

capstan ; and as the leaf rises and the tail plunges into the water, the chain rises off the segment and obtains an increased leverage to lift the bridge.

The resistance caused by the rise of the water is equal to 38 lbs. at the handle of the capstan, for every foot above 9 feet that the water rises.

The highest fresh, since 1840, was 16 feet 2 inches above low water mark.

The effect of heat in expanding the bridge is considerable ; this is provided for by taper iron keys, fitting in the grooves of the meeting plates, and inserted to such a depth as to give a proper bearing for the opposite leaf. The opening is $\frac{3}{4}$ of an inch wider in cold frosty weather than during a hot summer.

A register of the tides at Selby Bridge, during the year 1842, is annexed to the paper ; from this it will be seen that only 54 tides rose above 10 feet.

The construction of the bridge was illustrated by a model constructed by Mr. G. Coulthard (Bridge Superintendent), and which was presented to the Institution by Mr. J. Walker, M. Inst. C.E.

February 18, 1845.

SIR JOHN RENNIE, President, in the Chair.

No. 671. "Memoir of the Canal of Exeter, from 1563 to 1724."

By Philip Chilwell De la Garde ; with a Continuation, by James Green, M. Inst. C. E.

Previous to the reign of Henry III. the tide came up as far as Exeter, and barges and small craft ascended the river Exe to the Water-gate of that city.

About that time Isabella de Fortibus built a weir, called after her 'Countess Weir,' in which an opening of 30 feet was left for the passage of vessels. In the twelfth year of Edward I. this passage was blocked. Other weirs were added by the Courtenays, Earls of Devon. Legal proceedings were taken by the citizens, and verdicts were gained, but the power of the Earls was greater than the law.

In the thirty-first year of Henry VIII. (1540), an Act of Parliament was obtained for restoring the navigation. Many attempts were made, and much money was expended, without effect, in that and the two succeeding reigns.

In 1563 the Chamber engaged "John Trew of Glamorganshire,

in Wales," as their engineer. Trew, instead of clearing the river, rendered the city accessible by a canal. This work was a true pound-lock canal, similar, in all essential points, to canals of the present day.

This proposition may be maintained by the evidence of existing contemporaneous public documents.

In the Act Book of the Chamber, No. 2, is a curious paper, entitled, "The whole order and process of the covenants, bargains, communications, and other dealings had between the mayor, bailiffs, and commonalty of the city of Exon of the one party, and John Trew of the other party, for and concerning the river of Exe and conducting the same," which affords a summary of proceedings to the second week of the fourth month, after the commencement of the work.

The following passage shows a change in the plans of the engineer:—"Item, the 15th of December, 1563, Mr. John Peryam, mayor, the said John Trew, after sundry views of the ground about Exe, being before minded to have gone to the east side of the river, did now change his mind, and thought it better to take the ground and way by the west side of Exe."

It will be observed, on reference to the map (Plate 1), that a mill-lead extends from St. James's Weir to the Weir Mills. These mills are situated a little above the original and lowest obstruction, Countess Weir. Probably this weir had been already removed. By placing a lock near the lower end of this mill-lead, a canal would have been formed, conveying vessels above St. James's Weir—at that time the obstacle nearest to Exeter.

To those who are acquainted with the locality, and remember the high, and for the most part precipitous, bank, which extends from Wear to Exeter, it will be obvious, that there was scarcely any other mode of going by the eastern side.

The following memorandum confirms this opinion:—"The 28th of September, 1563. At which day, order and agreement was had and made with John Cove and Nicholas Crowne, for and concerning certain wears placed and fixed in the water-course from St. James's Weir to the Wear Mills; that is to say, the said John and Nicholas do covenant and grant consent and assent, that one John Trew, who hath taken in hand the conducting of the river or haven, shall have all stakes and other stuff as he or his men shall pull up, for the conducting of the said water, without any denial of them, or any of them, or their assignees, and of their own free gift. And further it is by the said John and Nicholas covenanted, and with their full assent and consent agreed, that not they, nor any of them, nor their assignees shall in anywise intermeddle with the wear called St.

James's Wear, to pull up or take away any stake or stakes, or any stuff there."

The clearance of the mill course, the conservation of the weir at its head, and the formation of the ground, appear conclusive. The plan might have been executed at a small cost in a short time, yet Trew's change of mind was creditable both to his boldness and sagacity. Until Trew's weir was erected, the current of the Exe must have been difficult to stem. Its rapidity is shown by the existence of the Tucking Mills, and its channel, near Exeter, was apparently shallow and rocky. Besides, whatever additional expense was incurred, the purchase of the wear mills, or at least compensation for damage, was avoided.

The conveyances of the land purchased, the map in Braun's "Civitates," the manuscript map called Havill's Map, and various other contemporaneous authorities, prove that the original canal took the same course as the present canal, as far as the deep pyll or outlet of Matford brook.

The following extract from Act Book, No. 3, furnishes the length, as well as some other very important particulars; and although, owing to the provoking negligence of the clerk, it is imperfect, yet the deficiencies may be supplied from other sources.

"12th of March, Anno Eliz., &c., XV. Who do wholly agree, Mr. Knight, Mr. Bruarton, Nicholas Martyn, William Trevet, Richard Prowse, Richard Hellier, Jeffry Thomas, William Martyn, John Webbe, and Michael Germin, shall measure the watercourse and work of the Haven, all the length and breadth of the same, and of the pools, and to sup at Walter Jones, and the receiver to pay for their supper there." Then follows at the bottom of the page, "which persons before named have measured the said watercourse, and do find the same to contain as followeth:—

| | |
|---|--------------|
| " First, the length of the whole ground wrought, is | . 9360 foot. |
| The length of the banks | . 6720 foot. |
| The breadth at the lower sluice and downwards | . 16 foot. |
| The depth there and below | . 3 foot. |
| The breadth of the lower pool | . 23 foot. |
| The length of the lower pool | . 189 foot. |
| The depth of the said pool | . 5½ foot. |
| The breadth" | _____ |

The length of the present canal to the Pyll, or Matford brook, is just 9360 feet—a coincidence confirming the identity of its course with that of the original canal.

From the several conveyances it appears, that the land purchased for the canal was as follows:—

| Owners. | Parishes. | | Breadth. | Total. |
|------------------------------|--------------------------------------|---|------------------|------------------|
| Floyre, | { St. Leonard, and St. Thomas, | from the Exe to Bole pool . . . | 68 ft. | } A. P. 3½ 20 |
| | | at and by Bole pool . . . | 151 | |
| Coffyn, | Alphington, | | no breadth given | 120 |
| Penrudocke and Loveys, | } Alphington | through old Exe (apparently). | 68 | } 8¼ 31½ |
| | | from old Exe to higher of middle sluices | 68 | |
| | | from thence to 25 feet below Trew's house | 100 | |
| | | from thence to Alphington brook | 76 | |
| | | from Alphington brook to Adel- bury wood | 68 | |
| Mohun and others | } Exminster | from Alphington boundary to lower pair of sluices . . . | 68 | } 6½ 6 |
| | | at and between the sluices and twenty feet below | 100 | |
| | | from thence to the pyll . . . | 68 | |
| Holland | Exminster | | no breadth given | 1 . |

That the breadth of 16 feet was continued throughout, is supported by the fact, that the breadth of the ground which it occupied, varied but little, except where the locks were situated.

That the depth of 3 feet was continued throughout, is proved by the following passage, from "the whole order and process, &c. Also to talk and confer with them for the full depth of 3 foot from the Pyll to Adelbury wood, and to continue the same level to Old Exe." By 'Old Exe' is probably meant the 'Old river of Exe;' but if by 'Old Exe' is meant an estate so called, through which the canal passed, it will still give that depth for five-sixths of its entire length.

That the breadth of the lower pool, or lock, was repeated at the middle lock, may be assumed on the same grounds; the land appropriated to each, being 100 feet in breadth. There is no reason for supposing any difference in length or depth.

Considerable vestiges of these locks were discovered, during the late improvements by Mr. James Green. They consisted of the western walls of the chambers of the locks, partially buried in the western bank of the canal of 1699. No remains of the upper lock were found; but its position was fixed in the map at Bole pool. The breadth of the ground was, however, 51 feet wider than at the two lower locks. Its pool, or chamber, was probably much wider, in order to serve as a floating dock for vessels, which, during floods, could not proceed at once to the quay. The reasons for regarding the pools as chambers of locks will be given subsequently. Their inordinate size, according to modern notions, was for the purpose of

receiving several vessels at the same time, and allowing them to pass each other—for which the breadth of the canal was insufficient. The following item, from a specification for enlarging the canal in 1699, puts this beyond doubt. “For digging a pool between the said two gates, which must be 300 foot in length at least, and about 80 foot in breadth at the top or surface of the water, and 50 foot broad at the bottom, and for walling the same on both sides, for the convenient and necessary passing of ships one by the other.” The waste of water was great, but the engineer had the river Exe at his disposal.

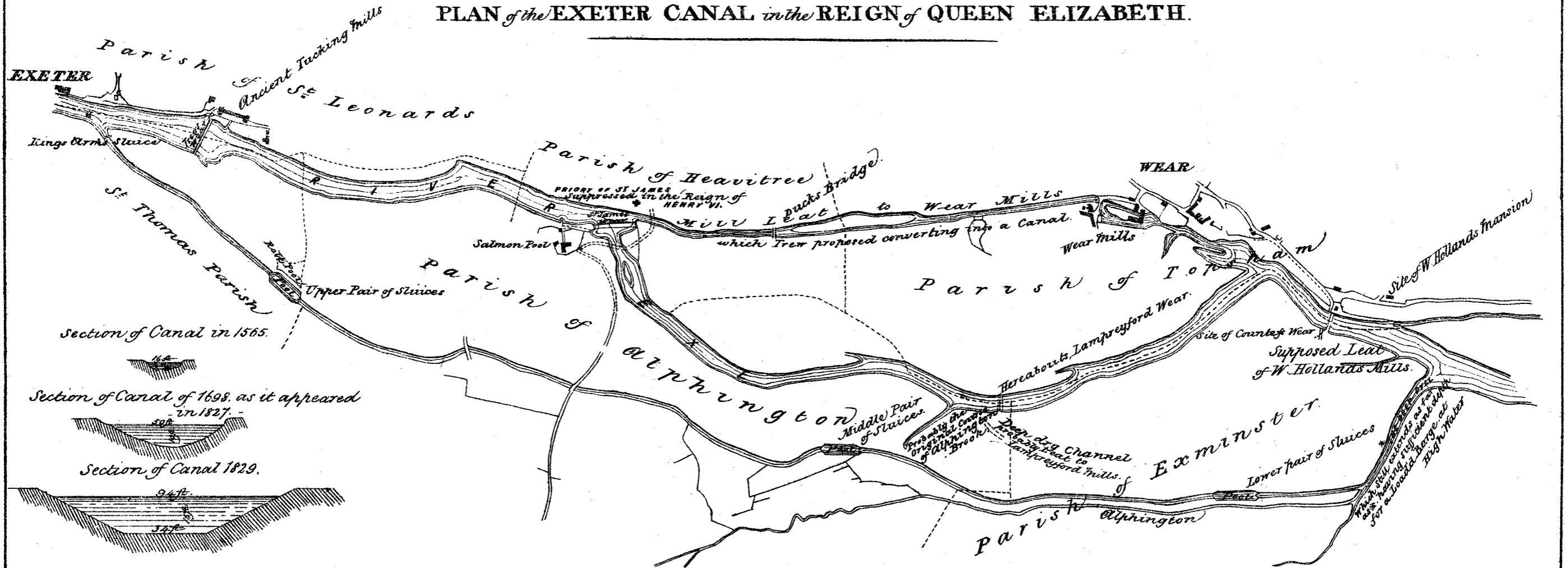
That the pools, or as they are elsewhere termed, pairs of sluices, were real pound-locks, might be safely inferred from the last quotation; but as that applies to alterations undertaken more than a century later, it is desirable to prove the fact by contemporaneous evidence.

In the conveyance of the joint property of Robert Penrudocke, and Leonard Loveys, Esquires, the following measurement occurs:—“From the said house upwards, to the head of the higher sluice, of the two middle sluices, there lately made one hundred foot, and from the said head upward, &c.”

In the conveyance of the land of William Mohun, Esq., is the following description:—“Unto the lane or way there leading towards Countess Wear, where one pair of sluices now are lately made, called the lower pair of sluices, and so downward from the said lane or way to and until a place near or over against the Mansion House of William Holland, Esq., called the pyll or deep pool. And in breadth upwards from the said pyll or deep pool at and under twenty foot next adjoining and beneath the said lower pair of sluices, and by all the said way four perches, and in breadth, where the said pair of sluices be, and between the said pair of sluices, and the said twenty foot next beneath the said pair of sluices, one hundred foot, and in breadth upwards from the head of the higher sluice of the said pair of sluices to the higher part of the said ground and soil granted by these presents four perches.”

Such dimensions can hardly apply to any structures, excepting locks. But when it is observed, that elsewhere, instead of being called ‘a pair of sluices,’ the last of the above-mentioned works is styled a ‘pool,’ which pool is described as being half as deep again as the canal, it must be evident, without referring to the specification of 1699, that the work mentioned could be none other than a lock, having between its sluices, or gates, a chamber 189 feet in length by 23 feet in breadth, with a lift of 18 inches; and that it belonged to a canal 16 feet wide and 3 feet deep.

PLAN of the EXETER CANAL in the REIGN of QUEEN ELIZABETH.



J. Green j^r del.

It has been stated, that there were three locks, although two only are mentioned in the conveyances, and one only in the Act Books. This might be assumed from the terms 'lower and middle pairs of sluices,' which may be received as implying an upper pair. The question is however, set at rest, by documents relating to the case of the Mayor and Chamber *versus* George Browning. From these the Rev. Doctor Oliver ascertained, some years before these researches were commenced, that the canal had seven sluices. The lower and middle locks account for four of these, and the King's Arms sluice, which is shown in contemporary maps, for a fifth. The remaining two of course belonged to the upper lock. These are the only documents to which it is necessary to refer which have not been seen and copied by the author, or of which he has not verified the copies of others by personal inspection. These were not to be found amongst the numerous, but unarranged, muniments of the corporation; but the accuracy of so learned and careful an antiquary as Dr. Oliver, will not be disputed.

The situation of the upper lock was determined by the breadth of the ground purchased at the confines of St. Thomas and Alphington, and that of the middle and lower locks by the masonry, which protected the western sides of their chambers.

Instead of removing any weirs, Trew added that which is known by his name. It is also called St. Leonard's Weir. It is thus mentioned in the conveyance of the property purchased of William Floyre, Esq.:—"Some part lyeth and adjoineth next and unto the new wear lately made by John Trew, crossing over the said river of Exe; and some part thereof is that whereupon the said wear is lately made, set, fixed, and erected, for the better continuance and maintenance of the said new watercourse, and for the rebounding of water into the said new watercourse."

This wear was originally a stake wear, as may be seen in Havill's, Braun's, and other maps; but it was subsequently re-constructed of stone.

Close adjoining to the water-gate of the city (the place at which previous to the time of Edward III., vessels had been accustomed to unload), a quay was erected. It is thus described in an address of the corporation to Lord Burleigh:—"The wharf or key now made . . . the same city to their like great charges containeth in length 150 foot, all of ashlerwork; and in breadth 80 foot of like work, little more over, with a convenient crane thereupon builded."*

* Lansdowne MS., No. 25, Article 2, superscribed "20 June, 1577. The answer of the mayor, bailiffs, and commonalty of Exeter, to the complaint of Richard Sandford, of Topsham."

As Trew's account of the progress of the work, and of his expenses, states, that "the first month ended the 6th of March, 1563" (O. S.), it is clear, that it was commenced early in the February of that year.

The time occupied in completing the work, and the sum expended on it, are indicated in the following passage:—"The citizens of Exon have new made the said port, and made a fair and open key, which cost about three thousand pounds. And have laden and unladen their merchandises there these fourteen years."* The 'fourteen years,' which would allow about a year and a half, is not quite exact; for at that time the quay had not been commenced, as may be inferred by the following proceedings of the chamber.† "An Act made the 25th of July, 1565, for making of the key." Then comes the order, and at the bottom of the page is added, "which Act was renewed the 10th of September, 1565, &c.;" so that it seems not to have been begun at that time.

In about two years after the commencement of the work, it was evidently approaching completion, as may be collected from "An Act made the 25th of January, 1565" (O. S.)‡ "By whom it is ordered, that all such duties shall be paid for every ton of wares, discharged at the water-gate and key of the city, as is usually paid and received at Topsham, &c. And further, it is concluded, that Thomas Rawlyns, tailor, shall be the porter and keeper of the said water-gate, &c."

It may be presumed, that these appointments were made in anticipation; for as the quay had not been begun in the preceding September, a very short time would have been thus allowed for constructing such an extent of ashlerwork.

The real date may be inferred from an Act made the 2nd of December, 1566. "And further it is agreed, that in consideration, that Mr. Oliver shall well and truly collect and gather all such sums and sums of money, as shall be due for any kind of wares and merchandises discharged and unladen at the key of the water-gate, and to answer the same, from the feast of St. Michael last past, until the same feast next coming, shall have for his pains the sum of 40s."

The last order is on the 8th of January, 1566 (O. S.) "Who have fully condescended, that Mr. Smyth, receiver, shall build a crane or some other engine, for the charge or discharge of all wares and merchandises to be laden and unladen at the key."

* Lansdowne MS., No. 28, Article 12, superscribed "June 20, 1579, touching the Haven at Exon."

† Act Book, No. 3, fol. 160.

‡ Act Book, No. 3, fol. 165.

It may therefore be concluded, that in the autumn of 1566, the navigation was open, and, that in the spring of 1567, the works were finished—having been commenced in February, 1564.

It may not be uninteresting to show on what terms the engineer, who was likewise the contractor, undertook the work :

“ Order, agreement, and a full conclusion is made, that in consideration that John Trew shall and will conduct and make the haven of the city in such sort, as boats and vessels, laden with ten tons weight at the least, shall at all tide and tides pass and repass to and from the seas unto the city’s walls, and according to such articles of agreement between the said John Trew of the one party, and the mayor, bailiffs, and commonalty of the other party, agreed upon and sealed, he shall have the sum of two hundred pounds paid unto him, as also twenty-five pounds in money for the discharge of one hundred loads of timber, by him demanded, for saving of the Tucking Mills. And that the works being finished, he shall take no more for transporting, lading, and unloading of any wares and merchandises, but after the rates as followeth :—

| | <i>s.</i> | <i>d.</i> |
|--|-----------|-----------|
| “ For every ton of tonnage from Colepool, Powderham, and Exmouth, to Exeter | 2 | 8 |
| For every ton of kyntaledge from any of the said places | 2 | 0 |
| For every ton of tonnage from Topsham to Exeter | 2 | 0 |
| For every ton of kyntaledge from thence, to and from | 1 | 8 |
| For every boat loading with beer, shillingstones, lime, wood, coal, fish, corn, or grain, being not above six tons lading, shall have from Exmouth or elsewhere within Exmouth bar | 0 | 4”* |

John Trew is described in legal documents as a ‘Gentleman,’ and William Stroude, who preceded him, as an ‘Esquire,’ titles not lightly accorded in the days of Elizabeth, and which show the estimation in which the civil engineer was then held.

Trew’s work gave little satisfaction. It could not be entered “at all tide and tides”—which might have been foreseen. Besides, no barge canal can successfully compete with an ordinary road in a distance of only 3 miles or 4 miles. The double transfer, and the injury of goods, outweigh the advantage of the cheaper conveyance. There is reason for believing that the canal was deepened on the occasion of its being cleaved, or when new sluices were required.

* From a MS. belonging to the corporation of Exeter, entitled, “An Abstract of all the orders and ordinances extant, made, enacted and ordained, by the mayors and common council of the city of Exeter for the time being, for the good government of the said city and commonwealth of the same, by John Vowell, alias Hooker, and Chamberlain of the same.”

[1845.]

About 1675 the Chamber commenced the extension of the canal to the Topsham sluice, called in later documents after its keeper, Trenchard's sluice.* On the 16th of July, 1698, they "Resolved that the old work for the bringing up of ships be forthwith widened and deepened from the key to Trenchard's sluices."† Also "This day (12th September), certain articles made between the Chamber and Mr. Wm. Bayly, for widening and digging the new canal or river, making a stone wear, and digging the broad from the key thereunto, passed the common seal."‡

Troubles now began to multiply. Bayly, having proceeded so far as to render the canal impassable, ran away with the money. They applied for an Act of Parliament under the circumstances detailed in the statement of their case.§ Having recited the Act of the 31st of Henry VIII., they proceed, "By virtue of which power the said mayor, bailiffs, and commonalty, did then, to their great cost and charge, cut and make a new channel, or haven, through which boats and lighters did with merchandize, on spring tides only, pass and repass to and from the said city, and in length of time, trade increasing, and that boats and lighters might have a free passage to and from the key of the said city upon all sides, the said mayor,

* See the estimate for finishing the work sent to Parliament, 1699, wherein the distance along the course of the canal proves, that the Topsham and Trenchard sluice were identical. In Act Book, No. 11, we find, 13th of May, 1701—"Ordered that Mr. Way do take care of the works till further order, and that the sluices be not opened but when he is present, and he is to have inspection over Comb and Trenchard."

† Act Book, No. 11.

‡ Act Book, No. 11.

§ This and the 'Estimate,' which is given entire, belong to a set of extremely curious and interesting papers, which were found in 1834 by John Gidley, Esq., town clerk, in a drawer, where they had apparently lain undisturbed ever since they were written. They consist of original draughts of this statement of their case, with many corrections—of the petition to Parliament, with various alterations—of a second draught, with further corrections—of rough draughts of correspondence with the Bishop, the Dean, the representatives of the city, the Counsel and Solicitor, with numerous corrections, and the draught of the estimate, which is transcribed *verbatim et literalim*. A map is mentioned in the correspondence, but this probably was never returned. This series of draughts supply information which the corrected documents, as they were transmitted to their destinations, would not afford, and quite furnish a key to the private feelings and secret discussions of their authors. The petition to Parliament, for example, as it appears in the Journals of the House of Commons, has been chastened down to a calm decorum—differing widely from the racy and vehement style of the original. It would hardly be guessed from the former, that the extension of the canal was 'High Church,' and its curtailment 'Low Church,'

bailiffs, and commonalty, did at several times within five-and-twenty years last past, by enlarging, lengthening the said channel, making of new sluices, erecting a new wear and building of a new key with conveniences thereunto belonging, lay out and expend the sum of ten thousand pounds, and within two years last past that ships of the burden of two hundred tons may come up to the said city, did agree to have the same done for nine thousand pounds: but the person with whom such agreement was made being fled, they were forced, by his so far proceeding thereon, to endeavour to complete the same, which they did, and therein have laid out the further sum of eleven thousand pounds, which said sums of money are still due and owing from the said mayor, bailiffs, and commonalty—the revenue that hath accrued thereby, not having been sufficient to pay the interest of the same, as it became due. Which works, being of late by the violence of fresh waters and other accidents, much impaired and damaged, the same cannot be completed under the further sum of ten thousand pounds, as by men of judgment therein has been computed. And if the said works be not completed, it will be the ruin of this city in all matters of trade, the extraordinary charge of land-carriage of goods between this city and Topsham, being already three thousand pounds per annum; besides, the great damages and losses sustained by the carriage of the said goods. And the said mayor, bailiffs, and commonalty, being so indebted as aforesaid, and likewise in a further sum of five thousand pounds, they are in no way able of themselves to proceed further on in the said work, so that now, and for six weeks past, the same has lain in a ruinous condition, no boat whatsoever being able to pass or repass, &c.”*

In a letter to Sir Edward Seymour, they promise to send a map, plan, and estimate. This estimate, with all its erasures and interlineations, throwing much light on the work, is too curious to be omitted:—

ESTIMATE.

| | | |
|--|---|-----------|
| “To what may be the charge of finishing the Kay with its appurtenances, & making of it compleat in every respect | } | |
| “For finishing [walling] walls of† the Kay | | 264.00.00 |
| “Levelling & paving thereof | | 106.00.00 |

* From a MS. endorsed “The case of an Act of Parliament relating to the water-works.”

† In the original, the word between brackets is erased, and those *in italics* are inserted. This remark will apply to the various erasures and insertions throughout the document.

| | |
|--|-------------------|
| " 2 new Cranes | 100.00.00 |
| " Finishing the bridge between the wharfe } & the Kay } | — |
| " Making of slipp to land timber & other bulky } goods } | 085.00.00 |
| " Making of a Dock for the security of the } merchants' shippes & goods } | 750.00.00 |
| " Making of severall Bayes for the cleansing } & finishing the Broad, & securing the bankes } thereof } | 050.00.00 |
| " Finishing the wall of the [same for] for the se- } curity thereof, and removing the gravell below the } same } | 050.00.00 |
| | <u>1405.00.00</u> |
| " other side — | 1405.00.00 |
| " Removing the Bay att the mouth of the Canall, & } finishing the sluice there } | 0100.00.00 |
| " Repairing the breaches <i>in the said Canall</i> occasioned } by a flood, removing the gravell, making good } the bankes, <i>raising</i> & securing the same from the } mouth of the Canall to the Lock, which is about a } mile & half in length } | 705.00.00 |
| " For another pair of gates at Kings Armes | 700.00.00 |
| " Finishing the upper gates of the intended Lock, the } masonry, & other worke thereunto belonging, } making of the lower gates of the same Lock, } which must be 25 foot in height, & each leafe } thereof twenty foot broad, with the iron & brass } worke [thereunto belonging], ground floor & } apron thereunto belonging } | 1382.[08.09] |
| " For digging of a foundation [of] <i>for</i> the said lower } gates, making of [a] <i>the</i> flood & sufficient for } such gates, with timber & other materialls to bee } used in the same, [and for digging] } | |
| " For digging a poole between the said two gates, } which must bee 300 foot in length at least, & } about 80 foot in breadth [att] <i>on</i> the topp or surface } of the water, & 50 foot broad att the bottom, & } <i>for</i> walling the same on both sides, for the con- } venient & necessary passing of shippes one by the } other } | 181.00.00 |
| " For walling the poole as above | 605.00.00 |
| | <u>5078.00.00</u> |
| " For deepning the Canall, making and securing the } bankes from the said Lock to Trenchard's Sluice, } being <i>more than</i> a mile & $\frac{1}{2}$ in length } | 407.[9].00 |
| " For diverting and carrying off a Backwater, or } Brooke, called Alphington Brooke, & two other } Brookes, [which] thereby to prevent <i>frequent</i> da- } mages which may <i>otherwise</i> happen to the <i>said</i> } Canall } | 150.00.00 |

| | |
|---|--------------|
| " For repairing the ground-worke & hanging of a gate att the said sluice, called Trenchard's Sluice, smyth's worke, masonry & carpentry, & materials | } 555.00.00 |
| " For removing severall ridges of gravell, sande, & mudd, between Trenchard's Sluice & the Kay of Topsam, which otherwise would obstruct the passage of shippes, fixing of poles and markes there for the secure passage of shippes [Bordelling]. | } 100.00.00 |
| " For new making & repairing & finishing of 4 [horse] Turne Bridges for horses & carriages, & 2 foot Bridges over & athwart the said Canall & the walls thereof | } 200.00.00 |
| " For [through] throwing off the gravell att a considerable distance from the margent of the bankes to prevent falling & slipping in of the same into the said Canall | } 350.00.00 |
| " other side | 5078 |
| | 6340 — |
| " other side | 6340.00.00 |
| " For filling upp severall cutts* made in the landes adjoining, for diverting the water during the tyme that the Broad & Canall were deepning | } 0300.00.00 |
| " For damages to the owners of the landes adjoining to the Broad & Canall from the tyme of the beginning of the said worke untill [to] the same shall be compleated. | } 0700.00.00 |
| " For the purchase of severall [through which] landes used in widening of the said Canall, and in banking the same | } |
| " To Topsham | 7340.00.00 |
| " For making of a new cutt from [Trenchard's slu] a place called Goffen's poole to a place called [Powderham poole], Turfe poole, being [near three] [ne] two miles in length, & making a sufficient Lock and poole att the mouth thereof & walling the same, that shippes of considerable burthen may come up to the City. | } 6000. |
| " For the purchase of all the landes through which such new cutt shall bee made and the bankes of same. | } |
| " For two [new] Turne Bridges for horses & carriages over the said new intended Canall, & walling the same on both sides" | } |

Through the opposition of petty interests in Exeter and Devon, the application for the Act failed. The popular triumph was complete, and not less costly than complete, for the Chamber with

* One of these cuts, which was never filled up, occupied part of the site of the present basin.

great difficulty, after a lapse of 25 years,* accomplished a work, the imperfect character of which will best be understood from Mr. James Green's Reports. It would be a very moderate calculation to set down the consequent loss to the town in delays, injuries, and repairs, at £250,000.

Sympathy is due for the Chamber of that day, whose opinions were too far in advance, not only of their city, but of the Legislature. It was no small matter for a corporate body, in a corner of the empire, to conceive and attempt (more than 50 years before the Sankey Cut), a canal of 10 feet in depth—a canal, in all other respects, coinciding with the still greater work, which they were enabled to complete before their final extinction in 1835, and which remains a monument of the courage, integrity, and zeal, with which, for 700 years, they had directed the commercial affairs of their city.

No. 671A. “Continuation of the Memoir of the Canal of Exeter, from 1819 to 1830.” By James Green, M. Inst. C. E.

As Mr. De la Garde's Memoir, which embraces so clear an historical account of the first formation of the Exeter Canal, and its successive improvements and extensions, closes with a reference to its imperfect condition in the year 1819, and mentions the Reports subsequently made thereon, it may not be unacceptable to the Institution to be succinctly informed of the state of the canal at that period, and what has been done, since that time, to render it a ship canal, capable of passing vessels of 500 tons burden quite up to the city of Exeter.

Previous to the year 1820, the canal had been for many years, only capable of passing vessels drawing 9 feet of water from the tide-way of the river Exe, about a mile above the town of Topsham, to the quays in the river Exe, at Exeter; but the increase in the size of the canal, although accomplished by great perseverance, on the part of the Chamber, and at a vast expense, had been effected in a very imperfect manner, and the several works had become greatly impaired and dilapidated.

The canal from the King's Arms sluice, at its entrance into the

* In Act Book, No. 11, on the 27th of December, 1724, a committee is appointed, who “are desired to pen a letter to the Lord Walpole and such other persons as shall be thought proper for the opening of the port.” On the 3rd of the ensuing January, similar letters are directed to be sent to the Lord Chief Justice King, and the Archbishop of York.

It must not, however, be supposed that the canal was wholly impassable during this long period, for there is abundant evidence to the contrary.