessary warehouses and wharves, together with a stone bridge across the Kent, in place of the ancient Miller Bridge, if the Company would continue the length more into the centre of the town.

The scheme soon developed. A general meeting was held at the Town Hall, Lancaster, on the 7th of February, 1792, at which it was resolved unanimously to form a subscription list for obtaining an Act of Parliament to carry it into execution, and for defraying all expenses necessary for completing the same. It is said that before the meeting terminated £247,800 had been promised, a sum which was increased to £370,500 before the end of the month, the town of Lancaster providing an overwhelming proportion.

The first Act (32, Geo. 3, c. 101) was obtained on the 25th of June, 1792, as follows:—

Whereas the making and maintaining a Navigable Canal from the town of Kirkby Kendal, in the co. of Westmorland to the township of West Houghton, at a place called West Houghton Chapel, in the co. of Lancaster; and also the making of two navigable cuts or branches, one from a place at or near Borwick Hall, to or near Warton Crag, and the other from at or near Gale Moss, in the parish of Crofton, by Chorley, to or near Duxbury, in the parish of Standish, both in the said co. of Lancaster; will not only be of considerable advantage to the lands and estates in the neighbourhood thereof, by making a communication from the extensive mines of Coal at the southern extremity to the inexhaustible quantities of Lime stone at the northern end thereof, of both which articles all the intermediate country is greatly in want, but also by uniting the Port of Lancaster with so large a tract of inland country wherefore, for obtaining and perfecting the good effects and purposes aforesaid, may it please your Majesty etc.

From Section 3 the Act makes it clear that it was not then the intention of "The Company of Proprietors of the Lancaster Canal Navigation" to join up with the Leeds and Liverpool Canal, but rather to cross over it to West Houghton.

Section 7 grants permission to the Company to take a feeder from the river Mint "at a certain place called Mints Feet, taking in at the most convenient place the Stockbridge Brook and to make the same to join the said intended canal, at a certain place in Kirkby Kendal aforesaid, called Yeanum." Provided always that not more than one-half of the water of the said rivers be taken, and that the mill-owners upon their banks may draw, if necessary, water from the canal for the use and working of their mills, "so as that the head or flow of water in the said canal be not thereby reduced more than two feet, nor to a less depth than five feet."

Section 8 enacts that in order to secure such head of

water, the canal must be made at least seven feet deep from "Yeanum to the southern extremity of Hincaster Green."

Sections 62 and 64 grant to the Proprietors power to raise and contribute among themselves a competent sum of money to carry on so useful an undertaking provided that the said sum does not exceed £414,100 to be divided into shares of £100 each, and that £60,000 thereof be applied solely to the Westmorland Section. Permission was also given to borrow an additional sum not exceeding £200,000.

With such powers no time was lost in getting to work, and the first meeting of the Proprietors was held on the 3rd of July, 1792, when John Dilworth was elected chairman to the Company.

In the following year a second Act (33 Geo. 3, c. 107) was obtained, granting permission to make another branch from Galgate to Glasson Dock, within the Port of Lancaster, a distance of $2\frac{1}{2}$ miles.

In 1794 trouble arose with the Leeds and Liverpool Canal Co. who desired to make a deviation from their plan and by going southward to take in the Douglas valley, circle round the south of Wigan, and turning northward run in a parallel line beside and above the Lancaster Canal to its prejudice and detriment. In their Answer as opponents to the Leeds and Liverpool Bill, the Lancaster Canal Co. prepared a plan not only showing the deviation complained of, but—what is more interesting to us—an intended extension of their own line from West Houghton to Worsley in order to form a junction with the Bridgewater Canal.

Three years after the first Act was obtained, on the 30th of August, 1795, the Company published their first detailed report, in which we find that the Committee intended to confine their energies at first to two quite separate portions, viz. : one from the limestone country at Tewitfield to Preston, and the other from the coal and

cannel country in the neighbourhood of Bark Hill, near Wigan, to Clayton Green, 5 miles south of Preston ; thus deferring the difficult sections caused by lockage from Tewitfield to Kendal, and from Clayton Green to the Ribble, with the necessary embankments and aqueduct across the river to Preston. Of the work in progress the Committee report as follows :—

Section 1, from Tewitfield to Ellel Grange (17 miles) it is hoped to complete within two years. The aqueduct over the Keer is up to the spring of the arch ; that over the Lune—" the greatest piece of work of the kind in this Kingdom "—is likewise up to the spring of the arches ; the road aqueduct at Bulk is completed ; the arch of the aqueduct over the Conder is turned ; and a number of road and occupation bridges, culverts, and other pieces of masonry are in great forwardness.

Section 2, from Ellel Grange to the river Calder (10 miles) may be completed within 16 months. The Cocker aqueduct is of small dimensions, and for the one over the Wyre—consisting of one arch of 54 feet span—the materials are preparing.

Section 3, from the Calder to Myerscough Wood (3 miles) may be completed within 18 months. The materials for the aqueducts over the Calder and Brock are in great forwardness and the arches of three of the other bridges have been turned.

From here nothing seems to have been done until we get to Limbrick Beck, near Chorley, from whence Section 4 carries the line to Bark Hill (7 miles) which it is hoped will be completed shortly. The aqueducts over the Limbrick, Baganley and Lostock, as over the river Douglas—consisting of one arch of 40 feet span—are nearly finished.

Truly a fair record for three years work at a cost of £149,920.

The third Act (36 Geo. 3, c. 97) received the royal

assent on the 14th of May, 1796, enabling his Majesty, in right of his Duchy of Lancaster, to make a grant of certain lands required.

How far Rennie himself was responsible for the carrying out of the work, it is not easy to determine, but by the year 1796 it would seem that one Thomas Fletcher was engineer to the Company, and engaged upon planning out the Westmorland section. Mr. J. H. Thurstan, the London and North Western Railway Company's Engineer at Lancaster, has very kindly shown to me a Survey (Roll 82) made by Fletcher in November, 1796, in which he also strikes for Holmer Hall, rising there some 27 feet by a series of locks, 16 feet by two locks at Rowell, 16 feet by two locks at "Debit," or Deepthwaite Bridge, another 16 feet by two locks near to Greenhead Farm and thus with a total rise of 75 feet to the Kendal Basin, with a Feeder falling 23 feet from the river Mint.

A second Survey (Roll 1025) made by Thomas Fletcher in January, 1797, endeavours to take a medium course between Whitworth's and Rennie's lines, which shows how loath the Company were to give up the limestone district around Farleton. This Survey rises 60 feet by seven locks at Tewitfield, passes on the east side of Holmer Hall, on the west side of Holme, from thence to Farleton where it follows around Whitworth's bend *via* Crooklands to Stainton, rising 9 feet by a lock opposite the seventh milestone in passing. Instead of passing westward to Hincaster however, Fletcher boldly neglected the Gunpowder Works, and, by rising 6 feet made straight between Stainton Hill and Mary Bank for Raines Hall and Larkrigg Hall, and from thence to Kendal, with a total rise of 75 feet.

However, both schemes were again shelved, for the Company seem to have been at their lowest ebb of depression. Although it was reported that the two southern portions would be completed before the end of the year,

yet the Company had to face the fact that by that time their full resources of £85 per share would be called up, and that there would remain a deficit of £40,435, £15 per share being reserved by the Act for the construction of the canal in Westmorland.

According to expectation the portion from Preston to Tewitfield was completed by the 1st of November, and three weeks afterwards the Traders of Lancaster, notwithstanding the financial difficulties, indulged in quite an aquatic ceremony and toasted the magnificent aqueduct over the Lune which alone seems to have swallowed up over £48,000.

On the north-east side of the aqueduct is inscribed: "To Public Prosperity"; on the south-west side:—

Quæ deerant adeunt: sociantur dissita: merces
Flumina conveniunt arte datura novas.

A.D. MDCCXCVII ING. I. RENNIE EXTRUX. A. STEVENS P. ET F.

This may be rendered in a couplet of the style of the time, and expanding ING(eniavit) and EXTRUX(ere) as "Delineavit" and "Sculpsit" are used beneath engravings, and P(ater) ET F(ilius):—

Old needs are served; far distant sites combined;
Rivers by art to bring new wealth are joined.

A.D. 1797. J. Rennie, engineer. A. Stevens & Son, contractors.

A tombstone in Lancaster churchyard gives the death of Alex. Stevens, architect, on Jan. 29th, 1796, at the age of sixty-six.

Rennie was great on bridges—Waterloo Bridge, London Bridge, and Southwark Bridge were all of his design. This bridge is 600 feet in length, and is formed of five semicircular arches, each of 70 feet span; carrying the surface of the canal 62 feet above the average level of the river, or 70 feet above the sea datum.

An abstract of the Balance Sheet for the first six years, up to December, 1798, is instructive:—

ON THE LANCASTER LEVEL.

Land, etc.	.. ..	£42604	17	1½	
General Expenditure	.. ..	178158	11	2	
Lune aqueduct	.. ..	48320	18	10	
Hydraulic Pozzolano earth from Italy	.. ..	321	8	9	
					£269405 15 10½

ON THE WIGAN LEVEL.

Land, etc.	.. ..	£5760	1	6	
General Expenditure	.. ..	55416	16	3½	
Applications to Parliament	.. ..	£6327	1	2	£61176 17 9½
Salaries, fees, etc.	.. ..	16341	11	9	
Quarrying, Boat building and Interest to Proprietors	.. ..	29314	3	5	
					£51982 16 4
					£382565 10 0

By the year 1799 William Cartwright was engineer to the Company, and on the 1st of November the Committee issued a report of his survey for the best method of connecting the northern with the southern portion of the canal. He says, "Your south level is intended to terminate at Clayton Green, being the most northern point which will admit of that level being carried on before the general fall to the Vale of Ribble commences. This part of your canal is completed from Bark Hill to Johnson's Hillock (12 miles); the remaining part to Clayton Green (3 miles) has the chief part of the masonry and part of the cutting already done upon which £8000 has been expended. From the want of some connection between the two levels both sections suffer so that even the town of Preston cannot be supplied direct with coal." Cartwright estimated the cost of the original plan of locking down 222 feet and crossing the Ribble by an aqueduct at £180,945. Conceiving that a simpler method might be found, he continues, "I have turned my thoughts therefore to the forming of a junction by means of a double wagon-way, that is, the ascending wagons to have

one road and the descending wagons to have another road. Erecting steam-engines by the aid of which the wagons will be lowered and raised and to cross the Ribble with a substantial wooden bridge . . . making a similar inclined plane on the north side of the river to a proposed basin at Preston with a short length of waterway to the present terminus at Spital Moss." Estimated at £60,000.

To carry some such scheme into effect, and to pay off the debts of the Company, the Committee once more applied to Parliament and on the 20th of June, 1800, obtained the fourth Act (39-40, Geo. 3, c. 57) granting them power to raise £200,000 by additional shares.

A Mr. Monk now came forward with an alternative scheme, suggesting that the Douglas Navigation should be continued from Rufford *via* Tarlton Bridge, Bank Hall and, skirting the marshes to Penwortham, lock down to the Ribble. With these conflicting views it would appear that the Proprietors then went back to their first engineer, asking John Rennie and William Jessop, Esquires, to survey and adjudicate upon the schemes. Their report was presented to the General Meeting on July 7th, 1801, in which they say:—"We are still of opinion that an embankment to the full height of the Lancaster level, and a stone aqueduct will be most advisable, and on estimating the expense of a design which Mr. Rennie has made for an aqueduct of three arches of 116 feet span each, we have no doubt of its being done for less than £94,979 (i.e. about one-half of Cartwright's estimate). As this sum is not within the extent of the Company's funds at present it will be to the interest of the Company that a temporary mode of conveyance should be *immediately* adopted and we know of none more advisable than by an Iron Rail-way etc." Cartwright's scheme was evidently adopted, for on January 4th, 1803, the Committee report that the "Iron Rail-way is making

considerable progress" and that 234 yards out of 259 yards in length of the tunnel through Whittle Hills, connecting up with the canal at Johnson's Hillock, were completed.

The engine-house on the north bank of the river was situated on the site of the present Belvedere, near the Flagstaff, and after the wagons were hauled up, eight or nine of them were formed into a train, drawn by horses. The route skirted the edge of Avenham Brow, behind what is now Ribbleside Place, and thence turning due north crossed under Fishergate to the wharf.

The first recorded effort for passenger traffic appears to have been made in 1802, when "a pleasant voyage" for the Guild is advertised from Lancaster to Preston with the assurance that "for safety, economy and comfort no other mode of conveyance could be so eligible as the packet boats; for there the timid might be at ease, and the most delicate mind be without fear."

By the year 1805 it is evident that the Company were at last considering it about time to do something in Westmorland. On the 2nd of July a report and survey of the practicability and expense of making a *railroad* from Tewitfield to Kendal, with an estimate of £38,574 was laid before the meeting.

How far Cartwright was responsible for this suggestion I do not know, but the London and North Western Railway Company possess the original plan (Roll 306) which shows that it was thoroughly worked out with inclined planes for ascending and descending wagons, similar to that over the Ribble. The line was to ascend 70 feet at Tewitfield, to rise gradually 10 feet in a fairly straight line to Crooklands, and thence east of Lane Hill to Stainton. Following the easiest course it was again suggested to avoid the Gunpowder Works by continuing the line on Fletcher's plan to the east of Stainton Hill, where ascending 40 feet by another inclined plane it

reached its highest level to descend gradually 13 feet to Natland, and by a third inclined plane to descend rapidly 32 feet to Natland Mill, and so onward to Kendal 75 feet above the canal at Tewitfield.

The gunpowder influence, however, appears to have been too strong against the scheme, so that we find on the 7th of January, 1806, a report and survey for making a navigable canal, 27 feet wide at the top and of $4\frac{1}{2}$ feet depth of water, with an estimate of £71,734 was laid before the meeting and approved in preference to the railroad. This scheme, which virtually adopts the original Whitworth survey, and the one ultimately carried out, was designed by William Miller and inscribed "A Plan of the intended Variation [from Rennie's line which received Parliamentary sanction by the Act 32, Geo. 3, c. 101] of the Lancaster Canal from the Township of Hutton in the Co. of Lancaster to the Township of Hincaster in the Co. of Westmorland and of the intended Railway in the Township of Farleton in the said Co. of Westmorland and also of the intended Railway from the said Canal in the Township of Carnforth to Kellet Seeds in the Township of Over Kellet both in the said Co. of Lancaster" (L. & N. W. Ry. Roll 582).

At the July meeting it was resolved to apply to Parliament for the fifth Act, to sanction the Variation.

The Bill (47 Geo. 3, Sess. 2, c. 113) which received the Royal assent on 13th of August, 1807, prays for power to vary the line from the northern terminus of the present executed part thereof, at or near a place called Tewitfield to a certain place called "the World's End" in the Township of Hincaster, and also to make and complete a railway or road leading from Farleton Knott to communicate with the said variation in a certain close called Kilnhall in the Township of Farleton; and another railway or road from certain limestone rock at or near a place called Kellet Seeds in the Township of Over Kellet, according to a Plan deposited with the Clerks of the

Peace for the counties of Lancaster and Westmorland. It repealed the power of the Committee to take a feeder from the river Mint, and withdrew the stipulation that the canal must be 7 feet in depth from "Yeanam" to Hincaster Green.

Eight locks were to raise the level from 70 feet up to 146 feet above the sea level, and the canal was to pass to the east of Holme, through Farleton and Crooklands to Stainton Bridge End where it was to turn due west to flow through the Hincaster Tunnel of 378 yards in length with the water level 76 feet below the summit of the hill. Finally the canal was to end at Kendal with a basin near the Aynam, and one cannot help being struck with the very curious coincidence that the northern section commences from Preston at a place called Avenham Walk, (pronounced Aynam), beside the confluence of the Swill Brook with the Ribble. At Overborough there is a field now called "Yannam" but formerly "Eynam" which is situated in the angle formed by the confluence of Leck Beck with the Lune, just as the French town of Avignon is situated in a fork between the Rhone and the Durance rivers.

On the 7th of February, 1809, it was resolved "That the Committee be directed and authorised to proceed with the execution of that part of the canal between Tewitfield and Kendal," and yet, owing no doubt to the dark Napoleonic war-cloud, four more years elapsed before the Committee issued on 19th of December, 1812, their reasons for continuing the canal to Kendal, as follows:—

1.—*Coal.* The quantity of coal at present carted from Tewitfield to Kendal amounts to 7000 tons per annum, which if conveyed by canal would raise an additional income of £620. To which should be added a possible increase in the consumption of coal by the facility and saving on conveyance; as also an increase in the demand for coal owing to the inclosing of Waste Lands and draining of Turbary Grounds, thereby reducing the quantity of turf for fuel; estimate of increased consumption paying Canal Duty the whole length of the line £1,924.

2.—*Coal Slack.* The quantity of Slack at present carted from Tewitfield to Kendal amounts to 6000 tons, which if conveyed by canal would raise an additional income of £175. Estimate of increased consumption say 3000 Tons paying duty the whole length of the line £400.

3.—*Slate.* 3000 Tons are stated to be carried annually from Kendal to Yorkshire, and to the Leeds and Liverpool Canal at Gargreave, at an expense of 27/- per ton, a cost equal to £450. An increase in the trade owing to the saving of at least 14/- per ton estimated at £450.

4.—*Merchandize.* 6600 Tons, the present quantity, if conveyed by the Canal from Tewitfield to Kendal, would raise £1070, to which should be added an increase of the carrying trade owing to the probable diversion of the coasting trade from Milnthorpe to Lancaster and so along the Canal, £1100.

5.—*Timber, Freestone, Flags, Bricks and Marble* estimate £500.

6.—*Packet Boats* estimate £400.

7.—It is further expected that the water which the locks will bring down, may supersede the expense of pumping water at Preston, a saving of say, £500. Making a total extra income of £7589, and the Committee estimate the expense of construction of the line, which had recently been re-surveyed, at £98,095.

Toward the end of 1813 the contract for making Hincaster Tunnel was let, and by the 6th of February, 1816, the Committee report that the aqueduct over Stainton Beck and the Moss Lane aqueduct are finished; a considerable quantity of materials are laid down for those over the Crooklands and Farleton Becks; the masonry of one of the locks is completed whilst the others are in a state of forwardness. Difficulty had been found in getting suitable stone for the roofing of the Hincaster Tunnel but that the Committee were trying experiments for the manufacture of bricks on the site. On the 4th of February, 1817, it is reported that 2,000,000 bricks had been made and that half the length of the tunnel was completed.

The construction of the line from Hincaster to Kendal was publicly let, on the 30th of June, 1817. Several

navvies attended the meeting, and afterwards caused considerable riot in the town. The newspapers record the occurrence, and say, "Sound Policy demands that the ruffians should be held up as an example to the unruly multitude which the cutting of the canal will shortly bring to this populous neighbourhood." * And so we pass forward to the 21st of November, 1818, when we find that the eight locks were all completed and that "much praise is due to Mr. Fletcher (who succeeded as engineer after the death of Cartwright in 1812) for the plan of these locks and for the manner in which the workmanship has been executed under his immediate control and inspection."

In the last or sixth Act (49 Geo. 3, c. 64) we find the Company seeking power to raise £270,000 on mortgage of the rates and dues, as, having spent all their capital they now found it "expedient and necessary" to make one or more reservoirs in the township of Killington and to utilize the river Beela for conveying water from thence to the cut or feeder already joined up with the canal. As was only likely, the Bill met with considerable opposition on the grounds that the Committee had already exceeded their authorised share capital by £21,935, and were therefore to some extent seeking an Act of Indemnity; that instead of securing sufficient income by making a through connection with the coal fields at West Houghton, the wagon-way being but an inconvenient substitute, they had rather wasted their resources in "ornamenting the town of Lancaster, with a grand aqueduct over the Lune, upon which the water had laid stagnant for over 20 years;" and finally, that they still intended to make a useless branch to Glasson Dock in the forlorn hope of reviving the "decayed port of Lancaster." The Act, however, was obtained on the 14th of June, 1819, when sufficient newly enclosed land was purchased from the

* *Westmorland Advertiser*, July 5th, 1817.

townships of Old Hutton, New Hutton, and Killington for the purposes of a reservoir. The water now covers an area of 153 acres, with an extreme depth of 53 feet, and it is reckoned that it holds some 4,000,000 liquid cube yards.

Soon after it was filled (September 10th, 1820) a leak was discovered in the dam, when it was found necessary to drain the whole to make the needful repair. In doing this a vast quantity of fine red trout, of six to seven pounds weight, were caught and taken in some 40 cart loads to the Kendal market.

Unheeding of all remonstrance the Committee pushed forward the northern section. The newspapers tell us that by the 27th of March, 1819, the canal was filled with water as far as Crow Park to the west of Natland; that by the 14th of April the first boat came up to the Aynam Basin; that the official opening was postponed from the 1st of May until the 18th of June, owing to the bursting of an embankment seven miles from Kendal,* and that on the 3rd of September another rupture occurred in the bed of the canal sufficient to stop the traffic for a week.

The story is told how that the ox-eye daisy was first brought into Westmorland by seeds in the barges, but be this truth or fiction, we come to the 1st of May, 1820, when Packet Boats commenced to ply both ways daily between Preston and Kendal. The advertisement announces that the one from Preston will leave at 6 o'clock in the morning and may be expected to arrive at Garstang at 10 o'clock, Lancaster at 1 o'clock, the Locks at 4 o'clock and Kendal at 8 o'clock, in time to catch the coach for the North, which will leave soon after the arrival of the Packet. Fore cabin 6/-, After cabin 4/-, for the whole journey. Tea, coffee and refreshments will be served on board. Such a journey, now-a-days, would

* The opening ceremony is fully recorded in all the local histories.

be considered a most sleepy, ridiculous affair, but in the early part of the last century it amounted to something quite wonderful.

On the 2nd of July, 1833, an express boat named the "Waterwitch" commenced to run, by which the whole journey of 57 miles was reduced to seven hours, the boat making the return journey within the day, and maintaining a speed of ten miles an hour with a change of horses every four miles. The fare remained the same, and for the first six months no fewer than 16,000 passengers availed themselves of the service.

The passing of the Railway Acts, however, brought about changes. The line from Preston to Lancaster was opened in June, 1840, and we find a "Bradshaw" for 1842 giving the times for a connecting Packet Boat service as follows:—

LANCASTER CANAL SWIFT PACKET BOATS.

TRAVELLING AT UPWARDS OF NINE MILES PER HOUR.

Kendal.	Lancaster.	Arrival at Preston.	Trains Leave Preston.	Arrival at Liverpool or Manchester.
..	6-0 a.m.	9-20 a.m.	9-45 a.m.	12-0 noon
6-30 a.m.	9-50 "	1-20 p.m.	2-20 p.m.	4-0 p.m.
8-30 a.m.	11-50 "	3-20 "	4-20 "	6-0 "
Manchester.	Liverpool.	From Preston.	Arrival at Lancaster.	Arrival at Kendal.
9-0 a.m.	8-45 a.m.	11-0 a.m.	2-20 p.m.	6-20 p.m.
11-15 "	11-0 "	1-30 p.m.	4-50 "	8-30 "
2-45 p.m.	2-30 p.m.	4-0 "	7-20 "	..

	First Cabin.	Second Cabin.
FARES between Preston and Lancaster.....	1s. 6d.	1s. 0d.
" " Lancaster and Kendal	3s. 0d.	2s. 0d.
An omnibus between the railway and packet stations free from charge.		
.N.B.—The packets are warmed during the winter season. 1st m./1st/, 1842.		

When the young railway got into financial trouble it was the Canal Company which with pluck and audacity took it over on lease for a term of twenty-one years from the 1st of September, 1842, and for several years they had the pleasure of reporting that their working of the railway had been as satisfactory "as the continued existence of commercial depression could reasonably warrant." It would seem, however, that the lease was never actually signed and that the railway began to shuffle out of it. On the 20th of November, 1844, they seek to vary it by saying that until 1847 the Canal Company is to pay them 4 per cent., but after that date, the new Lancaster and Carlisle Railway Co. will take the lease over at 5 per cent. Then arose a great dispute between the three companies and on the 1st of February, 1848, the Canal Company report that they have "neglected no opportunity to press for the completion of the lease but that the Lancaster and Preston Railway Co. has by its own acts delayed the measure and now repudiates it. Your Committee have therefore, been compelled to file a Bill in Chancery for specific performance of the agreement entered into on the 14th of July, 1842."

Agreement, however, was come to before the February meeting in 1849, whereby the railway agreed to pay for the relinquishment of the lease a sum of £4,875 per annum during the remainder of the unexpired term of 21 years. A statement was issued later, showing that the pluck of the Canal Company had resulted in a clear total profit of £67,391.

Meanwhile the death blow to the canal was developing, as the London and North Western Railway Company began to amalgamate the "North Union" to Preston, the "Lancaster and Preston" the "Lancaster and Carlisle," and finally the "Kendal and Windermere" companies. On the 21st of September, 1846, the Lancaster and Carlisle line was opened as far as Kendal, whereupon

the Packet Boats ceased to sail. From this period a bitter struggle ensued and various arrangements were tried—such as that the railway would not carry coal if the canal would not carry passengers, and so forth—until the year 1864 when the North Western Railway Company took over a lease of the waterway, and finally purchased it outright for £500,000 in 1885.*

After the final dividends had been paid and only some £100 were left in hand, Mr. William Ford, the then chairman, caused a silver medal to be struck and presented to each of the Proprietors, when the Company was dissolved.

* 1859. The tram wagons ceased running across the Ribble. 1868. The engine house, with its large chimney on Avenham Brow was demolished.