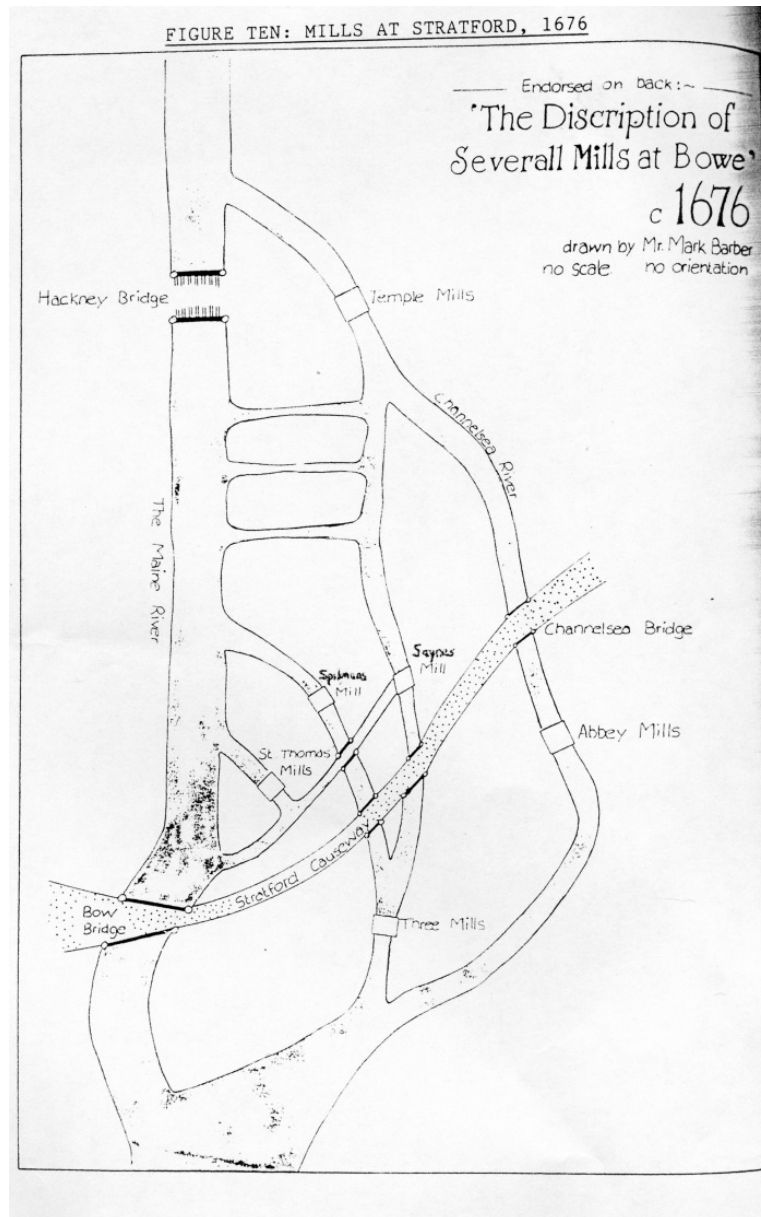


CHAPTER TWELVE

THE LOWER LEA

12.1 The City of London's jurisdiction

The City had reason for a close interest in events along the Lea. Amongst the properties whose income was applied to the maintenance of London Bridge were two tidal mills north of Stratford Causey, Saynes Mill and Spilmans Mill (see Figure10 below).¹



In addition the grain and malt brought downstream not only increased supplies in the London markets, but if landed at the City's legal quays, increased the City's revenue from the meteage dues paid on all water borne goods landed at London.²

In 1414 the City had claimed jurisdiction over the Lea as well as over the Thames and Medway, and their rights were recognised at this date.³ The City did pursue their claims with regard to the Thames and the Medway,⁴ but never again over the Lea, despite a close interest in improving the river in the reigns of both Henry VI and Elizabeth I.

Then in 1695 newly appointed Commissioners of Sewers for the river were told that they had no jurisdiction over those parts of the Lea 'inquirable into by any Custome or Speciall priviledge of the City of London', and this part of the Lea was vaguely recognised as the 'new Cutt near Hackney'.⁵

These instructions were an official recognition of the mistaken claim that the City had built a canal or new cut as a result of the act of 1571 when in fact they had not (see 3.1). Since it was recognised that they had built such a canal, the City were awarded jurisdiction over it, as specified in the Act of 1571. The City were to defend these claims until relinquishing them voluntarily in 1767.⁶

At no time were the limits of the City's jurisdiction precisely delineated. The City authorities themselves were somewhat vague about the exact extent of the new cut they claimed they had built, but in practice it came to be recognised that the new cut was the lower four miles of the river below the mouth of the head stream of Temple Mills, and more particularly that channel known as the Bowling Alley (see Figure 11).⁷

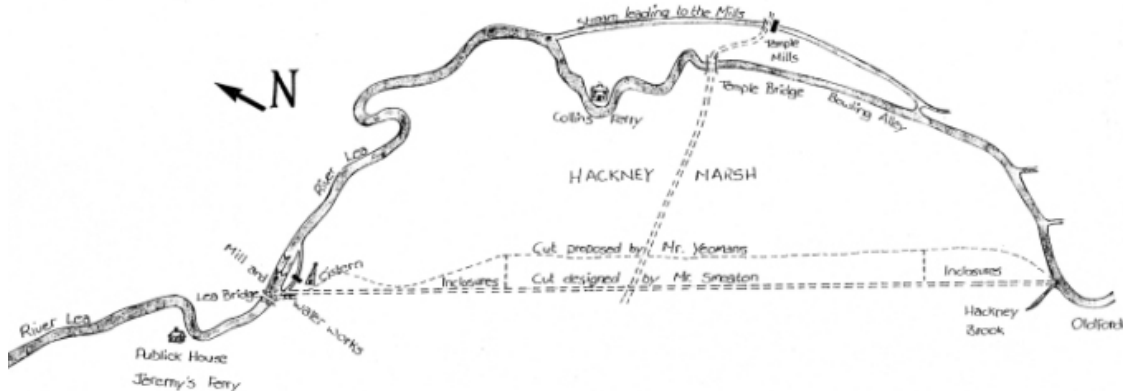


FIGURE ELEVEN: THE LEA AT HACKNEY, 1767

It must be that genuine confusion explains why this claim was pursued and accepted, but there must also be a strong suspicion that several circumstances combined so that the interested parties had varying but sufficient reason to press the claim and to ignore any evidence to the contrary. It is now the purpose to try and outline how these circumstances arose.

Much of the genuine confusion must have arisen because of the numerous channels into which the lower Lea split. It is difficult to provide precise evidence, but there must have been many changes to these channels, even if the basic pattern remained the same. Such

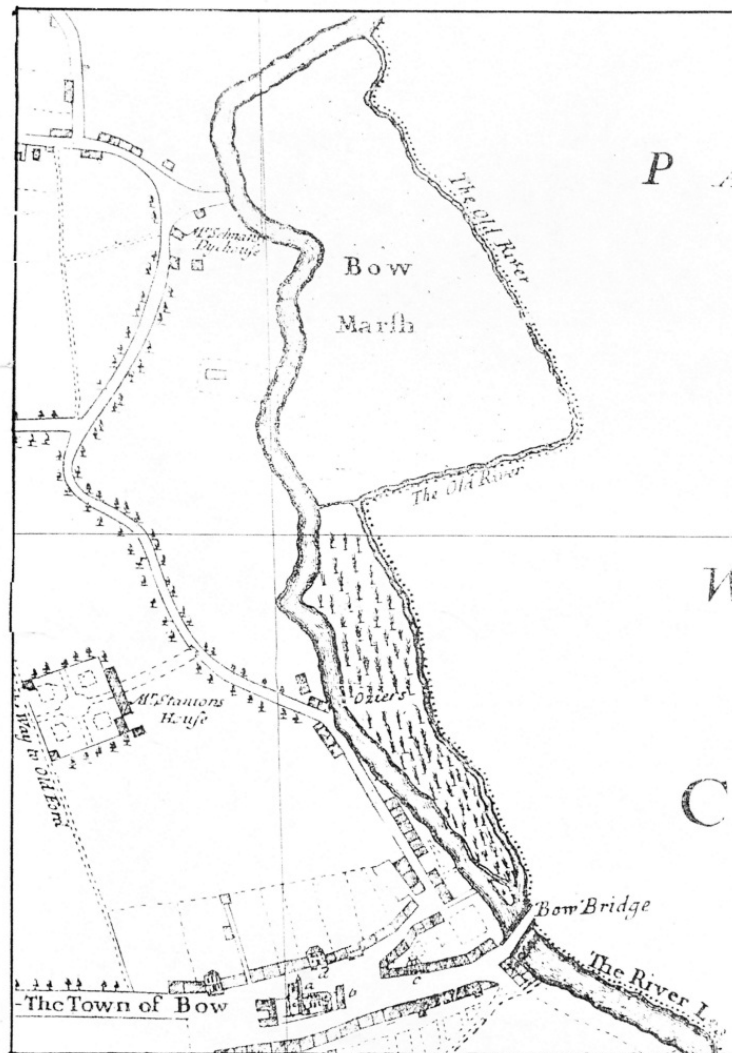
changes arose both from natural causes and from alterations made by riparian landowners and local millers.

Confusion over the navigable channel was long standing. In 1551 a Commission of Sewers set out to determine the traditional navigable channel, and one of the alternatives noted was different from those noted later.⁸ Then in 1575 commissioners were asked to consider 'wch is the water of Lee at the partinges benethe temple milles of ij Streames there is no speciall choyce to be made but by Deliberate vewe'.⁹

Some details of the confusion which was to arise in the seventeenth century can be discerned from a survey of the parish of Stepney made in 1703 by Joel Gascoyne (see Figure 11 above & 12 below)¹⁰

FIGURE TWELVE: PARISH BOUNDARIES ALONG LOWER LEA

Extract from Joel Gascoyne's map of Stepney, 1703



Sufficient additional evidence has been found to make further comment, but insufficient to explain the confusion, and why certain channels were known locally as the old or new river Lea.

One source of confusion must have been that the county and parish boundaries in the area did not follow the traditional navigable channel as might be expected, but diverged at two points.

One such point was that the boundaries followed the millstream leading to and from Temple Mills rather than the main river (or Bowling Alley). Caxton and Norden do not show this on their county maps, but references in 1551 and 1614 noted as an established fact that the mills stood on the shire stream, and descriptions of the mills always noted that they stood in the parishes of Hackney in Middlesex and Leyton in Essex.¹¹ Further downstream Gascoyne noted that the boundary stood along 'The Old River' to the east of the main river at Old Ford. It is not clear what purpose this particular channel had, there is a possibility it had some connection with a tidal mill known as 'Landmylnes' which had once been part of the manor of Stepney, but had most probably fallen out of use by the early sixteenth century.¹²

12. *In 1343 Stephanie Asheday was tenant at Landemylnes. In 1431 a trench and weir at Old Ford served mills called 'Landemylnes or Lunsmills'. In July 1566 Lord Wentworth sold a messuage called the Land Mills, and in October 1632 'One Capitall Messuage called ye Land Mills, barns and meadow' were sold for £600: Harte, fos.111,139; GLRO, M/93/436 fos.9-10.*

Further evidence of this confusion emerges from Parliamentary Surveys of property confiscated during the Interregnum. The land between the main river and the tail stream of Temple Mills was known as Bullivants, Bully Fence, or other variants. In 1652 this land was described as abutting on channels known as 'New River of Lee' and the 'Old River'. Further downstream St Thomas Meade, land between the main river and the head stream of St Thomas Mills, was described as being 'surrounded on both sides with the river of Lee'.¹³

Just why such terms should be in local usage at this date has not been determined. It is difficult to imagine any authority which could have been altering the navigable channels during the first half of the sixteenth century, so it seems that such terms bore some reference to a confused memory of events during the 1570s. The weakness of such supposition is obvious, more evidence is necessary, but it can be noted that oral memory of events at Waltham in the 1570s can be shown to be wrong (see 8.2).

These local usages probably explain the instructions given by the London aldermen in 1654 that an investigation be held into 'the Citties power in any sort in and upon that pte of the River of Lee called the Newcutt'. Such concern arose out of fears that alterations at Temple Mills would prejudice the City's tidal mills further downstream, there is no reason to suspect that the City intended to establish jurisdiction over the lower Lea at this date.¹⁴

Nothing more is known of these investigations during the 1550s, and no interest in the 'new cut' is recorded again until 1676. In the intervening years however the City co-operated with the Lea bargemen in their efforts to oppose the New River Company (see 11.2), and must have become aware of the use made by the bargemen of the Act of 1571 in their efforts to annul the rights to collect tolls, if for no other reason than that in 1671 Edward Hopkins presented his papers to the City.¹⁵

Then in January 1676 the aldermen expressed concern that a bargemen, Joseph Anger,¹⁶ was unloading malt at Hackney and carrying it by land to the capital, thus avoiding the meteage dues payable if it was landed at wharves along the Thames. City officials were asked to investigate whether such dues could be claimed from Anger, but also to discover 'what advantage may bee made to this City from the said River the Soil and profits whereof are vested in this City by an Act of Parliament made 13 Elize cap: 18'.¹⁷

16. *Within a few years Joseph Anger(Aunger) was dead. In his will, where he describes himself as a yeoman of Ware, he leaves Padlers Farm in Tharfield to his son, Joseph, makes monetary bequests to his daughters Mary Godfrey, Judith Dickenson and Anne Lewin, and makes their husbands (all Ware maltsters) and two Royston maltsters responsible for annuities to be paid by his son.*

The City were thus investigating whether they had built a canal or not. The following month they set up a committee 'for the better Asserting the Cities Jurisdiction and Right to the River Lee and Regulating and Improving the same for the public Uses and benefit of this City'. Hopkins was instructed to attend this committee.¹⁸

18. *Hopkins was awarded the right of making one person free of the City, and was himself taken on as one of the City's watermen as a reward for his work on this committee.*

This committee produced two distinct initiatives. A decision was taken to prosecute a Mr Graves who, it was argued, had 'taken to himself the whole benefit of Fishing in the River Lee Pretending to be Solely Intituled thereunto.' Graves probably held a lease to the fishing along the lower Lea from one of the riparian manors.

By threatening such action the City were claiming that they had built a canal along the lower Lea and were thus entitled to the profits from the fishing. It seems unlikely such action was ever prosecuted, for debates in the ensuing decades show that the City were still trying to establish these rights, and it can be noted that in 1707 a John Graves enjoyed rights to moor his fishing boat at a wharf at Stratford.¹⁹

The other initiative arose from Anger's defence. He argued that he did not unload at Hackney to avoid the meteage dues, but was forced to because of the poor navigable condition of the lower Lea. This defence may have been disingenuous, there were several good reasons to unload at Hackney rather than sail all the way to London, but the aldermen chose to respond. They instructed their Water Bailiff to scour and cleanse the lower Lea, and over the next three years he spent nearly £300 on this work, and on completion was told to preserve the lower river in the future.²⁰ There is no evidence to suggest that the Water Bailiff did indeed follow this last instruction.

Whilst the Water Bailiff had been carrying out this work during the 1670s however, rows broke out with local millers who felt that the scouring, and particularly the deepening, of the navigable river threatened their supplies of water. These rows came before the Privy Council, who decided that a Special Commission should be issued to settle the dispute. They instructed the Attorney General that the preamble to this commission should include 'A salvo ... as to the Rights of the said City to the said River by Act of Parliament'.²¹

This suggests official recognition of the City's claims, but this was not to be. In fact no commission was ever issued to settle this dispute,²² and in 1681 rows over Bow Lock meant that the City once more appointed a committee to examine the act of 1571 and report what rights the City enjoyed. No report was ever minuted. Instead the dispute was referred to the Commissioners of Sewers for the Levels of Havering and Dagenham.²³

The City had failed to establish their claims, and for some reason were not prepared to pursue the matter further. These matters remained throughout the decade. Then in 1690 a Dr William Savage informed the aldermen that the soil and ground on each side of the 'New Cutt from the River Lea to the River of Thames' was occupied by several landowners, and the fishing in the cut let by several local lords of manors, without any profit to the City. This, he felt, contravened the Act of 1571. Once more the City set up a committee to investigate.²⁴

This committee perused ancient records, surveyed the Lea, and also investigated what rights the City enjoyed along the Thames. By 1693 they were sufficiently confident to recommend that negotiations be opened with anyone willing to lease the 'Citties ground on each side' of the new cut. Negotiations with Savage began.²⁵

Then in July 1694 the Lea bargemen approached the City complaining about the tolls demanded at weirs and locks along the river which, they argued contravened the Act of 1571. The bargemen wanted the aldermen to petition for a commission to scour and cleanse the river. This the City did, in August 1694, at the same time nominating the sixteen members they wished to see appointed, four to represent the City, whilst the counties of Essex, Hertfordshire and Middlesex were to have four members each. The City added a rider that they were not to bear the costs of this commission.²⁶

The specific choice of sixteen members was a deliberate reference to the size of a commission specified in the Act of 1571. The bargemen and the aldermen had joined forces to use this act to pursue two separate claims. The bargemen wished to revoke the right to collect tolls, the City wished to establish a right of conservancy over their new cut.

In June 1695 a Commission of Sewers was issued, but with 45 members, not the 16 requested. However the commissioners were specifically told that they had no rights over any part of the river over which the City were laying claim.²⁷ This was a significant victory for the bargemen and the City.

Negotiations with Savage recommenced, and on 24 March 1697 agreement was finally reached. Savage leased from the City all rights to the fishing in their new cut and all rights to any profits which could be obtained from the land on either side of the cut. The City were to retain responsibility for the navigation. The lease was for 21 years, and Savage agreed to pay a peppercorn rent and a moiety of the profits for the first two years, and 1/- and a moiety thereafter. He accepted responsibility for maintaining the banks and the bed of the cut, as well as for a bridge in Hackney Marsh, most probably Temple Mills Bridge. He also promised to establish in law, at his own expense, the City's proper title to the new cut.²⁸

It was this last promise which was controversial. If the case was successfully established, then by the terms of the Act of 1571 the City would enjoy all rights to the fishing in the new cut and would also own all land on either side of the cut, up to a distance of 50 or 60 feet from the bankside. Existing landowners would resent such interference with their rights. Costly legal action could be expected.

The lease was extremely vague about what constituted the new cut, merely specifying

All that their new cutt River comonly called the River of Lee alias Ware River extending and to be accompted from the old River called Ware River above the Town of Ware ... downwards in and through the Countyes of Hertford Essex and Middlesex unto the River of Thames

Despite years of investigation, the City were still reticent. Not only were they leaving it to Savage to take the necessary legal action, which could be explained solely by their own financial difficulties, there is no reason to suspect that they were able to present him with the evidence he needed to prosecute his case. Perhaps the City were well aware of the weakness of their claims?

There were good reasons for all parties to pursue such vague claims, and to explain why they might be prepared to either ignore the lack of evidence that a canal was built or any evidence to the contrary. There is reason to suspect that the parties did not intend to pursue the claims resolutely when the lease was signed.

The bargemen were intent on revoking the right to collect tolls at Waltham Turnpike, based largely on an interpretation of a clause in the Act of 1571(see 11.2). If the City's claims, based on other clauses of the same act, could be established, this would be a welcome precedent. In addition, such success would mean that the City was responsible for maintaining the navigation along part of the river, another important bonus.

The City authorities had reasons too. Their agreement with Savage did not commit them to any expenditure unless Savage was successful, but it did raise the possibility, however remote, that income would accrue to them in the future. At this date the City's financial position was so bad that legislation had been needed to protect them from imminent bankruptcy. Immediately following this rescue operation, private interests forwarded several schemes, all of which either offered to relieve the City of existing responsibilities

in return for any profits, or offered them a share in some profit making venture in return for their support. Savage's proposals for the Lea must be seen as one of the more nebulous of these schemes.²⁹

Savage's motives were that he held the title to Temple Mills in Leyton and wished to improve this property. In 1700 he granted a lease to tenants to grind brazil-wood, redwood and logwood, raw materials for the local dyeing industry. In the lease he stipulated that if ever more water power was necessary, he would erect a weir across the navigable river. He assured the tenants that his agreement with the City gave him the necessary authority.³⁰

This tortuous conjunction of interests was to have no success. The bargemen did not secure the annulment of any tolls, the City never established any rights to the fishery or to the adjoining lands, and Savage was unable to accomplish his limited aims to improve the mills.

Soon after the tenants occupied the mills, they asked Savage to build the weir. He hired workmen, and it was built for £150. However he met with fierce opposition from the bargemen. They complained to the aldermen, who instructed Savage to remove the weir. This angered his tenants, and the ensuing rows over their lease to the mills had still not been settled by 1707.³¹

By this date Savage was dead. His will, proved in August 1704, left a life interest in Temple Mills and most of his other property to his widow, Margaret, after which Temple Mills were to pass to his grandson, Savage Elderton. However the lease to the new cut was left not to his widow, but to his son-in-law, John Elderton.³²

32. *PRO, PROB 11/477(169). In his will he described himself as an esquire. Besides Temple Mills, the will mentioned houses in Golden Square and John Street in Clerkenwell, a house at Hackney, houses in Saffron Hill and Vine Street, Westminster, lands and osier grounds in Hackney, West Ham and Leyton, 'Chimicall preparacons' and drugs; Greek and Latin books, and one of Queen Elizabeth's coronation pieces.*

Enquiries by the City discovered that William Savage had made no attempts to establish the City's claims in the courts, and that no profits had been obtained from the lease.³³ It is unlikely that Elderton pursued the matter. The lease must have been disregarded long before it expired in 1718, as were the claims that lay behind it. The City later 'unsuccessfully argued that their rights along their new cut, in which they specifically included Bow Creek, entitled them to collect meteage dues on all malt and grain landed along the lower Lea,³⁴ but they were never to pursue attempts to claim either the fishing or any rights on the bankside. All that remained from all this activity is that the City acknowledged an undefined responsibility for the navigation along the lower Lea.

From all this evidence it is difficult to picture just what the City claimed or pretended they had done. Savage suggested, the Act of 1739 implied, and Griffiths, the Water Bailiff, confirmed, that the whole lower Lea below the mouth of the head stream of Temple Mills was the new cut. However comments by John Strype, and the policy pursued by the bargemen after 1739 (see 16.5) suggest a more limited concept, namely

that the new cut was that channel down to old Ford known as the Bowling Alley. Of this channel Strype rightly noted 'it is more likely an antient branch of the Lee, and never cut by Art'.³⁵

Another clue to contemporary thinking is provided by a local historian, Sir Henry Chauncey, who had access to the interested parties. He wrote that he had been 'credibly informed' that the City had spent £80000 on building the new cut and improving the river.³⁶ Such tales suggest he had been talking with local fishermen.

Having acquired some responsibility for the lower Lea, the City was involved in subsequent events. Thus it was that the bargemen complained to them about Savage's weir, that the bargemen complained to them about a weir at Hackney waterworks in 1707, that the City played an important role in discussions over a tumbling bay next to the Three Mills between 1700 and 1715 (see 12.3), that they inspected the rebuilding of Bow Lock in 1721, and also removed millstones which impeded barges in Bow Creek.³⁷

Such interest was always in response to requests from the bargemen; the City never took the initiative themselves. They did not treat the lower Lea the same as they treated their responsibilities for the conservancy of the Thames and Medway. They never undertook annual surveys. Indeed in 1739 Parliament could be told that the 'City has never held any Court of Conservancy or laid out any thing to preserve the Navigation since their new cut was made.'³⁸ Unfair, and indeed inaccurate, comment but indicative of the City's attitude to the lower Lea. It should be noted that the bargemen themselves never insisted that the City regularly scour and cleanse the lower Lea until the 1730s and 1740s.

Even this limited involvement meant expense to the City, without any of the returns that had first stimulated their claims. Under such circumstances it might be expected that the City would easily relinquish their responsibilities. The bargemen assumed this when they submitted bills to Parliament in 1737, 1738 and 1739, but they were mistaken. The City fought hard to defend their vague rights along the lower river, and the bargemen were forced to compromise and amend their bill accordingly (see 14.2).

12.2 The navigation

The feature dominating the navigation along the lower river was the ebb and flow of the tide as it was controlled by the operation of Bow Lock. Bow Lock was a tidal lock maintained and operated by the owners and tenants of the Four Mills at Bromley, but its operation also benefitted both the bargemen and the other tidal mills in Stratford.

Evidence suggests that though the construction of the lock may have differed over time, the principle of its operation did not until it was replaced by pound locks in 1855. In that year the lock had a pair of gates as shown in Figure 13 below, as it did for much of the period under consideration, but there were times when it was merely a simple dam with removable flashboards in its centre.

The principle was that the incoming tide either pushed the gates open and flowed up the Lea or it was allowed in by the removal of the flashboards. When the tide had reached its peak and begun to turn then Bow Lock was shut, either by the turning tide forcing the gates shut or by the re-insertion of the flash boards. Thus the ebbing tide could not escape by the same route that it had entered.

Part of it escaped down the head stream feeding the Four Mills, hence its ownership, but the amount of water penned back by Bow Lock was such that much escaped down the head streams of the numerous other tidal mills in Stratford. Bow Lock thus controlled the operation of these mills, but to a lesser extent than the Four Mills.

It was during the period between the closing of Bow Lock and the time when the ebbing tide had escaped down the alternative channels that the barges came down the lower Lea from Hackney to Bow Lock; the increased depth of water behind the closed Bow Locks being essential to allow the barges to overcome the sharp fall in the river bed along the lower river and the remains of an old causeway at Old Ford.

Near the end of the ebb tide Bow Lock could be opened to allow the bargemen to pass down into Bow Creek and on to the Thames on the last of the ebbing tide. It was over the opening of the gates at this point or the failure of a neap tide to force open the gates that most disagreement between the millers and the bargemen was to occur. The operation of the lock brought benefit to all parties, but the millers could hamper the speedy passage of the bargemen if they chose. An additional problem was that at times too much water was held back by the mills and Bow Lock, with the result that adjoining lands and sometimes even Stratford Causey were flooded.³⁹

There was a lock on the site from at least the reign of Edward 1 (1272 -1307), when it was said that Henry de Bedyk, the prior of Halliwell, whose priory owned the Four Mills first erected it. There were early arguments over whether the lock should be allowed to stand, and in 1345 and 1362 juries presented that it should be pulled down. Whatever the short term effect of such disputes were, the lock actually remained. A description in 1416 shows that it was a simple dam with an 18' gap for barges to pass through which could be closed by the insertion of flashboards, and there were no disputes over its rights to exist at meetings of the commissioners appointed in 1551.⁴⁰

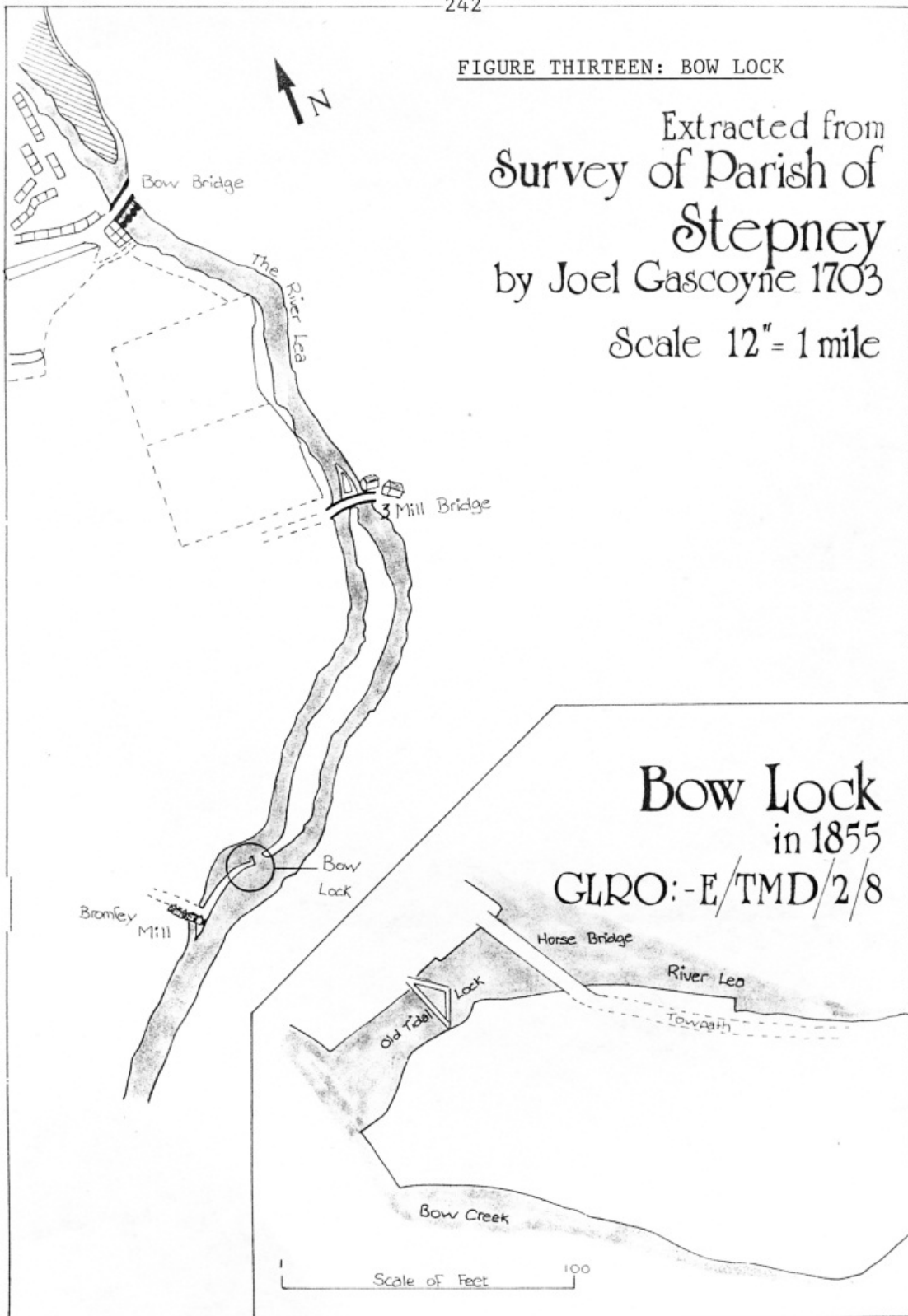
The owners of the Four Mills rebuilt Bow Lock in 1573. Since the City of London had a close interest in the Lea at this date, it became involved in the work. The Dutch surveyor who was preparing a scheme for a Limehouse canal at the City's request was ordered to inspect the rebuilding plans, and a committee was appointed to supervise the actual construction⁴¹

41. *CLRO, Repertories, 17 fo.456; 18 fo.42. Committee met with Mistress Culverwell and 'Payne the mylne maker'. At this date Elizabeth Culverwell owned East Mill, one of the Four Mills:PRO, STAC 5 B88/34.*

FIGURE THIRTEEN: BOW LOCK

Extracted from
Survey of Parish of
Stepney
by Joel Gascoyne 1703

Scale 12" = 1 mile



In 1588 Lord Burghley noted that 'The lock at ye Boo do open at the first begyning to flow They shut it at the highest of the flood'.⁴² This does suggest a lock with gates opened automatically by the tide. Such an interpretation could be confirmed by complaints in 1581 that at neap tides the height of the incoming tide below the lock was so low compared to the river above that barges could not pass without Bow Lock being opened, yet the lock-keeper, on the instructions of the millers at the Four Mills, refused to do this.⁴³

43. *BL, Lansdowne MS. 32 no.34. Exact quote:- '...at certeyn tymes the flud in the saide ryver is lower a great deale withoute the locke, then at other tymes it is wch is at the nete Tydes whereby the boates passing betwene Ware and London cannot withoute the openyng of Bowe locke make their passage'.*

Yet by the end of the century there are references to Bow Lock having 'eight rooms' in it, which suggests a dam with removable boards.⁴⁴ However the Four Mills estate had been allowed to decay during the 1590s during disputes over their ownership, and rebuilding of the estate was necessary when the new owner gained possession.⁴⁵

It is thus possible that a new type of lock had been built in 1573, but that it had decayed and been replaced with the more traditional type of lock by the end of the century. More evidence is necessary, and differing interpretations could be placed on the evidence available.

Evidence collected in 1713 shows that in the early 1660s Bow Lock was still a dam with removable flashboards, and that John Burton 'had 40s a year + the house to look after the flashboards'.⁴⁶

Soon afterwards major changes were made to these arrangements by the miller at the Four Mills, Robert Cowden. The sill of Bow Lock was raised two or three feet, a pair of gates was erected, the river above the lock was narrowed from 40' to 18', and a lock above Bow Bridge may have been removed. Bow Lock was no longer a dam with flashboards, the principle whereby the gates were open and shut by the force of current of the water had been introduced, and thereafter retained.⁴⁷

Such measures increased the depth of water behind the lock, to the obvious benefit of the Four Mills, but had conflicting effects on the navigation. The increased depth was beneficial, but the heightening of the sill and the absence of a lock above Bow Bridge must have been disadvantageous.

Particular complaints emerge from evidence collected in 1712. One bargeman stated⁴⁸

he hath seen boats lay at the said lock for want of water 3 times in the space of 6 months the tides not being able to open Bow Lock it lay soe high and the back water lyeing soe heavy on the Gates that they keep out the Tyde

Other bargemen confirmed that this happened frequently at neap tides. Another bargeman stressed the problems of passing through the lock

Bow Lock is soe kept that if a barge be ever soe little above it at Ebb soe that he be not there Just as the Tyde Turns, the Tyde shuts the Gates and they are forced to lay there another Tyde although there is sometimes an hours Tide to good

In response to such complaints George Sorocold suggested that the sill should be laid lower so that the gates could open even at the lowest neap tide, but it was not until Bow Lock was rebuilt in 1721 that the sill was lowered, and then most probably not by as much as Sorocold had suggested. The City hired a surveyor to supervise this work, which was done by the owners of the Four Mills, and marks were made so that the same sill height could be maintained for the future.⁴⁹

In 1766 John Smeaton once more recommended that the sill should be laid even lower and the lock itself be rebuilt with two pairs of gates. However no such powers were sought in 1767 and the principle of the lock's operation remained unchanged until replaced by a pound lock during the 1850s.⁵⁰

Of the lock above Bow Bridge little is known. In 1551 a 'landmylles lock' stood along the river between Old Ford and Bow Bridge. In 1601 there were complaints about the 'continual lying open of the old lock above Bow Bridge' which suggests decay. During the 1660s it was owned by a Mr Beast (or Best) who died in 'the sickness year', after which the lock either fell into ruin or was pulled down by Robert Cowden when he rebuilt Bow Lock. It was never rebuilt.⁵¹

The precise ownership of the lock has not been discovered. Historically it seems to have been the property of a tide mill known as 'landmylles' which had disappeared by the sixteenth or seventeenth century. Whatever, its effect by this date was to pen back water so that barges could pass down through Old Ford with less difficulty and more water could escape down the head streams of the tidal mills above Stratford Causey. Its removal after the 1660s may have caused some problems, and during the debates over the tumbling bay in the first decades of the eighteenth century (see 12.3) proposals were made to rebuild this lock.

Shortly below the limit of the tidal flow at Hackney the river split into two main channels, the traditional navigable channel down to Old Ford (known locally as the Bowling Alley) and the Channelsea which fed Temple Mills and Abbey Mills before merging with the navigable channel once more at Bow Lock.

The bargemen's passage down the Bowling Alley depended both on the tide and on the flash of water coming down from Hackney. On occasion they also needed the help of the miller(s) at the Temple Mills. After major rows about the expansion of milling capacity on this site, the Havering and Dagenham commissioners issued orders in 1627 that the miller(s) should shut down millgates and floodgates for a whole hour whenever the bargemen requested. They stipulated that no toll could be demanded in return for this assistance.⁵²

Millers further upstream were entitled to a toll on such occasions, so the explanation for this exception at Temple Mills may be that it lay within the confines of tidal waters. It is known that the bargemen voluntarily offered the miller a toll in 1743,⁵³ so perhaps there were other occasions when a toll was paid or demanded, just because it was so close to the limit of the tidal influence. None of the other tidal mills lower down at Stratford ever enjoyed such rights.

A further factor about the navigation along the lower Lea was that Stratford emerged as a port in the coastal trading network, although it was never officially recognised as such. Coastal craft came up Bow Creek to unload at Stratford for a variety of reasons. They could avoid the crowded Thames, they could deliver direct to the expanding industries in West Ham and Stratford, they could tranship to smaller Lea barges for up-river carriage, and there were many areas east and north of London which were better or as easily served from wharves in Stratford as they were from the wharves along the Thames.

Little can be precisely determined about this development. In the absence of any official status as a port, data is not available. A study of the industrial development of Stratford, West Ham, Bromley and Old Ford in the seventeenth and early eighteenth centuries would provide many leads, but this has not yet been attempted.⁵⁴

Some idea of this growth can be obtained from the evidence available about wharves in the area. It can be assumed that all tidal mills in the area had their own wharves,⁵⁵ that many local industries acquired their own landing rights,⁵⁶ that there may have been a public wharf, but there were also many private wharves, both along the navigable Lea and the numerous millstreams in the area.⁵⁷

55. *In 1590 the 'little gryst mill', one of the Four Mills, had a wharf of its own and the miller also had the right to use a crane on a wharf at one of the other mills, 'the greate Mill'. In 1711 an inventory of the Four Mills noted 'Two Waggon and one Cart Eight old horses and a Mare hornbeams and Timber and a parcell of old Stuff on the Wharfe and some pieces of Oak one old Barge':*

In particular the lower reaches of the Channelsea river developed important wharfing facilities. In 1648 William Cheyney complained that the Havering commissioners had granted him a liberty for passage of boats and lighters from the Thames up the Channelsea to a wharf at Charles Bridge, but that the miller at the Abbey Mills had built a bridge over the river so low that this passage was now severely hampered. The miller argued that the Channelsea was not an ancient right of way but a 'hired passage' for one year, but his arguments were rejected by the commissioners. Thereafter the miller had to allow such passage, and the locks at his mills had to permit the passage of barges.⁵⁸

As early as 1633 a wharf at Charles Bridge was let, which was not necessarily the wharf that Cheyney was interested in. Richard Boswell who made proposals to improve the Lea in 1721 (see 13.3) leased two wharves along the Channelsea, one at Charles Bridge, the other next to Abbey Mill. A map made in 1767 shows that there were wharves all along the Channelsea below Charles Bridge.⁵⁹

Further evidence of the expansion of wharfing facilities emerges from rows between the millers at St Thomas Mills and Spilmans Mills. Tenants of the latter could bring goods up to a wharf along their tail race, but access was hampered by a bridge leading to St Thomas Mill. During the 1640s this bridge had been supported by a 'Trussell in the middle'* which allowed only small craft to pass underneath. Thus all goods brought to the mill had to be transhipped at the bridge before they could be carried to the wharf.

About 1650 this bridge was pulled down and a new one erected by the tenant at St Thomas Mills. This bridge was 2 feet higher and had no 'trussell' which meant that larger craft could come up to the wharf without having to tranship their goods at the bridge. This was a distinct advantage to the tenant at Spilmans Mill who agreed to pay an annual rent of £4. There were later disputes over this bridge and the rental payment but the improvement remained.⁶⁰

Just as the City were concerned that barges coming down river from Ware were avoiding meteage dues by unloading at Hackney and Stratford, they were concerned that coastal craft could avoid the same dues by entering the Lea and unloading there.

During the 1730s the City took action to close this loophole. Cases were brought against Harward Martin of Bromley, cornfactor and maltster, Peter Lefebure of the Three Mills, distiller, and William Moakes of Ware,⁶¹ maltster, and action against others was considered. All were charged with avoiding meteage and other dues on 5000 quarters (a purely nominal quantity) they had shipped from ports in East Anglia, Essex, and along the south coast.

61. When Moakes died in August 1738, it was of sufficient interest for Boyer to report, with the comment that this 'eminent Malt-factor' had left an estate worth £15,000 to his son-in-law 'Dr Wolly of Hertford'. In fact Moakes left his estate to Trustees to provide an annuity to his widow and some immediate bequests of £500 to three grandchildren. After his widow's death his estate was to pass to his grandson, William Waller

The City's claims were based on arguments that the lower Lea was a 'new cut' over which they had the jurisdiction, and that they were thus entitled to the same dues that they enjoyed at the legal quays in London. The outcome of these cases is not known, but there is no later evidence to suggest that the City were successful in establishing such claims.⁶²

Some coastal craft did unload along the Lea, but how many cannot be determined. It can be noted that craft with a capacity of 300 quarters were said to use the lower Lea in 1676, considerably larger than the Ware barges which were said to be about 200 quarters capacity at most at this date.⁶³ Also it must be stressed many Ware barges did make the journey to London and returned with cargoes of coal and malt.⁶⁴ Loading and unloading along the lower Lea was only an option. It cannot be said which was the more normal.

12.3 The row over the tumbling bay

This particular dispute is the best documented event along the river before records improve after 1730. The dispute arose from the conflicting interests of various millers

and landowners in Bromley and Stratford. It was only when proposed settlements to these disputes threatened the navigation that bargemen became involved, but thereafter they had sufficient influence through the City of London to ensure that the navigation became a major concern in the ensuing debate.

The original complaints were that the millers at the Three Mills and the Four Mills penned back so much water, above their proper allowance of 4½ feet, that the lands further upstream were often 'overflowed' and the three tidal mills north of Stratford Causey were unable to work efficiently by reason there was too much water in their tail streams. Such complaints were longstanding.

Normally the Havering commissioners responded to such complaints by insisting that the millers should not pen back more than the customary 4½ feet, that they should open their locks and gates whenever floodwaters came downstream, and by imposing fines for persistent refusal to co-operate. However the millers at the Three Mills and the Four Mills frequently refused to co-operate, and often penned back more than 4½ feet of water in order to lengthen the time they could work their mills.

Such complaints were made to the Commissioners of Sewers in 1695, who repeated their normal orders and imposed a fine of £100 on Robert Cowden, the miller at the Four Mills. On this occasion however, the complainants, landowners and millers in High Meads and Mill Meads north of Stratford Causey, proposed that a tumbling bay be built as well.⁶⁵

This tumbling bay, or overshot as it was alternatively called, was a weir set in the bankside over which water could pour whenever the depth of water in the navigable channel rose above 4½ feet, thus negating any efforts by the millers to pen back more than the customary allowance. Interested in this proposal, the commissioners ordered a special survey to be taken three days later, a survey which was conducted by five commissioners and five jurors, with some millers and landowners in attendance. This survey recommended that a tumbling bay be built just below Bow Lock so that surplus water in the head stream of the Four Mills flowed into Bow Creek. This tumbling bay was to be 40' wide and was to cost £200, but no decision was taken as to who was to pay or who was to maintain it for the future.⁶⁶

When this survey was discussed at the next Court of Sewers Cowden and John Chinnal, the miller at the Three Mills, complained that they had not been present to put their case. Another survey was ordered. Nine commissioners attended on this occasion, including Sir Benjamin Bathurst who held an interest in the Three Mills,⁶⁷ and they reversed the findings of the previous survey. They held that the existing arrangements were satisfactory and that no tumbling bay was necessary. Their recommendations prevailed.⁶⁸

67. *Bathurst's son, Allen, was married to Katherine, daughter of Sir Peter Apsley. Apsley had left the Three Mills to his eldest son, Peter, and Katherine had inherited them on Peter's death.*

In 1701 however, the millers and landowners above Stratford Causey made similar complaints and proposals to the commissioners. After investigation they ordered that a

tumbling bay be built, identical to that proposed in 1695, at the expense of the millers and landowners of High Meads and Mill Meads.

The bargemen had been alarmed at these developments, feeling that the reduction in the depth of water above Bow Lock could hamper their navigation. They complained to the aldermen in July, and it was most probably as a result of ensuing representations that the final orders in August made provision for flashboards to be ready to insert in the tumbling bay, if ever it was necessary to pen back more than 4½ feet for the benefit of the navigation.⁶⁹

The tumbling bay was not immediately erected, for proponents of the scheme were unable to purchase the necessary land from the Bathurst family. It was not until August 1709 that John Key, the miller at St Thomas Mill, obtained possession of the land, and not until December that construction of the tumbling bay began after Thomas Hall had been hired to carry out the work.⁷⁰

Immediately the bargemen complained to the aldermen who instructed their Water Bailiff to tell Key and Hall to stop their work. Since they ignored this approach, the City brought a writ of *certiorari* before the Queen's Bench and the court granted an injunction prohibiting work until after a proper hearing of the case.

This hearing took place on 19 June 1710, with the City presenting the bargemen's arguments that the tumbling bay reduced the amount of water in the navigable channel, making it difficult for barges to pass over the flats at Old Ford. However it was not these arguments that won the day. The court quashed the orders of the Commissioners of Sewers on a technicality, namely that it had not been specified whether the height of the tumbling bay was to be measured from its sill, from the bed of the river, or from any other point.⁷¹

The commissioners immediately reconvened, and on 9 September 1710 they ordered that a tumbling bay be built 4½ feet high from its sill, reiterating that flashboards could be used to pen back more water if it was ever needed for the navigation. As a further response to the bargemen's complaints about the flats at Old Ford the commissioners also ordered that a lock be erected above Bow Bridge where one had stood until the 1660s.⁷²

These developments did not satisfy the bargemen. Once more they appealed to the aldermen, once more the aldermen responded, instructing their officials to prevent the tumbling bay being erected or to pull it down if a start had been made.⁷³

Work had already started. In anticipation of the commissioners' orders a lock had been built in a local carpenter's yard ready to set up above Bow Bridge and the tumbling bay had been built behind the river bank, waiting only for the order to breach the bank. Proponents of the scheme were thus fully prepared to immediately implement the orders issued on 9 September.⁷⁴

Within a few days the tumbling bay was open and operating and the City had obtained and served another writ of *certiorari* prohibiting the implementation of the commissioners' orders. Disputes were later to break out over the exact sequence of events. Key and Hall argued that the bank at the tumbling bay had been breached because George Godfrey, the miller at the Four Mills,⁷⁵ had penned back so much water that the pressure had broken down the bank at some date before the City had obtained their writ of *certiorari* on 11 September or had served it a day or two later. Godfrey maintained that the bank had stood firm until 14 September when Hall had breached it on Key's instructions despite having been served with the injunction.

75. *George Godfrey had taken over the lease from Abigail Cowden in February 1702 and was to purchase the Four Mills in July 1712.*

Whatever the true sequence, the tumbling bay remained in operation. Godfrey was furious. On 4 October he tried to close the breach in the banks but was thwarted by Hall's workmen. He returned the following day, mob-handed. He was accompanied by thirty men he had recruited from the Mint, a place of sanctuary in the City where debtors took refuge, all of whom were in disguise, some 'having their perriwigs with their backsides before their faces others with masques on their faces and some with their faces besmeared with soot or other blacking'. Armed with swords, guns and pistols, this gang broke into Key's property, cut the mooring ropes of his barges, and built a dam across the mouth of the tumbling bay.

The Commission of Sewers immediately ordered that the dam be pulled down, and Godfrey was unable to prevent the tumbling bay from coming into operation again. In February 1711 however, he once more took illicit action, sinking Key's barge and rebuilding the dam across the mouth of the tumbling bay. This time the commissioners did not immediately issue orders that it be pulled down. The tumbling bay remained closed.

Meanwhile litigation progressed. Key brought action against Godfrey in the county courts, Godfrey, with the City's help, brought action against Key in the Queens Bench. Godfrey was found guilty of trespass and was also charged with erecting the dam and removing Key's barge. Key was found guilty of contempt for continuing to work after being served with the injunction.⁷⁶

This impending litigation may be one reason why the commissioners did not immediately remove the dam after Godfrey had built it for the second time, but there were other factors. Proponents of the scheme were in such financial difficulty that they were unable to take any initiative. Key had absented himself from his business to avoid the heavy fines and costs imposed by the Queens Bench.⁷⁷ Mrs Joyce, a tenant of the Bridge House at the adjoining Saynes Mill, had been ejected for non-payment of rent and had ended up in the Fleet prison.⁷⁸

78. *Mrs Joyce had inherited a lease to Saynes Mill on her husband's death in 1686. This lease expired in 1689, when she renewed it for 21 years at £50 a year, paying a fine of £400. In 1692 she obtained an additional 10 years to this term. By May 1710 she was £200 in arrears with her rent, and a judgement of*

ejection had been obtained against her. All her goods were seized, she ended up in the Fleet, and was never to recover her lease

Up until this date the City had always supported those who opposed the construction of the tumbling bay, but their problems with Mrs Joyce caused them to reconsider their position. She had always maintained that her problems would not have arisen if the tumbling bay had been built, for then her mills would have worked efficiently and she would not have fallen behind with her rent.

Eventually the Bridge House set up a committee to investigate. On 11 July 1711, about three hours after high water of a neap tide, this committee found that there was so much water in the tail streams of the two tidal mills belonging to the Bridge House that their wheels could hardly turn when the flash gates were opened. The millers stated that this was normal, and it was often much worse at spring tides. A visit to the Three Mills and the Four Mills established that their millers were penning back too much water, even though they had been forewarned of the visit and had drawn off some of the excess.

The committee then considered the commissioners' decrees of September 1710, heard evidence from several bargemen about the state of the navigation during the short period the tumbling bay had been open, and took advice from George Sorocold. The committee concluded that both the tumbling bay and the lock above Bow Bridge were desirable.

The aldermen accepted these recommendations, and thus reversed their previous policy. Actions against Hall and Key in the Queens Bench were dropped immediately. However the aldermen insisted that the Bridge House were not just to support the commissioners' decrees of September 1710, but were to take fresh advice about possible solutions.⁷⁹

From these investigations a new initiative did emerge. Earlier proposals for the lock above Bow Bridge were retained intact, but substantial changes to those for the tumbling bay were favoured. No longer was it to act solely as an outlet for excess water above the height of 4½ feet, it was also to permit the passage of barges instead of Bow Lock.

The tumbling bay was still to be 40 feet wide, but the 20 feet on the western side were to be laid as low as the bed of the river above Bow Lock. Barges could thus pass through the tumbling bay on all occasions, even at the lowest tides, which they could not do with the existing arrangements at Bow Lock. Gates were to be built in this half of the tumbling bay which would be of the same height as the other half of the tumbling bay. These gates would only be opened when barges wished to pass, thus Bow Lock would retain its function of controlling the flow of the tide for the benefit of the tidal mills.⁸⁰

During these investigations opinion amongst the bargemen was divided. Most felt that the lock above Bow Bridge would help them over the flats at Old Ford, but there were reservations about the need for a tumbling bay. Some argued that it would not improve the navigation and that it would make it more difficult to load and unload at the harbour next to Bow Lock, but as many favoured the tumbling bay.⁸¹

These new proposals were endorsed by the City in May 1712, and the Bridge House were instructed to meet the Commissioners of Sewers in order to proceed. In August the commissioners issued new decrees, but they merely re-affirmed their proposals of September 1710,⁸² they did not endorse the new proposals. It seems probable that the new proposals for the tumbling bay were dropped after legal advice that they interfered with the legal rights of the owners of the Four Mills to a level of water penned back by Bow Lock and that they constituted a new river or passage for barges which was outside the powers of a Commission of Sewers to implement.⁸³

The new orders issued in August 1712 were that a lock be built above Bow Bridge on the site where one had formerly stood, and that when this lock had been completed, and not before, a tumbling bay be built according to the specifications made in September 1710. The lock above Bow Bridge was to be a simple dam across the river, with four flood gates 4 feet 10 inches wide, and one gate for the passage of barges which was to be 18 feet wide and have folding gates.⁸⁴

Once more the proposals were thwarted, this time by the landowners in Mill Meads and High Meads, the very same who had originally proposed the tumbling bay many years before. They objected to paying for the work, but most probably also objected to the prominence given to the problems of navigation rather than to their own complaints of flooding.

The landowners obtained a writ of *certiorari*, and at the ensuing hearing the Queens Bench quashed the commissioners' decrees on the grounds that they had no powers to charge local inhabitants for work which was designed to perpetuate and alleviate rather than abate a private benefit which was a nuisance. The work itself was not questioned, merely the method proposed for financing it.⁸⁵

Such an impasse left room for private initiative, and in October 1713 George Fry, a citizen and clothworker of Broad Street, offered to erect the lock above Bow Bridge at his own expense provided the City promised to defend and finance him if there was subsequent legal action. The City welcomed this offer. Fry made no offer whatsoever about the tumbling bay.⁸⁶

Fry's offer seems to have arisen as a result of his interests in local tidal mills. After a couple of years of legal problems Fry completed the purchase of the Three Mills in 1714. He made unsuccessful offers for leases to Saynes Mill and Spilmans Mill in 1712 and 1714, and obtained the lease to Saynes Mill in 1720, although his financial problems meant he was unable to enter the property. He was also the father-in-law of John Key at St Thomas Mills.

As a lock above Bow Bridge would benefit all these mills, his private interest is obvious. His failure to obtain a lease to Saynes Mill or Spilmans Mill in 1712 or 1714 most probably explains why he never erected the lock at this date. However when he obtained a lease to Saynes Mill in 1720 he resurrected the scheme, for when he gave up this lease

in 1722 he agreed that the 'Framed Timber intended for a Lock' should be left on the premises.⁸⁷ It was never erected.

The fact that no lock was erected by Fry or the succeeding tenants meant that the proposals for the tumbling bay fell into abeyance. The matter was never raised before the Commissioners of Sewers after August 1712, and there is no evidence to suggest that it was ever again seriously considered. After twenty years of argument, investigation, discussion and decision nothing had been achieved. The conflicting interests could not be resolved in this way, and the traditional orders about the height of penned water and the opening and shutting of gates had to suffice.

NOTES TO CHAPTER 12

- 1 P.E. Jones, 'Some Bridge House Properties', *Journal of British Archaeological Association*, Third Series, xvi (1953) 59-73; ERO, T /P 48/1. Extracts from Bridge House Records. In addition the aldermen considered purchasing St Thomas Mills in 1615: CLRO, Repertories, 32 fo.208.
2. CLRO, H.T. Riley, *Charters and other Documents relating to the Rights of the City of London to Metage Dues* (private publication for use of City of London Corporation, 1865). During the Tudor period Lea bargemen had unsuccessfully argued that they should not pay such dues, which rose from ½d to 1d towards the end of the sixteenth century :CLRO, Repertories, 19 fos.15,221,236,268,281,293,298; *ibid*, 20 fos.48,105,320; *ibid*, 21 fos.19,96,129,301,430; *ibid*, 31(1) fo.189; W.H. Overall, H.C. Overall, editors, *Analytical Index to ...Remembrancia*, 382.
3. *Rotuli Parliamentorum*(Rec. Comm.), iv.36.
- 4 J. Strype, *A Survey of the City of London and Westminster* (2 vols, London, 1720), i.32 - 39; R. Griffiths, *An Essay to prove that the Jurisdiction and Conservancy of the River Thames is committed to the Lord Mayor and City of London* (London, 1746)
5. PRO, C191/1 no.15.
6. CLRO, Repertories, 171 fos.199,218; _CJ, xxxi.201; 7 Geo. III, c.51.
7. R. Griffiths, *An Essay... Conservancy of the-River Thames*, 55-56.
8. Harte, fos.l69-73; BL,,Add. Mss. 18783 fos.89-93.
9. BL, Lansdowne MS. 38 no.36.
10. BL, Maps, Crace Port. xvi(26).

11. BL. Maps, C7 cl; Maps, 2345(40); PRO, C2 James 1 38/69-. ; GLRO, M/93/436; ; London Borough of Hackney Library Services, D/F/TYS 42 fos.81,338-39.
12. In 1343 Stephanie Asheday was tenant at Landemylnes. In 1431 a trench and weir at Old Ford served mills called 'Landemylnes or Lunsmills'. In July 1566 Lord Wentworth sold a messuage called the Land Mills, and in October 1632 'One Capitall Messuage called ye Land Mills, barns and meadow' were sold for £600: Harte, fos.111,139; GLRO, M/93/436 fos.9-10.
13. PRO, E317 Essex no.18A.
14. CLRO, Repertories, 63 fo.89; *ibid*, 64 fo'.130.
15. *Ibid*, 76 fo.101.
16. Within a few years Joseph Anger(Aunger) was dead. In his will, where he describes himself as a yeoman of Ware, he leaves Padlers Farm in Tharfield to his son, Joseph, makes monetary bequests to his daughters Mary Godfrey, Judith Dickenson and Anne Lewin, and makes their husbands (all Ware maltsters) and two Royston maltsters responsible for annuities to be paid by his son: ERO, 413 BR 10.
17. CLRO, Repertories, 81 fo.56.
18. *Ibid*, fos.96,196,259,297. Hopkins was awarded the right of making one person free of the City, and was himself taken on as one of the City's watermen as a reward for his work on this committee.
19. *Ibid*, fo.259; CLRO, BHC 1711, evidence of John Graves taken in 1713; *ibid*, Abstract of Mrs Key's writings.
20. CLRO, Repertories, 81 fo.336; 82 fos.7,43,197; 83 fo.196; 84 fos.106,112,115; CLRO, Misc Mss 160.14.
21. PRO, P.C. 2/65, 24 November 1676, 29 November 1676, 8 December 1676, 26 January 1677; CLRO, Repertories, 82 fos.24,26,35,55,78,197; 83 fos.196,263; Guildhall Library, MS. 13539.
22. C66 (files for 1676-170); C191/1; C231/7-8.
23. CLRO, Repertories, 86 fos.154,158,163.
24. *Ibid*, 95 fos.175,176.

25. Ibid, 95 fos.190,197,216,338,351,355; 96 fos. 232, 233,258,269,458; 97 fos.100,163,252,307; 98 fo.337.
26. Ibid, 98 fos.405,426.
27. PRO, C191/1 no.15.
28. CLRO, Comptrollers Deeds 50 no.11; CLRO, Repertories, 100 fo.104; CLRO, City Lands Committee, Journals 8 fos.48,50,56,100-102,106,109; Guildhall Library, MS. 2194.
29. Charles Carlton, *The Court of Orphans*(Leicester,1974); J.R. Kellett, 'Some Late17th century Schemes for the Improvement of the Corporation of London's Revenues', *Guildhall Miscellany*, i(9),27-34; J.R. Kellett,'The Financial Crisis of the Corporation of London and the Orphans Act 1694', *Guildhall Miscellany*, ii(5),220-27; I.G. Doolittle, 'The City Of London's Debt to the Orphans,1694-1767', *Bulletin of Institute of Historical Research*, lvi(1983),46-59.
30. PRO, C6 349/17.
31. Ibid; CLRO, Repertories, 105 fo.445.
32. PRO, PROB 11/477(169). In his will he described himself as an esquire. Besides Temple Mills, the will mentioned houses in Golden Square and John Street in Clerkenwell, a house at Hackney, houses in Saffron Hill and Vine Street,Westminster, lands and osier grounds in Hackney, West Ham and Leyton, 'Chimicall preparacons' and drugs; Greek and Latin books, and one of Queen Elizabeth's coronation pieces.
33. CLRO, City Lands Committee, Journals 9 fos.161,163; *ibid*, 10 fos.178,192; *ibid*, 11 fo.49.
34. PRO, E112 1185/1140; E112 1183/1060.
35. J. Strype, *Survey of London*, i.47.
36. see Chapter 5 fn.30.
37. CLRO, Repertories, 105 fo.445; 112 fo.96; 114 fo.6; CLRO, Misc Mss. 167.9;
38. GLRO, 0/400/4.
39. Harte, fos.130-39,150; Hatfield House, CP 166/47; BL, Lansdowne MS. 32 no.34; CLRO, BHC 1711, evidence of bargemen; Enfield, *The Report of John Smeaton, Engineer, upon the New-making and completing the Navigation of the*

- River Lee ... made 1766(another copy:Bodl., Gough Maps 17); TWA, East London Waterworks Co. Minute Books, ix,fo.416.
40. CLRO, BHC 1711, pleas before King Edward III; ERO, T/P 48/1 fos.20-23; Harte, fos.130-41,150.
 41. CLRO, Repertories, 17 fo.456; 18 fo.42. Committee met with Mistress Culverwell and 'Payne the mylne maker'. At this date Elizabeth Culverwell owned East Mill, one of the Four Mills:PRO, STAC 5 B88/34.
 42. Hatfield House, CP 166/47.
 43. BL, Lansdowne MS. 32 no.34. Exact quote:- '...at certeyn tymes the flud in the saide ryver is lower a great deale withoute the locke, then at other tymes it is wch is at the nete Tydes whereby the boates passing betwene Ware and London cannot withoute the opening of Bowe locke make their passage'.
 44. ERO, T/P 48/1, Court of Sewers, 21 May 1597, 12 April 1600.
 45. Felix Barker, 'The Battle of the River Lea', London Evening News, May 4 1950; PRO, STAC 5 B88/34; STAC 5 B75/37; STAC B41/21; STAC 5 B99/3; STAC 5 B95/15; STAC 5 B104/9; STAC 5 B108/34; STAC 5 B105/33; STAC 5 S42/29; STAC 5 S3/9; STAC 5 T1/39; PRO, E/310/13/42 fo.31.
 46. CLRO, BHC 1711, evidence of John Graves.
 47. Ibid, Petition from John Key and Elizabeth Joyce; ibid, The State of the Case of John Key and Thomas Hall; ERO, D/SH1, Court of Sewers, 9 September 1710.
 48. CLRO, BHC 1711, evidence of bargemen.
 49. Ibid, letter from George Sorocold; CLRO, Repertories, 125 fos.496,519,520,556; 126 fo.III; CLRO, Court of Aldermen Reports and Paper, September 1721.
 50. Enfield, The Report of John Smeaton...upon...the River Lea; N. Beardmore, 'Description of the Navigation and Drainage Works recently executed on the tidal portion of the River Lee', Proceedings of the Institution of Civil Engineers, xiii 1855 ,245-51; GLRO, Acc 1016/713; 13 & 14 Vic., c.109.
 51. Harte, fos.139-43; ERO, T/P 48/1, Court of Sewers, 26 September 1601; CLRO, BHC 1711, evidence of John Graves; ibid, The State of the Case of John Key and Thomas Hall; ERO, Court of Sewers, 9 September 1710.
 52. ERO, T/P 48/1, Court of Sewers, 29 September 1627, 8 October 1627, 29 December 1627, 11 August 1628; CLRO, Bridge House Committee Order Book 1611-1714 fos.27,41-47; CLRO, Repertories, 40 fo.316; 41 fo.341

53. PRO, RAIL 845/53, Court of Sewers, 21 April 1742.
54. For some brief details: R. Allison, 'The Changing Landscape of South-West Essex from 1600 to 1850' (unpublished Ph.D..thesis,Univ of London,1958), 244-279.
55. In 1590 the 'little gryst mill',one of the Four Mills, had a wharf of its own and the miller also had the right to use a crane on a wharf at one of the other mills, 'the greate Mill'. In 1711 an inventory of the Four Mills noted 'Two Waggons and one Cart Eight old horses and a Mare hornbeams and Timber and a parcell of old Stuff on the Wharfe and some pieces of Oak one old Barge': PRO, Req 2 61/99; PRO, STAC 5 B99/3; London Borough of Tower Hamlets, Local History Collection, Deeds 3849.
56. Guildhall Library, MS. 13539,
57. ERO, D/SH1, Court of Sewers, 3 October 1691, 31 March 1692, 20 April 1693, 2 April 1694, 6 October 1699; ERO, D/DLo T59; CLRO, BHC 1711, Abstracts of Mrs Key's writings; GLRO, Acc 1449/1; PRO, E315, Vo1.245 pt.2 fo.89; PRO, C8 625/54; PRO, SC 11/997 fo.21.
58. ERO, T/P 48/1, Court of Sewers, 28 March 1648, 5 April 1653, 8 October 1653.
59. Guildhall Library, MS. 13539.
60. CLRO, Repertories, 93 fos.61,117; CLRO, Bridge House Committee Order Book 1611-1741 fos.194,247-48.
61. When Moakes died in August 1738, it was of sufficient interest for Boyer to report, with the comment that this 'eminent Malt-factor' had left an estate worth £15,000 to his son-in-law 'Dr Wolly of Hertford'. In fact Moakes left his estate to Trustees to provide an annuity to his widow and some immediate bequests of £500 to three grandchildren. After his widow's death his estate was to pass to his grandson, William Waller: PRO, PROB 11/691(201); A. Boyer, The Political State of Great Britain(60 vols,London,1711- 0 ,lvi.186.
62. CLRO Repertories, 137 fos.384 420; 138 fo.81; 139 fo.259; PRO, E112 1185/1140; E~12 1183/1060.
63. Guildhall Library, MS. 13539; BL, Add. Mss. 33576 fo.63.
64. CLRO, Cocket Duties, Cargoes passed East and West 1676-78; *ibid*, Accounts of duty on fruit, malt, salt and passage of grain and coals, 29 October 1705-28 October 1706. Hereafter both termed 'Cocket dues
65. ERO, D/SH1, Court of Sewers, 6 April 1695.

66. Ibid, 9 April 1695.
67. Bathurst's son, Allen, was married to Katherine, daughter of Sir Peter Apsley. Apsley had left the Three Mills to his eldest son, Peter, and Katherine had inherited them on Peter's death: Hampshire RO, Mildmay 10M69 T191; ERO, D./DLc T36; G.E. Cokayne, *The Complete Peerage*, ii.28-29.
68. ERO, D/SH1, Court of Sewers, 12 October 1695, 2 November 1695.
69. Ibid, 5 April 1701, 10 May 1701, 16 August 1701; CLRO, Repertories, 105 fo.384.
70. CLRO, BHC 1711, The State of the Case of John Key and Thomas Hall.
71. Ibid; *ibid*, The Case concerning the Tumbling Bay; CLRO, Repertories, 113 fo.449; 114 fos.86,148,232, 250,271.
72. ERO, D/SH1, Court of Sewers, 9 September 1710.
73. CLRO, Repertories, 114 fo.323.
74. CLRO, BHC 1711, evidence of Charles Duncombe and others.
75. George Godfrey had taken over the lease from Abigail Cowden in February 1702 and was to purchase the Four Mills in July 1712: London Borough of Tower Hamlets, Local History Collection, Deeds 3850-51; GLRO, MDR 1714/2/109.
76. CLRO, BHC 1711, The State of the Case of John Key and Thomas Hall; *ibid*, The Case of John Key and Thomas Hall; *ibid*, affidavit of George Godfrey; ERO, Calendar of County Records and Sessions Records 1699-1714, nos.546/7-10.
77. CLRO, BHC 1711, petition of John Keys.
78. Mrs Joyce had inherited a lease to Saynes Mill on her husband's death in 1686. This lease expired in 1689, when she renewed it for 21 years at £50 a year, paying a fine of £400. In 1692 she obtained an additional 10 years to this term. By May 1710 she was £200 in arrears with her rent, and a judgement of ejection had been obtained against her. All her goods were siezed, she ended up in the Fleet, and was never to recover her lease: CLRO, BHC 1711, petiton of Elizabeth Joyce; CLRO, Bridge House Committee Journals, 3 fos.90,95; 4, fos.223,237,238; ERO, T/P 48/1, copy of original deeds 285/10.
79. CLRO, Repertories, 115 fos.377-78; CLRO, Bridge House Committee Journals, 4 fo.242.

80. CLRO, BHC 1711, a Method of Improving the Navigation; CLRO, Common Council Journals, 55 fos.318-19.
81. CLRO, BHC 1711, evidence of bargemen.
82. Ibid, Bridge House report to Lord Mayor; ibid, order of Common Council May 1712; CLRO, Common Council Journals, 55 fos.318-19; CLRO, Bridge House Committee Journals, 4 fo.261; ERO, D/SH1, Court of Sewers, 30 August 1712.
83. CLRO, BHC 1711, legal opinion.
84. ERO, D/SH1, Court of Sewers, 30 August 1712.
85. Modern Reports- 10, Case 87 Queen v. Inhabitants of West Ham
86. CLRO, BHC 1711, legal opinion; CLRO, Bridge House Committee Journals,, 4 fo.310.
87. CLRO, Bridge House Committee Journals, 4 fos.275-78, 280,331,334; 5 fos.105,112,114,117,119,120,123,125, 127,129,132,133-36,141; PRO, C7 110/112; ERO, T/P 48/3, part; Hampshire RO, Mildmay 1OM69 T191.