

# ARCHAEOLOGICAL FINDS IN THE CITY OF LONDON 1967-70

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*Guildhall Museum*

This is an account of some archaeological investigations in the City of London between 1967-70. I am indebted to those people who have helped in the excavations, and especially to Mr. R. Inman who supervised the work on the Blackfriars wreck II; to Mrs. V. Fenwick who supervised the initial part of the excavation of Blackfriars wreck III; to Mr. H. Chapman of Guildhall Museum who assisted in the recovery of the most important timbers of Blackfriars III and worked in the bed of the Thames for 30 hours continuously with hardly a break; to Mr. J. Clark of Guildhall Museum who not only assisted on the excavation of Blackfriars wreck III, but also drew the dagger published here (Fig. 8), and to members of the City of London Archaeological Society who assisted with the investigation of wrecks II, III, and on the site of the medieval London Bridge. Thanks are also due to the City Engineer, Mr. H. King, and his colleague Mr. Bromfield; to Messrs. FitzPatrick & Son Ltd., contractor, and to the Port of London Authority.

The watery flavour of this paper is entirely accidental and is caused by the rebuilding of London Bridge and part of the City's waterfront near Blackfriars. Two important investigations took place on land during this period but the reports on them have not yet been completed.

Reference is made in this paper to groups of excavated objects which have been recorded in the Museum Excavation Register (e.g. E.R. 1279). These groups comprise the dating evidence for archaeological features described in this report but, owing to a lack of time and staff, none of them can be drawn at present. It is hoped that these groups will be published eventually, but meanwhile they are available for study on application to the Director, Guildhall Museum, Gillett House, 55 Basinghall Street, London, EC2V 5DT.

## SITE I. BLACKFRIARS EMBANKMENT SCHEME, 1969-70

A series of coffer-dams were constructed in the bed of the Thames to facilitate the building of a new embankment wall from off the Mermaid Theatre to just east of Trig Lane. These coffer-dams, each just over 20 feet wide, were a continuation of the series in which in 1963 a Romano-British shipwreck was found (P. Marsden, "A Roman ship from Blackfriars, London", published by the Guildhall Museum).

The recent excavations within the coffer-dams were carried out to a deep level, below that of the Roman period, and three more wrecks were found (Fig. 2), as well as many extremely interesting objects. As these wrecks were all found fairly close together and in the proximity of Blackfriars, they have been given this nomenclature:

*Blackfriars wreck I*, found in 1963, dated to the 2nd century A.D.

*Blackfriars wreck II*, found in 1969, dated to the 17th century A.D.

*Blackfriars wreck III*, found in 1970, dated to the 15th century A.D.

*Blackfriars wreck IV*, found in 1970, dated to the 15th century A.D.

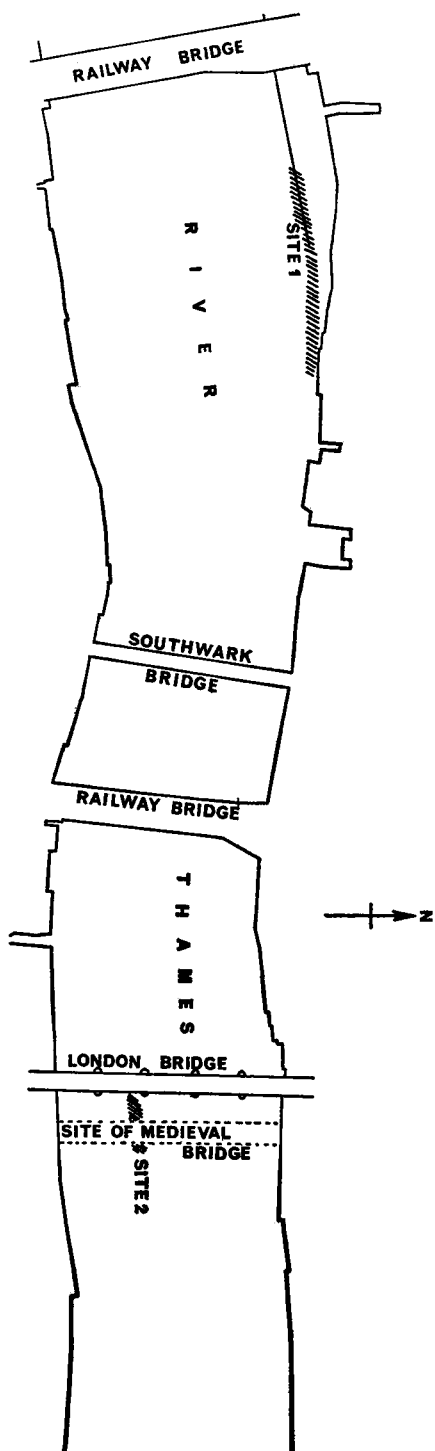


Fig. 1  
Sites investigated in the River Thames in 1967-70

## BLACKFRIARS WRECK II

This 17th-century wreck was found on 5th June, 1969, and during my absence, Mr. R. Inman directed the excavation of the vessel during one weekend, and Mr. R. Merrifield took a comprehensive photographic record. The excavation uncovered the inner planking which was recorded, and Mr. Inman managed to recover a sufficient quantity of objects from within the boat to enable it to be dated. Unfortunately, there was not sufficient time to fully investigate the construction of the boat. On my return a small portion of the boat still remained *in situ*, but the timbers from the rest of the vessel lay torn apart and scattered around the coffer-dam. These were collected together and the significant pieces were drawn. I am grateful to Mr. Inman for making his excellent record of the boat, and to Mr. Merrifield for his extremely valuable photographic coverage before the wreck was destroyed. I am also grateful to Mr. B. Bathe of the Science Museum for his help and advice during the preparation of this paper.

*Site of the wreck*

The wreck lay roughly east-west in the bed of the Thames several feet below the river bed, and was surrounded by black muddy gravel. Its bottom lay about 3 metres below Ordnance Datum, and its position east of Blackfriars Bridge is shown on Fig. 2.

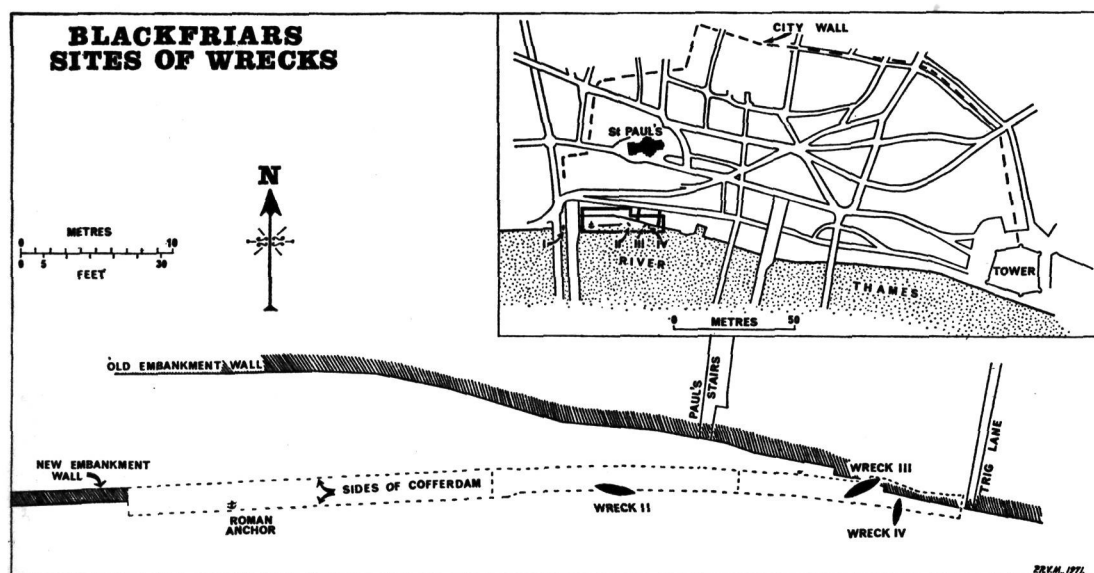


Fig. 2

Site of wrecks in the Thames east of Blackfriars. The concentration of sixteenth-century knives and daggers was between wrecks II and III.

*The boat (Fig. 3).*

A considerable part of the west end of the boat had been destroyed before the vessel was recognised, and part of one side lay outside the coffer-dam and may not have been disturbed by the excavations (Plate 1). The east end of the boat was sharp, and if the missing west end had also been sharp the boat may have been about 14 metres long. It was clinker

**BLACKFRIARS WRECK II**

SEVENTEENTH-CENTURY

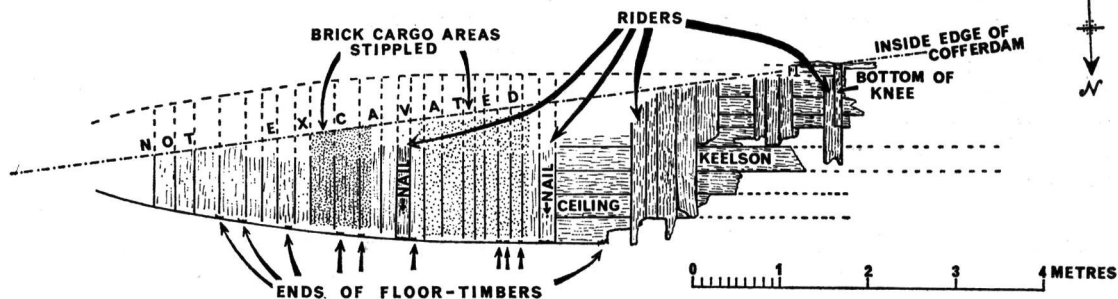


Fig. 3

Plan of the seventeenth-century Blackfriars wreck II.

built, flat-bottomed, and each side met the flat bottom to form a chine (Fig. 4). The sides had been almost completely destroyed, so it is impossible to judge the beam of the vessel. The maximum distance between the chines, however, was just over 2 metres.

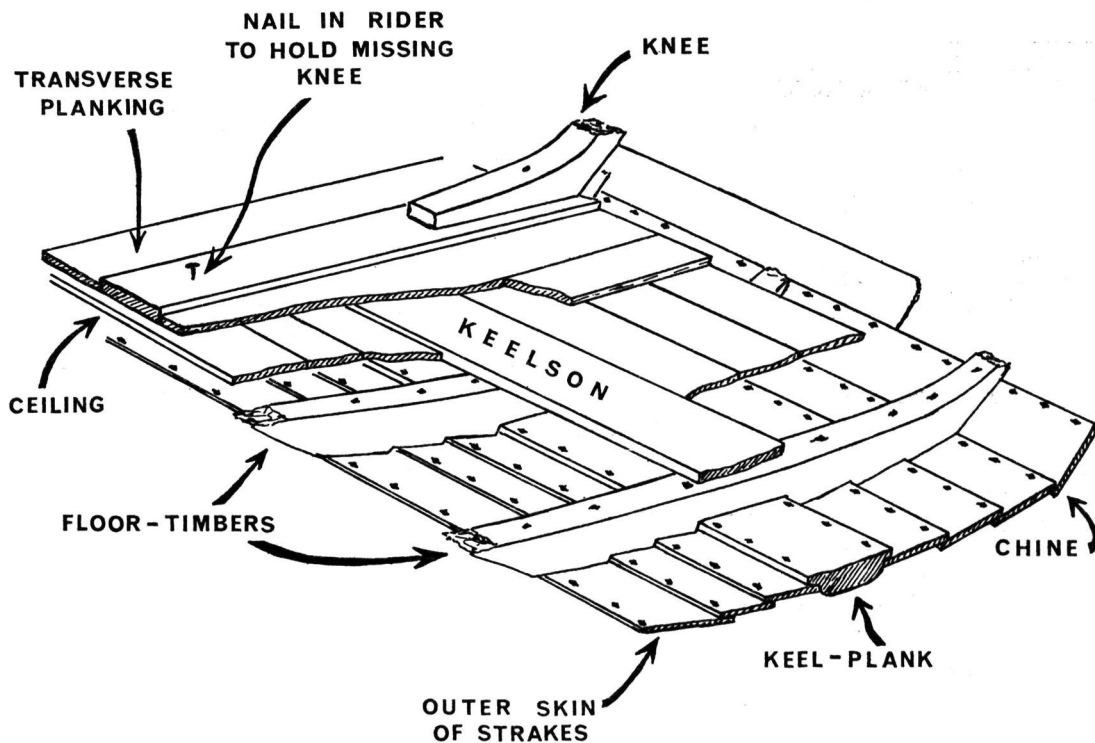


Fig. 4

Drawing to illustrate the construction of wreck II.

The keel-plank was of elm (*Ulmus* sp.), 17 cms. wide and 5 cms. thick. It was therefore little more than an extra thick plank. This keel-plank was only studied in its fragmented

state and not *in situ*. The garboard strakes fitted into rabbets on each side of the keel-plank and were held in place by iron rivets spaced about 9 cms. apart. The joint was caulked with an unidentifiable plant-like material.

The floor-timbers were small, between 4 and 7 cms. wide and roughly 5 cms. deep, and were notched on their undersides to accommodate the keel-plank and the overlapping strakes. Because the construction of this part of the boat was not examined *in situ* it is difficult to judge the spacing of the floor-timbers. However, a portion of the keel bore the impression of two floor-timbers 49.5 cms. apart on its upper surface. One of the floor-timbers clearly overlay a rivet holding the garboard strake to the keel, showing that the outer skin of strakes had been built first and that the ribs had been added after. This was the usual method of constructing clinker-built vessels. The floor-timbers have long rivets at the steps in the undersides where the overlap of the strakes must have occurred. The rivets used in this boat are all of the same form but of varying lengths; each comprises an iron nail with a flat head and square shank which is driven through the wood from outside the boat and the point is bent or clenched down over a small diamond-shaped iron rove (Fig. 5, no. 15). The roves had been cut from a strip of iron, as two were found still partly joined together, and each was punched into a domed shape.

A keelson, about 25 cms. wide, ran along the centre of the vessel on top of the floor-timbers, and was held by ordinary iron nails with flat heads and square shanks. On either side there was an inner skin or ceiling of planks, a sample of which has been identified as Pine (probably *Pinus silvestris*). These were laid longitudinally, and on top of them were a large number of transverse planks and riders (Fig. 4, plate 2). The purpose of the transverse planks was evidently to save the bottom of the boat from damage when loading and unloading a cargo of bricks. The riders, however, were thicker than the transverse planks and their primary purpose was evidently to support the lower ends of the side frames. None of the side frames had survived except on the south side where a knee, which may have been the lower end of a side frame, had been attached to the top of a rider by a large iron nail. On the north side of the boat the ends of several riders had similar large nails projecting out of them with the head of each several centimetres above the top of each rider, and clearly these had once held other knees. The spacing of the riders was not very regular but it would seem that 1.70 metres was a rough average measurement. On the south side of the boat the first side strake above the chine was fastened to the knee, but on the north side of the boat this strake was missing. It is interesting that the knee was not directly fastened to the top of the floor-timber, as this would seem to have been a much stronger construction.

The outer skin planking was of Oak (*Quercus robur* type) and 1.5 cms. thick. Although only fragments of the outer skin planking could be studied it is clear that each strake comprised an unknown number of planks which were joined end-wise with a simple overlap scarf of about 15 cms. The outer end of the scarf was secured by an iron rivet centrally placed in the strake, and by a number of small iron nails. The seam was caulked with a felt-like material. The overlapping strakes were held together by iron rivets spaced at intervals of about 7 cms. A small area of the outside of the outer skin of the east end of the boat was recorded *in situ* and was found to be sheathed probably with oak planks about 5 mm. thick. This was fastened by many small iron nails with square shanks, spoon-shaped pointed ends and with curious waisted flat nail heads (see Fig. 5, no. 16).

A careful study of the boat and its dismembered timbers has made it possible to judge the approximate length of the vessel. The small portion of the east end of the boat which

was seen *in situ* was found to be V-shaped in cross section. Many of the floor-timbers saved from the boat generally, however, showed that the vessel had a flat bottom amidships, and a photograph of the surviving west end of the boat shows a curving floor-timber, proving that this part of the vessel was beginning to narrow towards the west end and that the middle of the boat probably lay just west of the cargo area.

No trace of any mast-step was found, but in the conditions under which this boat had to be investigated it would not be surprising if this feature was not detected.

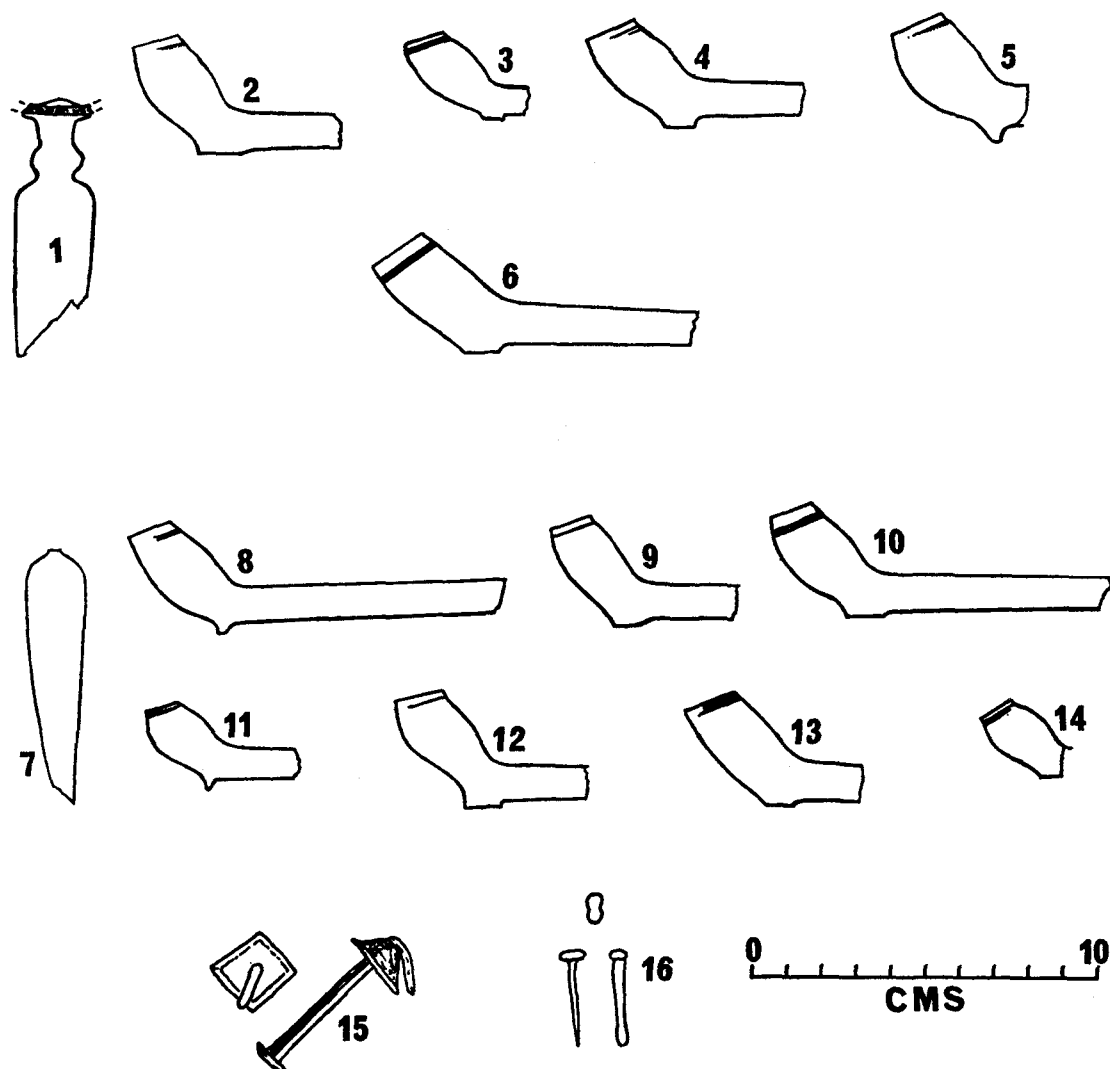


Fig. 5  
Dating evidence for wreck II. Nos. 1-6 from on the bottom of the boat;  
Nos. 7-14 from immediately beneath the boat.



PLATE 1. View from above of the bottom of the seventeenth-century Blackfriars wreck II, after the cargo had been cleared. Scale of feet.

PLATE 2. The longitudinal and transverse planking in the bottom of wreck II, over the floor-timbers.



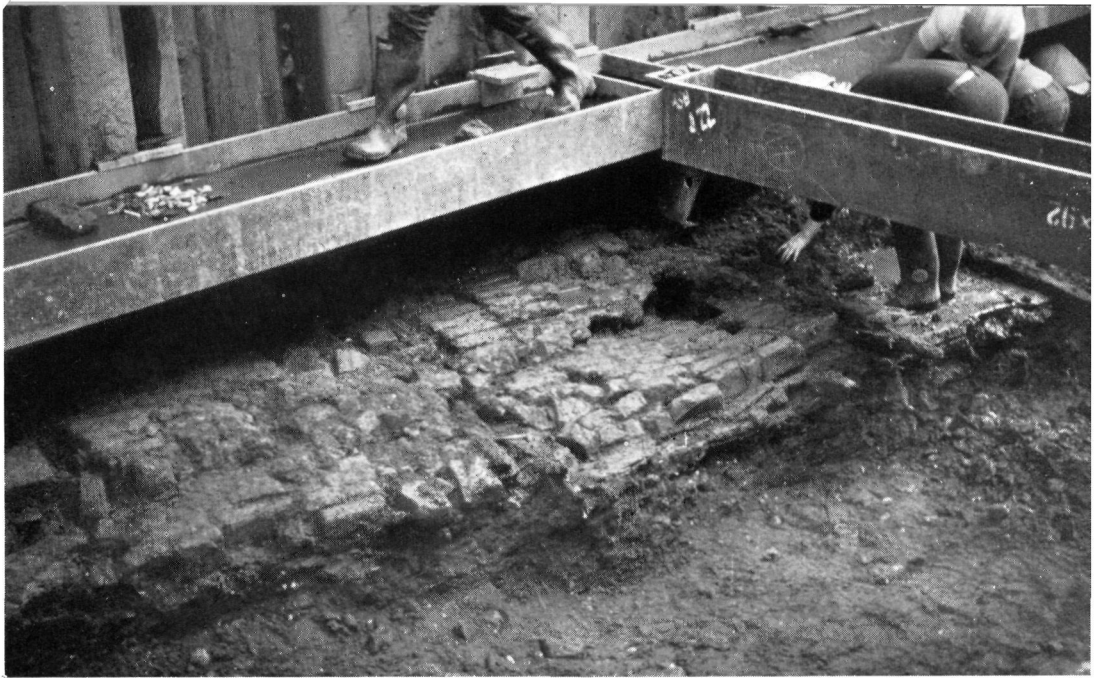


PLATE 3. The brick cargo of wreck II *in situ*.

PLATE 4. View of the fifteenth-century wreck III looking aft. The floor-timbers, mast step and the stringer have all been removed. The sternposts can just be seen in the far distance. Scale of half metres.



### *The cargo*

This flat-bottomed boat was carrying a cargo of red bricks and was evidently a barge. These were carefully laid on top of the transverse planks in two areas, three bricks deep (Plate 3). Each brick was a featureless rectangular block  $22\frac{1}{2}$  cm. long,  $10\frac{1}{2}$  cm. wide, and  $5\frac{1}{2}$  cm. deep. None of the bricks had ever been mortared together so it is likely that they were being brought new from brickworks somewhere to London for building purposes.

### *Dating evidence*

Evidence to date the loss of the boat was recovered from both inside the boat and from the silty gravel beneath the boat. The significant dateable material from inside the boat on the bottom boards comprised a number of clay pipes (Fig. 5, nos. 2-6) of the period 1650-70. Other finds from inside the boat include part of a wine glass stem (Fig. 5, no. 1), sixteen brass pins with twisted wire heads, three small brass pin cases, iron nails, several small lumps of coal (at the east end), and two fragments of brown coarse ware pottery.

From immediately beneath the boat were recovered 25 clay pipe bowls all of the period 1650-70 (Fig. 5, nos. 8-14). Other finds include a broken wine glass stem (Fig. 5, no. 7), parts of a Bellarmine jug with the bottom of a bearded face and a rose medallion, a fragment of black glazed ware, small fragments of buff ware with the pale greenish-yellow glaze which is typical of the 17th century, and several small fragments of brown glazed red coarse ware.

Clearly the boat was wrecked during the third quarter of the 17th century, and it is likely that it was carrying bricks to London for the intensive rebuilding which occurred after the Great Fire of 1666.

### *Conclusion*

This is the first boat of this period to have been investigated in Britain, and as the documentary records of small craft of this period are almost non-existent, it is a particularly important discovery. The construction of this barge is surprisingly "medieval" in appearance with its clinker construction and plank-like keel, and this shows that our knowledge of shipbuilding is not sufficient for us to be able to date old boats simply by their construction.

## BLACKFRIARS WRECK III

This 15th-century wreck was found on 25th November, 1970, and special thanks are due to those who helped on the site, and especially to Mrs. V. Fenwick and Miss A. Evans of the British Museum, Mr. H. Chapman of the Guildhall Museum, and Mr. R. Inman. Thanks are also due to Mr. B. Greenhill, Director of the National Maritime Museum, for providing facilities for cleaning and storage of the most important timbers at very short notice. These timbers, which comprise all of the surviving ribs, the keel, the keelson, the mast-step timber, the stem and sternposts, and some of the planking, were given to the National Maritime Museum in January, 1971.

### *The boat*

A considerable amount of the boat had survived showing that it was originally about 16 metres long, and about 3 metres wide (Plate 4). It had a flat bottom and both ends of the craft were pointed. Its overlapping planks, riveted together, showed that it was clinker built (Fig. 6). Unfortunately the bow had been destroyed during the contractor's excavations prior to the discovery of the wreck, but the junction of the stempost and the keel had

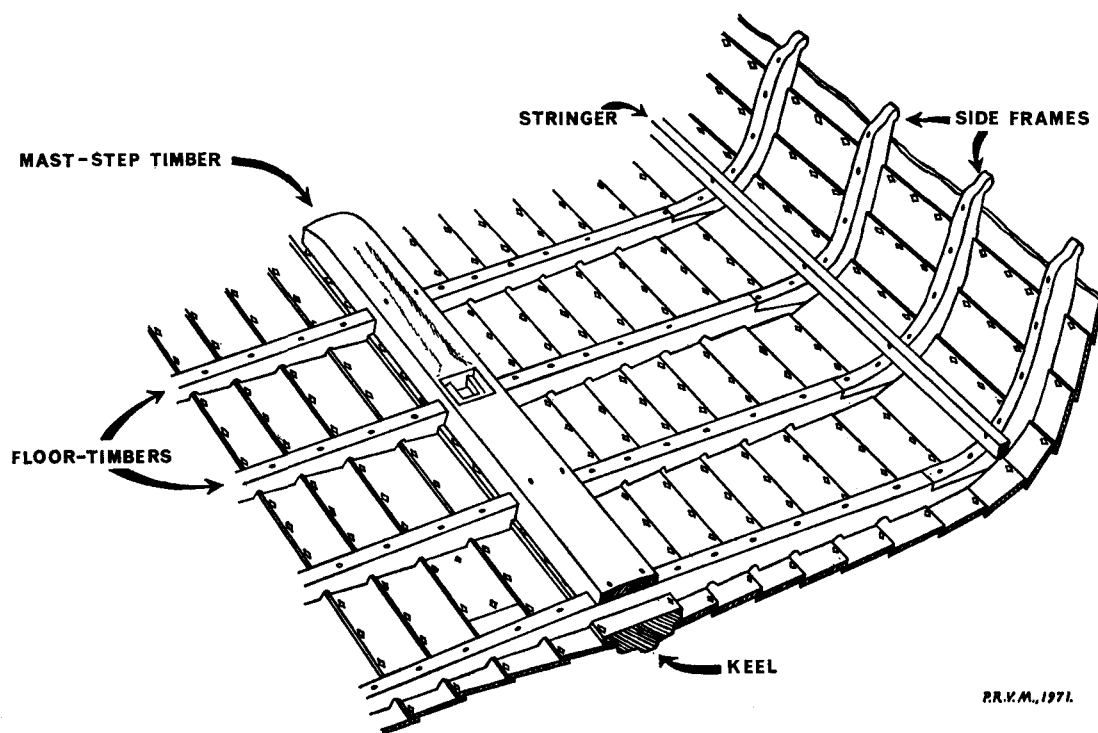


Fig. 6  
Drawing to illustrate the construction of the fifteenth-century Blackfriars wreck III looking aft.

survived. The stern, however, was very well preserved (Plate 5), and the sternpost stood to a height of several feet. Inside, the boat was strengthened by many floor-timbers and side frames, and a stringer fastened to the top of the ribs gave some longitudinal strength. The main longitudinal timber, however, was the keel which, although quite wide, was only a few inches thick, and was really nothing more than a rather thick plank.

The ribs were fastened to the planks by wooden pegs (trenails) at the ends of which had been inserted wooden wedges. On top of the ribs roughly amidships was a longitudinal timber containing a mast-step, showing that the boat was propelled by sail.

#### *Dating evidence*

The loss of the boat has been dated by objects lying in the primary sand filling in the bottom of the vessel. It seems likely that most of these had been dumped on the wreck site soon after the boat was lost, but a few objects were probably on board when the vessel sank. The whole collection, which mostly comprises broken pottery and parts of leather shoes, has been provisionally dated to the last quarter of the 15th century. Two small pewter or lead pilgrim badges were also found which date from this period.

The boat was clearly old when lost as its bottom planking had been extensively repaired, and in view of this it is likely that the boat was built during the first half of the 15th century.

A few other interesting objects were found in and around the boat, and amongst these are parts of three wooden bowls, and the blade of an oar.

*Was the boat wrecked?*

No obvious clue to the cause of the loss of the boat could be found. There were no old holes in its bottom; and its planking, although extensively repaired seemed to be strongly fastened together. Not all of the bottom of the boat had survived, however, due to some destruction by the site contractor in 1970 prior to its presence being detected, and this might have removed the evidence for the loss of this vessel.

That the boat was wrecked, rather than deliberately abandoned due to old age, is suggested by its inconvenient situation close to the medieval waterfront. In that position the wreck would impede the access of other vessels, and it would be a danger to shipping in the Thames.

*Purpose of the boat*

It was almost impossible to differentiate between the objects which were in the boat when it sank and the rubbish which had been dumped in the Thames on the wreck site soon afterwards. There was no cargo, and no planking on top of the ribs to protect the hull from possible damage caused by loading and unloading a cargo, and this may indicate that the boat was not intended to carry a cargo.

There was, in fact, evidence that it might have been a fishing boat, for on its bottom, and concentrated forward on the starboard side, were nearly 2,000 cylindrical lead weights, each about an inch long and half an inch in diameter. A hole passes longitudinally through each of these, and it seems reasonably certain that they were weights for a fishing net. Two heavier lead weights of different form were also found, one in the forward part of the boat, and one outside the vessel.

Only a brief examination of the finds has yet been made, and it is likely that more definite evidence of the purpose of the boat will be forthcoming when all the finds have been studied in detail.

#### BLACKFRIARS WRECK IV

This wreck was found a few yards east of Blackfriars Wreck III on 1st December, 1970. A grab had dug through the vessel and a section across it was visible in the side of the hole. Unfortunately this boat was found during the investigation of Blackfriars III and little time could be spared to make anything but the most hurried record of it.

*The boat*

The boat was clinker-built, and was lying north-south in the coffer-dam. Part of the boat still survives in the river bed south of the new embankment wall. The keel-plank was 41.5 cm. wide and about 10 cm. thick, and the garboard strakes were riveted to rabbets in the sides of the keel. The strakes were 1 cm. thick, and the overlapping strakes were held together by iron rivets similar to those used in Blackfriars III. The method of attaching the strakes to the floor-timber was not established. The underside of the floor-timber did not seem to be notched to accommodate the overlapping strakes, but two limber holes were found cut in the underside of the floor-timber on each side of the keel to allow the flow of bilge water. The boat would seem to have been a small river craft judging by the width of its bottom.

*The cargo*

Overlying the floor-timber in the section was a spread of irregular lumps of Kentish ragstone, which evidently formed part of the cargo. None of the pieces seen had been shaped, and some were quite large (up to 50 cms. across).

*Dating evidence*

There was no time to recover any dating evidence from this wreck, and in any case the section in which the boat was exposed was rather dangerous. Nevertheless, it seems that the wreck was of late medieval date as workmen were finding large quantities of 15th-century pottery at about this level in the river bed very close to the wreck.

Comparative levels are a particularly important clue to age as the sands and gravels in which wrecks III and IV lay were deposited by the river and were sufficiently firm not to allow them to subside into the river bed. The level of wreck IV was a little lower than that of wreck III which has been dated to the 15th century.

*Purpose of the boat*

There are two indications pointing to the purpose of the boat. Firstly the thinness of the strakes, only 1 cm., strongly suggests that this boat was merely a river craft which did not sail at sea; and secondly, the ragstone, which in a boat of this small size must have been a cargo, indicates that the boat was a barge.

**IRON ANCHOR**

The lower part of an iron anchor (Museum accession no. 25389) was found in 1969, but as the digging was carried out by a mechanical excavator it was not found associated with

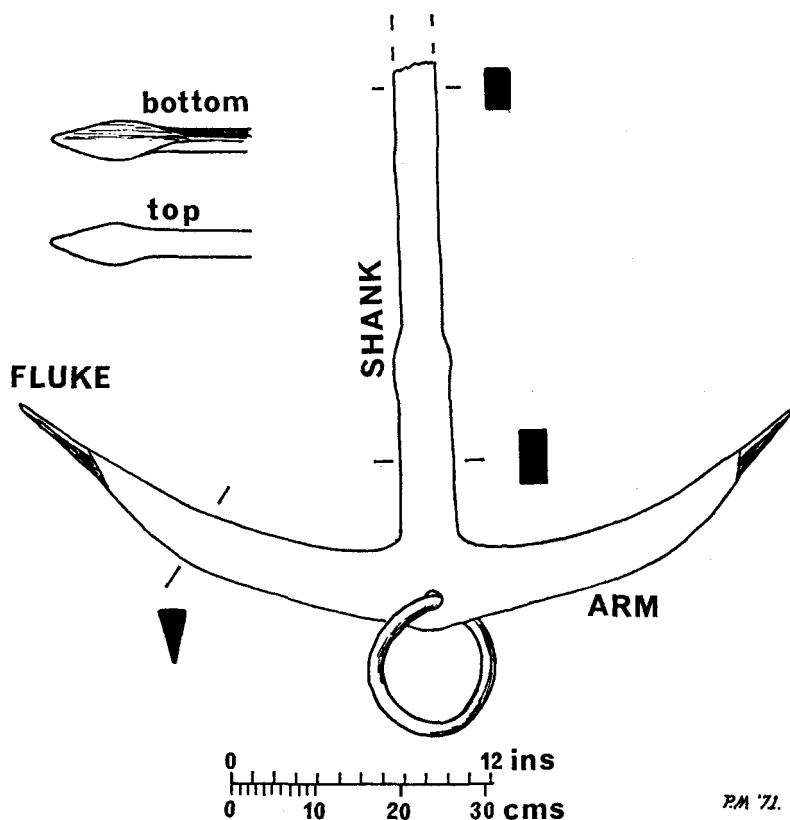


Fig. 7  
Iron anchor from the Thames at Blackfriars, probably Roman.

any dating evidence (Fig. 7). From its depth, form, and condition, however, it is clear that the anchor is not of recent date, and is most likely to be Romano-British.

The surface of the anchor had corroded, and this corrosion had fortunately impregnated the surrounding sand and gravel so that it is clear that the anchor was lying in a deposit of clean sand and gravel. Small pieces of wood in the gravel had split open on drying, and a piece of blackened leather had dried biscuit hard. The clean sand and gravel is a particularly significant point, because archaeological observations in that coffer-dam had shown that there are two distinct deposits in the river. The lower comprises a layer of clean sand and gravel, which has been found to contain only Roman objects, and above this is a black silty gravel which contains objects of 15th-century date and later. No deposits belonging to Saxon, Viking or earlier medieval times have been noted and very few objects of those periods have been found despite several attempts to locate deposits belonging to those periods. It therefore seems most likely that the anchor was found in the Roman deposits.

The form of the anchor itself is a useful clue to its date, although it must be remembered that very little is known about the development of the anchor in Northern Europe until recent times. The shank is broken and only the lower half survives. The shank is rectangular in form with a curious swelling close to the crown. The arms are triangular in section, and the crown is pierced for an iron ring. The flukes are pointed and have a flattened triangular cross section.

Features of the anchor can be paralleled in Roman and Viking iron anchors which have a similar form, although an exact parallel cannot be found. Probably the closest parallel in form is the anchor from the great Viking ship found at Oseberg in Norway, and this has arms which are triangular in cross section. The ends of the flukes are broad, however, unlike the London anchor which has pointed flukes.

A feature of the London anchor which may be significant is the curious swelling on two sides of the lower part of the shank. To my knowledge this has only been found on an iron anchor of Roman date from Pompeii; and a similar feature is indicated on a cast taken of a natural concretion-mould of a corroded Roman anchor from the sea bed off the south coast of France, now preserved in the Boreli Museum at Marseilles.

#### THE KNIVES AND DAGGERS

As the excavations were carried out in the coffer-dams from west to east, a remarkable concentration of mostly 16th-century knives and daggers was found opposite Paul's Stairs, and there seems to be little doubt that the Stairs were used as a point from which they could be thrown. The collection which the Guildhall Museum has acquired from the labourers must be merely a small part of the total number of objects lying in the river bed.

It comprises 25 daggers, seven of which are of the kidney type, and two of the rondel type. An additional kidney dagger in private hands is illustrated here (Fig. 8). It has a damaged wooden handle at the end of which is an iron terminal with a brass wash. The iron blade has been irreparably damaged in antiquity by being chopped on the cutting edge. There are also four quillon daggers, and a fine main-gauche with a decorated blade.

There is also a 14th-century iron sword, 83 cms. long; and the iron and bronze boss from a 16th-century buckler.

The bulk of the group, however, comprises 74 iron knives of many forms and with varied handle terminals such as a horse-shoe (two examples) and a *fleur-de-lys*.

A curious feature of the daggers is that ten of them (excluding that in private hands) have been deliberately damaged before they were thrown into the river. The blades of seven have been bent sufficiently so that the iron is fractured, and three other daggers have blades completely broken.

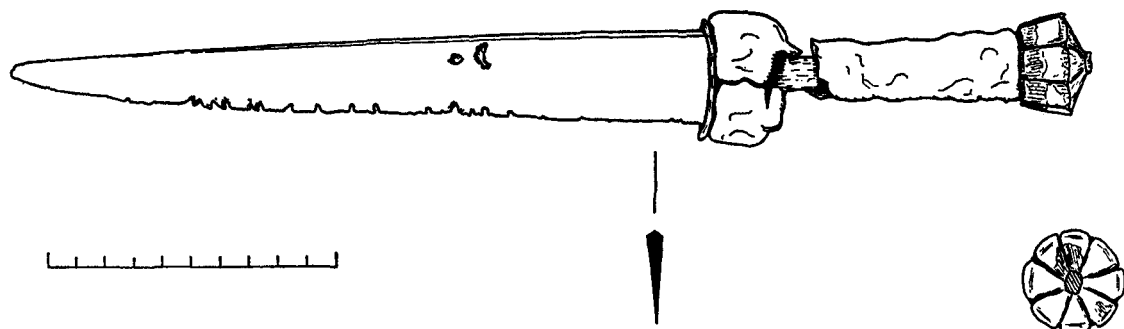


Fig. 8  
Kidney dagger from the Thames at Blackfriars. Scale of centimetres.  
(Drawn by J. Clark).

## LONDON BRIDGE

Between 8th and 13th November, 1967, the Port of London Authority dredged a channel east of the 19th-century London Bridge, opposite the second arch from the Southwark side, and across the site of the medieval bridge (Fig. 9). The dredger used a grab to excavate generally to a depth of 5 feet into the river bed, and the debris was dumped into a dumb-barge lying alongside. Members of the City of London Archaeological Society were on board, and after each grab of black muddy gravel had been dumped into the barge, they quickly raked through the material looking for objects.

The dredging began just east of the medieval bridge site and worked westwards till it went under the second arch of the 19th-century bridge from the Southwark side. As the dredging approached the site of the medieval bridge so the density of objects increased until, at the medieval bridge site, every grab was bringing up many objects. Because the bridge was not demolished until the 1830's many of the objects were of comparatively recent date; but there were also some medieval objects. The objects recovered comprise three iron grappling hooks, three iron axe heads; iron nails of assorted sizes up to 71 cm. long; an iron bucket handle; two iron padlocks with brass fittings; four spurs (three rowel and one prick); three horse-shoes; sixteen keys; many brass pins; an iron dagger blade; two two-pronged forks; three lead wool seals; iron scissors; top of a 16th-century candlestick; a brass badge bearing the arms of the City of London, and inscribed on the back: "FOR CHRISTOPHR JACKSON A FREEMAN ON STREET 1699"; a pewter mug inscribed: "H BICKERS, KINGS HEAD, WEBB ST, BORO."; another pewter mug inscribed: "S.B.T., LONDON ROAD COFFEE HOUSE, ST GEOR FLD."; and there were coins including two 15th-century tokens, two halfpennies of George II, two pennies of Victoria dated 1861 and 1863; a halfpenny of George VI dated 1951, and a modern token, probably for a "fruit machine." (E.R.1279A).

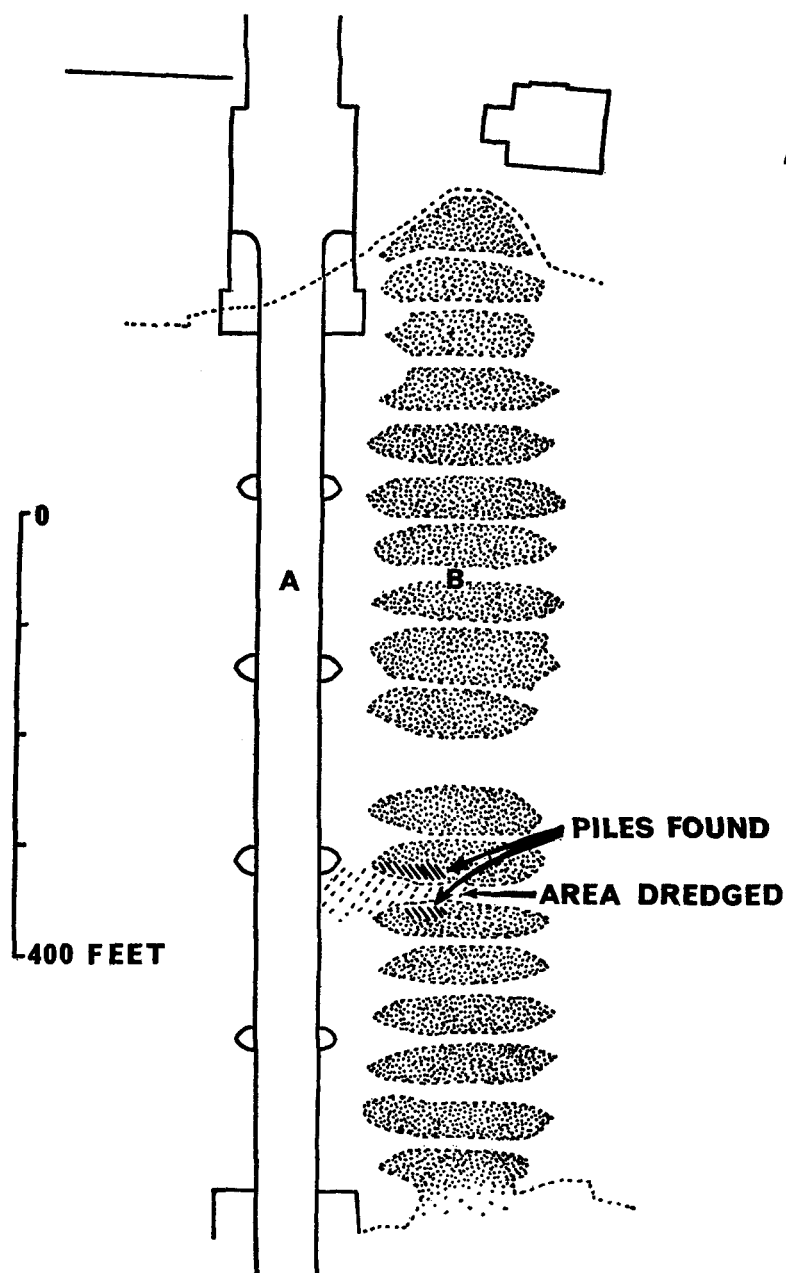


Fig. 9  
Plan of London Bridge region to show area of dredging in 1967. "A" is the nineteenth-century bridge, now being re-built; and the stippled areas marked "B" are the foundations, or starlings, of the medieval London Bridge.

As the dredger dug it brought up many large facing blocks from the old bridge, and even two portions of the 18th-century balustrade, very waterworn. It also pulled up many timber piles from the foundations of two of the starlings of the bridge. They belonged to two types—the “old” piles roughly cut from individual tree-trunks and roughly 45–60 cms. in diameter. The lower end was always pointed and many piles had this end fitted with an iron point or shoe. The grab had chopped off the tops of most of these piles, but it seems that their average length was in the region of 4.5 metres, but one especially long pile was 7 metres long. The soft spongy and stained colour of this wood indicated that they were of considerable antiquity, whereas the more recent piles, which were square in section, were hard and only superficially discoloured. These were also fitted with iron points. From amongst the piles the grab also brought up great quantities of chalk and ragstone rubble.

As the dredger worked away from the medieval bridge westwards to the 19th-century bridge, the antiquities became fewer and fewer, and, instead, modern items which had been thrown off the bridge were found. These comprised lorry tyres, two 1940–45 World War German pistols still in their leather holsters, a German revolver of similar age, and a very fine brass knuckle-duster. (E.R.1279B).