

SECTION THREE

THE RIVER LEA: 1730s-1767,

A PERIOD OF LIMITED IMPROVEMENT

CHAPTER FOURTEEN

THE DESIRE FOR IMPROVEMENT: THE ACT OF 1739

The impression that the flash-lock navigation was considered to be adequate is strengthened by the evidence which emerges during the 1730s. During this decade the bargemen patiently negotiated a settlement which was then authorised by Act of Parliament in 1739 (12 Geo II, c.32).

Throughout this period the prime intent of the majority was not to substantially improve the navigation, but rather to obtain a regular source of income to maintain the existing navigation, and thus relieve themselves of the financial responsibility.

As a consequence the Act of 1739 is curiously unambitious when compared to other river improvement legislation. It was only along the short stretch of the navigable river above Ware that any improvement was authorised. For the river below Ware, the Act is silent.

Some did consider that more substantial improvement was necessary (see 14.4), but they do seem to have been a minority. Unfortunately such conclusions must be tempered by the nature of the evidence available. Little is known of the initiatives that arose in Ware, but much more of those which emerged from Hertford. This is a problem for there were separate and distinct initiatives from both centres, which then seem to have been merged by the process of negotiation.

14.1 Early negotiations

On 19 January 1732 the Hertford aldermen were told that the town of Ware intended to apply to Parliament to improve the Lea between Ware and London. Immediately the aldermen advanced 5 guineas so that a clause could be inserted in the intended bill to improve the river between Hertford and Ware, and they further resolved that if the bill was proceeded with, then they would consider what sums of money were necessary to improve this stretch of the river.¹

Nothing else is known of these developments at Ware, and no approach is minuted in the Commons Journals. It may be that they held back, for within a month there is evidence that the Hertford aldermen were considering their own bill.

On 5 February 1732 Sir Thomas Clarke, one of the borough M.P.s, wrote to the aldermen informing them that the bill intended for submission 'for the ascertaining and improving the Navigation of the River Lee between the Towns of Hertford and Ware' would be opposed by the Trustees of Ware Park estate. Unfortunately the reasons for such opposition are not minuted, nor were they when Clarke wrote a few days later, repeating his points, after news of the death of Thomas Byde, owner of Ware Park. The aldermen were not dissuaded, they instructed Clarke to continue, and did so later that same month after receipt of another letter from Clarke.²

2. *Byde died of the gout on Sunday 6 February 1732: London Evening Post, 10-12 February 1732.*

Once more nothing is known of the exact intentions at this date, and once more the initiative to approach Parliament was not pursued, for nothing is minuted in the Commons Journals.

The next recorded development is that in July 1732 the aldermen were informed that it had been 'confidently ascertained that an Advantagious Demand hath been made by the Owners of Ware Park Estate on the New River Company for Ware Mills'. The town clerk was immediately ordered to inform the Company that the ancient way of navigation was along Manifold Ditch, and that the aldermen expected to receive a yearly satisfaction from the Company as compensation for their property rights along the Ditch, and also expected that barges would be allowed to use this route again.³

Such an exchange suggests that the Trustees of Ware Park estates may have opposed the aldermen's plans to improve the navigation because they were considering an offer for Ware Mills, and that it was the New River Company who were the interested party.

Company records for this period were destroyed in a fire in 1769, but there are reports that they were expanding and consolidating their activities in the 1730s.⁴ The purchase of Ware Mills would be a sensible option, for it would remove one source of possible conflict over their supplies of water from the Lea.

However such developments must have aroused fears amongst bargemen that they wished to increase their intake of water from the Lea once more. Hence the threats from the Hertford aldermen about the possibility of re-opening the navigation down Manifold Ditch, and also the proposals which were submitted to the Company in September 1732.

These proposals noted the importance of navigation along the Lea to London, but stressed the problems caused by the New River Company taking too much water from the river. Comments were made that the right to take water was either 'unsupported by good Foundation, as is the Opinion of some Gentlemen of Knowledge' or should be limited to that amount allowed by the Privy Council decision of September 1669. Yet the Company was said to be taking about one-third of the river's capacity, far in excess of what the Company were properly entitled to.

Nevertheless the bargemen, recognising the importance of the Company's supplies of water to the capital, were prepared to allow the Company a properly ascertained supply, at existing levels, in return for an annual payment from the Company. This money was then to be used by a body of Trustees or the Commissioners of Sewers to maintain the navigation and erect locks, weirs and turnpikes where necessary.

These proposals are important, for although it was another seven years before the necessary legislation was obtained, the principle embodied in these proposals dominated that act. The ensuing negotiations and disagreements were about details, not about the basic premise of these initial proposals.

The immediate response of the New River Company to these proposals is not known, but it was obviously prepared to negotiate. The Company was taking far more water from the Lea than that allowed by a strict interpretation of the Privy Council decision of 1669 (see 10.7), and could not meet existing commitments if these supplies were reduced. The bargemen had taken legal advice before submitting their proposals,⁶ and certainly had a case, but it was in their interests too to negotiate.

6. *Advice was asked about whether the Company could be restricted to those amounts of water allowed by September 1669 decision, whether the Company's turnpike in Manifold Ditch could be removed so that barges could use this route once more, and whether the new route opened in 1658 was legal.*

The precise details of these negotiations are not available, but by 1735 agreement had been reached that the existing route between Hertford and Ware would be retained, that the Company should purchase Ware Mills, and that the Company should be allowed as much water out of Manifold Ditch as would pass 'thro a Cavity of Six feet wide + two feet deep to be placed even with the Sill which lyeth at their old Waterhouse at the Mouth of their new Cut in a slow and languid Current.' In return the Company promised to pay £500 immediately and an annual rent of £50 to maintain the navigation between Hertford and Ware, and a further £1000 and an annual rent of £300 to maintain the navigation below Ware.⁷

A major item in the discussions which had led to this initial settlement was the precise arrangements which were to regulate the quantity of water the Company took from the Lea. These arrangements were described in the Act of 1739, but except for some minor alterations, were those which had been agreed upon by 1735.

These new arrangements were that a 'Balance Engine' was erected at the mouth of Manifold Ditch to regulate the amount of water passing out of the navigable channel into the ditch. Further down the ditch, near Chalk Island, a turnpike was built right across the ditch, which was to turn the water coming down the ditch through a timber trough, 6 feet wide x 2 feet deep, into a cut which led to the New River.

The novel arrangement was the 'Balance Engine' at the mouth of Manifold Ditch. It was described thus:-⁸

The Ballance Engine is so artfully contrived, as to draw as much Water out of the River, when the Water is at the lowest, as it does or can do when it is at the highest, by means of a Ballance Boat, which sinks as the Water falls, and so in Course raises the Gate of the Sluice so much the higher, which, by that means, is always capable of supplying the lower Gage erected near the old Turnpike ... and as the Water rises in the River, it lowers the Gate of the Sluice to such a Degree, as to prevent more Water going down than can run through the Gage, which is so exactly calculated as to keep the New River at all Times brimful.

Other changes introduced by these new arrangements were that Manifold Ditch was widened, the timber trough or gauge was set up, and the turnpike was rebuilt so as to turn water through the trough, but also to allow surplus water flow over it in order to keep the ditch below supplied with sufficient water.

It had taken time to plan and test these new arrangements, both to the satisfaction of the Company, and of the bargemen, who hired Dr Desaguliers to give themselves an independent opinion. There were some further problems about these arrangements before the Act of 1739 was obtained, mainly about height and positioning of the various components, but the principle was retained, and was to prove adequate. There is no further record of dispute over these arrangements after 1739, and no alterations were made by the Act of 1767, which was innovative in every other sphere governing the navigation.

The Hertford aldermen were involved in these discussions, making suggestions that the navigation down Manifold Ditch be re-opened, consenting in 1733 that the Company should enjoy 'a Slow and languid Current of Six feet wyde and two feet deep' though they wanted £800 and an annual rent of £50 in return, then demanding in 1735 that the Company remove their Balance Engine,⁹ but the aldermen were also particularly concerned to improve the navigation between Hertford and Ware.

In the early months of 1733 the principal inhabitants of Hertford organised a voluntary collection to finance such improvements, and the aldermen subscribed £100 to this fund.¹⁰ Not only were there intentions to improve the existing arrangements, but there were fears that the financial problems of Hertford waterworks meant that steps were necessary to prevent the existing navigation falling into disuse.

The owner of the waterworks, John Ward, had been in financial difficulty for several years, and been declared bankrupt in 1730. Amongst the economies he took were that he stopped paying the rent for the waterworks and stopped maintaining the two turnpikes at Hertford. In October 1733 the aldermen began legal procedures to recover the waterworks, and by January 1734 had obtained a verdict in their favour.¹¹

Immediately afterwards the aldermen signed an agreement with the organisers of the voluntary subscription that they take over the turnpikes and restore and maintain them and the navigation, without paying rent, and without harming the waterworks. This agreement was to last 'untill an Act of Parliament can be obtained', but was to cease if no Act had been obtained within three years.¹²

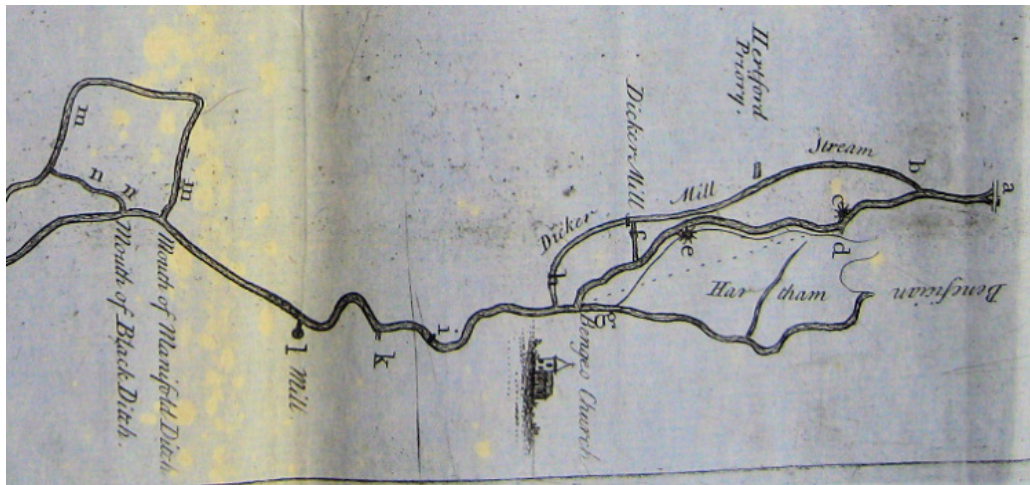
This last referred to the fact that a bill was being considered to improve the river between Hertford and Ware. A petition, engrossed as 1733/4, was prepared but never presented to Parliament on behalf of the 'Mayor of Hertford + severall land Owners farmers + dealers'. This petition stressed the importance of the weekly market at Hertford and the navigation from there down to London. However problems were noted because

that part of the said River between the said Townes as runs on the South East side of a Comon called Hartham...(in length One Hundred and Thirty two poles) being

very Crooked and having many Windings therein is Choaked up and now become almost Impassable

To offset this it was suggested that

by making a New Cutt Streight thro the Comon ...from the South West to the North East end thereof(in length Ninety Eight Poles) and turning such part of the said River ... into such new Cutt, and erecting proper Lockes and Workes thereon



This proposed cut is shown above, the dotted line leading from the paper mill (d) to the confluence of the rivers near Bengeo Church. This map was prepared by William Whittenbury for presentation to Parliament, and he was also paid 4 guineas for a model of a 'new Cistern' to be built along the cut and a visit to London. Despite such preparation no approach was made to Parliament, and this particular improvement was dropped, and not included in the Act of 1739.¹³

Instead a Commission of Sewers was obtained for the short stretch of the river between Hertford Bridge and Ware Bridge, the only time such a commission was sought. Nothing is known of the work of this commission, but it seems likely that it restricted itself to scouring and cleansing the river, and that its costs were met out of the fund raised by the voluntary subscription in Hertford.¹⁴

One further initiative to emerge from these early negotiations was that Joshua Gilman, a Quaker distiller,¹⁵ organised the collection of records relevant to the Lea between Hertford and Ware. In February 1732 he began searching the borough records, and the information he collected was published in London in 1734.¹⁶

15. *Joshua Gillman came from a Quaker barge-owning family. In 1724 he was recorded as a distiller, in 1732 as a maltster and distiller, and in his will proved December 1738 a 'Dealer in Malt Hops and Strong Waters' He was surveyor to the Cheshunt Turnpike Trust, and his son took over this post after his father's death. His widow, Mary nee Kimpton, continued in business after her husband's death until her own in 1740:*

14.2 The approach to Parliament

Thus by the middle of the decade some form of agreement between the bargemen and the New River Company had been reached, and the townsmen of Hertford and Ware were agreed upon a joint approach, rather than considering separate bills as had been the case at first.

On 10 March 1737 a petition was submitted to Parliament on behalf of the Mayor, Recorder, Aldermen, and Inhabitants of the town of Hertford, and of the Inhabitants of the Town of Ware ... and of several Farmers, Maltsters, and Barge Owners ... on behalf of themselves, and several Hundreds of other Persons residing near to, and concerned in, the Navigation on the River Lea ... and of the Governor and Company of the New River

It stressed the importance of the Lea to London, both as a transport artery and as a major supplier of water. It noted that there had been differences between the bargemen and the Company, but that these had 'lately been accomodated'. Thus leave was sought, and granted, to introduce a bill.¹⁷

This bill was not submitted. A failure explained by the bargemen thus:

It was agreed by all the Parties that application should be made to the Parliament ... And thereupon the Company caused a Bill to be drawn + a Copy ..delivered to the Navigators in which all or the greatest part of that Agreement was sett forth But disputes arising about some Clauses... + the Company alledging that unless the Sill of the New Cavity was laid four inches higher than the Sill of their old Waterhouse they could not supply the Citys of London and Westminster so well

Thus the bill was held back, whilst the effect of these new demands on the navigation were tested. Since it was found that the navigation did not suffer, Parliament was approached once more.¹⁸

In 1738 two acts were sought. A private act (II Geo II, c.14 PR) was obtained whereby the New River Company acquired Ware Mills for an annuity of £400, which authorised the construction of a flash lock between Ware Mills and Ware Bridge to assist the passage of the barges, and which confirmed an agreement which had been reached between the Borough of Hertford and the Company on 1 May 1738. This agreement fixed the new route opened in 1658 as the navigable route for the future, and fixed the terms on which water could be supplied to the mills and the bargemen could use the pound lock next to the mills.¹⁹

In addition a public bill was submitted on 24 April 1738. It received its first reading, but on 4 May it was decided that the second reading should be postponed for a month. A decision which meant that the bill was lost, for the session ended on 20 May.²⁰

20. *another copy of this bill is catalogued as 1739, but since this copy is identical to 1738 bill at the Bodleian and since it continues to refer to a contract to purchase Ware Mills (authorised by Private Act of 1738), it seems probable that it too is the 1738 bill, rather than an identical bill submitted the following year:*

Several factors may explain this development. The New River Company stated that the bill had been dropped 'upon an Opposition which however groundless would have Spent more time than the Sessions was like to Continue'.²¹ This could be a reference to a further disagreement with the bargemen who complained that the Company had at the last moment demanded an additional three inches of water from the Lea,²² or to a decision of the London aldermen to oppose the bill because it ignored their claims to jurisdiction along the lower Lea.²³

Additional opposition came from Philippa and John Walton, owners of Waltham Abbey :Powder Mills. They argued that the new arrangements allowed the New River Company too much water from the Lea, making an aside that it was a remarkably cheap bargain for the Company. They felt that in dry weather the lack of water in the navigable river meant that the workings of their mills were hampered and their carriage of raw materials and finished powder along the river would be held up.²⁴

A comparison between the 1738 bill and the Act of 1739 shows no material changes to those clauses dealing with the entitlement of the Company to water from the Lea. Any disagreement over an additional 3 inches of water in 1738 was settled, and the bargemen and the Company once more approached Parliament, to submit a bill which must have been broadly similar to that submitted the previous year.

This meant that they were still prepared to ignore the City's claims to the lower Lea, even though they had this time met with representatives of the City before approaching Parliament.²⁵ The City responded by strenuously opposing the bill when it came before the House.

On 19 February 1739 leave was sought to introduce the bill. The same evidence in favour, with one minor change, was presented as had been submitted in 1737 and 1738. Leave was granted, and on 23 March the bill was submitted.²⁶

26. *The only change in evidence was that Desaguliers revised his estimate of the amount of water allowed by 1669 decision. If surmise of fn.20 above is correct, then no copy of the 1739 bill survives.*

Evidence in favour had been given by Bostock Toller, the town clerk of Hertford who was acting as agent for the petitioners, by Jasper Bull, clerk to the New River Company, by Dr Desaguliers, and by two bargemasters, Thomas Pettit and James Fordham, who had both known the river for nearly 50 years.

Pettit and Fordham talked of the problems caused by millers and weir-keepers who were determined to extract as much money as possible from the bargemen, but emphasised that the situation had been better when a Commission of Sewers had been in existence. They told Parliament that the bargemen had raised over £3000 to meet the costs of scouring and cleansing the river, and argued that the payments from the New River Company would adequately meet such costs in the future, and also allow the bargemen to be recompensed for the sums they had already expended.

Opposition came from several quarters. The most trenchant, and effective, was that mounted by the City. They argued that their rights along the lower river were ignored, and they were not prepared to renounce them. As a result the bill was substantially changed at the third reading. The City's mistaken claim to have built a new cut along the lower Lea was upheld (see 12.1), and clauses were inserted acknowledging the City's rights and restricting the jurisdiction of the proposed Trustees and Commissioners of Sewers to that part of the navigable river above the new cut. The title of the bill was altered to accommodate these changes.²⁷

Nevertheless the City continued to oppose the bill.²⁸ This was because they felt that the proposed bill was inadequate, and that a more concerted improvement policy was needed. Other groups shared this opinion (see 14.4), but such arguments had no effect either on the passage or the wording of the act.

Neither did those petitions or arguments submitted by the milling community. Opposition came from millers and mill-owners at Waltham Corn Mills, Waltham Abbey Powder Mills, Enfield Mills, Chingford Mills, Tottenham Mills and Walthamstow Mills. There was much collusion, for all their petitions were almost identical, and, strangely, they were brief and formal, providing no evidence of trenchant or well argued opposition.²⁹

Opposition from all these parties was presented both in the Commons and the Lords. Yet a comparison between the bill submitted in 1738 and the published act shows few changes, with the exception of those made to accommodate the City's jurisdiction over the lower Lea. There were some minor changes to clauses dealing with the New River Company's rights to extract water from the Lea and those dealing with the appointment of Trustees. Commissioners of Sewers, with all their traditional powers, were retained, to work in tandem with the Trustees, and not be superseded by them. But that is all.

Otherwise the bill passed through all its stages without interruption, and on 14 June it received the Royal Assent.³⁰ On receipt of the news in Hertford, the church bells were rung in celebration.³¹ Similar excitement in Ware and Stanstead can be assumed.

14.3 The Act of 1739

This public act first reconfirmed those arrangements above Ware which had been authorised by private act the previous year. The navigable channel was fixed forever as that route which had been opened in 1658, the terms regulating the use of the pound lock next to Ware Mills were fixed, as was a toll of 1/-, and the turnpike between the mills and Ware Bridge was once more authorised. Several clauses then detailed the arrangements controlling the New River Company's rights to water from the Lea, with provisions to ensure that they did not surreptitiously increase their intake, and that their rights were protected for the future. These clauses confirmed those arrangements which had been worked out in the early years of the negotiations.

The act then specified those who were appointed as Trustees, responsible for implementing those improvements mentioned in the act, responsible for obtaining a

Commission of Sewers to scour and cleanse the river, and who were to pay the costs of this commission out of the payments specified in the act from the New River Company.

Sixty six Trustees were specifically named, but many ex officio members were also authorised. These included the Lord Mayor, Recorder and aldermen of the City of London, the Mayor, Recorder and aldermen of the Borough of Hertford, the Knights of the Shire and county M.P.s of the three riparian counties of Middlesex, Essex and Hertfordshire. All nominated Trustees, and those appointed as replacements by the Trustees themselves, were to possess property worth at least £100 a year. They were in fact the same landed gentry who had traditionally acted as Commissioners of Sewers, the trading interest who used the river were not at this date appointed. A quorum of ten Trustees was stipulated.

The Act then specified those payments to be made to the Trustees by the New River Company. For the river between Hertford and Ware the Company were to pay £750 immediately with an annual payment of £50 thereafter. For the river below Ware the initial payment was £2500 with £300 annually thereafter. The initial payments specified were those originally agreed, topped up by backdating the annual rental payments to Michaelmas 1734.³²

The Act also specified some payments which had to first be paid by the Trustees out of the sums received from the Company. Out of the account for the river below Ware £1000 was to be paid to several bargemasters and maltsters, to repay them for those expenses they had incurred in executing the Commission of Sewers which had been appointed in 1721 and for expenses since then in scouring and cleansing the river. Out of the account for the river between Hertford and Ware the Trustees were to pay £320 12/- to the Borough of Hertford, to repay them for their expenses in repairing the turnpikes, in scouring and cleansing the river, and in soliciting the Act of 1739.

Having made these payments the Trustees were to use the remainder of the initial payments and the annual rents to implement those improvements specified in the Act and to generally maintain the navigation. Separate accounts were to be kept for the river between Hertford and Ware and for the river between Ware and the beginning of the new cut. The Act had specified some minor improvements for the river between Hertford and Ware, the result of the discussions at Hertford, but curiously, no improvements for the river below Ware were detailed. The Trustees were merely authorised to use their income 'for purchasing, building, or hiring Locks or Weirs upon the said River, in such Manner as the said Trustees, or any of them, shall direct'.

The Act also preserved the traditional rights of the City of London along the lower Lea, mistakenly recognising that they had built a new cut as a result of the Act of 1571. Also recognised were the traditional rights of the town of Ware to take water from the Lea to cleanse the highways leading through the town.³³

33. *'The Town of Ware stands low, upon a Level with the River; the main Street is kept clear of Dirt, by turning the Water through it as often as there is Occasion': N. Salmon, History of Hertfordshire, 246.*

Finally there was a clause added by Parliament, fixing penalties upon any barge-owner who allowed his crews to carry any 'Fishing Net, Gun, Engine, or other Instruments for taking and destroying of Fish or Game'.

This Act thus authorised those arrangements and improvements agreed in discussions between the bargemen and the New River Company, and those which had been discussed at Hertford. Missing are any improvements for the river below Ware. The work of the Trustees in the years after their appointment (see Chapter 16) suggest that there were definite ideas for the improvement of this stretch of the river. It would be interesting to know just why they were omitted from the Act. Were there fears that possible opposition would prevent the passage of the Act, so it was decided to authorise only those improvements over which agreement had been reached, and leave the others to the future?

Another point to emphasise about this Act is just how unambitious it was. No powers to build new cuts, to erect pound locks or lay out proper towing paths were sought. The traditional powers of Commissions of Sewers along the river were not superseded. This in complete contrast to most river improvement legislation in the late seventeenth and early eighteenth centuries.³⁴ Further confirmation that the flash lock navigation was considered adequate.

14.4 An alternative scheme?

One of the reasons that the City continued to oppose the bill, even after their rights had been recognised at the third reading in the Commons, was that they felt that 'the said Money is not Intended to be laid out in providing Locks to Supply the Want of Water, which is allowed to be taken away'. They stressed that they did not wish to restrict the rights of the New River Company; they just felt that better provision should be made for the navigation.³⁵

Similar points were made in another petition presented to the Lords. This argued that the New River Company were to be allowed to take so much water that the navigation would suffer. They felt that this 'Defect can no otherwise be remedied than by erecting Locks or Weirs, as Reservoirs for Heads of Water to be let out as Occasion requires, for the free Passage of Vessels and Barges'.³⁶

The exact improvements hinted at in these comments are not recorded, they could be either the provision of a series of specially constructed flash locks, or the construction of new cuts and the introduction of pound locks.

It is of interest that one of the witnesses before the Lords was John Hore, who had 'lately surveyed the River Lee'.³⁷ Hore was a well known engineer with a long interest in river improvement schemes. He had implemented improvements to the river Kennet and to the Bristol Avon, and had formulated schemes for the rivers Chelmer and Frome. In every case he had favoured pound locks and either a series of cuts to by-pass mills and other

obstructions or a lateral canal along the river valley.³⁸ It is possible that he proposed similar improvements for the Lea, but if so, no details now remain, and there is no later reference to his ideas during the 1750s and 1760s when such ideas re-emerged.

NOTES TO CHAPTER FOURTEEN

1. HRO, BHR Vol 21 fo.133.
2. Ibid, fo.134 and unfoliated page between folios 134 and 135. Byde died of the gout on Sunday 6 February 1732: London Evening Post,10-12 February 1732.
3. HRO, BHR Vol 21 fo.136.
4. R. Seymour, A Survey of the Cities of London and Westminster, Borough of Southwark and Parts adjacent (2 vols,London,1734), i.26.
5. BL, L.R. 33 d 27, Extracts ...relating to ... the River Lea between Hertford and Ware,28-29.
6. Ibid, 25-28. Advice was asked about whether the Company could be restricted to those amounts of water allowed by September 1669 decision, whether the Company's turnpike in Manifold Ditch could be removed so that barges could use this route once more, and whether the new route opened in 1658 was legal.
7. HRO, A2575. This document is a later copy deposited at Hertford in 1946 by Major F.C. Giles-Puller. The original has not been traced.
8. Lincolns Inn Library, MP 102 fo.174.
9. HRO, BHR Vol 21 fos.137,139,147.
10. Ibid, fos.139,301.
11. Ibid, fo.141; ibid, Vol 39 fos.32-41; K.R. Fairclough, East London Record, 1985.
12. HRO, BHR Vol 21 fo.142.
13. Ibid, Vol 39 fos.61-62.
14. PRO, C231/10 fo.223; C191/2 no.105; PRO, DL 17/90.
15. Joshua Gillman came from a Quaker barge-owning family. In 1724 he was recorded as a distiller, in 1732 as a maltster and distiller, and in his will proved December 1738 a 'Dealer in Malt Hops and Strong Waters' He was surveyor to the Cheshunt Turnpike Trust, and his son took over this post after his father's

- death. His widow, Mary nee Kimpton, continued in business after her husband's death until her own in 1740: HRO, Q84 fos.96,98; Guildhall Library, MS. 11936/17 fo.280; HRO, BHR Vol 21 fo.133; HRO, 51 HW 13; 52 HW 2 ; HRO, T/P 1/1.
16. HRO, BHR Vol 21 fos.133,134,137,139, and unfoliated page between folios 134 and 135; BL, L.R. 33 d 27, Extracts ...relating to ... the River Lee between Hertford and Ware.
 17. CJ, xxii.788,825.
 18. HRO, A2575.
 19. 11 Geo. II, c.14 PR; BHR, Vol 21 fos.157-58; *ibid*, Vol 39 fos.43-59; GLRO, Acc 1953, Deeds Register Book A no.13.
 20. CJ, xxiii.50,98,158,186; Bodl. MS. Rawl. C 192; another copy of this bill is catalogued as 1739, but since this copy is identical to 1738 bill at the Bodleian and since it continues to refer to a contract to purchase Ware Mills(authorised by Private Act of 1738), it seems probable that it too is the 1738 bill, rather than an identical bill submitted the following year:BL, SPR 357 c6(46).
 21. GLRO, 0/400/4
 22. HRO, A2575.
 23. CLRO, Repertories, 142 fo.299.
 24. CJ, xxiii.166; Lincolns Inn Library, MP 102 fo.174.
 25. CLRO, Repertories, 143 fos.159,202,214.
 26. CJ, xxiii.238,293,299. The only change in evidence was that Desaguliers revised his estimate of the amount of water allowed by 1669 decision. If surmise of fn.20 above is correct, then no copy of the 1739 bill survives.
 27. CLRO, Repertories, 143 fos.159,202,214; CLRO, Common Council Journals, 84 fos.127,136; CLRO, Small MS. Box 24 no.II; House of Lords RO,petition of Lord Mayor 30 May 1739; CJ, xxiii. 310,533,375.
 28. CJ, xxiii.375; LJ, xxv.409. Despite alterations in bill, 2 aldermen still acted as tellers for the noes
 29. CJ, xxiii.354,367; LJ, xxv.402; House of Lords R0 ,17579, 11581, 11583, 17585, 11587.

30. CJ, xxiii.293,333,346,354,369,373,375,378,380; LJ, xxv.398,412-14,416-17,419.
31. HRO, BHR Vol 49 fo.286.
32. CJ, xxii.825.
33. 'The Town of Ware stands low, upon a Level with the River; the main Street is kept clear of Dirt, by turning the Water through it as often as there is Occasion': N. Salmon, History of Hertfordshire,246.
34. See Acts of Parliament listed in T.S. Willan, River Navigation in England,152-55.
35. House of Lords RO, petition of Lord Mayor, 30 May 1739.
36. Lincolns Inn Library, MP 103 fo.241.
37. LJ, xxv.309.
38. A.W. Skempton; 'Engineering on the English River Navigations to 1760' in M. Baldwin, A. Burton, editors, Canals: A New Look, 23-44; T.S. Willan, 'The Navigation of the Thames and Kennet 1600-1750', Berkshire -Archaeological Journal, x1(1936),146-56; R. Boyes, R. Russell, Canals of Eastern England,63; M. Handford, The Stroudwater Canal Gloucester, 1979) 32-41.