EXCAVATIONS AT TOPPINGS AND SUN WHARVES, SOUTHWARK, 1970-1972

BY HARVEY SHELDON

A. INTRODUCTION:

The site of Toppings and Sun Wharves lies on the south bank of the Thames and on the north side of Tooley Street, between the present London Bridge and St. Olaf House (Fig. 1).

Demolition of the wharves during 1970 allowed Southwark Archaeological Excavation Committee to examine the site prior to its redevelopment. With funds made readily available by the Department of the Environment, Southwark Borough Council and the owners, the Proprietors of Hay's Wharf Ltd., it was possible to carry out three separate seasons of excavation between September 1970 and December 1971. For an overall period of about twelve months, the work was undertaken by a small full-time group assisted by others at weekends. In order to complete the excavations, some further weekend work was done between February and May, 1972.

During this time it was possible to excavate much of the southern part of the site. All this area had been cellared, and was back-filled to ground level after demolition, except north of the roadway entrance; here the basement roof remained unbroken to provide passage for vehicles. Excavation started in the north of this area (Trench 1, Fig. 2) and during the first season extended west and south to include Trenches 2–8. In a short second season Trenches 9–13 were opened; these and Trench 14 were largely completed during the third season.

Although modern ground level was above +4.3 m. O.D., the nineteenth century cellars had imposed a fairly uniform destruction on all the archaeological levels above about +1.7 m., except in the south-west of Trench 14. Deeper intrusions, largely in the form of wall foundations, pillar bases and eighteenth century floors had caused further loss.

These disturbances in general left some 0.6 m. of early Roman deposits relatively intact at the south of the site, although medieval levels, mainly river deposited, survived more deeply to the north.

THE REPORT

The report comprises the following sections:

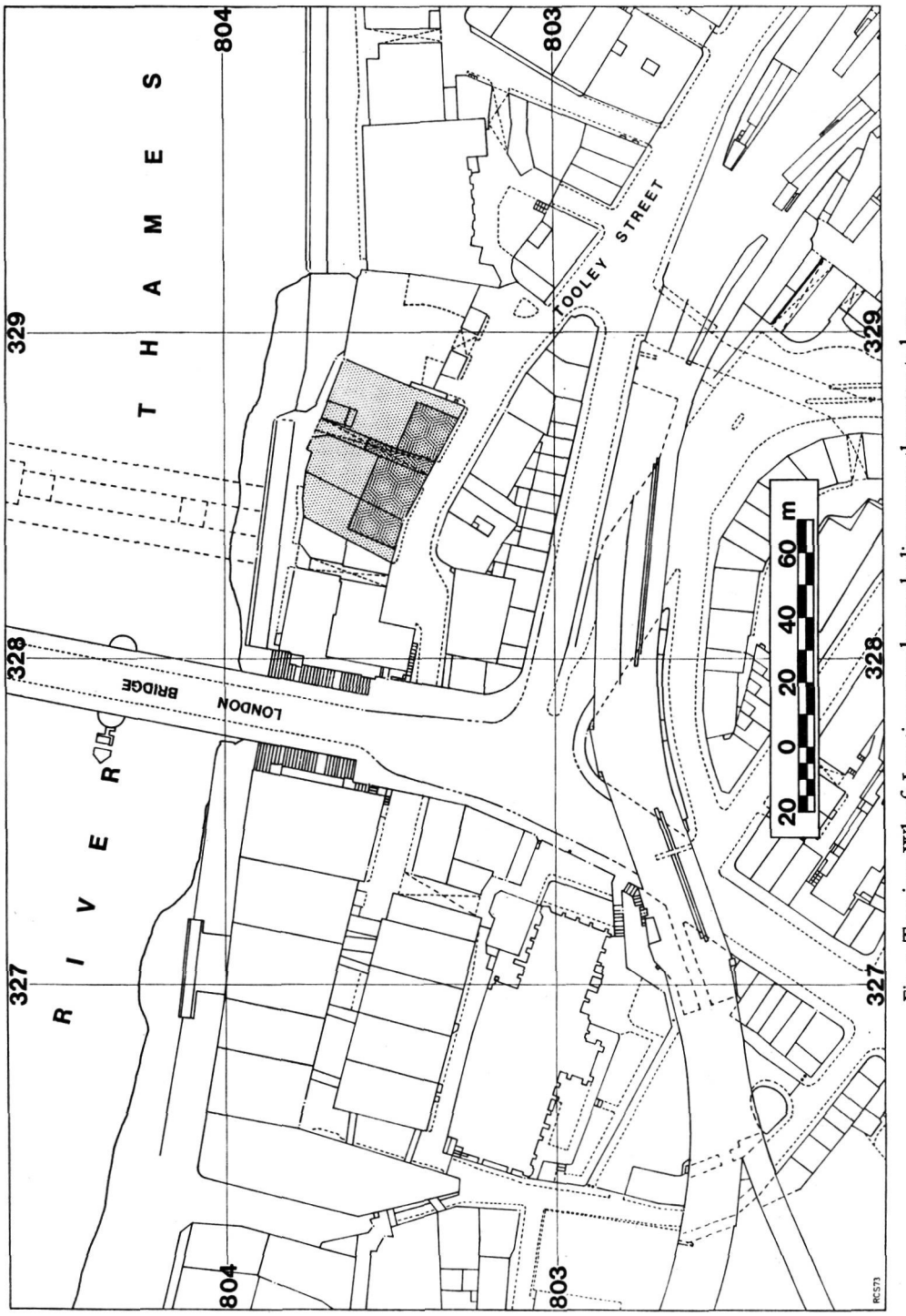

Fig. 1. Toppings Wharf; Location map; heavy shading covers the excavated area

B. SUMMARY OF RESULTS:

1. Although traces of late-prehistoric activity were found within the top layers of the river gravels at about +0.8 m. O.D., the first identifiable settlement began probably a generation or so after the invasion of 43 A.D. Before this the Thames had deposited silt over the river gravels and then retreated, bringing the land level up to about +1.1 m. O.D.

2. A number of early Roman buildings were erected on the silt at the south of the site; they were constructed largely of clay and timber and all but the eastern one appeared rectangular in plan. They could have been part of a complex associated with the early Roman bridgehead. Evidence of metal working in bronze and iron was recovered from two of the buildings but little else survived to indicate reliably what other manufacturing or trading activities took place within them.

3. Some demolition and rebuilding occurred, probably in the early years of the second century, but cellar intrusions had destroyed the later sequence in all but a small area. Here a collapsed building was overlaid by brown silty earth. This, and the scarcity elsewhere of intrusive Roman deposits later than the mid-second century could mean that the site was flooded at that time and became unsuitable for further settlement. Darker earth with late Roman pottery over the deposit of silty earth could have been dumped in the late or sub-Roman period to raise the land level against the rising Thames.

4. No evidence was found of activity between the late or sub-Roman period and the twelfth or thirteenth century, when a substantial building was erected. This was destroyed by a devastating flood towards the end of the thirteenth century. All the earlier levels in its path were eroded, thus removing the possibility of locating the Roman river bank on the northern part of the site. For a time the Thames flowed into the northern part of the excavated area, but earth banking seems to have been thrown up at the south of the site more or less immediately after the disaster.

5. The river bank must then have been pushed out to the north again, for the chalk foundations of later medieval walls were cut into the post-erosion deposits, and a wooden structure—possible a jetty associated with the dock—was built, probably within the first half of the fifteenth century.

6. The floor of the dock itself—known to have been in existence in 1323—was found, and a wall bounding it to the east. This wall was probably built in the late fourteenth or early fifteenth century and may have replaced or extended an earlier one destroyed in the erosion. A further timber structure, possibly a revetment, was built into the dock in the early sixteenth century.

C. DOCUMENTARY SOURCES IN RELATION TO THE EXCAVATION

BY RHODA EDWARDS

1. SUMMARY.

Evidence from documents establishes one main feature on the site, existing (with some alterations) for at least 500 years. This was the narrow dock, midway along Toppings Wharf, which formed the entry to a gated landing-place known as the Watergate, and was so named as early as 1323.[1] Map evidence of the sixteenth century proves the position of the dock, and also shows that St. Olave's stairs lay on the riverfront immediately west of the dock entry.[2] The maps also indicate that this side of the dock south of the stairs was an open space or wharf, and that both wharf and dock extended almost as far as Tooley

Street. Wyngaerde's panorama of London *c.* 1543 shows dock, wharf and stairs, and a structure bridging the dock at its southern end that is presumably the Watergate. At some place upon the wharf, a parish public privy was in use at least between 1566 and 1699.[3]

It is not possible to identify and locate any other individual structures such as houses, shops or warehouses, but documents suggest that the whole area in the near vicinity of London Bridge was densely built-up from before the fourteenth century.

By 1716 the southern part of the dock had probably been filled in and the Watergate removed, though the remaining inlet (measuring only 13 ft. 8 in. x 28 ft. 7 in.) was still known by that name. A shop and warehouse stood on the southern end fronting Tooley Street, and the open wharf on the west side had been built over, leaving only a narrow alley leading to St. Olave's stairs.[4] By 1779, this, and other property on the west side of Toppings Wharf, was leased to Thomas Preston, who is listed in the *Universal British Directory* of 1790 as a lead merchant and shot maker. In 1806, a shot tower was built in his lead works,[5] and later used as a signalling tower for "Watson's Telegraph to the Downs".[6] All the buildings at Toppings Wharf were destroyed by fire in 1843,[7] and the warehouse built after this finally demolished in 1970.

Occurrences of fire and flood nearby, which may have affected the site, have been documented. A flood in 1097 was severe enough to damage London Bridge badly; a fire in 1135 or 1136 destroyed the wooden bridge and houses at the Southwark end of the bridgefoot, possibly also reaching the site. Another fire burnt houses on the south end of the new stone bridge in 1213.[8] A great flood in 1294 was almost certainly that which archaeological evidence shows devastated the site in the late-thirteenth century.[9] A fire on 8th September, 1725, broke out at a brushmaker's house in Tooley Street and burned all the east side of the Southwark end of London Bridge, though it did not touch St. Olave's church.[10] The excavation indicated that the site at Toppings Wharf was burnt.

2. Documented Archaeological Finds:

It was possible to associate documentary evidence with some archaeological features. It was clearly shown on the ground that a flood and consequent "great erosion" did occur in the late-thirteenth century. A Thames flood on 18th October, 1294, was recorded, and, although the London Bridge area is not specifically mentioned as being affected, it seems likely that this event was the cause of the "great erosion". The 1294 flood is said by the chroniclers compiling the Annals of Bermondsey Abbey, to have devastated the lands of the Abbey, which included much of the riverside from Southwark to Rotherhithe.[11] Other documents suggest that the Thames' banks near London Bridge were subjected to repeated flooding in the late-thirteenth or early-fourteenth century.

In 1303 the Prior of St. Mary Overy petitioned the King, mentioning the "continual resistance, which without ceasing, we attempt against the violence of the river Thames, on whose banks our home is situated".[12] Excavations some 150 m. west of Toppings Wharf, at New Hibernia Wharf in 1973, on the site of the Priory, showed that the "great erosion" also affected the western side of London Bridge.[13]

In 1327 a Papal Mandate was sent to the Bishop of Winchester ordering him to relax 60 days of enjoined penance to all who contributed within three years to the repair of St. Olave's church, which had been damaged by the tide beating against the walls, and carrying off bodies from the graveyard.[14]

In 1330 the Thames seems to have been a cause of trouble on the east side of St. Olave's church. Isabella, late wife of Hamo Godchepe, was allowed to "construct a wharf between the wharf of the Abbot and Convent of St. Augustine, Canterbury, on the east and the wharf of the churchyard of the church of St. Olave, Suthwerk, on the west, in order to keep off the water of Thames from the houses of her late husband in the parish aforesaid".[15]

Numerous commissions for the repair of stretches of the southern Thames bank were issued, in 1298, 1303, 1309, 1311, 1320 and 1325.[16] These may have been merely routine measures, but it is reasonable to assume, in view of the above evidence, that some were for the repair of flood damage. In 1334 the Thames again caused widespread flooding, according to John Capgrave's Chronicle (fifteenth century): "This yere were so grete wateres, that thei broke down walls in Temse and othir places, ovircured the londis, and kyllid many bestes".[17]

Of the structures documented on the site, archaeological evidence of the dock was found. In Trench 13 successive layers of sand and gravel, containing pottery of the fourteenth to late-fifteenth century, may have represented phases of the dock floor. Presumably cleaning and relaying of gravel in the dock took place at intervals. In 1566 the expenses of cleaning and repair appear in St. Olave's churchwardens' accounts. Payments included: "paide for iii Loades of gravell . . . iiis; paide to three Laborers that clensyd the Docke . . . vs; paide to v men at the betill x tydes ev(er)y man viiid a tyde dryvynge of pylles . . . xxxiiis iiiid".[18]

Evidence of the 1725 fire might have been found in Trench 8. Here a cellar floor built in the mid-seventeenth century was overlaid by burnt debris which included pipes and pottery fragments of early to mid-eighteenth century date.

3. Finds Not Documented:

Other structures found cannot be associated with specific documentary evidence. Late-twelfth or early-thirteenth century massive stone foundations in Trenches 8 and 11 (Building VII) probably belonged to a structure destroyed in the 1294 flood. Two other stone buildings of similar date were recorded just before their destruction in the nineteenth century, on the southern side of Tooley Street, in Churchyard Alley and Walnut Tree Court; the first may have been part of the house of the Earls of Warenne, the second of the Prior of Lewes.[19]

Many later medieval chalk foundations were found in the northern trenches. This is consistent with the general picture of the area; in 1323, fourteen small shops at "La Watergate" are mentioned, and in 1392, property on its west side is described as new built.[20]

Chalk foundations and a cellar of possible early-sixteenth century date on the extreme east of the site in Trench 14 (Building IX) are unlikely to have been part of old St. Olave's church, as when it was rebuilt in 1738, "the walls of the new church are to jut out at the west end two feet further than the old one",[21] and the 1875 60 in. o.s. map shows the new church did not overlie the Toppings site.

Large quantities of Dutch-type pottery of early Tudor date were found in Buildings IX and X. The possibility that this was imported by Dutchmen can be supported by the fact that a large number of them settled in St. Olave's parish. In 1441 and 1484 Southwark had a population of about 350 "Dutch" (this means Flemings and Germans also); the City of London had about 1,500.[22] In 1541 about 350 aliens were listed in St. Olave's parish alone.[23]

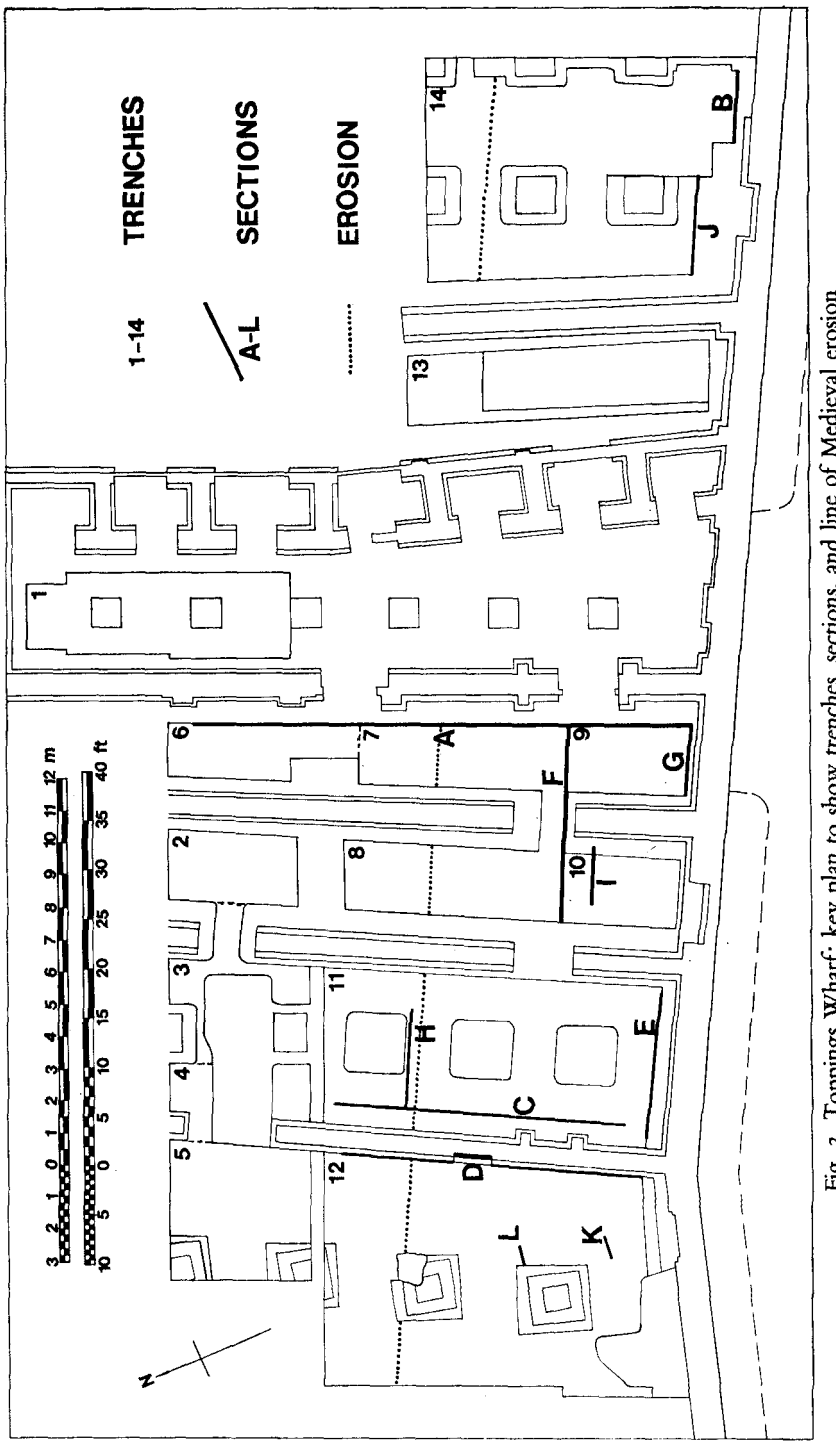

Fig. 2. Toppings Wharf; key plan to show trenches, sections, and line of Medieval erosion

Another possibility is that the Dutch-type pottery was made in England by immigrant potters. In 1542 and 1550 aliens in Greenwich and Woolwich were described as "potters" in Kent Lay Subsidy lists, and may even have been working there at an earlier date.[24] However, the term "potter" is often used for a metal potmaker, so this evidence should not be taken as conclusive.

4. Other Documentary Evidence:

It has been suggested that the pre-Norman bridgefoot adjoined St. Olave's stairs, that is, a little east of the medieval bridge. No sign of the approach to a bridge in this position was found on the site. The fact that the strip of land occupied by the dock and Watergate belonged to the City of London from at least 1546, has been used as an argument to support this theory of the site of a pre-Norman bridge. It is claimed that the strip represents an ancient ward boundary of the City, and therefore would be a likely spot for the positioning of a bridge.[25] However, no evidence exists that the City owned the dock before 1546, when the churchwardens of St. Olave's rented it from the Corporation.[26] The Watergate certainly existed in 1323, but ownership by the City cannot be proved.

The possible evidence of the dock found in Trench 13 did not include any indication of the position of the Watergate itself. Its existence on the site can be proved in 1323. First, property listed in the *Inquisition Post Mortem* of Lora, wife of William de Peyfrer included: "Parish of St. Olave, Southwark. A messuage with 14 small shops at 'La Watergate', held for life, by the demise of John de Northwode the elder, with reversion to the said John and his heirs, of the Earl of Warenne by service of 6d. yearly . . . "[27]

Second, tenements, "late of William de Wyntryngham 'carpenter' and by him new built", lay between property of William Horston (etc.) on the west and the "Watregate in the parish of St. Olave, Suthwerk on the east . . . "[28]

Thirdly, a lease of 1373 by the Prior of Lewes to William de Wyntryngham of property on the south side of Tooley Street, described it as measuring, "in breadth from our gate towards the north 23 feet as far as the tenement that William de Wyntryngham had of John de Northwode".[29] The Prior of Lewes's gatehouse was opposite St. Olave's church on the south side of Tooley Street, and de Northwode had been the tenant in 1323 of the shops adjoining the Watergate, thus this lease proves its location on the site of Toppings Wharf.

In the sixteenth century, the Watergate features prominently in St. Olave's churchwardens' accounts. In 1546–48 they "payd for makyng clen the water gate and for makyng clen a howsse & karting a way the rubysh . . . "[30] In 1554 a royal visit by Edward VI was recorded: "pd to Mr Koke for rynggyng whene the Kyngs grace came to take hys barge at the Wattargatte for to gooe to Grenewyche". Other payments included in 1568–70 "It(e)m for planks to mend the entry of y^{e} Water gate", and "It(e)m y^{t} is further agreed at this vestry y^{t} the lytell house w^{ch} stand upon the warfe wthin the water gate w^{ch} was a pryvye before shall be made a pryvye agayne". In 1579 the Vestry agreed, "that the prive be vewed at the watergate, and pr(ov)isyo(n) to be made that it may be made swete, yf yt may be, by digginge, bordinge, or otherwise as shall be thoughte most meete . . . " In 1584 Mr. John Bayley was made Keeper of the privy on the bridge and at the watergate.

Both the watergate and the privy seem to have been in constant need of repair. In 1608, "Edward Ducket hattbanndemaker had warninge given him to repayre and amend the

stayres and wharfe upon the watergate accordinge to the Covenant in his leasse". In 1614, "the wharfe at the watergate & the house of Office theireupon is very much out of Repratione . . . "[31] In 1699, however, the privy or house of office was still in use.[32]

At some date after 1660, the parish ceased to rent the Watergate from the City of London, and by 1716 the Corporation leased its site to other tenants.[33]

D. THE FINDINGS

BY

BY HARVEY SHELDON

WITH PAT EVANS, ERIC FERRETTI, BERNARD JOHNSON AND IRENE SCHWAB

D.I. Pre-Roman:

Little evidence of activity prior to 43 A.D. was obtained from the excavation. Some worked flints and about half-a-dozen abraded pieces of pottery were found in the top sandy stratum of the river gravels on the western side of the site at a height of approximately +0.6 m. to +0.8 m. O.D. These and the flints from later levels are reported on below (see E.I and E.II). No features indicative of settlement accompanied the discovery of the artefacts, and it may be that they were washed onto the site by the river. This process could have occurred over some length of time, between the Mesolithic period and the beginning of the pre-Roman Iron Age or even later.

D.II. The Early Roman Settlement:

The top of the natural gravels rose from a height of about O.D. level at the east of the site to +0.8 m. at the west, forming the eastern side of the ridge on which the Roman bridge probably stood.

At some time, probably during the Iron Age, but possibly more or less contemporary with the Claudian invasion, the top of the natural gravels was covered with a layer of clay-like silt which varied in thickness from approximately 0.3 m. at the west of the site to at least 1 m. at the east. This brought the land level up to about +1.1 m. O.D. The deposition of silt rather than sand and gravel was presumably caused by changes in the river flow.

After it had accumulated, but at the latest within the generation following the Conquest, the river retreated to the north. Clearly two possibilities can be suggested as the cause of this retreat: either there was a natural fall in water level, or the Thames was artificially banked and contained within its old channel. Whatever the cause, and the former seems more likely, the silt was left on dry land and the area became available for settlement.

For the purposes of dating the settlement both the coins and the Samian pottery were examined. Of the 10 closely datable coins found within the relevant layers, the latest was Neronian. (See E.VI, coins 1, 2, 3, 4, 5, 6, 7, 8, 9 and 12). The much more abundant Samian ware would, however, suggest a later date for the settlement. Consequently, in the following sections (D.II. 1–13) the latest Samian within a context has been used to assign a date to it, except when the residual nature of the pottery has been apparent.

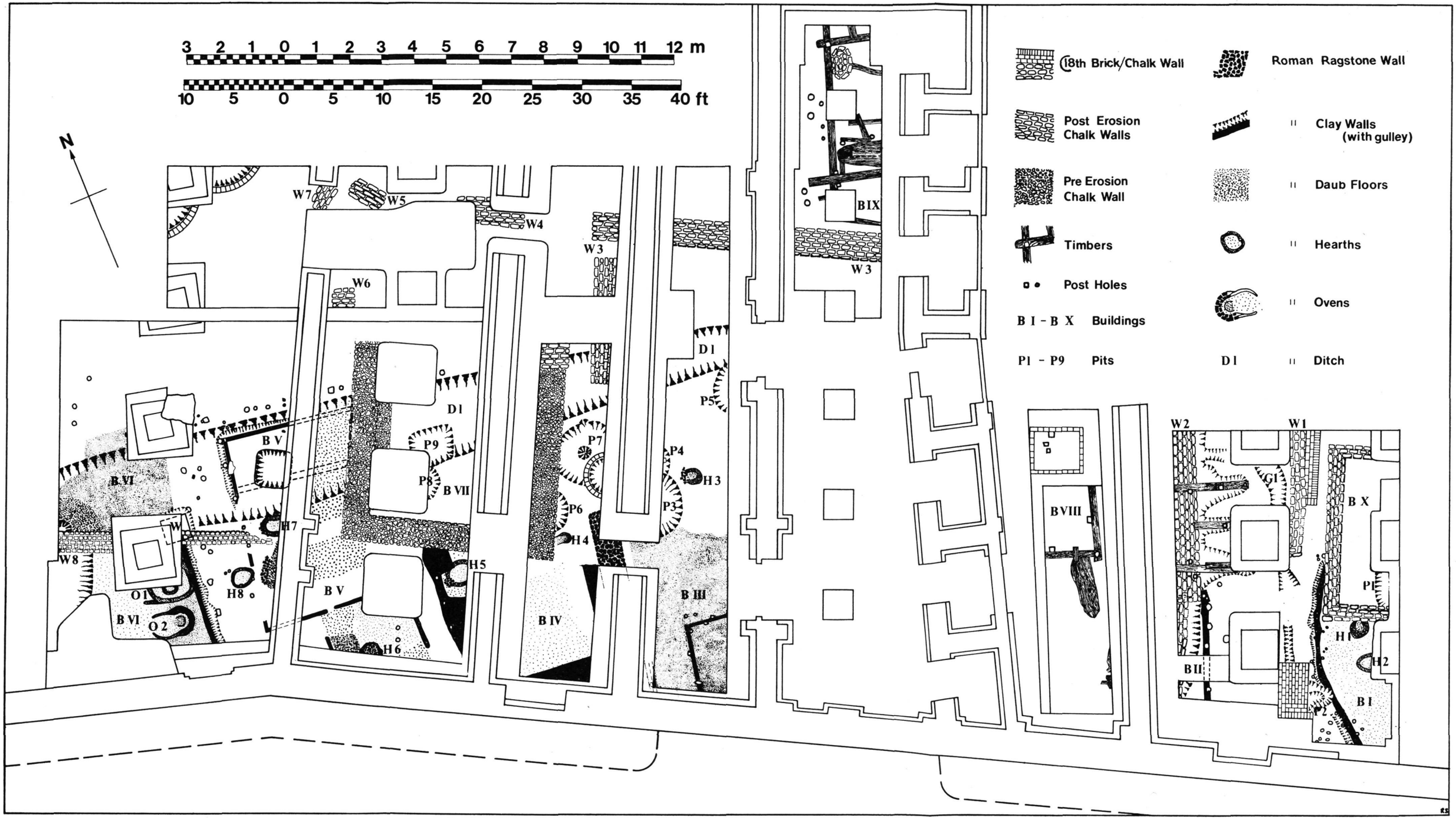

Fig. 3. Toppings Wharf; Site Plan

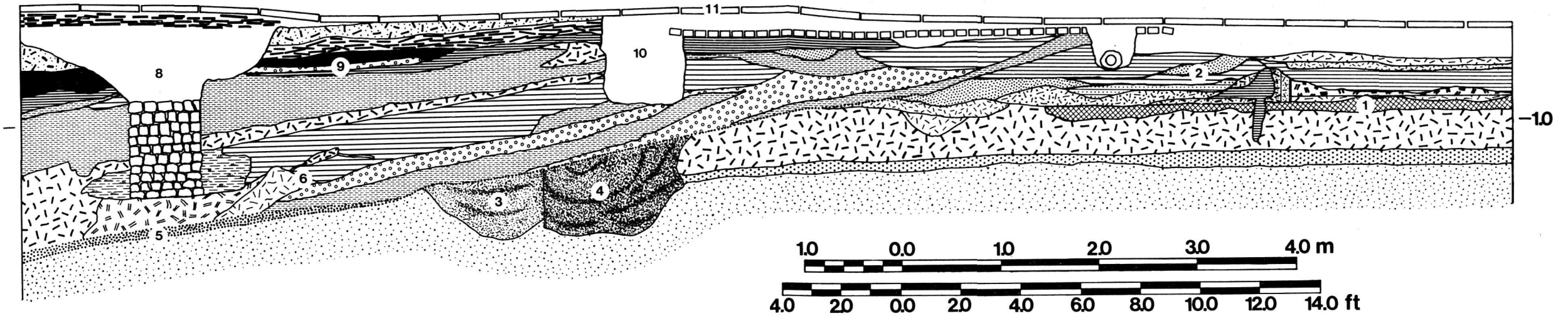

Fig. 4. Toppings Wharf; Section A. Trenches 6, 7 and 9, facing east

A red daub floor above the natural clay (1) is overlaid by a clay wall with plaster facing (left, above (1)). Rubbish deposits have been tipped into the disused building (2). These layers, and the early Roman ditch (3) and a later pit (4) have been eroded by a late thirteenth century river flood, marked by the line of the gravel (5). Above it occur various waterlaid (6) and dumped deposits (7) probably of early fourteenth century date. (7) could represent the base of a contemporary river bank. The post-erosion deposition levels have been cut by a later Medieval wall which has in turn been robbed out (8). (9) is a Medieval gravel surface laid over the deposition layers, overlaid by burnt building debris. The section has been truncated by at least two post-medieval cellars; the earlier brick floor accompanied by a wall (10), the later paved with York stone (11).

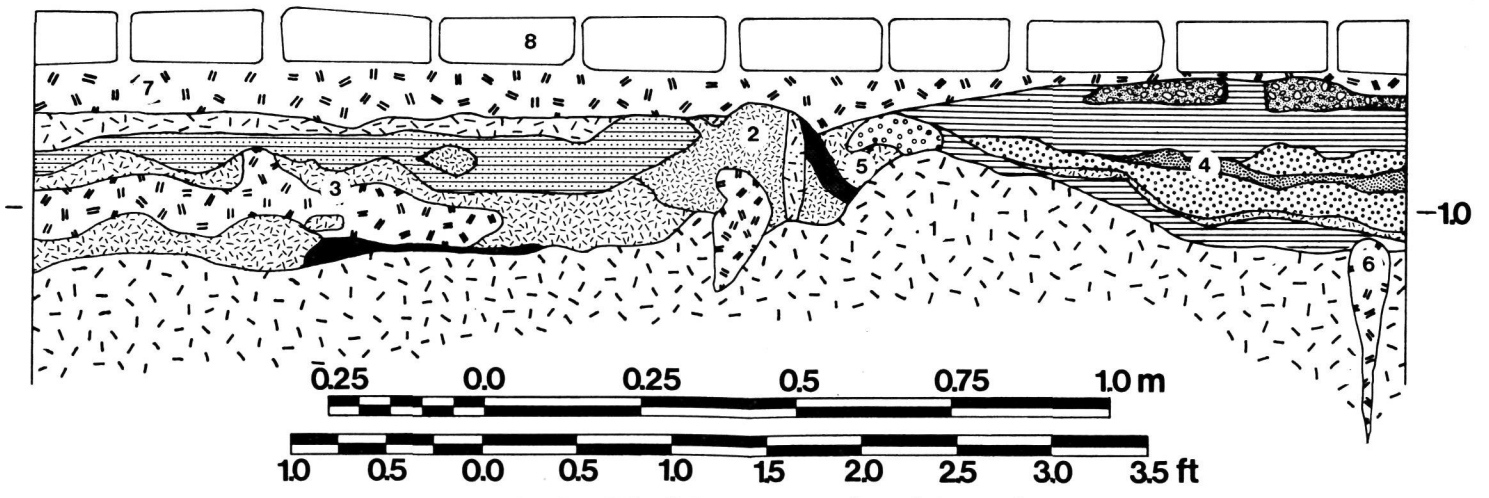

Fig. 5. Toppings Wharf; Section B, Trench 14, facing south

The river silt (1) has been cut away on both sides of the clay wall (2) to put in the floors of the early Roman building to the east (3) and the gravels of the alley to the west (4). The latest floor of yellow clay has been truncated by post-Roman features. Immediately to the west of the wall stump is a gully (5). The post (6) is one of a number cut through the river silt beneath the gravels. The top layer of grey-green clay (7) is a foundation layer associated with the eighteenth century brick floor (8).

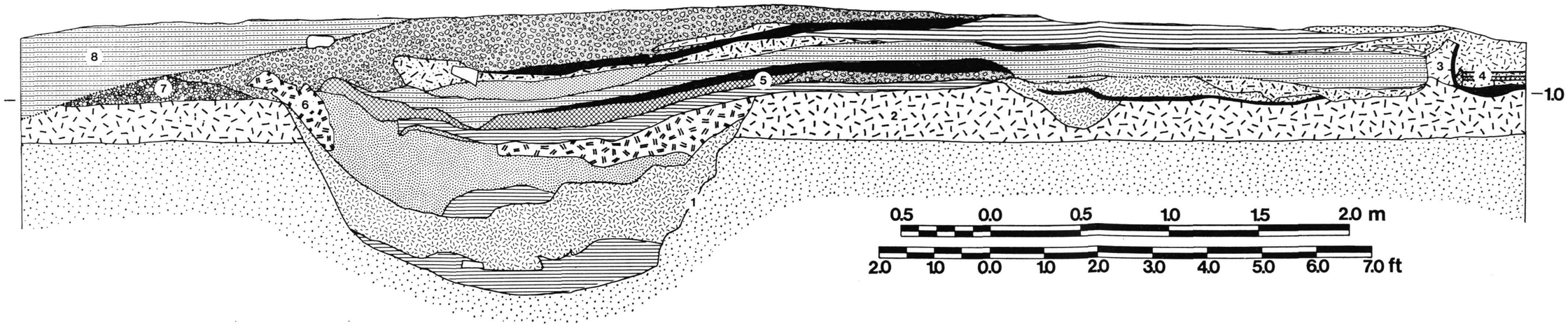

Fig. 6. Toppings Wharf; Section C, Trench 11, facing east

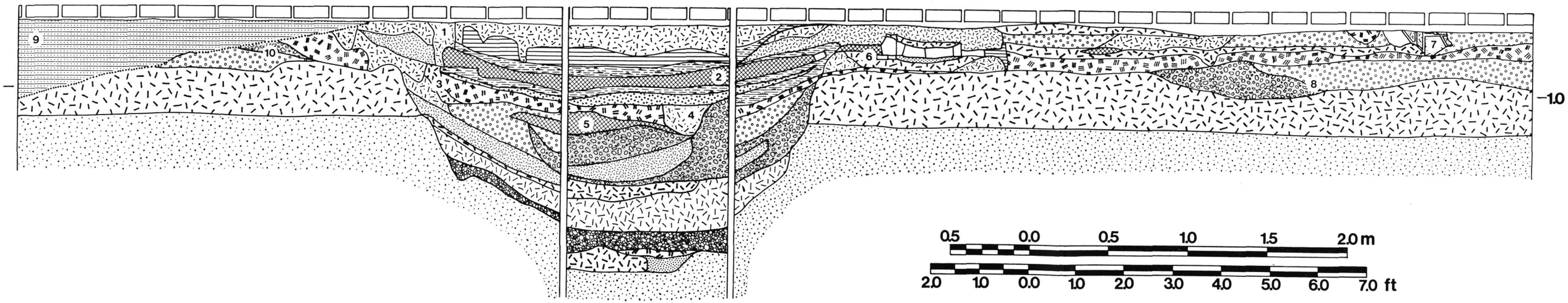

Fig. 7. Toppings Wharf; Section D, Trench 12, facing east

Fig. 6. The early Roman ditch (1) is seen cut through the natural silt (2). The northern clay wall of Building V's southern room is shown (3) with floors to the south (4) and north (5). The line of a possible clay wall (6) is seen in the north of the building. The Roman gravel (7) to the north of the ditch is shown, as is the deposition above the erosion (8).

Fig. 7. The middle has been stepped back to avoid a post-medieval intrusion. The ditch is overlaid by the early Roman Building V.
The northern clay wall (1) a red daub floor to the south (2), and earlier phase northern wall (3) and a probable partition wall (4) are indicated. The earliest probable floor (5) is shown subsided into the ditch. A hearth (6) within Building V is also shown and the possible base of the building's south wall (7). What is probably an earlier intrusion into the silts is seen at the south of the section (8). The post-erosion deposits to the north of the trench are indicated (9) overlying Roman gravel layers (10), possibly a bank.

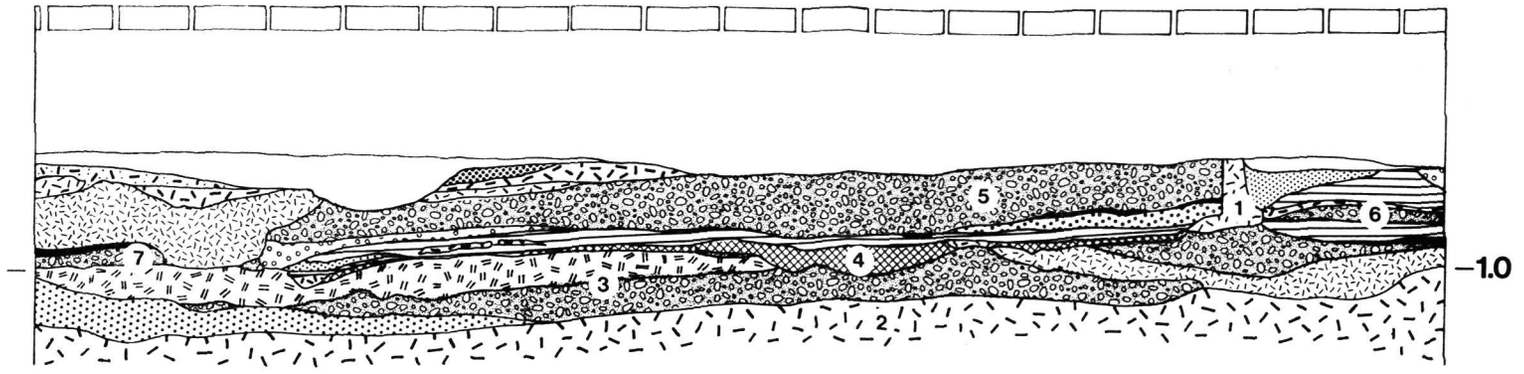

Fig. 8. Toppings Wharf; Section E, Trench 11, facing south

The western wall of Building V (1) is seen overlying the natural silt (2) and the foundation layers (3). The hearth (4) is seen as a thickening of the first floor. (5) represents a probable series of floors not distinct in section. West of the building lies an alley floor (6). East of the building lies similar gravel (7) possibly representing a passage between IV and V.

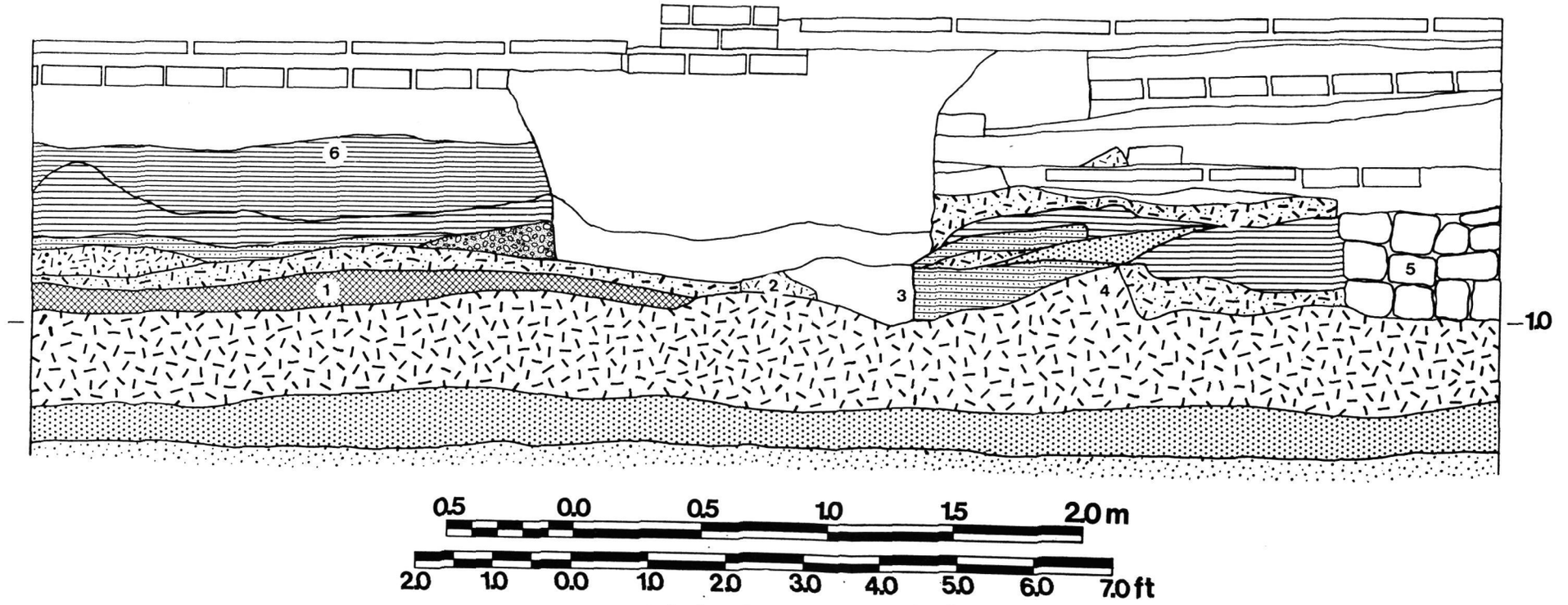

Fig. 9. Toppings Wharf; Section F, Trenches 7 and 8, facing south

This shows the daub floor of Building III at the south of Trench 7 (1). The probable western clay wall (2) is shown, possibly cut into it by the wall base of ragstone and gravel (3). This also seems to have intruded through the eastern wall of Building IV (4), but the stratigraphy was unclear. The southern end of the east wall of the medieval Building VII (5) is also shown. (6) and below represent the filling of Building III and (7) could be a later clay floor or a collapsed wall over Building IV.

D.II. 1. THE DITCH:

The earliest major Roman feature on the site was an east–west ditch, which was traced for a length of over 18 m. through Trenches 7, 8, 11 and 12 (Fig. 3). The ditch was best preserved in Trench 12 and the western part of 11; elsewhere much of its northern side had been destroyed, largely as a result of the thirteenth century river erosion.

Although a distinctly defined linear feature, the ditch varied both in width and depth. In general it was some 2.7 m. wide and 1.2 m. deep. It was dug through the clay-silt probably to quarry the underlying gravel, perhaps for an accompanying road or bank. No trace of either was found south of the ditch and had one existed it must have been to the north, on the river side. (Figs. 4, 6, 7).

Unfortunately, due largely to the medieval erosion, only at the west of the site—in Trenches 11 and 12—did any Roman levels survive north of the ditch. There layers of gravel might support the idea that some sort of bank once existed. (Figs. 6, 7).

The probability that the ditch was dug for quarrying rather than for drainage is suggested by the nature of the filling, which consisted mainly of clay, gravel and domestic refuse, the latter presumably suggesting settlement nearby. As very little silt was found at the base of the ditch it is likely that it remained open for only a short time. Samian sherds from the ditch suggest it was filled during the early part of the Flavian period.

In Trenches 11 and 12, outside the ditch and running parallel to its northern edge, stood a line of posts; these varied in depth from 30 cm. to 70 cm. and in diameter from 5 cm. to 10 cm. They may have extended originally further east along the ditch edge, where the erosion had destroyed the stratification. They could have been the vertical timbers of a revetment holding back a gravel bank to the north of the buildings.

D.II. 2. THE EXTENT OF THE BUILDINGS:

The early Roman buildings will be described in some detail across the site from east to west below (D.II. 6–12), but a general summary is given first (D.II, 2–5).

What have been interpreted as parts of six separate buildings were found (Fig. 3. B.I to B.VI). They were generally set on the underlying silt, but certainly two of them (V and VI) were partially constructed over the back-filled ditch. No evidence of a soil level underneath the buildings was found, although it is possible that the silt supported vegetation which was cleared prior to construction.

Apart from the ditch there was very little stratigraphic evidence of Roman activities preceding the buildings. No significant difference in dating was obtained from the Samian associated with the ditch and that found in the early levels of the buildings, except perhaps for Building III which might be slightly later. This could suggest that the ditch was dug as part of the initial development of the site.

The building to the east of the site (I) may have been round, but all the others were rectangular and thus fit into the pattern familiar from other urban settlements of the period. Gravel yards or alleys separated the easternmost (I) and the westernmost (VI) from their immediate neighbours. Other buildings probably stood between II and III, but it was not possible to excavate most of this area, and the part which was opened (Trench 13) had been disturbed by the construction of a medieval dock (see D.VI. 2).

No frontage on which the buildings may have been aligned was discovered; one to the north would have been destroyed in the medieval erosion and a southern frontage would have been under Tooley Street or beyond it. It is certainly possible that these structures

formed part of a complex associated with the Roman bridgehead and laid out in conformity to it, for their north–south orientation was similar to that which the bridge might be expected to take. This probably stood on or very near to the site of its medieval successor, which may have reached the river bank only some 40 m. north of Building VI.

D.II. 3. METHODS OF CONSTRUCTION:

It seems certain that unbaked clay and wood were the main materials used for the buildings, which can probably best be described as timber-framed with an infilling of daub. The walls were usually first identified as raised stubs of clay (Plate 2); sometimes these were accompanied by external gullies, and post-holes were associated with both.

None were found to a surviving height of more than 30 cm. and clearly only the bases of the superstructures remained. In places the only guide to the wall was the termination along its line of a floor; it is very probable that some were missed in excavation.

In their shape and structural materials these buildings seem representative of the houses found within the urban centres of Roman Britain during the first 100 years or so of the Province's history. However, any detailed interpretations as to the construction must rely partially on evidence gathered by other researchers from more complete remains. These have shown that a variety of methods were employed using timber and clay, sometimes incorporating stone foundations as a footing.[34]

Evidence from within Verulamium *insulae* XVII[35] and XIV,[36] of buildings destroyed respectively in Neronian and Antonine fires, revealed sleeper beams laid within foundation trenches. These horizontal timbers formed the bases of wood and clay superstructures. A building from XIV contemporary to that destroyed by the earlier fire also yielded sleeper beams but some were not set in trenches. However, three successive buildings in XIV that were erected and went out of use in the period between the fires yielded only one partially preserved timber within the various foundation trenches. It is clear from this that conflagration and consequent baking and burial provide more information than demolition or decay.

This finding may have some bearing on the Toppings Wharf site for, apart from organic traces, the wood had decayed beyond recognition. The holes in which the posts had stood contained only a greenish soil but their outlines were clearly identifiable as intrusive shapes cutting the underlying strata.[37] The problem of wood decay would more seriously hamper the recognition of horizontal timbers, especially if these were unaccompanied by foundation trenches.

There was, in fact, little indication at Toppings Wharf that foundation trenches were used. Only in the southern part of two western walls—those which served internally for Building III (Plate 3) and externally for Building VI—were cuts identified which could have taken associated timbers. (Figs. 10 and 14). In both cases, if these were slots for timbers, they indicate horizontal beams provided for only parts of a frame, perhaps to serve as an opening in the wall.

Only one example of a possible horizontal timber just above floor level was seen within a clay wall; this was in the northern wall of Building V where for about 0.3 m. a greenish soil layer sandwiched between yellow clay was traced. That the timbers were there is made likely by the finding of many fragments of building nails, usually within the debris lying over floors, but occasionally within the clay stubs themselves. More than 120 nails were found, and they represent by far the largest single type of metal object recovered. It is

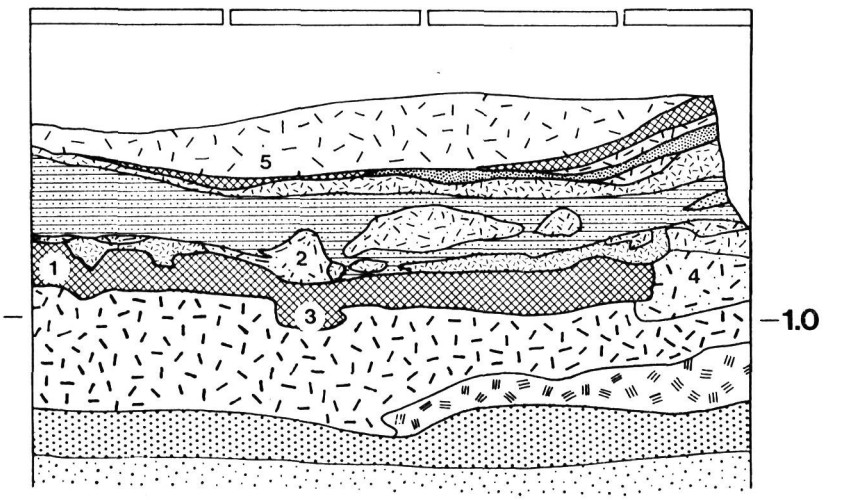

Fig. 10. Toppings Wharf; Section G, Trench 9, facing south

This shows Building III's daub floor (1) at the south of Trench 9 overlying the natural deposits. It may have collapsed into a beam slot (3) just below the demolished western partition wall (2). To the west the floor terminates at the probable main wall (4). Rubbish has been tipped into the building, overlaid by a possible floor or collapsed clay wall (5).

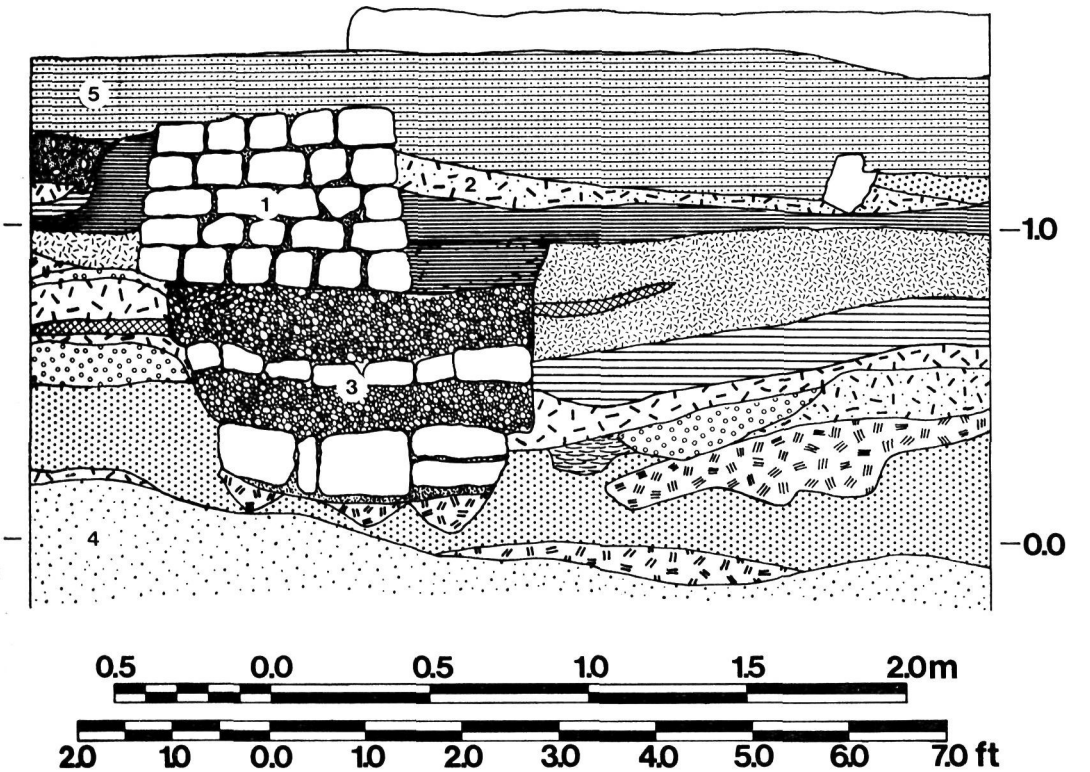

Fig. 11. Toppings Wharf; Section H, Trench 11, facing north

The western wall of Building VII (1) is accompanied by a clay floor (2) and rests on a raft of packed gravel and chalk blocks (3). The wall has been cut down through the early Roman ditch which here overlies natural sand (4). Above the building is the post-erosion deposition (5).

possible that the lowest horizontal timbers were generally higher up than the walls survived; this would have served to keep more of the wood away from the damp underlying silt, and reduce the consequent problems of rot.

Evidence of posts within the line of the walls, or just off them, was more common, especially from Buildings I, II, V and VI, and it seems likely that these must have provided the main supports for the walls and the roofs. Convincing traces of wattling, however, were found only in the northern and eastern wall of Building V's southern room. Here the white core remains of horizontal branches, which had been woven round the verticals, were seen.

It is possible that some walls were built without internal timber supports of any kind and could have been made entirely of clay. The party walls within III, except to the south of the western one, did not seem to contain posts, and no wattles were apparent in analysis (E.XII). In this sense they might be similar to the party walls from the Antonine building in *insula* XXI at Verulamium.[38]

The probable southern and western walls of Building IV and the first phase eastern wall may have been built largely of clay, although it is possible that the clay served as a sill on which the horizontal lower timbers of a frame were laid[39] (Fig. 3). The rebuilt eastern wall —which may also have served as the western wall of Building III—was the only one to rest on a bed of masonry and gravel. This was covered by clay, but modern intrusion prevented positive identification of its higher parts. Traces of burnt wood over the clay suggest that the structure was carried up partly at least in timber, but the possibility that it continued in clay alone cannot be ruled out.[40]

Little evidence of how the walls were finished was found. Only the internal walls of Building III definitely contained plaster *in situ* (Plate 1), although probable traces were seen in the western face of the wall bordering III and IV.

Floors consisted of burnt and unburnt clay and also gravel. The burnt red daub of the former type could be the residue from buildings destroyed elsewhere and re-used for this purpose.

It is probable that the roofs were made of thatch, or perhaps timber, but no evidence of this was found. Tiles occurred, but usually formed the walls of ovens and hearths. They were not found in contexts suggesting derivation from roof collapse.

No evidence was found of furniture, although many internal posts were noted, which may have been fittings, especially in Building I near to the western wall. A lock found among the debris from Building V could have been all that remained of the door.

The number of successive floor levels might seem surprising in view of the short period of occupation. However, the excavations at Verulamium showed that there were four reconstructions over a period of 100 years, following the first buildings in *insula* XIV. Admittedly, two of the five phases were destroyed by fire, but the excavator also noted a greater number of successive floor levels during this time. This would indicate firstly the need to replace the clay and timber structures perhaps every 25 or 30 years; and secondly, the need to replace the floors within them perhaps every 10 years.

D.II. 4. Associated Activities:

The difference in construction between the buildings at Toppings Wharf could indicate that they were individual holdings and that an overall plan was lacking. It would be reasonable to expect that within the parts that were found, many commercial, manufacturing and

domestic activities were carried out. However, there was no proof that they were shops, and only a limited number of recognisable tools and pieces of equipment were found. (See E.VII. 1).

Metal-working was the only industry that was certainly present. Residual slags and fragments from both bronze and iron working were found within Buildings I and V, although the only unfinished item associated was a bronze ring. The hearths from these buildings may have been used during production. The distribution of workshops at the east and west of the site is perhaps an additional indication of individual tenancies, rather than a planned unit. Apart from this, evidence of manufacturing was not found, although the working of organic raw materials could, of course, disappear without trace.

Activities that might be categorised as domestic were more easily recognisable. The small rooms of Building III and V may have been enclosed residential quarters. The former contained plastered walls, which, with the probable exception of the eastern wall of Building IV, were not found elsewhere.

The hearth from the south of Building V and the small ones possibly inside the northern parts of Buildings III and IV may have been for cooking; a number of the broken pots on the site were covered with soot. The two ovens in Building VI could also have been for food preparation.

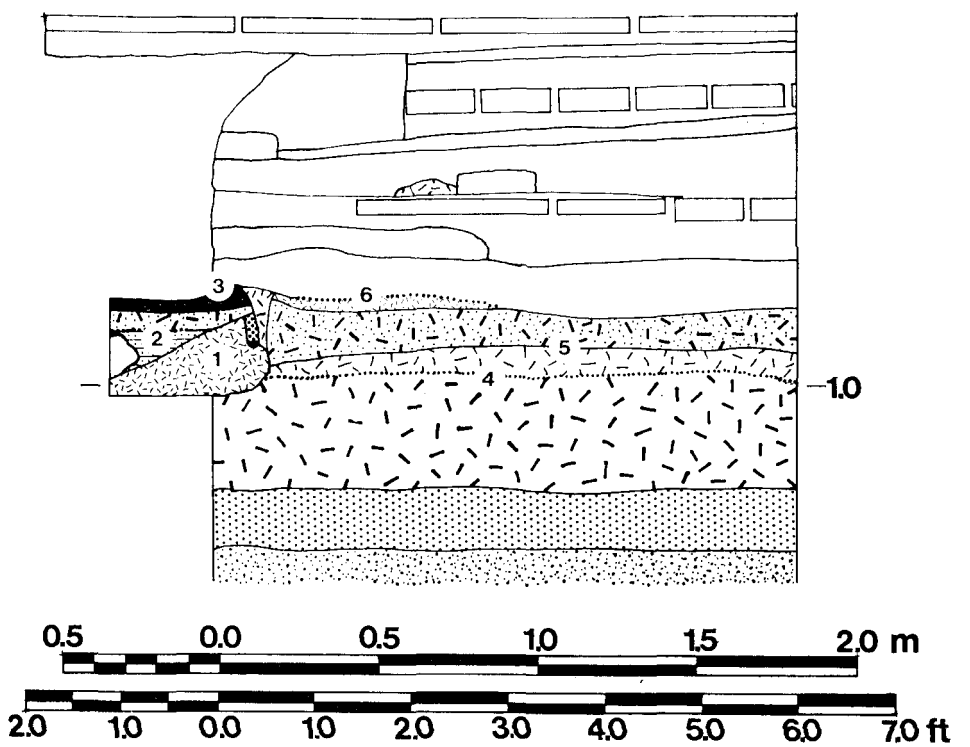

Fig. 12. Toppings Wharf; Section I, Trench 10, facing south

The clay wall with plaster facing (1) may have been replaced by one with a foundation of ragstone blocks and gravel (2) covered with clay. The burnt wood (3) could represent the remains of a beam. (4) and (5) appear as early floors of Building IV. (6) could be a floor associated with the later phase of the building.

The rims of more than 250 Romano-British vessels were identified; food and drink containers were numerous, although only a small proportion of these were flagons, mortaria and amphorae (see E.IV). The importance of Gaulish pottery within the local market in the later first century is indicated by the finding of parts of at least 40 decorated and a larger number of plain Samian vessels (see E.III). More than 20 glass vessels were also present (see E.IX).

The debris from eating and drinking was also seen in the faunal remains which were scattered liberally about the site. Cattle, pig and sheep seem to have been the major meat sources, although waterfowl, goat and hare also occurred (see E.X). Oysters were abundant: some 124 lb. in weight of shells was recovered probably representing more than 1,500 individuals (see E.XI).

Indications of recreational activity were limited. A probable set of bone gaming counters was found on a floor in Building I, but other examples were isolated, apart from three glass counters in a pit (P.5) (see E.VIII and E.IX).

D. II. 5. Duration of Settlement

It seems likely that the buildings, except perhaps for III, were erected during the earlier part of the Flavian period. A number of successive floors were found inside Buildings I, IV, V and VI; all, on the pottery evidence, belonged to the later part of the first century, although Building I could have continued in use at least until the early second century.

Some form of re-planning, at least in the western part of the site, is probable either at the close of the first century or in the early years of the second. The internal walls of Building III were demolished, and layers of rubbish were spread over the wall stubs and floors (Figs. 4 and 10). Building V seems to have been similarly filled, whilst the alley between V and VI, and VI itself, were overlaid by greenish earth and gravel. Pottery of Flavian-Trajanic date was found amongst the debris associated with Buildings V and VI, and of Trajanic date in that associated with Building III.

Due mainly to the fairly uniform level of the nineteenth century cellar intrusions, the nature of the subsequent early Roman settlement is unknown, but it is probable that buildings still continued to occupy the site until at least the middle of the second century.

Layers of yellow clay occurred as the highest recognisable Roman levels within the areas of Building III and over the eastern part of Building V; these may have formed the floors of succeeding structures. No clear indication of the direct relationship of these to the earlier buildings was obtained.

Further occupation is also attested by a well cut through the floor levels of Building VI and filled back probably within the first half of the second century (Fig. 3, W and Plate 4). No structural remains associated with it survive, but layers of sand and gravel containing Antonine pottery occurred nearby, where they had subsided into the filling of the main ditch.

It is perhaps significant that, apart from a gully and two pits, no intrusive features were found proving usage later than the Antonine period. No other pits, ditches or wall foundations were revealed cutting through the earlier strata. The possibilility might be considered that the settlement there ended within the second century, leaving the site either largely deserted, or at least open ground.

The truncation of the Roman levels caused by cellar digging meant that in one small area only could this possibility be tested. This was to the east, where a shallow cellar dug from above the alley and the eastern part of Building II allowed a seemingly complete sequence to survive through the Roman deposits. The results of its examination are described below (D.II. 7); they are not incongruent with the possibility of a fairly abrupt ending to the settlement. The silty deposits over the building and alley could well indicate flooding; while the darker earth above might represent late or sub-Roman dumping intended to safeguard this perhaps marginal land against further river intrusion (Fig. 13).

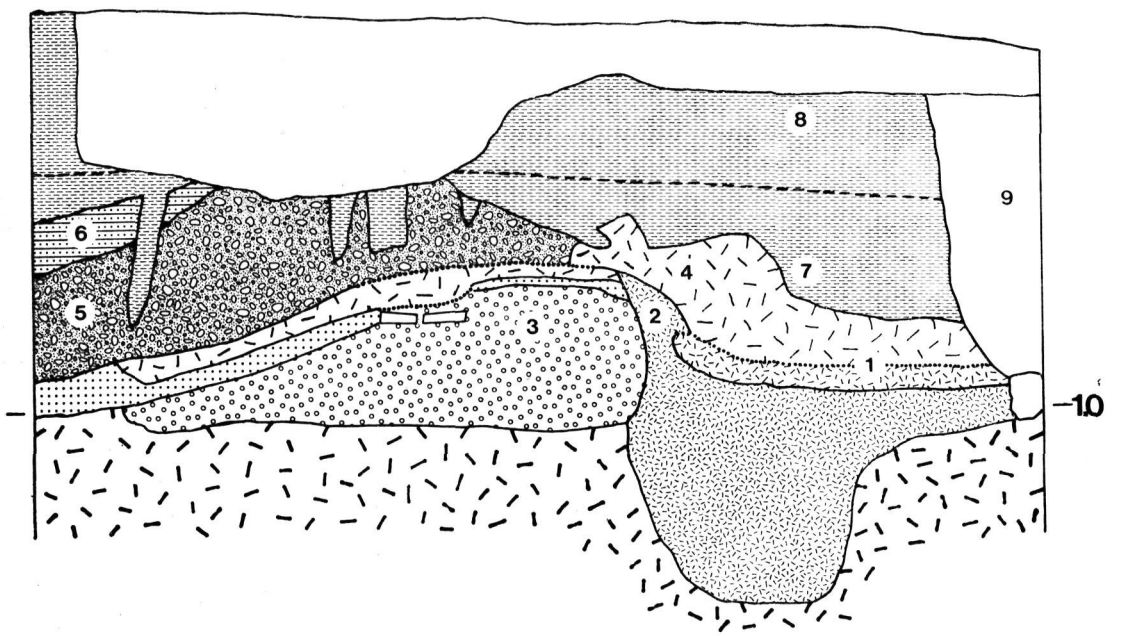

Fig. 13. Toppings Wharf; Section J, Trench 14, facing south

The gravel floor of Building II (1) is accompanied by the clay wall stub (2) backed by the gravels of the alley to east (3). Either collapsed clay walling or the base of a later wall and accompanying floor (4), overlie (1) and (2). Possibly two later phases of the alley gravels (5) and (6) survive, with posts cut through them. The brown mud overlying the building and alley (7) could have resulted from flooding, while (8) probably represents late or sub-Roman dumping. The robber trench through a medieval wall (9) is seen at the extreme west.

D.II. 6. Building I:

Within the easternmost trench on the site there was evidence of two buildings (I and II), which were probably contemporary; a gravelled alleyway lay between them (Fig. 3).

Building I appeared to be a circular structure and had an estimated diameter of 8.2 m. Several floors and part of the walling on the western side were found. Only two features —a number of stake holes and a small pit—seemed to antedate the building. The stake holes were found cutting through the natural silt and did not appear to form any coherent plan. It is possible that they were connected with one of the earlier floors of the building, but no trace of them was seen in these higher levels. The pit, which was about 2.4 m. deep and 0.8 m. in diameter, contained fragments of shell, bone and tile, but was not closely datable.

The earliest floor of the building was represented by a layer of charcoal and burnt material. A large amount of iron slag, and some bronze slag, was found in this and the following four layers (see E.VII. 1), showing that some form of metal-working, including smithing, was taking place. The floor was probably covered with rushes or some other organic material. The next floor, of clay, daub and charcoal rubble, could indicate some destruction within the building. An associated hearth (Fig. 3, H1) at the north end consisted of an oval area of ash, part of which was cut away by a medieval chalk wall. Traces of metal-working were again found in this floor. The latest surviving floor lay over a build-up of soil and sand, and was in the form of hard-packed yellow clay 10 cm. thick; on it 12 bone gaming counters were found (Fig. 47). A hearth of baked clay lay somewhat to the west of the centre of the floor (Fig. 3, H2).

The building appeared to be roughly circular, but not enough survived to confirm the plan. The pottery from the floors indicates a usage that began during the Flavian period and continued at least into the earlier part of the second century.

The walls, as they survived, consisted of stumps of green clay about 10 cm. high and 15 cm. wide, built directly on the natural silt (Fig. 5). These contained a number of stake holes, varying in depth from 4 cm. to 60 cm. and in diameter from 2 cm. to 11 cm., which formed no regular pattern. The stake holes were also found in a shallow external gully, about 13cm. wide and 8–10 cm. deep, which was filled with a dark green soil. West of this the natural silt was cut away to form a larger gully about 40 cm. wide, into which the layers of gravel outside the building had subsided.

Building I was clearly a clay and timber-framed structure, and the clay stumps, which are all that survive of the walls, may well have been the base of packing round the timbers. The larger holes could have taken relatively substantial timbers, perhaps supporting the roof, and the smaller ones part of the wattle framework.

The slag found in the lower floor levels, and in the build-up between them, suggests that the building was, at least in its earlier phases, some sort of metal workshop.

In the vicinity of Building I the alleyway consisted of at least five layers of hard-packed pebbles and sand. The surfaces ran down from Building II towards Building I, and between the two structures the alleyway was some 3 m. wide; it broadened out towards the north, possibly into a courtyard.

D.II. 7. Building II:

Just east of Building II three probable surfaces were distinguished in the alley, none yielding pottery of later than Flavian date. It was clear that the thickest deposit of gravel, at least in the earliest phase, had been placed next to the building, so that the surfaces sloped down to the east, towards Building I (Fig. 13). From a section dug at the south of the trench, it appeared that the natural silts had been removed and replaced by a greener clay, acting both as a foundation layer for Building II and as the lower part of the wall. A sherd of pre-Flavian pottery was found in the lowest part of the alley gravel and fragments of another vessel of similar date were found within the clay under the floor. Little remained of the gravel floor within the building; much of the interior had been removed by a wall, which probably bordered the eastern side of the medieval dock (see D.VI. 1 and 2).

Building II's eastern wall was traced for a length of nearly 3 m. north from the edge of the trench. It was seen as a band of green to yellow clay some 15 to 18 cm. wide, surviving to about 15 cm. above the floor. Four postholes, which extended for an average of 50 cm.

below the wall, and could have taken substantial timbers, were identified along its length. Overlying the wall stump and the gravel floor was a deposit of yellow clay. It was not clear whether this was originally the higher part of the wall that had subsequently fallen into the building, or whether it was both the wall base and the floor belonging to a later phase of the structure. The clay butt end of a northern wall was also discovered adjoining the eastern one.

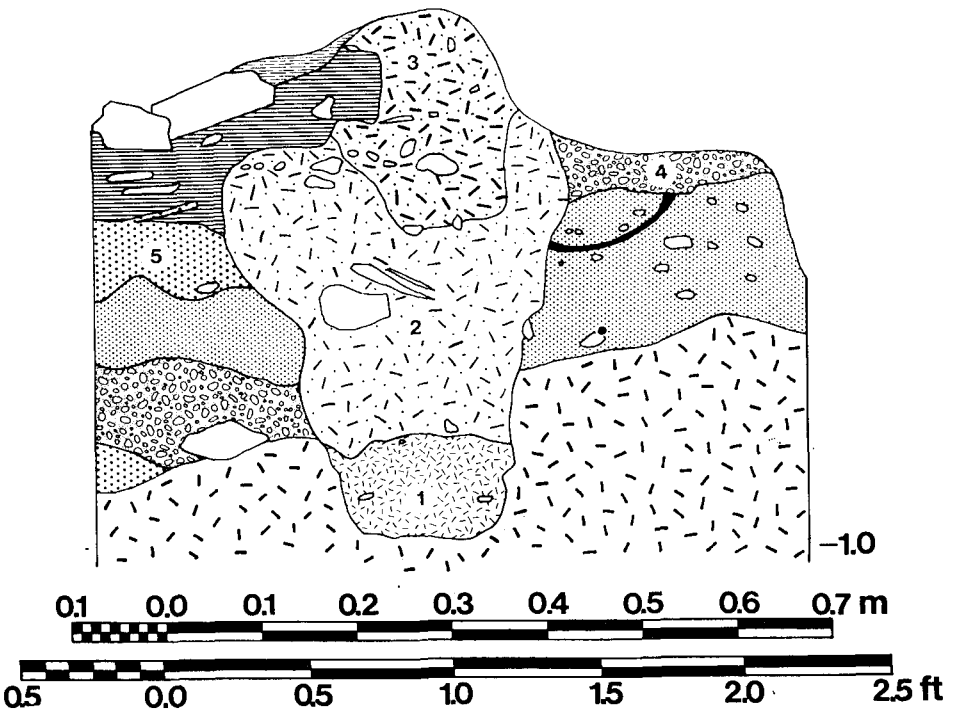

Fig. 14. Toppings Wharf; Section K, Trench 12, facing south

This shows a detail of the eastern wall of Building VI. Below the wall a layer of clay and stones could represent a packing in a trench cut to receive a beam (1). The wall as found here consisted largely of green soil (2) capped by yellower clay (3). It is possible that (2) represents decayed wood; fragments of bone and pottery as well as stone occurred within it. (3) might represent the daub infilling of the wall. To the west the lower floor of Building VI is shown (4). West of the wall layers of gravel and sand were found at (5) and below.

Above both the alley and the remains of the building was a layer of brown "silty earth". This seemed to follow the outlines below of both the collapsed building and the sloping external alley gravels; it was perhaps deposited by flood water from the Thames. Above it, starting at a height of +1.7 m. O.D. lay a fairly homogeneous darker earth containing late Roman pottery and building rubble, which could have represented the lower part of a late- or sub-Roman dumping intended to raise the land levels as a safeguard against incursions of the river.

Similar deposits have been encountered in other recent SAEC excavations and may be widely distributed in Southwark.[41] In one case they overlie an early Roman building sequence (106 Borough High Street, 1974), but in another, a well, which was probably not filled in until the early fourth century (Angel Place, 1973).

D.II. 8. BUILDING III:

Building III's floor was composed of irregular segments of reddened baked clay, on average some 1 cm. thick. Neither the southern nor eastern border lay within the excavated area, but it measured at least 4.9 m. from north to south and 2.7 m. from west to east. A wall was found bounding the building to the west, but none was discerned to the north, although the clay which had collapsed over the northern part may have originally served as one.

Two internal clay walls, probably bordering a partitioned area were found. Both had been destroyed, but the northern wall survived to a height of some 30 cm. to the east of Trench 9 (Fig. 4). Here it was about 18 cm. thick and faced on its southern side with white plaster (Plate 1). The texture of the wall clay varied; the southern part was sticky and green, while the northern part was yellow, and contained flecks of reddened clay (see E.XII). The base was set without foundations on the red baked clay; the associated surface seemed to be an overlying band of yellow clay some 3 cm. thick. A dark stain less than 2 mm. thick was noticed in parts upon it; this could have been the remains of a wood or rush covering.

It is possible that both walls stood largely without wooden support. No traces of wattle framework were found and although five possibly associated post-holes were examined, only one, some 30 cm. north of the southern edge of Trench 9, was directly on the line of the wall. This descended only 5 cm. below the red clay, but south of it the floor subsided into a hollow. Possibly the post was at the northern end of a beam-slot, providing the base support for part of the wall (Fig. 10 and Plate 3).

The masonry-based wall between Buildings III and IV had been destroyed by modern foundations (see D.II. 9) and to its east the red baked clay floor terminated; it was not possible to establish a relationship between them. A stub of clay west of the floor might have been the original wall, replaced by the masonry base, although both could be part of the same structure (Fig. 9).

As only one floor was found, it is possible that Building III had a relatively short life. The finding of a Trajanic sherd within the collapsed structural debris (see below), suggests that it may have been occupied during the early part of the second century. No evidence of its function was obtained, but the plastered internal walls, unusual on this site, seem to suggest living quarters rather than industry. Only one hearth was found (H.3), which may not have been within the building, as it lay some 1.5 m. north of the edge of the red baked clay.

This building was either destroyed, or at least rebuilt, in a way which involved the demolition of the internal walls and the raising of the floor levels. Layers of clay over the floor could have been the demolished walls, which were covered by deposits of domestic rubbish. One pit was distinguished (Pit 3), which cut the collapsed debris; it might have been dug prior to the general rubbish dumping. Above this, in the southern part of the building, a layer of clay might have been another floor, but no other evidence survived beneath the post-medieval cellar.

D.II. 9. BUILDING IV:

This structure lay immediately west of Building III. Three walls were identified, one at the south, which belonged to the earlier phase of the building, one to the east, and one to the west. Three successive floors were found. The primary one, consisting of well-packed

gravel, lay directly on the silt, and was covered by a thin brown layer less than 3 mm. thick—perhaps a wood or rush surface. Above this a clay floor was covered by a similar lens. Flavian pottery was found both on the bottom surface and in a levelling of sandy earth containing domestic refuse dumped over its successor. A hearth was found on a level equivalent to the bottom floor, but north of where the building could be positively located.

A later gravel floor laid above the levelling also contained Flavian pottery. On the floor were deposits of burnt matter with quantities of oyster shell. This later phase seemed to have involved southward extension of the building necessitating the demolition of the southern wall and, perhaps, the reconstruction of the eastern one.

What was interpreted as the southern wall related only to the lowest two floors of the building and was represented by a plinth of green clay some 60 cm. wide, surviving some 15 cm. above the base floor level. Presumably the higher levels of the wall had been demolished when the structure was extended. No trace of wood was found associated with it, and it is not possible to say whether the higher parts of the wall were carried up in clay and timber, or clay alone.

The eastern wall of the building had been much destroyed by a nineteenth century basement wall, but it seemed that two phases could be discerned. The first was represented by green clay, similar to that in the south wall, which survived to about 23 cm. above the base floor, and was associated with the first two surfaces; within its core a sherd of Neronian or early Flavian pottery was found. Traces of plaster were seen sticking to the western face of the clay.

Both the plaster and the clay appeared disturbed (Fig. 12) by an intrusion dug into the wall. This was cut to lay in a bedding of hassock blocks accompanied by tiles, which may have been a base for a wall serving both Buildings III and IV. This masonry foundation was about 0.8 m. wide and was traced in plan for a length of 1.5 m. Its edge was located twice by undercutting the basement wall 2.6 m. and 5.3 m. respectively from the northern end. The foundation was covered by bands of gravel and sandy clay. Capping the latter was a layer of burnt wood, which could have represented the remains of a horizontal beam.

About 2.1 m. north of the end of this wall, was a deep post-pit, cut some 1.4 m. into the silt and underlying gravel. The large post, apparently with a diameter of 40 cm., which stood there could have been a major support for the roof of the two buildings. No pottery of later than Flavian date was found in the fill.

The probable western wall of Building IV was found in Trench 11 (Fig. 3). It consisted of a broad band of green clay, similar to the southern and earliest eastern walls, with three post-holes in a line along its centre, about 5 cm. in diameter and 40 cm. deep. Towards its northern end, the clay band was narrower, and then broadened out again, enclosing an area of well-packed gravel to the east. This was possibly the western edge of the earliest floor in Building IV.

D.II. 10. Building V:

What was defined as Building V lay within Trenches 11 and 12, and seemed to consist of at least three rooms. The evidence from each trench will be dealt with separately.

(a) Evidence from Trench 11:

Only one feature, apart from the ditch, clearly antedated the building. This was a small pit either cut down from the top of the natural silt or having had its top layers removed during the building's construction. One sherd of pre-Flavian pottery was found in its fill.

The most substantial part of the building to survive was in the southern strip of the trench. Here the lower parts of three clay walls were exposed, between which was laid a red baked clay floor with a hearth set into it (Fig. 3). None of the walls survived to a height of more than 26 cm. above this floor.

In the southern strip of the trench, layers of sand and gravel overlay natural silt. These may be unconnected with the construction of Building V, but they could perhaps represent a preparatory levelling-up of the area. Over the sand and gravel a band of greenish clay was laid, which seems to have been a foundation for the eastern wall and the earliest floor (Fig. 8). A second possible clay foundation layer was seen in the western strip, north of the northern clay wall. Although this clay merged with the natural silt beside the wall, towards the ditch it covered a thin layer of burnt clay. The whole layer was cut down slightly into the top of the natural clay (Fig. 6).

No pottery later than early-Flavian was found within these layers beneath the building.

The wall at the eastern end of the southern room, which ran north–south across the southern strip, was made of the same greenish-grey clay as the layer underlying the floor, and merged imperceptibly into it. Four vertical holes, lined with the remains of wood, were visible in the wall, as were strips of decayed wood running horizontally through it. Two of the posts were about 26 cm. deep and were set alternately with shallower ones. The wall ended before reaching the southern edge of the trench, and no trace of it could be seen in the southern face. However, the line of the wall was preserved by the join between the layers to east and west of the wall. Possibly there was an entrance to the room at this point.

The western wall was of clean green-yellow clay, and survived to a height of 23 cm. Its eastern face was almost vertical, and at the base the clay spread out on either side of the wall, on the eastern side almost at right-angles to it. This could have been in order to give the wall stability. However, the absence of any internal wattling indicates that the wall was not intended to stand on its own, and the sharp right-angle in its eastern side suggests that the clay was perhaps the bedding for a beam, which would have supported a clay and wood superstructure. The wall rested on a band of gravel which ran along its line over the clay foundation layer. This could have been to provide better drainage for a main wooden beam. The western wall did not join the northern, but its line was preserved by floors inside and outside the room.

The northern wall of yellow sandy clay was the most substantial. The southern face had been baked solid, and the area of burning extended under the lowest floor of the room. About half-way along the wall was a vertical stake-hole, while running horizontally through the wall were the well-preserved remains of small branches, apparently woven around the vertical stakes; these were evidently the remains of the wattle core. The wall rested on a foundation of dirty green/grey clay, which carried on westwards into the edge of the trench, although broken by a later intrusion.

FLOORS:

In the area enclosed by the walls, the earliest floor was a layer of red baked clay. About half-way between the walls lay a tiled hearth cut down into the clay beneath the floor (Fig. 3 H.6). North of the room, gravel with a hard-packed surface extended towards the ditch, running into a second baked clay floor above the ditch. (Fig. 6).

To the west of the southern room was another gravel surface, which seems to have been part of the alleyway which ran between Buildings V and VI.

Between the western wall of Building IV and Building V was a strip about 60 cm. wide, of gravel in the southern part, with a mixture of red baked clay, charcoal and floor plaster to the north. It could perhaps have been a passage running between the buildings, but there seems to have been no evidence for a well-compacted floor surface. The latest pottery found in all these early floors was of Flavian date.

Although the existence of floors showed that Building V extended north from the clearly defined southern room, the evidence for accompanying walls was limited. None were obvious in excavation, but traces of two were seen above the ditch, which were aligned with those crossing the ditch in Trench 12.

Later floors occurred within the southern room. Two successive gravel layers were found here; the first had a covering of dirty sand, and charcoal was found spread over the second. Flavian pottery was again associated with these floors.

Evidence for the destruction of the building was most clearly seen in the vicinity of the southern room. Overlying the northern wall stub was a spread of gravel containing domestic refuse including pottery of Flavian-Trajanic date; within it lay a band of yellow clay, perhaps representing the fallen wall. Over the eastern wall lay a mixture of dirty sand and brown clay which seemed also to cover the western part of Building IV.

There was some indication that the occupation sequence continued above Building V. The highest surviving levels revealed a slab of plaster some 2 cm. thick and 1.21 m. long, running roughly on the same line as the old eastern wall. It was painted on the eastern face, but was packed in a matrix of uniform yellow clay which did not allow the wall's outline to be distinguished. Set into the yellow clay, to the north of the plaster, was a hearth walled with tile and pottery (Fig. 3, H.5.).

(b) Evidence from Trench 12:

Walls:

The western wall was mainly evident within the ditch where the subsidence had enabled it to survive. Here the wall of yellow green clay was about 9 cm. thick and stood to a height of 10 cm. above floor level; outside the ditch, the wall remained only as a tumbled clay ridge. Associated with the wall were six post-holes, set outside it on the edge of a gully.

Immediately east of one post-hole, an oval piece of rough-hewn ragstone, wedged with tiles, had been inserted into the wall. It may be that the decomposition of domestic refuse in the ditch below the building caused the post to move and thus necessitated the repair of a load-bearing timber, perhaps a roof support, which had tilted to the east.

The floors and walls had subsided into the ditch. Within it, two separate stages of the northern wall were found, one on top of the other, each approximately 25 cm. high (Fig. 7). The last part of the northern wall, before it reached the north-west corner of the building, consisted of buff clay at each side with green sandy soil, which might represent decayed wood, in the middle. The green soil was visible to a depth of 4–5 cm. into the top of the clay wall. Set into the north-west corner was a single rectangular post, about 10 cm. x 15 cm. with a depth of 20 cm.

Floors:

Two baked clay floors had subsided into the ditch. Both were of similar composition, but the lower one, 25 cm. deeper, was less thick. This original floor contained a green clay band, running parallel to the north wall, but 1.2 to 1.5 m. further south. This was presumably an internal wall, demolished before the later floor was laid in.

HEARTH:

On the southern edge of the ditch was a hearth (H.7), the eastern part of which had been destroyed by a modern wall. A ridge of grey clay set onto the silt formed the sides of a shallow pan, 1.2 m. in diameter, filled with carbonized deposits. These were covered by a red baked clay crust 5–8 cm. thick, on which were set pieces of masonry. Above the masonry were several more layers of burnt material with clay between them. Round the baked clay was an incomplete ring of broken tegulae.

South of this hearth, on the same level as the baked clay crust, was an area of carbonized sandy soil, with a line of broken tegulae on its western side. The middle of this burnt area contained numerous iron and bronze particles, suggesting hearth-rakings from metal-working had collected there.

Pottery from the building in this trench, as in Trench 11, indicated that it was in use during the Flavian period.

D.II. 11. THE ALLEYWAY:

The gravel alleyway between Buildings V and VI was 1.8 m. wide; its original surface was covered by a layer 7.5 cm. thick of domestic rubbish. Into that surface had been set a hearth (H.8), providing evidence of a number of fires, of which at least one had been doused with sand. Two later surfaces were found, and into the second a gully had been cut alongside Building VI.

D.II. 12. BUILDING VI:

WALLS:

The eastern wall of the building, which was 13 cm. wide, survived to a height of between 25 and 30 cm. between the south of the trench and a later wood-lined well which cut through it (Fig. 3). In some parts the core of the wall was sandy and green, with bone, stones and tiles in it, and topped by buff sandy clay. Elsewhere, especially towards the north end, it was of solid yellow clay.

A gully lay outside the wall, containing black soil with domestic refuse. Five post-holes were found just east of the gully, averaging between 15 cm. and 20 cm. in diameter and 30 to 50 cm. in depth.

Pottery from the wall indicated that it may have been built in the early Flavian period.

FLOORS:

Two floors were associated with the wall and each had an oven based on it. The lower oven (Fig. 3. O1) was placed on the original crushed red baked clay and pebble floor; its successor (O2) stood on a later pebble floor.

Pottery from the floors associated with the ovens was of Flavian date.

Lying over the earlier east–west ditch, was a second red baked clay floor. This may have been a continuation of the earlier floor at the south, although the relationship had been obscured by later intrusions. This floor had subsided into the ditch. The wall of Building VI had become completely distorted and the only firm evidence for it was the eastern edge of the floor which lined up with the wall in the southern part of the trench. The subsidence was remarkably irregular along the ditch, as in some places the floor fell by approximately 60 cm., while in other areas it fell hardly at all.

OVENS:

A modern intrusion had destroyed the northern half of oven 1, leaving a wall only to the east and south. The wall was constructed from tile, rubble, wall-plaster and clay. The plaster slabs were well preserved, probably due to their being baked while the oven was in use (see E.XII. b).

The later and better preserved oven (O2) was 90 cm. in diameter. Its floor was a small circle of light grey mortar set in a hard-packed layer of clay. The mortar and clay base was covered by three large yellow tiles, which had been subjected to enough heat to craze them *in situ*. Over the tile base a piece of tegula lay in the middle of the floor, but, apart from that, the only contents were carbonized remains. The main wall of the oven was constructed from pieces of broken red tile, laid in two courses on the floor, and daubed with clay as a lining. Outside, presumably as a packing to retain heat, were slabs of painted wall-plaster stacked to a height of about 10 cm., possibly cleared from the earlier oven. The front opening, on the west side, had been completely removed by a modern intrusion, but a pair of probable clay flue walls about 45 cm. long extended from the west side. A deposit of mixed charcoal and sand spread westwards from the oven over the associated pebble floor.

ABANDONMENT OF BUILDINGS V AND VI:

Covering the alley and remains of the buildings were layers of yellow sandy gravel and green soil. Flavian-Trajanic pottery was found within them, suggesting that Buildings V and VI had been abandoned by the early part of the second century.

D. II. 13:

EARLY ROMAN ACTIVITY PROBABLY LATER THAN BUILDINGS I TO VI:

Two pits (P.5 and P.9) were found cutting the ditch but their relationship to the buildings had been destroyed by the erosion in one case (P.5) and the medieval Building VII in the other. Associated pottery suggested that they were at least of early second century date. A pit cutting the floor of Building III was probably Trajanic (P.3) and this had disturbed a pit dug to contain a post (P.4) which could have been related to the building.

It is possible that pits 5 and 9 belonged to a phase of the settlement higher in the stratification than survived the clearance for the nineteenth century cellars; the same may be true of the well which had been cut through Building VI (Fig. 15).

This well was 2.5 m. deep and the bottom lay at a height of −1.1 m. O.D. Wooden shuttering extended up from the base for almost 1 metre (Plate 4). This was made of oak planks about 2 cm. thick, which enclosed an area 76 cm. by 82 cm., and sat on a thick sandy crust. On the western side three planks of unequal height but 82 cm. in length sat one above the other. Sections had been cut in the ends of the timbers to receive the tongues of the other boards at right angles. Higher up the well, and presumably originally behind the wood, the sides were lined with brown clay.

The bottom of the well contained an accumulation of dirty sand and gravel about 15 cm. deep; within it were two lead weights (see E.VII.1a). Above lay a filling of brown clay—perhaps collapsed lining—which included a wooden barrel base and staves, as well as fallen sections of the higher planking.

Above the lower layers were other deposits of gravel, clay and carbonized remains. Capping them was a layer of sandy clay some 91 cm. thick containing abundant remains of cream to white plaster in 1 cm. thick slabs, some with red paint on one surface. This probably represented a destroyed clay wall, thrown in to seal the well.

Samian in the back-fill suggested that the well had gone out of use during the first half of the second century. The more abundant coarse pottery might place this event in the Hadrianic/early Antonine period (Fig. 31).

D.III. LATE- OR SUB-ROMAN:

The only intrusive features apparently belonging to the latter half of the Roman period were found to the east and west of the site. Under the Tudor Building X the corner of a pit occurred; this contained only a few sherds of pottery, at least two of which seemed to be late Roman (P.1). West of this a gully (G.1) cut through the gravels between Buildings I and II and was truncated by the late thirteenth century erosion. It contained about 50 pieces of pottery as well as building debris. Although the pottery could have been second century in date, the fill also included a fourth century coin. Building debris was also found in an intrusion at the far west of the site, of which only part was recovered; a substantial proportion of the associated pottery was of fourth century date.

The possible significance of the lack of later Roman features and of the black earth overlying Building II is discussed in D.II.5 and D.II.7

D.IV. MEDIEVAL PRE-EROSION PERIOD:

Parts of two pits (P.6 and P.8) were all that was found to represent the period between the deposition of the late- or sub-Roman dark earth and the construction of Building VII (Fig. 3). Both contained some Roman pottery as well as a smaller number of sherds dated to the twelfth or early thirteenth century (see E.V.1) and both were truncated during the construction of Building VII.

Three of the building's substantial walls were found. The southern one was some 3.7 m. long and those to the east and west survived to a length of approximately 6.1 m.; they were nearly 90 cm. wide and remained to a height—including the underlying rafts—of about 1.2 m. (Plate 5).

During construction the building area was cleared down to a level approximating to the top of the natural silt, and then trenches at the sides were cut for the deeper foundations of the walls (Fig. 11). Sections cut through the east and west walls showed that they were laid on rafts about 60 cm. deep and 1.2 m. wide, consisting of chalk blocks alternating with layers of packed gravel. The wall above was narrower and built of mortared chalk blocks incorporating tile fragments, with stone on the inner sides, facing a cellar. This contained two clay floors, which lay at about 30 cm. below the surviving top of the wall. The brown clay lower floor was some 5 cm. thick and had a dirty grey surface; its successor was of orange clay and about 3 cm. thick. These were underlaid by a layer of dark earth containing many chalk fragments, presumably deposited during construction.

No pottery was found on the floors but two medieval sherds from within the wall fabric were of a date similar to those found in the underlying pits (see E.V.1). It seems clear, therefore, that Building VII was put up in the twelfth or thirteenth century, but its ownership is unrecorded, and no evidence as to its usage was found. It may indeed have had a short life, for the walls were destroyed by the flood which caused a considerable erosion on the site at the end of the thirteenth century.

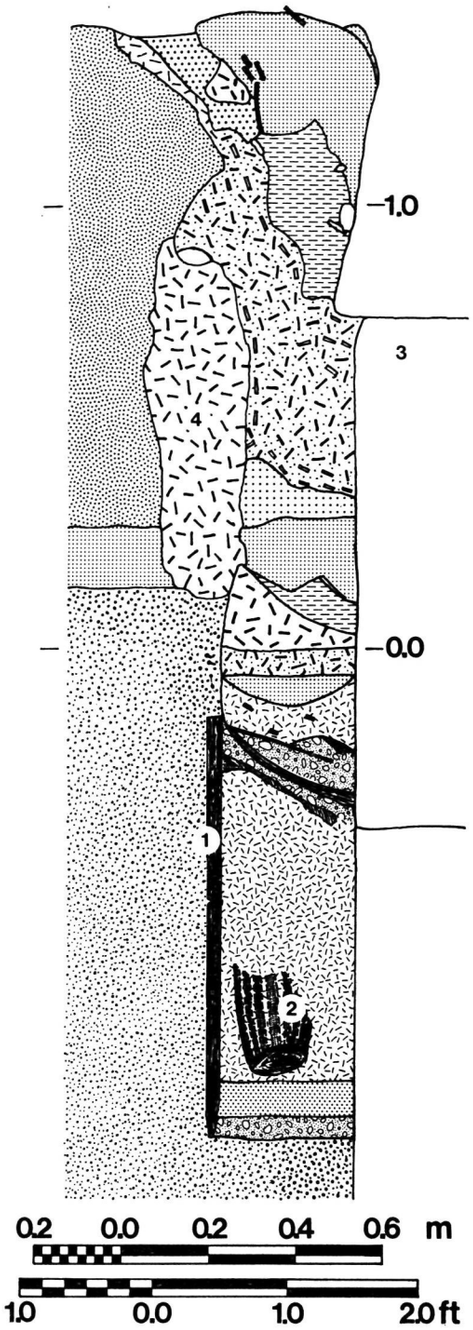

Fig. 15. Toppings Wharf; Section L, Trench 12, well, facing south—This shows the wood lining (1) and the barrel (2) overlaid by layers of fill. The clay lining at the east of the well is shown (4) as is the pillar base foundation (3) which had destroyed much of the well.

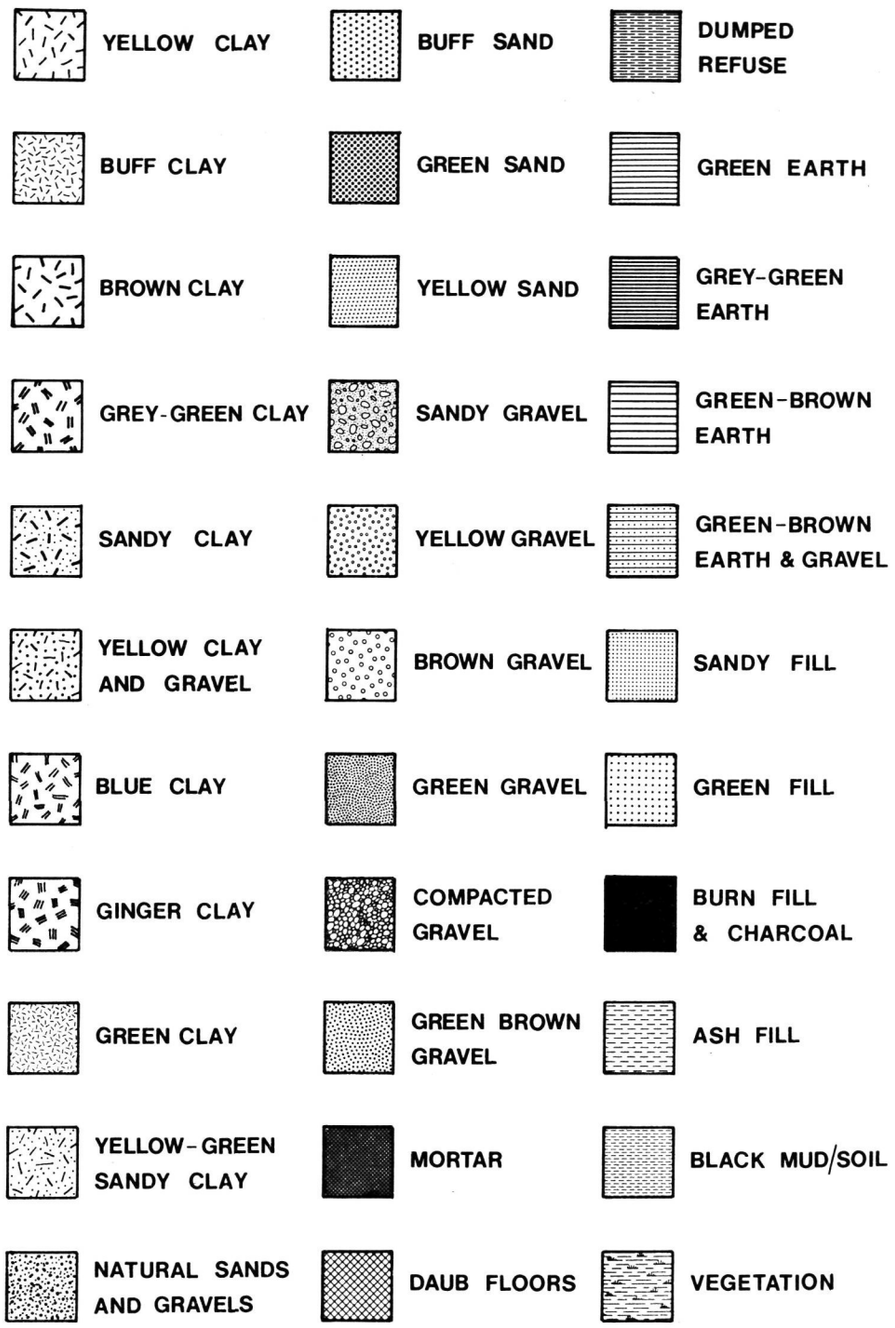

Fig. 15A. Key to section shading. All sections marked at + 1.0m O.D.

D.V. The Erosion and Deposition:

1. The Erosion:

The limit of the flooding was clearly marked by the gravel which was deposited in its wake (Fig. 4). This rose from the Thames progressively towards the south of the site and presumably showed the declining power of the water. The river must have breached the medieval bank and washed away all that lay in its path inland. Building VII was destroyed, and any neighbouring structures, with their contents, must at least have been extensively damaged. Moreover, many of the site's buried levels were taken out. The most northerly feature to survive was the lower part of the early Roman ditch; all levels more than 12 m. away from the site's southern boundary were gone.

Pottery from the gravels suggests that the erosion could have occurred about 1300, while documentary evidence points to an inundation of 1294 (see E.V.2 and C). It therefore seems reasonable to suppose that the gravels found were laid during that natural disaster.

2. The Deposition:

For some time after the river broke its banks, it intruded into at least the northern part of the site. Here bands of grey clay-like silt, brown mud, vegetation and loose gravels were found overlying the erosion gravels, rising to a height of over +1.20 m. O.D. It seems likely that the dumping of soil was started more or less immediately after the erosion, presumably in an effort to reconstitute a bank. The evidence for this came from layers of earth containing building debris, pottery and animal bone at the south of the site, directly overlying the erosion-laid gravel, but underlapping some of the more obviously water-laid deposits to the north (Fig. 4).

The pottery found both in the dumped and water-laid deposits was little different in date to that found in the underlying gravels. It is probable, therefore, that this more southerly bank, was built either at the very end of the thirteenth or early in the fourteenth century, as a temporary measure against the widened river. (See E.V.4).

D.VI. Later Medieval and Tudor:

1. The Stone Buildings:

Any bank to the south of the site must soon have been replaced by one further north. Over the riverine deposits in the south of Trenches 2 and 6 lay a gravel surface (Fig. 4, 9) at a height of +1.7 m. O.D. Whether the surface was the floor of a building, or a path behind the river bank is uncertain. It was overlaid by deposits of soot and building debris, but these covered a wider area than the gravel and could have been dumped.

Cut through the deposition layers were trenches for a number of chalk walls. Wall 3 (Fig. 3) was built of chalk blocks bonded with pebbles. The building it contained was traced for 9 m. east–west and for 3.8 m. south from the south-western corner. The foundations were about 1 m. wide and in places survived to a depth of 1.2 m. This was probably a substantial late-medieval building, perhaps a merchant's house, erected to the west of the dock and behind the wharf (see D.VI.2). No evidence came from within the foundations to prove that it was built later than the middle of the fourteenth century.

Further west, part of a small, similarly built foundation (W.6), probably the column of a retrieving arch, was found. Three mortared chalk walls lay further north (W.4, 5, 7). These, too, were cut through the deposition layers, to a depth of 90 cm. to 1.2 m., and were probably the lower parts of retrieving arches belonging to the later medieval riverside buildings.

An east–west wall (W.8) was found cut through the top of the Roman levels in Trench 12. This survived for a length of about 6 m. and was 60 cm. wide at its thickest part, west of a modern pillar base. The bottom course, on the northern side, consisted of dressed chalk blocks, measuring 20 x 20 x 30 cm. These were stained on the northern face, possibly with tar. The rest of the foundation was made up of mortared roughly-hewn chalk and ragstone boulders. Some looser rubble above, which might have represented the bottom of a robber trench, contained a tobacco pipe, probably of early eighteenth century date and a seventeenth century coin (E.V.6, coin 42).

A further chalk structure, an oval column, was found at the north end of Trench 1. This isolated base might have been the unmortared lower foundation of a crane or similar structure associated with the jetty. (See D.VI. 2).

More information was obtained about the medieval wall (Wall 2) at the west of Trench 14, which may have directly bordered on to the dock (see D.VI.2). The chalk foundations of this wall adjoined a second one of flint and ragstone to the south on the same alignment. The relationship between the two is unknown as both had been extensively robbed during the early Tudor period. The ragstone wall contained one thirteenth century sherd, while the pottery evidence for the foundation of the chalk wall suggests a late fourteenth or early fifteenth century date. The former may have been an early dock wall damaged during the erosion and replaced by one with a foundation of chalk blocks set in mortar. This was at least 80 cm. thick but the western edge, facing the dock, lay under the baulk. On the east side of the wall the foundation cut encompassed a number of timbers, possibly support for a structure situated above or behind the wall. Of the three horizontal east–west beams at the base of the foundation the central one abutted the wall, while the other two ran into and probably through it. Higher timbers were also found; the southern beam was overlaid by a horizontal 50 cm. above. A post in the central beam was wedged by a timber running obliquely from it down to the wall base, whilst the northern beam acted as a sill for timbers running both obliquely to the wall and up to a higher horizontal (Fig. 3). These beams were very decayed and also damaged when the wall was robbed.

The destruction of the eastern wall of the dock (Wall 2) assigned to between 1450–1550 on the pottery (E.V) was perhaps represented by a layer of chalky rubble, immediately overlying the highest gravels, but not intruding into Building VIII. This event might be contemporary with the filling in of the southern part of the dock which is known from documentary sources to have happened before 1716 (see C.1).

Less than 4 m. east of Wall 2 lay Building X. Parts of three cellar walls survived; they were approximately 60 cm. wide and built of mortared chalk blocks of varying sizes with an admixture of tile (Plate 6). The walls were faced on the inside and clearly a foundation pit had been excavated and the wall built up flush against one side. For a length of 1 m. along the south wall the chalk blocks were obliquely cut, sloping up towards the outside, indicating a cellar window. A plank as long as the inlet and a foot wide lay on the floor immediately below it, which was of packed clay about 10 cm. deep. No firm dating was obtained for the building but the floor and demolition levels above contained pottery of the early sixteenth century. Chalk robbed from this building may have been re-used in the construction of the seventeenth or eighteenth century wall (1) which lay just to the west.

2. THE DOCK AND THE TIMBER STRUCTURES:

A dock was certainly in use at Toppings Wharf from 1323 (see C.4). Probable evidence of it was found at the south-east of the site, in Trench 13. The successive layers of sand,

earth and gravel sloping down towards the river represented its base. The lowest stratum, of discoloured sand, contained late thirteenth and fourteenth century pottery and rested on the natural gravels declining from about O.D. height at the south of the trench to −50 cm. at the north.

The dock was built or, more probably, reconstructed after the late thirteenth century erosion. The gravels laid elsewhere on the site were not found here, although the base level of sand could have been a local equivalent. Above this sand two gravel deposits brought the bottom of the dock up to about +90 cm. O.D. and extended its use into the fifteenth century, and possibly into the early sixteenth century. Between these strata was a layer of grey earthy gravel, containing a scatter of domestic and industrial debris including animal bone (see E.X.2), pottery, various metal objects and manufacturing residue (see E.VII.2). It is not certain what significance to attach to this deposit and its contents, which could have accumulated during the use of the dock.

The south-east corner of a timber-framed structure was found cut into the uppermost gravels of the dock (Fig. 3, Building VIII); 2.3 m. of the east side and 1.7 m. of the south side remained. These were based on beams, now badly decayed, laid into the gravel about 30 cm. below its surviving surface at a height of +60 cm. O.D. Two posts were found driven some 80 cm. into the natural sand which contained the base beams, while a third pinned them at the corner. Traces of planking on the beams survived to a height of 30 cm. Inside the structure the dock gravels continued to slope towards the river.

Running down onto the southern beam was a wooden channel, possibly a drain, 50 cm. wide consisting of two parallel planks laid flat in the gravel. Possible detached traces of it were also seen in the south-east of the trench. Other planks lying on edge apparently formed the sides, but only survived to a length of about 5 cm. This could have been for channelling sewage into the river.

Possibly the main structure was a revetment built into the dock in the late fifteenth–early sixteenth century, perhaps enclosing a smaller inlet formed in a reconstruction which accompanied the dismantling of the eastern wall (W.2).

It was filled by a deposit containing early Tudor pottery (see E.V.5), animal bones (see E.X.3) and other debris. This perhaps represented rubbish thrown down into the water, as it lay between a matrix of organic remains and sand.

A second timber structure was found in Trench 1, the northernmost part of the site examined (Fig. 3, Building IX). Its remains consisted of beams, again much decayed, laid horizontally in a packing of clay at a height of about +1.7 m. O.D. The foundations rested on layers of mud and gravel, probably representing a continuation of river-laid and dumped deposits. The higher layers contained pottery of the first half of the fifteenth century, and a similar date might therefore be given for the construction. The longest timber ran north–south for over 5 m., and from it two subsidiary timbers extended to the east. Further lengths of timbers were found but it is uncertain whether all were *in situ*.

Three posts pinning the beams down were found as well as an incorporated shute which sloped down to the east, perhaps into the dock. Three possible sets of posts were also seen west of the main beam, cut through the muds and possibly associated with the structure. This could have been the landward remains of a jetty set to the west of the dock on the wharf which was illustrated by Wyngaerde, *c.* 1543 (see C.1).

D.VII. LATER ACTIVITY:

Post-Tudor evidence was mainly confined to brick and tile cellars, which survived either intact or as rubble under the nineteenth century warehouse basements in Trenches 2, 6, 7, 8, 9, 10, 13 and the south-eastern part of 14 (Fig. 2). Two phases of floor were found in Trench 8. Pottery and pipe evidence suggest that the former cellar was built during or after the mid-seventeenth century, while its successor was laid down about 100 years later. The first floor was overlaid by a burnt deposit containing rubble which could indicate destruction in the fire of 1725 (see C.1). Between bricks in the cellar floor over the dock was a 1736 farthing (E.VI, coin 46) suggesting that the dock gravels at the south of the site had been built over by the early part of the eighteenth century. This confirms the documentary evidence (see C.1).

Apart from the floors, three circular brick-lined pits were found. Two occurred in isolation at the north-west of Trench 6, where they had been disturbed during the construction of a nineteenth century pillar base. They were filled with soil and may well have been cess pits in use during the eighteenth century. The third was cut down from the level of the eighteenth century cellar floor in Trench 8, and could have served a similar purpose. A halfpenny was included in the fill (E.VI, coin 50) as were a number of gun flints.

A square brick-lined pit at the north of Trench 13 was also found. This had been dug down into the earlier dock gravels and filled back with soil and ash containing clay pipes of the early nineteenth century, pottery, animal bones, glass and building rubble.

D.VIII. GENERAL CONCLUSIONS:

The findings from Toppings Wharf cannot be isolated from the context of other excavations undertaken in Southwark. An attempt is made below to relate some of these both to published work and more recent excavations.

1. PREHISTORIC:

Dr. Kenyon mentioned "three minute sherds of Iron Age A pottery and one flint arrowhead" as coming from her excavations.[42] The occurrence at Toppings Wharf of flints and pottery in the top of the river gravels at a height of +0.6 m. to +0.8 m. O.D. must strengthen the possibility of some form of late prehistoric settlement. This might have been dependent on the fish and fowl in the marshy low-lying areas on both sides of what is now Borough High Street. Recent work some 400 m. south of Toppings Wharf has produced a larger assemblage, containing both Bronze and Iron Age pottery lying in sand and perhaps washed in from higher ground nearby.[43] These lay below a deposit of clay-like silt similar to that found at Toppings Wharf, and at a similar absolute height.

Research has shown that even on the higher ground, marginal differences in height might determine whether any one particular area was above the water at any one time.[44] It might be more realistic to envisage the Borough High Street area not as a sand ridge stretching back from the Thames bank at the north, to higher ground in the south, but as a number of "eyots". Consequently the examination of sites set on the higher ground, at about +1.5 m. or +1.8 m. O.D. might produce more substantial evidence of pre-Roman occupation.

2. PRE-ROMAN TRANSGRESSION:

The silts overlying the river gravels at Toppings Wharf have been found elsewhere in the bridgehead region, rising to a height of about +1.4 m. O.D.[45] They seem to represent an

incursion that took place during the pre-Roman Iron Age and show that, during the transgression, the Thames must have been flowing at a height greater than +1.4 m. O.D. Unless deliberate embankment is assumed, they also show that the river had retreated and fallen to below +1.1 m. O.D. by the time of the Roman period settlement. Most of Southwark's early Roman sites lie on this silt or sand, at a base height of between +1.1 m. and +1.5 m. O.D. During the later first and early second centuries it is likely that Thames high-water was about equivalent to O.D. level, for work on the lower ground to the west of Borough High Street has shown peat deposits at that level, perhaps representing marsh land, containing first and second century pottery.[46] Even without embanking, therefore, the settlement sites would have stood above high-water level.

3. THE ROMAN SETTLEMENT:

Recent work has necessarily altered former views as to the extent of the early Roman settlement. It is now known that clay and timber buildings stood to the western side of the main north–south road some 400 m. south of the river bank within the early Flavian period and that contemporary structures were erected on its eastern side 550 m. to the south.[47] Indeed, at 207–211 Borough High Street sizeable deposits of domestic waste occurred in pre-Flavian contexts.

Colonisation of the south bank, including the settlement of sites near to the bridgehead within a generation or so of the Roman conquest is not unexpected, and may well represent a growing demand for goods and services by the large community on the north bank, attracting traders, craftsmen and other workers.

That metal-working was an important aspect of the early settlement is shown by the presence of iron and bronze slags at other sites and by what was thought to be a residue from a goldsmith's workshop.[48]

4. THE END OF THE EARLY ROMAN SETTLEMENT:

The possible ending of the settlement at Toppings Wharf in the mid-second century could have been caused by flooding, or even by the threat of the rising Thames to low-lying land. Evidence for the flooding of riverside settlements both upstream and downstream of London is known at some time during the second century or after.[49] There is reason to believe that in the City's Walbrook valley, the stream was silted up and the surrounding ground swamped soon after 155 A.D.[50]

In Southwark no flooding in actual occupation sites has been proved, although a canalized stream found recently just east of Borough High Street had overflowed its banks, and was depositing sands at a height of +0.6 m. O.D. in the middle part of the second century.[51]

Whether or not the Toppings Wharf settlement was terminated by flooding, a fundamental change at this time has been noticed at other sites.[52] Here the sequence of buildings ends somewhere in the middle of the second century, perhaps implying temporary desertion. The size of this disruption, and its causes, are so far unknown. It does seem clear, however, that the later Roman buildings are more likely to be of stone and are less ubiquitous than their predecessors.

5. THE LATE OR SUB-ROMAN BLACK EARTH:

This earth is familiar from many of the early Roman settlement sites, but seems to be confined to the area of these. It could generally represent an attempt to raise the land level against the rising river, but at Toppings Wharf might conceivably have formed part of a river bank.

Although apparently homogeneous, the earth could represent more than one period of dumping. The former view that it was water-laid and represented a widespread incursion of the river, is precluded both by the random distribution of the associated debris and the well-preserved state of the pottery and plaster.

6. SAXON:

No evidence of the elusive Saxon settlement was recovered. This is understandable in terms of stratification, for the levels, had they existed, would certainly have been taken out by the cellars. Very few Saxon sherds were claimed from the dumped and water-laid deposits that succeeded the late thirteenth century erosion, although an appreciable amount of Roman and eleventh or twelfth century pottery occurred there. Consequently, Saxon settlement on the site of Toppings Wharf seems doubtful.

7. THE LATE THIRTEENTH-CENTURY EROSION:

The construction of a large stone building at Toppings Wharf in the twelfth or thirteenth century shows that the contemporary river bank may have been as far north as it is today.

The erosion is the only tangible evidence on the site of the marginal nature of this river-side land, and the destruction of the building clearly illustrates the extent of the damage. That it was wide-ranging has been shown by work on sites to the west of the bridge.[53] At one of these, New Hibernia Wharf, more detailed evidence was obtained than at Toppings Wharf, revealing ditches dug probably in front of a temporary river bank.[54]

It is likely that the disaster swept away the river bank, causing severe flooding, and the destruction of river defences as well as docks and warehouses, although documentary records only give a general indication of the disruption (see C.2).

NOTES

1 *Calendar of Inquisitions Post Mortem*, 6 (Edward II), No. 632.
2 Anthony Wyngaerde's Panorama of London (*c.* 1543). Ralph Agas (*c.* 1560–70). John Norden (1600).
3 This is mentioned in St. Olave's Churchwardens' Accounts 1546–1610, 175–78, and in St. Olave's Vestry Minutes 1551–1604 and 1604–1724, which are kept in the Southwark Archives, Newington District Library, Walworth Road, S.E. 17,
4 A series of leases of this property, dated 1716–1800 refer to it as the Watergate. Small plans drawn in the margins of these show the dimensions and a wooden landing stage built over the southern end. Corporation of London Record Office.
5 Rate Books: Southwark Archives as in Note 3.
6 E. Walford, *Old and New London*, 6 (1873), 99.
7 *The Illustrated London News* (26 August 1843), 137–38.
8 See Marjorie Honeybourne, "The Pre-Norman Bridge of London", in *Studies in London History, presented to Philip Edmund Jones* (1969), 20–21.
9 R. H. Luard (ed.), *Annales Monsterii de Bermundeseia A.D.* 1042–1432 (1866), 468.
10 Gordon Home, *Old London Bridge* (1931), 259.
11 As Note 9.
12 W. Taylor, *Annals of St. Mary Overy* (1833), 37.
13 "Excavations at New Hibernia Wharf", *London Archaeol.*, 2, 99–103.
14 *Calendar of Papal Letters*, 2 (1895), 256.
15 R. R. Sharpe, *Calendar of Letter Books—E* 1314–1337 (1903), 243.
16 *Calendar of Patent Rolls, Edward I, 1292–1301*, 347; *Ibid.* 1301–07, 196; *Edward II*, 1307–13, 172–3, 422; *ibid*, 1313–17, 56; 1317–21, 482; 1324–27, 232.
17 F. C. Hingeston (ed.), *The Chronicle of England by John Capgrave* (1858), 203.
18 *St. Olave's Churchwardens' Accounts* 1546–1610, 175–78 (see Note 3).
19 John Gage, "Remains of the Prior of Lewes' Hostelry . . . ", *Archaeologia*, 23 (1831), 299–308;
C. E. Gwilt, "Norman Building in Walnut Tree Court", *Archaeologia*, 25 (1834), 604–06;
G. R. Corner, "Observations on the Remains of an Anglo-Norman Building in the Parish of Saint Olave, Southwark . . ." *Archaeologia*, 38 (1860), 37–53.
20 1323 (as Note 1). 1392 *Calendar of Inquisitions Post Mortem*, 11 (Edward III), No. 582.
21 D. E. Hubbard, *History of St. Olave's, Southwark* (Typescript Thesis, Goldsmiths' College) (1953), 30, in Southwark Archives as in Note 3.
22 Sylvia L. Thrupp, "Aliens in and around London in the Fifteenth Century", in A. E. J. Hollaender and William Kellaway (eds), *Studies in London History, presented to Philip Edmund Jones* (1969), 251–72.

[23] *Huguenot Society Publications*, 10, Part 1 (1900), 31–36.
[24] Public Record Office E179/124/247 (1542); E179/126/334 (1550).
[25] Marjorie Honeybourne, as in Note 8.
[26] *St. Olave's Churchwardens' Accounts;* see Note 3.
[27] As Note 1.
[28] As Note 20.
[29] "The Surrey portion of the Lewes cartulary", *Surrey Archaeol. Colls.*, 43 (1934), 84–112.
[30] As Note 18.
[31] All as in Note 3 (Vestry Minutes).
[32] R. C. Carrington, *Two Schools* (1971), 83.
[33] As Note 4.
[34] I. A. Richmond in *Studies in Building History* (1961).
[35] K. M. Richardson, *Archaeological Excavations at Verulamium* (1938).
[36] S. Frere, *Verulamium Excavations I* (1972).
[37] Although many of the vertical timbers were clearly rammed into the silt rather than placed in receiving holes, they have been described as posts rather than stakes because of their large size. The term post-hole rather than stake-hole is therefore used in the text.
[38] S. Frere, "Excavations at Verulamium 1956", *Antiq. J.*, 1956. He noted that similar walls had been identified at Canterbury.
[39] I. A. Richmond, as in Note 34, gives examples.
[40] Clay walls built on masonry dwarf walls are known from Verulamium (see S. Frere in Note 38 above), in the Antonine period. Claudian examples turned up with unbaked clay blocks from Colchester are known (R. Dunnett, "Excavations at North Hill, Colchester", *Archaeol. J.*, 122 (1966), 77F). In the latter building other main walls of clay blocks rested on spreads of gravel and in one case brushwood.
[41] They might represent a local phenomenon, but "black soil" is present in a number of towns lying stratigraphically between the late Roman and the next well-defined occupation. See S. Frere, "The end of Towns in Roman Britain", in John Wacher, *Civitas Capitals of Roman Britain* (1966), 23.
[42] K. M. Kenyon, *Excavations in Southwark* (1959), 15.
[43] SAEC excavation at 106–114 Borough High Street.
[44] Summarised in Alan Graham, "Southwark: the physical geography and archaeology of the settlement", unpublished B.A. dissertation 1974, Institute of Archaeology, London.
[45] SAEC excavations London Bridge, 1969, G. Dawson; Montague Close, 1969–73, G. Dawson; Old Hibernia Wharf, 1974, Alan Graham; New Hibernia Wharf, 1973, P. Evans, *et al.*
[46] As Note 44.
[47] SAEC excavations, 106–114 Borough High Street, 1973–74; 207–11 Borough High Street, 1972–73.
[48] P. R. V. Marsden, SAEC interim report 1964.
[49] R. E. M. Wheeler, "Old England, Brentford", *Antiquity* 3 (1929), 20; and *R.C.H.M. Essex, S.E.* (1923), 38–39.
[50] R. Merrifield, "Roman Coins from the bed of the Walbrook and their significance", *Antiq. J.*, 42 (1962), Pt. 1.
[51] SAEC excavation, 1974.
[52] SAEC excavations 207–11 Borough High Street, and Angel Place, 1972–73; 106–14 Borough High Street, 1973–74.
[53] Montague Close and New Hibernia Wharf, as in Note 45.
[54] P. Evans *et al.*, "Excavations at New Hibernia Wharf", *London Archaeol.*, 2, No. 5 (1974).

E.I. FLINTS

BY JOHN CRESSWELL

Some 35 pieces of flint were examined from the excavation. Of these 27 were of undoubted human agency. Ten were from the top of the pre-Roman gravels, the remaining 25 were from later layers, mainly Roman.

The material contains mostly blades and blade fragments, and a few core-rejuvenating flakes. The technique of removing blades from prismatic cores was introduced by Mesolithic man, but continued in use during subsequent prehistoric periods, and with the lack of any definite diagnostic pieces it would be difficult to assign this material to a specific culture.

Struck flint is relatively common in the present foreshore gravels of the Thames and thus cannot be reliably used to date any layers in which it is found. In consequence, and because of the sparsity of the material, it will be treated as a whole.

The flint used was mainly a light brown flint with chert inclusions (only one piece was of black flint). Some pieces had traces of patination, but only two items were heavily patinated. Grey chert was also used for five pieces. The raw material could have been obtained from the Thames foreshore. Most of the items appear quite fresh and only a few show signs of being rolled, although water-working could have added fresh scars.

The material as recorded contains only a couple of primary flakes (it would be difficult to ascertain the agency of singly-stuck flakes) and very little waste material. No cores were recovered. All the material described could have had some functional value—although as previously stated—very little is diagnostic. Only a few items had retouching along an edge, but many had chips off indicative of use—or perhaps rolling. A couple of items had signs of silica gloss along the supposed cutting edge. (One flake had a straight, steeply-retouched end, plus retouched notches along its side, which makes it an undoubted scaper.) Three pieces had sufficient retouch to class them as scrapers; one looks like a core retouch (perhaps from a core scraper). One piece of truncated blade has a trapezoidal shape and is suggestive of a *petit-tranchet* arrowhead.

DESCRIPTION OF MATERIAL (Fig. 16)

1. Knife blade, 5.7 cm. long, back blunted by single flake scar.
2. Blade, 4.1 cm., sides trimmed and end forming possible screwdriver-type burin.
3. Blade, 3.5 cm., made from chert, end truncated into notch, slight silica gloss along one edge.
4. Blade, 3.1 cm., crescentic, accentuated by side pieces being snapped away.
5. Pointed blade, 3.0 cm., some trimming along side.
6. Truncated blade, 3.1 cm.
7. Blade, 3.6 cm., end trimmed to point, sides trimmed with notch along one side.
8. ?Petit-tranchet arrowhead, 1.7 cm., made from truncated blade.
9. Flake, 5.6 cm., with trimmed notch giving hollow scraper.
10. Truncated blade point, 2.1 cm., notched along one edge, suggesting possible saw-blade.
11. Core-retouching flake, 3.9 cm., perpendicular to striking platform, portion of side trimmed to form scraper.
12. Truncated blade point, 2.7 cm., possible knife.
13. Core-retouching flake, 2.2 cm., parallel to platform, trimmed to form scraper.
14. Flake, 2.9 cm., naturally obliquely pointed.
15. Truncated blade point, 3.0 cm., trimming along one side.
16. Truncated blade, 2.2 cm.
17. Piece of flint, 3.4 cm., trimming along one side, with faint traces of silica gloss.
18. Core-retouching flake, 2.2 cm., perpendicular to platform, truncated into awl shape and flake scars indicative of such use.
19. Scraper, 3.8 cm., doubly-truncated blade with steep retouch along straight end, retouching and notches along sides.
20. Pointed blade, 3.9 cm., possible knife.
21. Blade, 4.7 cm., snapped off tip, both sides with slight trimming, especially near tip, possible awl.
22. Blade, 3.0 cm., crescent-shaped.

E.II. PREHISTORIC POTTERY

BY JOHN BARRETT

It can be argued that this material from the top of the river gravels belongs to the general run of Iron Age pottery common to the Lower Thames Valley. However, an early Roman date for Nos. 1 and 2 cannot be eliminated.

1. Abraded body sherd in dark fine fabric.
2. Abraded body sherd in dark fabric with fine flint grit, brown surfaces.
3. Two body sherds, black fabric with sparse flint grit; surfaces light brown. Both sherds abraded.
4. Fragments of fired clay, very abraded. Black fabric, brown surfaces, filler of fine sand.
5. Very small fragments of pottery in light brown fabric with flint grit.
6. Abraded sherd, black fabric with flint grit.

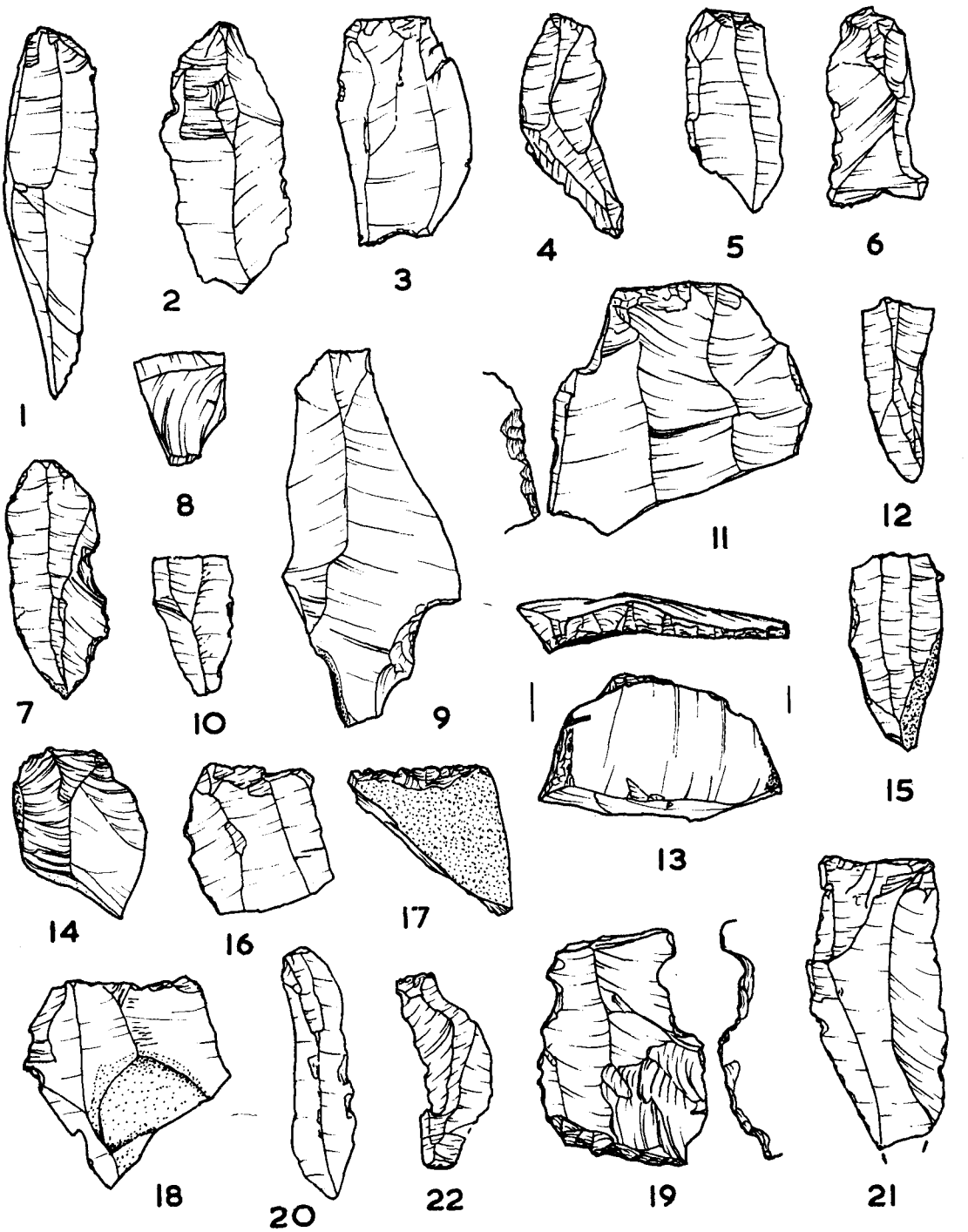

Fig. 16. Toppings Wharf; flints 1–22 (1/1)

E.III. THE SAMIAN WARE

BY JOANNA BIRD

ABBREVIATIONS:

LRF:	W. Ludowici, H. Ricken and C. Fischer, *Die Bilderschüsseln der Römischen Töpfer von Rheinzabern*, Heft 7 (Bonn, 1963).
O:	F. Oswald, *Index of Figure-types on Terra Sigillata* (1936–37).
S. & S.:	J. A. Stanfield and G. Simpson, *Central Gaulish Potters* (1958).
ATKINSON, 1914:	D. Atkinson, "A Hoard of Samian Ware from Pompeii" in *J. Roman Stud.*, 4.
HULD-ZETSCHE, 1972:	I. Huld-Zetsche, *Trierer Reliefsigillata, Werk-statt I* (Frankfurt).
KNORR, 1919:	R. Knorr, *Töpfer und fabriken verzierter Terra-sigillata des Ersten Jahrhunderts* (Stuttgart).
KNORR, 1952:	R. Knorr, *Terra-sigillata-gefässe des Ersten Jahrhunderts mit Töpfernamen* (Stuttgart).
STANFIELD, 1937:	J. A. Stanfield, "Romano-Gaulish Decorated Jugs and the work of the potter Sabinus" in *J. Roman Stud.*, 27.

This report is on the decorated vessels, the stamps and the graffito.

The information on the stamps has kindly been provided by Brian Hartley, F.S.A., and that on the graffito by Mark Hassall. The plain Samian is not included here but the relevant information has been incorporated elsewhere in the study.

1. DECORATED SAMIAN

EAST-WEST DITCH

DESCRIPTION (Nos. 1–14 Fig. 17)

1. Form 29, South Gaul. Leaves under the arcade of a scroll; *c.* A.D. 50–70.
2. Form 30, South Gaul. Straight wreath above scroll with wreath arcades; *c.* A.D. 50–70.
3. Form 29, South Gaul. Gadroons in lower frieze; *c.* A.D. 60–80.
4. Form 30, South Gaul. A vessel from Bregenz (Knorr, 1919, 97A) has all the motifs in a closely similar arrangement; *c.* A.D. 50–65.
5. Form 29, South Gaul. Fragment of scroll in upper frieze, and cornear in lower. Neronian–Early Flavian.
6. Form 29, South Gaul. Fragment of scroll in upper frieze; *c.* A.D. 55–75.
7. Form 29, South Gaul. Edge of scroll in lower frieze. Neronian probably.
   (Not illustrated).
   Form 30, South Gaul. Neat wavy line borders with cornear; *c.* A.D. 55–70.

EARLY ROMAN SETTLEMENT

8. Form 29, South Gaul. Similar upper scrolls were used by Mommo (Atkinson, 1914, 17) and by Vitalis (Knorr, 1919 83E); *c.* A.D. 60–80.
9. Form 30, South Gaul. Formal arrangement of corded leaves; *c.* A.D. 50–65.
10. Form 29, South Gaul. Hare (O.2098A) in a finely-corded medallion; similar leaf scrolls were used by several potters (*cf.* Atkinson, 1914, 21); *c.* A.D. 60–80.
11. Form 29, South Gaul. Scroll with corded leaf; *c.* A.D. 65–80.
12. Form 29, South Gaul. Scroll with cornears above short gadroons; *c.* A.D. 60–80.
13. Form 29, South Gaul. Formal leaves in a scroll; *c.* A.D. 50–65.
14. Form 29, South Gaul. The motifs were all used by Celadus—the rosette and circles on Knorr, 1919, 21B; the leaf on Knorr, 1952, 15D; and the gadroons (here badly smeared by the potter) on Knorr, 1919, 21A; *c.* A.D. 45–65.

(Nos. 15–29, Fig. 18)

15. Form 29, South Gaul. A similar wreath scroll was used by Bassus and Coelus (Knorr, 1952, 10H), and they also had similar central wreaths; *c.* A.D. 50–70. Burnt.
16. Form 30, South Gaul. Neatly modelled ovolo above straight wreath and panel frieze; *c.* A.D. 50–70.
17. Form 29, stamped by Mommo of La Graufesenque. The fabric and modelling are unusually poor, the slip having little gloss. The figure types are: hare, O.2078; dog, O.1924; deer, O.1737; and small dog, O.1916A. Many of the motifs were used elsewhere by Mommo; *cf.* particularly Atkinson, 1914, 3, 5 and 15; *c.* A.D. 70–85. (see S10).
18. Form 29, South Gaul. Tridentarius (O. 1013E) in lower frieze; *c.* A.D. 55–70.
19. Form 29, South Gaul. Gadroons; *c.* A.D. 55–75.
20. Form 29, South Gaul. Scroll with palmettes and small stipuled buds; *c.* A.D. 50–70.

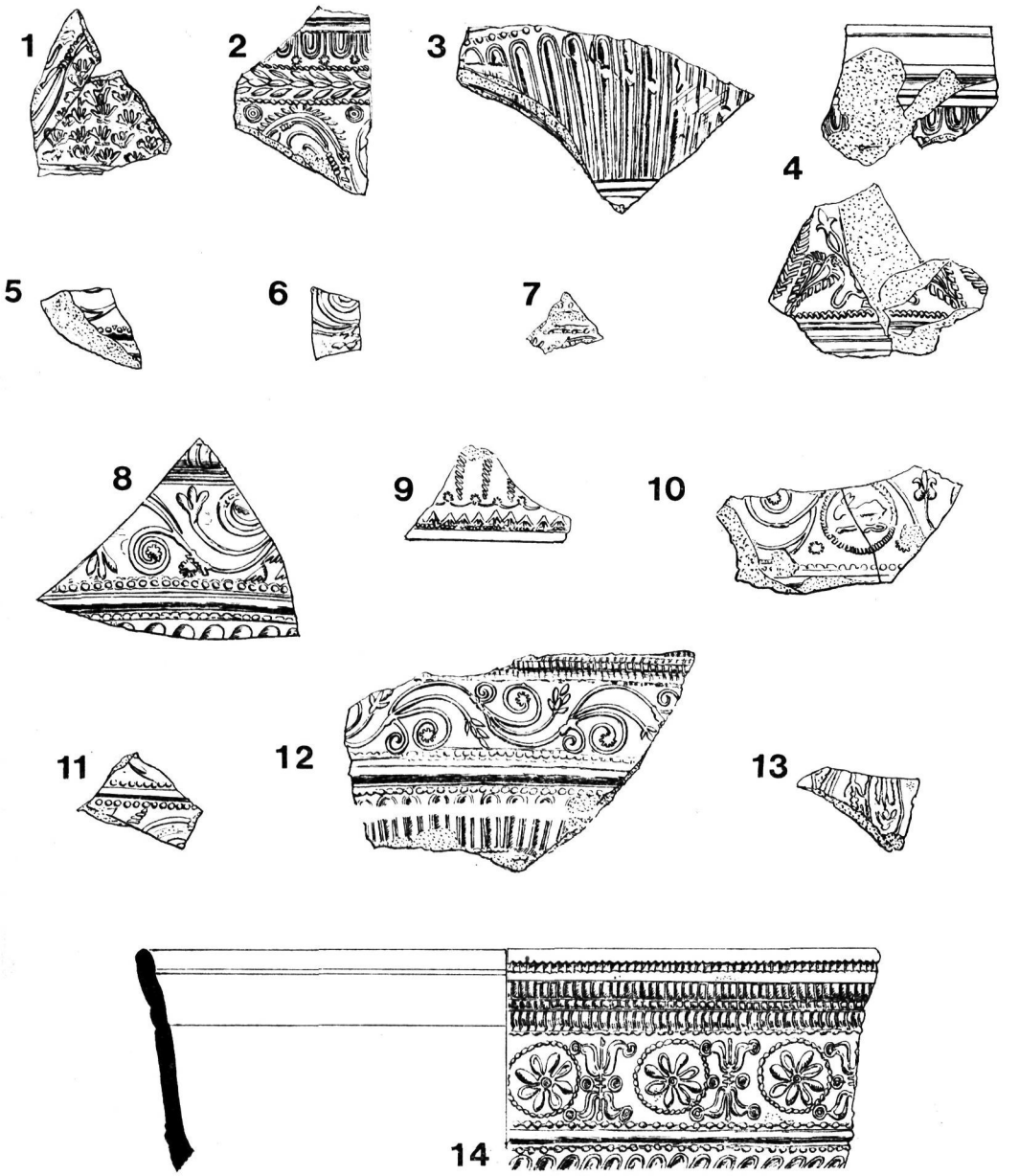

Fig. 17. Toppings Wharf; The Samian, 1–14 ($\frac{1}{2}$)

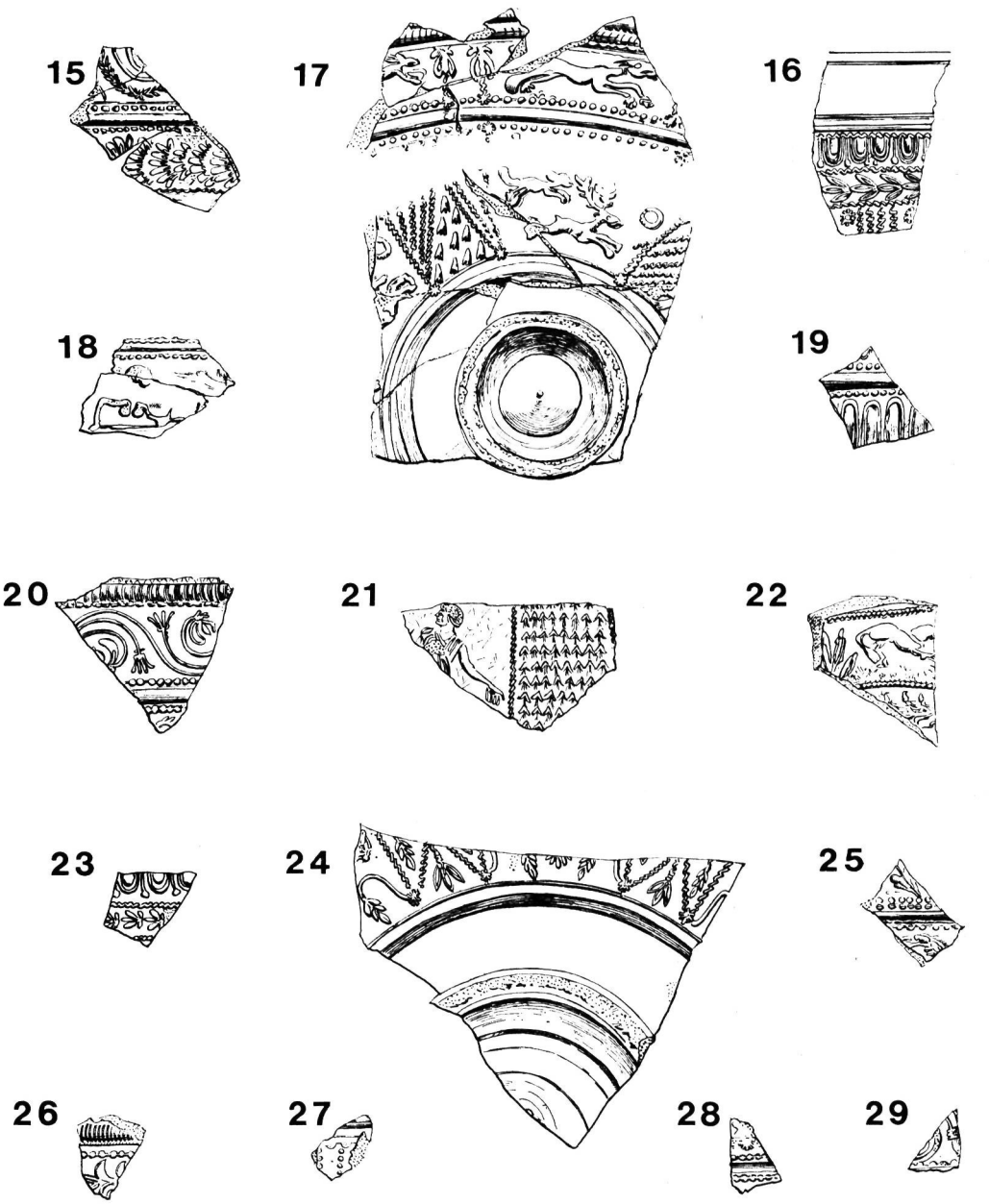

Fig. 18. Toppings Wharf; The Samian, 15–29 ($\frac{1}{2}$)

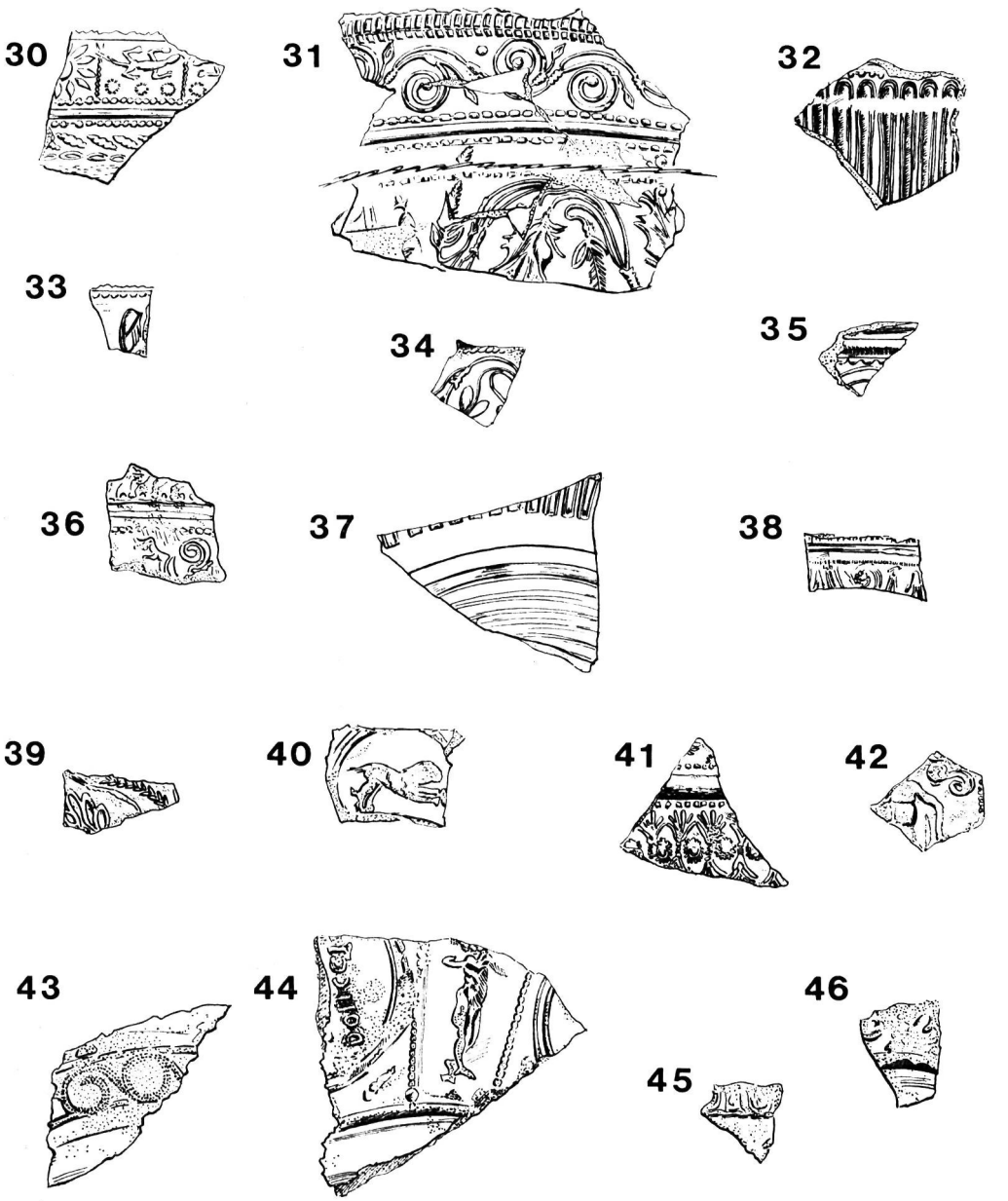

Fig. 19. Toppings Wharf; The Samian, 30–46 ($\frac{1}{2}$)

21. Jug of the type made by Sabinus of La Graufesenque (Stanfield, 1937). The figure is O.924; the leaves were used by Sabinus on a similar jug (Knorr, 1919, 100A); *c.* A.D. 50–70.
22. Form 29, South Gaul. The lion is probably O.1417. A similar arrangement of lions with this foliage motif and chevron wreath was used by Rufinus (Atkinson, 1914, 36); *c.* A.D. 70–85.
23. Form 30, South Gaul. Three small sherds (two not illustrated). Neat single-bordered ovolo above a simple wreath; *c.* A.D. 50–70.
24. Form 29, stamped by Cabucatus of La Graufesenque. Fine wavy lines and pointed leaves; *c.* A.D. 65–85. (See S3).
25. Form 29, South Gaul. Both friezes probably contained scrolls, the upper with pointed leaves, the lower with cornears; *c.* A.D. 60–80.
26. Form 29, South Gaul. A closely similar wreath was used by Germanus (Knorr, 1919, 37K); *c.* A.D. 60–80.
27. Form 67, South Gaul. Vertical beadrows. Flavian probably.
28. Form 29, South Gaul. Scroll with rosettes and leaves; *c.* A.D. 50–70.
29. Form 29, South Gaul. Scrolls with acorn terminals were used by several potters, notably Aquitanus (Knorr, 1952, 4F) and Bassus (*ibid*, 7C); *c.* A.D. 50–70.

(Nos. 30–46, Fig. 19)

30. Form 29, South Gaul. An unusual arrangement of two panels containing a lizard (O.2151 variant) and three rosettes alternating with a single large rosette. The central wreath was used by several potters; *c.* A.D. 55–75.
31. Form 29, South Gaul. The scroll in the upper frieze ends in small diamond-shaped leaves. The beautifully modelled leaf in the lower frieze is identical to one from the Walbrook (site ref. F.750.1); the pointed leaf was used by several potters, including Aquitanus (Knorr, 1952, 4D). The third motif is probably a pomegranate bud; *c.* A.D. 50–65.
32. Form 29, South Gaul. Gadroons in lower frieze; *c.* A.D. 55–75.
33. Form 29, South Gaul. Eagle (O.2175) in upper frieze; *c.* A.D. 60–80.
34. Form 29, South Gaul. Fine scroll with leaves and tendril-bindings; *c.* A.D. 45–65.
35. Form 29, South Gaul. Fragment of scroll in upper frieze; *c.* A.D. 65–85.
36. Form 29, South Gaul. Simple wreath in upper frieze, and probable scroll in lower. The relief is very shallow, suggesting that the mould was worn; *c.* A.D. 55–70.
37. Form 29, South Gaul. Gadroons in lower frieze; *c.* A.D. 65–85.
38. Form 29, South Gaul; slightly blurred by the potter. Small festoon and scroll, alternating with large arrowheads; *c.* A.D. 65–80.

(Not illustrated).

Form 29, South Gaul. Straight wreath above formal delicate scrollery; *c.* A.D. 50–65.

EARLY ROMAN PITS

39. Form 29, South Gaul. Corded scroll with a large leaf; *c.* A.D. 50–65.
40. Form 29, South Gaul. Lion (probably O.1417) in a scroll; *c.* A.D. 55–75.
41. Form 29, South Gaul. Large rosettes between pairs of palmettes; *c.* A.D. 50–65.
42. Form 37 in the style of the "Large-S Potter" of Central Gaul. The Mercury (O.535), s-motif, and beadrow are illustrated on S. & S., Pl. 76, 33; *c.* A.D. 125–145.

(Not illustrated)

Form 29, South Gaul. Panels with wavy-line borders; *c.* A.D. 60–80.

Form 29, South Gaul. Part of a leaf in the lower frieze; *c.* A.D. 55–75.

LATE OR SUB-ROMAN

43. Form 37, very abraded. Similar s-scrolls were used at Rheinzabern (LRF R56–58) and at Trier (Huld-Zetsche, 1972, O.33–36) but the plain line on each side is more characteristic of Trier; late second–mid-third century).
44. Form 37, stamped in the mould by Doeccus of Lezoux. The motifs all occur elsewhere in his work —Venus (O.331) on S. & S., Pl. 148, 15, the beads, rosette, medallion and astragalus on S. & S., Pl. 148, 25; *c.* A.D. 160–195. (See S4).
45. Form 37, East Gaul and probably Rheinzabern. The ovolo is too abraded to identify; later second-mid-third century.
46. Form 37, Central Gaul. Antonine probably.

REDEPOSITED (Nos. 47–54, Fig. 20)

47. Form 37 with freestyle hunting scene in the style of the Cinnamus-Cerialis group at Lezoux; *c.* A.D. 150–180.
48. Form 29, South Gaul. Gadroons above a basal wreath of finely-modelled formal leaves; *c.* A.D. 45–65.
49. Form 29, South Gaul. Scroll with rosette terminals. Neronian or early Flavian.
50. Form 37 in the style of Primitivus of Rheinzabern, apparently the sole user of this ovolo (LRF. E41); he also used the deer (LRF. T96b); *c.* A.D. 200–250.
51. Form 37 in the style of Cinnamus of Lezoux, who used the Cupid (O.401—S. & S., Pl. 157, 2) and a similar bird in a scroll (S. & S., Pl. 162, 58); *c.* A.D. 150–180.
52. Form 37, South Gaul. Broken ovolo; *c.* A.D. 80–110.
53. Form 37, Central Gaul. The small warrior (O.1057) was used on stamped bowls by Lastuca, Albucius and Cinnamus (S. & S., Pl. 100, 4; 121, 17; 160, 41); the beadrows are too abraded to aid closer identification; *c.* A.D. 150–180.
54. Form 37 with the smaller ovolo and distinctive rosette used by Drusus I (X-3) of Les Martres de Veyre (S. & S., Pl. 13, 156); *c.* A.D. 100–125.

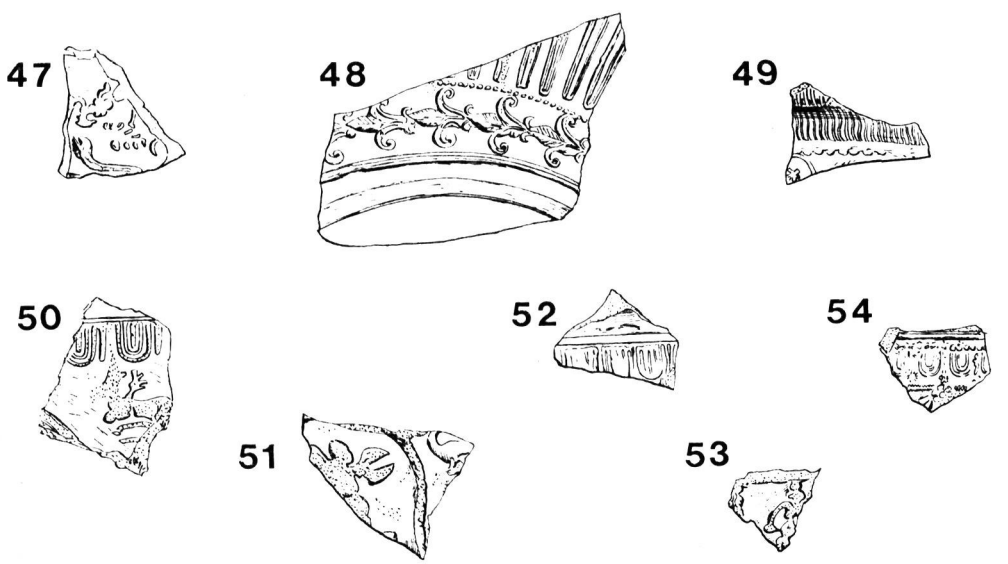

Fig. 20. Toppings Wharf; The Samian, 47–54 ($\frac{1}{2}$)

2. THE SAMIAN POTTERS' STAMPS

Fig. 21)

All are from levels associated with the buildings unless otherwise stated.

1. (AL)BANI on form 15/17 or 18.
   Die 10a, Albanus of La Graufesenque. Probably pre-Early Flavian.
2. (A)VINIF on form 15/17 or 18.
   Die 1a, Avinius of South Gaul. and probably of La Graufesenque. Flavian.
3. (CABV)CATI on form 29.
   Die 2a, Cabucatus of La Graufesenque; this potter is usually misread as Canrugatus. *c.* A.D. 65–85. (See Decorated No. 24.)
4. DOIICCI on form 37.
   Die 5a, Doeccus of Lezoux, impressed in the mould. *c.* A.D. 160–95. (See Decorated No. 44).
5. OFFELICIS on form 18.
   Die 2b, Felix I of La Graufesenque. *c.* A.D. 45–65.
6. L.IC.INI (ANAO) probably on form 29.
   Die 7a, Licinus of La Graufesenque. *c.* A.D. 55–65.

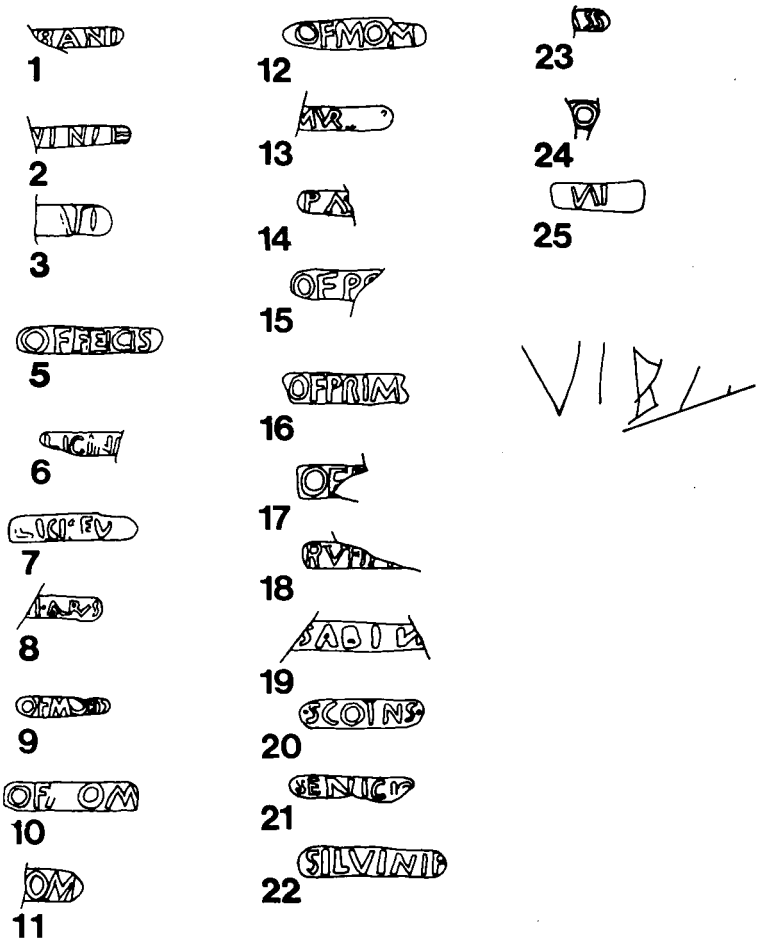

Fig. 21. Toppings Wharf; The Samian Stamps and the Graffito (1/1)

7. L.ICISEV on form 27g.
Die 2a, Lici( ) and Severus of La Graufesenque. The first potter is not the Licinus of the earlier Officina Liciniana stamps. *c.* A.D. 75–100.
8. (MASC)LI.BALBVS on form 18.
Die 1a, Masclus and Balbus of La Graufesenque. *c.* A.D. 60–80.
9. OFMODES on form 24/25.
Die 4b, Modestus I of La Graufesenque. *c.* A.D. 45–60.
10. OFMOM on form 29.
Die 9j, Mommo of La Graufesenque. *c.* A.D. 70–85. (See Decorated No. 17.)
11. (OIM)OM on form 18.
Die 9i, Mommo of La Graufesenque. As this die is found on form Ritt 1, it should be dated to the 60s A.D.
12. OF.MOM on form 18.
Die 9b, Mommo of La Graufesenque. This die is so far unique; the context suggests a Neronian–early Flavian date.
13. (OF.)MVRRAN on form 18.
Die 8f, Murranus of La Graufesenque. Probably *c.* A.D. 45–60.
14. PA(SSIEN) on form 27g.
Die 60a, Passenus of La Graufesenque. *c.* A.D. 55–70.

15. OFPO(NTHEI) on form 15/17 or 18.
Die 1a, Pontheius of La Graufesenque. *c.* A.D. 70–85.
16. OFPRIM on form 27g.
Die 18b, Primus III of La Graufesenque. *c.* A.D. 55–75.
17. OFP(RIMI) on form 15/17 or 18.
Die 12r, Primus III of La Graufesenque. *c.* A.D. 50–65.
18. RVFI(NI.MA) on form 18.
Die 15a, Rufinus II of La Graufesenque. *c.* A.D. 70–80.
19. ( )SABIN( ) on form 15/17 or 18.
A unique and incomplete die, Sabinus III of La Graufesenque. Neronian–early Flavian, on context.
20. SCOTNS on form 18.
Die 5a, Scotnus of La Graufesenque. *c.* A.D. 50–65.
21. SENICIO on form 27g.
Die 6a, Senicio of La Graufesenque. Probably *c.* A.D. 50–70.
22. SILVINIF on form 18.
Die 8a, Silvinus I of La Graufesenque. *c.* A.D. 65–80.
23. ( )ASS on form 15/17 or 18.
Unidentifiable; South Gaulish.
24. ( )O( ) on form 15/17 or 18.
Unidentifiable; South Gaulish.
25. ( )Λ//( ) on form 27g.
Unidentifiable; South Gaulish.

3. GRAFFITO

Incised on the exterior of a Form 27 cup. Reads VIBI?. A personal name. The last letter is uncertain.

E.IV. THE OTHER ROMAN POTTERY FROM THE EARLY ROMAN SETTLEMENT

BY PAT EVANS

1. INTRODUCTION:

The groups of illustrated pottery represent most of the vessels from the major features of the early Roman settlement which could be drawn.

The pottery is presented in the following order: the first group is from the east–west ditch which was filled prior to the construction of the buildings. Then follow groups from the buildings and alleyways starting with Building I and moving to the west across the site.

A further group comes from a destruction level just east of, but later than, Building V. The final groups come from three pits and the well. Pit 3 is later than Building III, but no stratigraphical relationship was obtained between Pits 7 and 9 and the buildings. Pit 7 could be a post-pit associated with the masonry wall between Buildings III and IV. The well was cut through the floor levels of Building VI.

Pottery from within the buildings has been divided into groups under the following headings: *Construction Phase:* pottery from foundation layers, walls and contained within primary floors; *Occupation within the building:* pottery from later floors and fill layers, deposited while the building was still in use; *Destruction layers filling building:* pottery from deposits associated with, or later than, the destruction of the building.

The date in brackets after each group heading is that of the latest Samian from the context. Where the samian appears to be residual, and contradicts the date indicated by the stratigraphy, this is stated in the text.

Conventions used in the descriptions of the drawn vessels are as follows: (i) *Temper:* "sandy" indicates that small grains were visible in the clay; "gritty" that large grains were present. Where no tempering is mentioned, none was visible. (ii) *Hardness:* "hard" indicates

that the sherd could not be scratched with the thumbnail; "fairly hard" that the sherd could only be scratched with difficulty; "fairly soft" and "soft" that little or no effort was needed to make an impression. (iii) *Quality:* "fine" and "coarse" indicate the texture of the clay and the degree of finish applied to the surface; these terms are very subjective. (iv) *Colour:* a hyphen indicates an intermediate colour (*e.g.* red-brown, a colour between red and brown), and a solidus, a mixture of colours (*e.g.* red/brown, patches of red and patches of brown).

In the individual descriptions, all types of jars and beakers have been grouped under the heading *Jars.*

2. The Drawn Pottery

(a) Ditch. (Nos. 1–21, Fig. 22). (Flavian) from the fill of the Ditch pre-dating buildings.

Jars:

1. Sandy, fairly hard, fairly coarse fabric; yellow-buff core with reduced grey centre, yellow-buff internal surface, grey/dark brown external surface caused by burning. Cordon at base of neck. Band of vertical combed wavy lines on shoulder. "Butt beaker".
2. Soft, fine, red fabric. Cordon at base of the neck, white slip applied to both surfaces.
3. Grogged hard, coarse, dark grey fabric. Burnished external surface between incised band and rim, and inside rim. Band of thin roughly incised lines on shoulder.
4. Gritty, hard, fairly fine fabric; light grey core and darker grey surfaces.
5. Micaceous, gritty, hard fairly coarse fabric; grey core with black internal surface inside rim; black external surface. Burnished on neck.
6. Gritty, hard, fairly fine fabric; light grey core, and darker grey surfaces. Lightly burnished band on neck. Traces of soot below lip.
7. Sandy, hard, fairly coarse fabric; light grey core, darker grey surfaces. Cordon at base of neck.
8. Sandy, soft, fairly fine red fabric. Cream slip applied to both surfaces.
9. Grogged, with some grit inclusions, hard, coarse fabric; grey core, surface colour varies between red, brown, grey and black.
10. Micaceous, sandy, hard, fairly fine fabric; brown core with reduced grey centre, external surface dark grey, internal surface brown. Burnished on rim and neck.
11. Sandy, hard, fairly fine fabric; red core, with reduced grey centre, dark brown surfaces. Burnished lightly on external surface. Groove on shoulder.
12. Gritty, hard, coarse fabric; brown core reduced to light grey in centre, dark grey lightly burnished surfaces.
13. Micaceous sandy, hard, fairly fine fabric; grey core, black external surface, dark grey internal surface. Shallow groove on shoulder.
14. Sandy, hard, fairly coarse fabric; light grey core, surface colour varies from dark to light grey. Irregular lattice of burnished lines on external surface.

Dishes:

15. Micaceous, sandy, fairly fine fabric; light grey core, dark grey surfaces. Imitation terra nigra.
16. Sandy, hard, fairly fine grey fabric.

Bowl:

17. Sandy, hard, fairly fine grey fabric. Shallow groove around the body.

Mortarium

18. Sandy, soft, fairly coarse buff fabric. Grits on internal surface and upper surface of flange. Stamp on flange near bead.

Bowl:

19. Sandy, soft, fairly coarse fabric; grey core and red surfaces. Broad cordon beneath rim, two narrow cordons at base of sherd. Cream slip applied to both surfaces, burnished externally. Imitation Samian Form 30.

Amphora:

20. Sandy, hard, coarse cream fabric.

Flagon:

21. Sandy, hard, coarse pink fabric.

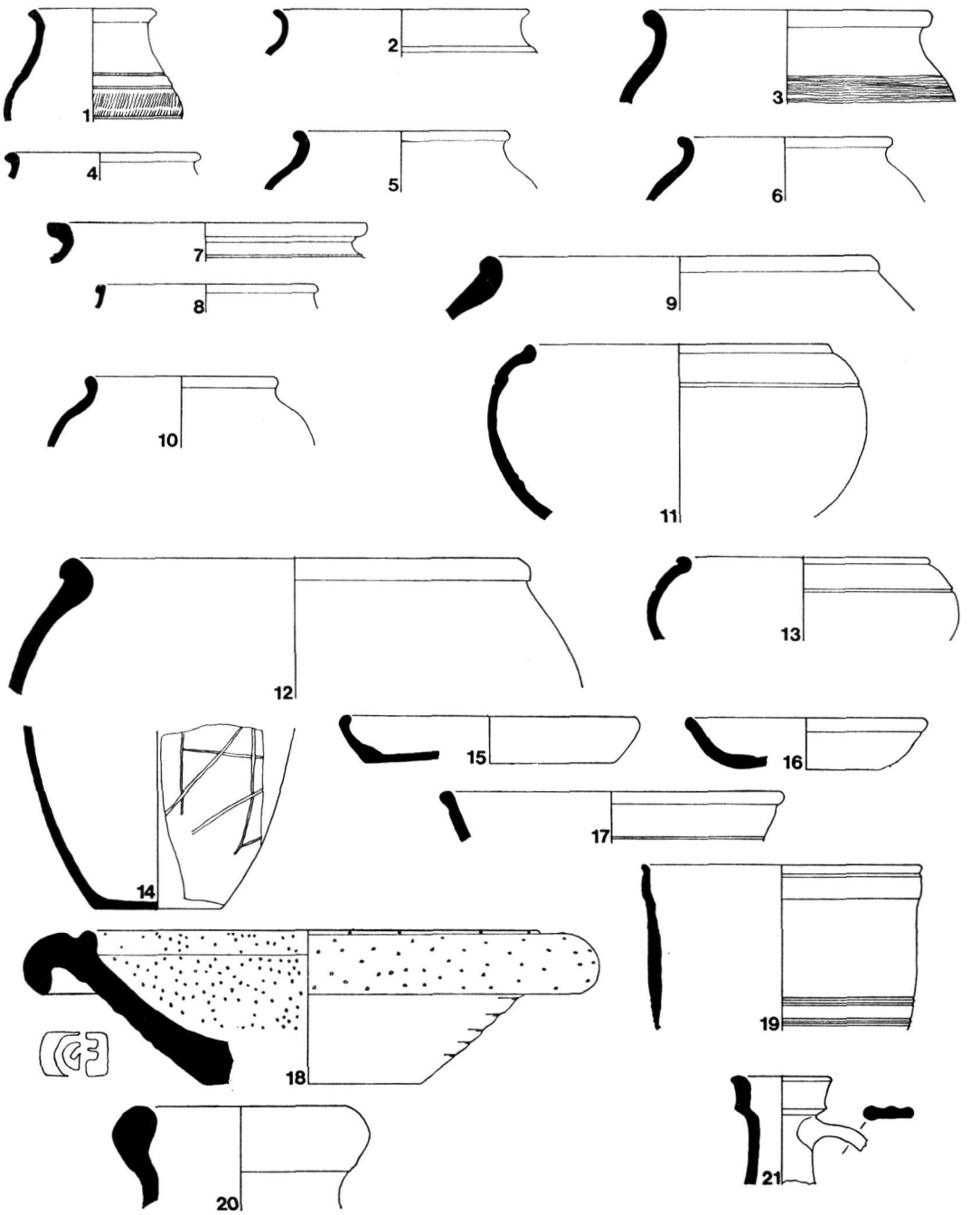

Fig. 22. Toppings Wharf; Roman pottery, 1–21 ($\frac{1}{4}$) except stamp ($\frac{1}{2}$)

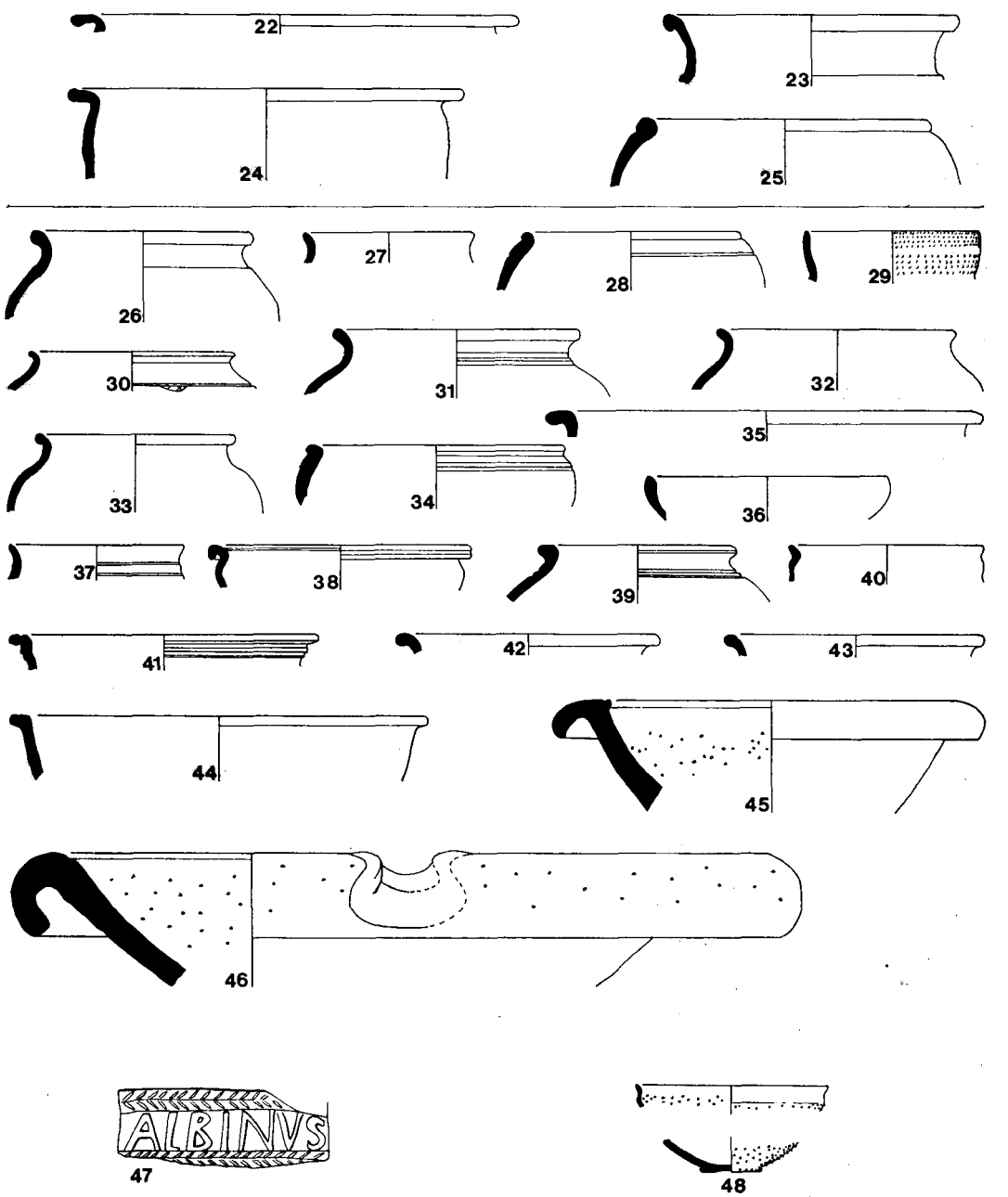

Fig. 23. Toppings Wharf; Roman pottery, 22–48 ($\frac{1}{4}$) except No. 47 ($\frac{1}{2}$)

(b) BUILDING I. (Nos. 22–48, Fig. 23. Nos. 49–50, Fig. 24)

(i) Construction Phase. (Nos. 22–25). (Neronian–early Flavian)

Bowl:

22. Sandy, hard, fairly fine grey fabric.

Jar:

23. Sandy, hard, fairly fine grey fabric. Cordon on shoulder.

Bowl:

24. Gritty, hard, fairly coarse fabric; grey-pink core, black surfaces. Smoothed external surface.

Jar:

25. Possibly shell-tempered, fairly hard, light grey fabric.

(ii) Occupation within the building: (Nos. 26–28). (Flavian)
(Nos. 29–50). (Flavian–Trajanic)

Jars:

26. Sandy, hard, coarse fabric; grey core with dark grey/brown surfaces. Burnished patches on exterior.
27. Sandy, hard, fairly fine pink-buff fabric. Smoothed externally on shoulder and inside rim.
28. Sandy, soft, fairly coarse fabric; red core, grey surfaces. Shallow groove on shoulder.
29. Very hard, fine red fabric. Green, rough-cast glaze on external surface.
30. Sandy, hard, fairly fine red fabric. Groove on shoulder. Burnished lattice below groove.
31. Sandy, hard, coarse light grey fabric. Burnished band on shoulder. Two grooves on neck.
32. Sandy, hard, coarse grey fabric. Burnished band below rim.
33. Sandy, hard, coarse grey fabric. Burnished band on neck.

Bowls:

34. Sandy, hard, fairly coarse fabric; grey core with oxidised red centre, grey surfaces. Two grooves below rim, surface smoothed between rim and grooves.
35. Sandy, hard, fairly coarse fabric; grey core with brown/black surfaces.

Dish:

36. Sandy, soft, fairly fine fabric; red core with grey surfaces.

Jar:

37. Sandy, hard, fairly fine grey fabric. Two grooves below rim. Black burnished slip on external surface.

Bowl:

38. Sandy, hard, fairly fine grey fabric. Groove on top of rim, shallow groove on edge of rim.

Jars:

39. Sandy, hard, fairly fine grey fabric. Two grooves on shoulder, one on rim.
40. Sandy, hard, fine grey fabric. Burnished black slip applied to external surface, running down internal surface.

Bowl:

41. Sandy, hard, fairly coarse grey-brown fabric. Groove on rim, two cordons on external surface below rim.

Jars:

42. Sandy, fairly hard, fairly coarse grey fabric.
43. Sandy, fairly hard, fairly coarse fabric; red-brown core with grey surfaces.
44. Sandy, hard, fairly fine fabric; grey core, orange-pink mica-dusted surfaces.

Mortaria:

45. Hard, coarse cream fabric; grits on internal surface.

46 and 47. Hard, coarse, pink-buff fabric. White grits, probably flint, on internal surface. Stamp ALBINUS across rim. For *Albinus* (*c.* 65–95 A.D.) see B. J. Philp, *Excavations in West Kent, 1960–70* (1973), 89; also H. Chapman and T. Johnson, "Excavations at Aldgate and Bush Lane", *Trans. London Middlesex Archaeol. Soc.*, 24 (1973), 39.

Cup:

48. Fairly soft, very fine cream fabric. Green-brown slip applied to surfaces, rough cast except on rim. Probably Lyons ware.

Bowl:

49. Sandy, hard, fairly coarse grey fabric. Two shallow grooves on external surface.

Jar:

50. Grogged, hard, coarse grey fabric.

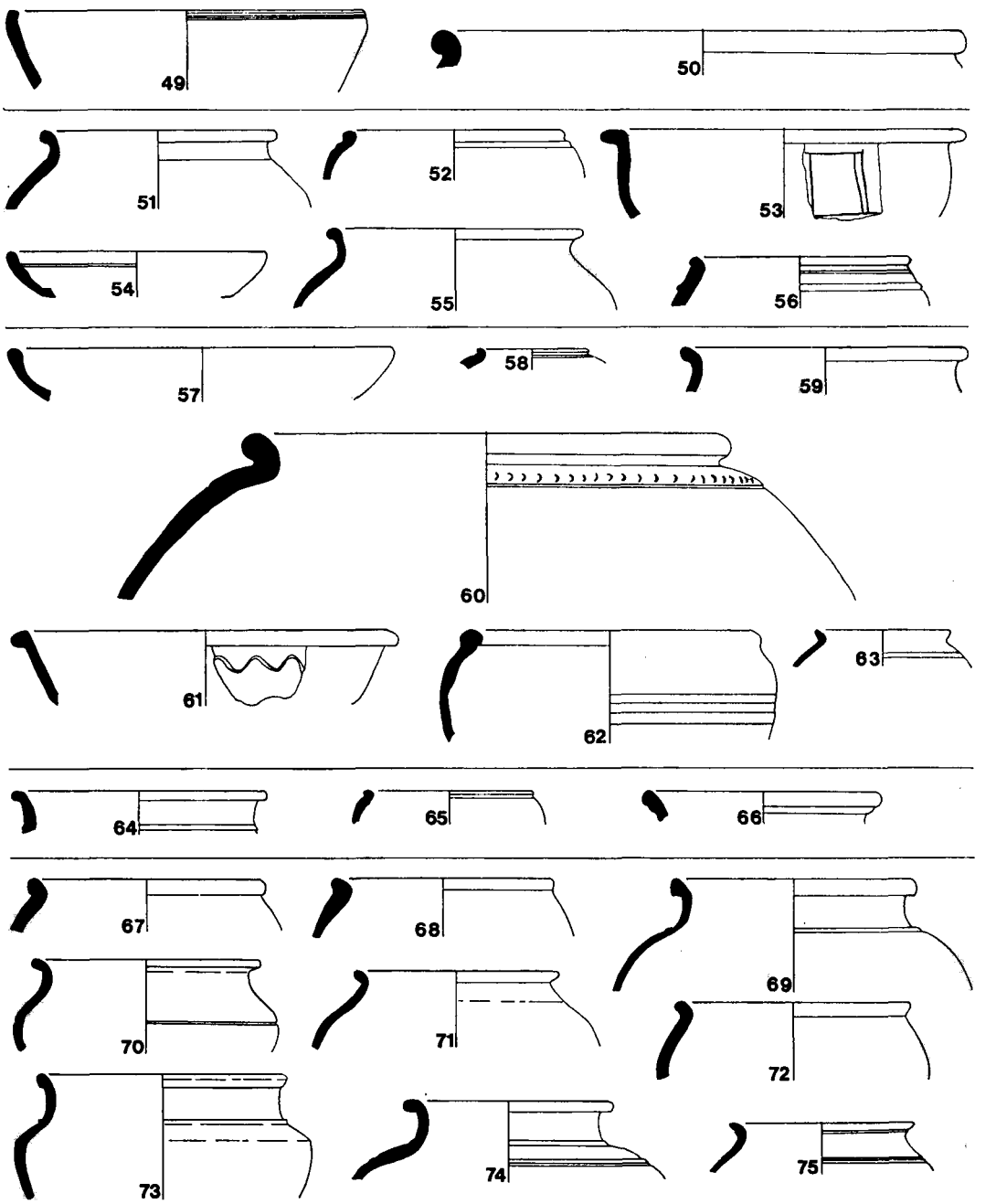

Fig. 24. Toppings Wharf; Roman pottery, 49–75 ($\frac{1}{4}$)

(c) ALLEY WEST OF BUILDING I, (Nos. 51–56, Fig. 24). (Flavian)

Jars:

51. Sandy, hard fairly fine fabric; grey core with black surfaces. Smoothed on external surface.
52. Sandy, hard fairly fine fabric; grey core with red surfaces. Groove on shoulder.

Bowl:

53. Sandy, hard, coarse fabric; grey core with orange-buff surfaces. Vertical burnished lines on externa surface.

Dish:

54. Sandy, hard, fairly fine grey fabric. Two grooves below rim on internal surface.

Jars:

55. Sandy, hard, fairly fine, light grey fabric.
56. Sandy, hard, fairly coarse buff fabric. Shallow grooves below rim, with cordon beneath.

(d) ALLEY EAST OF BUILDING II. (Nos. 57–63, Fig. 24). (Flavian).

Dish:

57. Hard, fine fabric; white core with metallic grey, lightly burnished surfaces. Terra nigra.

Jars:

58. Sandy, hard, fine fabric; grey core with black surfaces. Narrow cordons below rim.
59. Sandy, soft, fairly fine fabric; red-brown core with grey surfaces. Smoothed band on shoulder.
60. Gritty, shell-tempered, hard, coarse fabric; brown core with grey/brown surfaces. Smoothed band on external surface below rim, with groove beneath. Row of fingernail impressions between smoothed band and groove.

Dish:

61. Sandy, hard, fairly fine grey fabric. Incised wavy line on external surface. Traces of white slip on body.

Jars:

62. Sandy, hard, fairly fine grey fabric. Two cordons round body.
63. Sandy, fairly hard, fairly fine pink-buff fabric. Two shallow grooves on shoulder.

(e) BUILDING II. Construction Phase. (Nos. 64–66, Fig. 24). (Early Flavian)

Jars:

64. Sandy, hard, fairly coarse grey fabric. Cordon and groove at base of neck.
65. Sandy, soft, fairly fine grey fabric.

Bowl:

66. Sandy, hard, fairly coarse, grey fabric.

(f) BUILDING III. Destruction Layers filling building. (Nos. 67–75, Fig. 24. Nos. 76–102, Fig. 25). (Trajanic).

Jars:

67. Gritty, hard, coarse fabric; dark grey core, with brown/dark grey pitted surfaces.
68. Grogged, with some grit inclusions, hard, coarse fabric, grey core, with light cream-brown surfaces.
69. Sandy, fairly hard, coarse fabric; grey core with dark grey surfaces. Cordon at base of neck.
70. Micaceous, sandy, hard, fairly coarse fabric; light grey core with dark grey surfaces. Incised line around girth.
71. Micaceous, sandy, hard, fairly coarse fabric; light grey core with darker grey surfaces. Broad burnished band at base of neck.
72. Gritty, fairly hard, coarse fabric; grey core with grey-brown surfaces.
73. Gritty, hard, fairly coarse fabric; light grey core with dark grey surfaces. Burnished on external surface. Cordon at base of neck.
74. Gritty, hard, fairly coarse fabric; light grey core, with dark grey surfaces, smoothed on external surface. Cordons at base of neck and on shoulder.
75. Micaceous, sandy, fairly hard, fine fabric; light brown core with reduced grey centre, dark grey surfaces. Burnished on external surface. Two parallel grooves around shoulder.

Bowls

76. Sandy, hard, coarse dark grey fabric. Two grooves on upper surface of rim.
77. Micaceous, sandy, hard, fairly coarse fabric; grey core with very dark grey surfaces.
78. Sandy, hard, coarse fabric; dark brown core with grey/light brown surfaces.
79. Sandy, hard, fairly fine fabric; mid-grey core with light brown surfaces. Two grooves on top of rim.

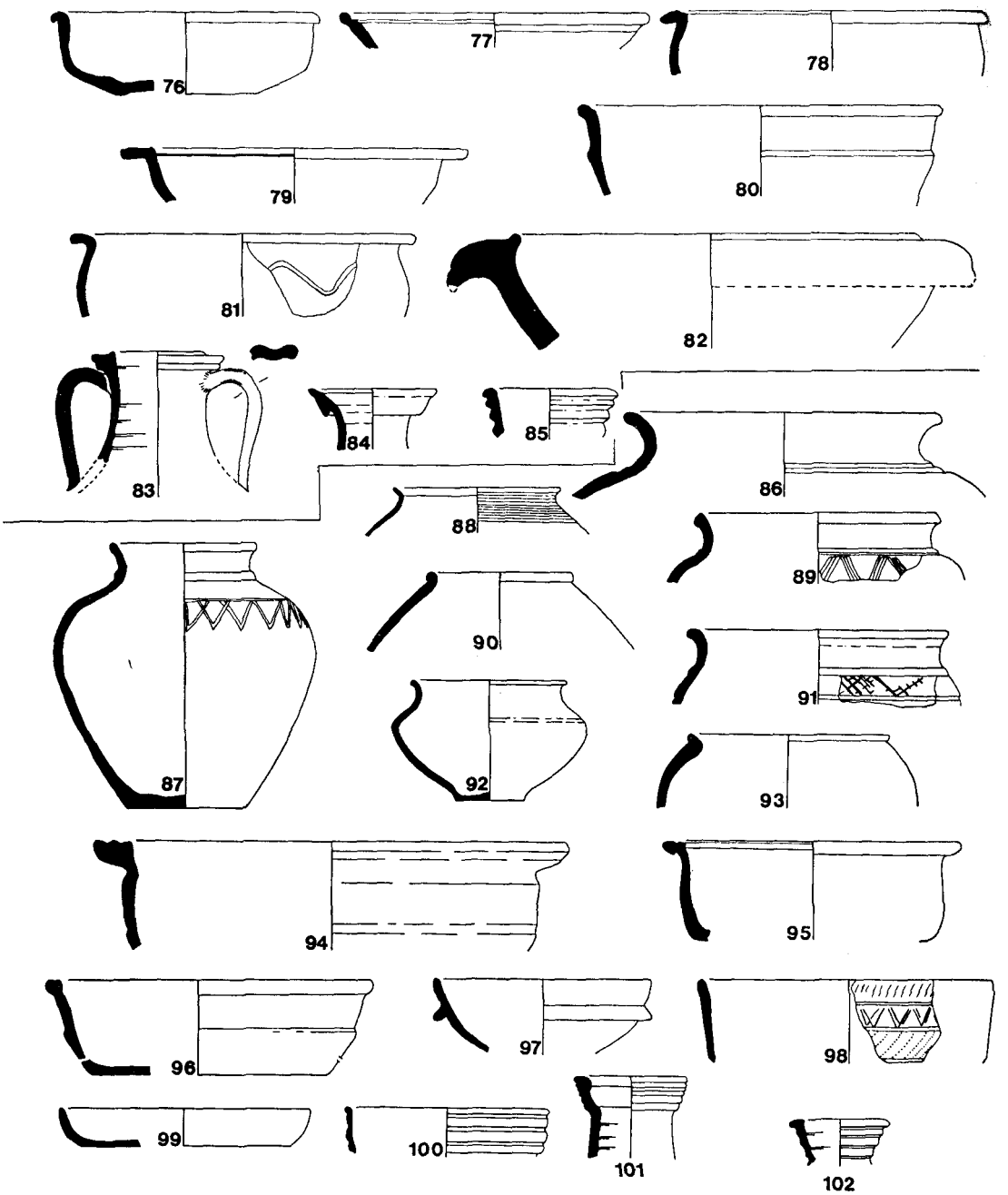

Fig. 25. Toppings Wharf; Roman pottery, 76–102 ($\frac{1}{4}$)

80. Sandy, hard, coarse dark grey fabric. Two grooves on top of rim.
81. Grogged, fairly hard, coarse fabric; grey core with darker grey surfaces. Incised wavy line around body.
Mortarium:
82. Sandy, with some grit inclusions, hard, coarse fabric; red core with brown/grey surfaces. Traces of white slip on both surfaces. Internal surface pitted and worn with few grits.
Flagons:
83. Gritty, hard, fairly coarse pink-buff fabric. Neck and body thrown separately.
84. Sandy, hard, fairly fine red-brown fabric. Cream slip applied to surfaces.
85. Gritty, fairly hard, coarse, pink fabric.
Jars:
86. Grogged, fairly soft, coarse fabric; grey core, dark grey-brown external surface, grey internal surface. Two grooves at base of neck.
87. Sandy, fairly hard, fairly fine fabric; red-brown core with grey/brown surfaces. External surface on neck smoothed. Cordon at base of neck, with band of burnished lines on shoulder.
88. Micaceous, sandy, hard, very fine fabric; light grey core with dark grey surfaces. Broad band of lightly incised lines below lip.
89. Micaceous, sandy, hard, fairly fine fabric, light grey core and internal surface, very dark grey external surface. Cordons at base of neck. Band of burnished lines on shoulder.
90. Grogged, hard, fairly fine fabric; pink core with reduced grey centre, dark grey surfaces.
91. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Cordons at base of neck and on shoulder with a very worn band of incised lattice between.
92. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Traces of burnishing on external surface. Light groove around girth.
93. Gritty, hard, very coarse fabric; grey core with very dark grey uneven surfaces.
Bowls:
94. Gritty, hard, coarse fabric; pink-buff core, with reduced grey centre, pink-buff surfaces. Two grooves on top of rim.
95. Sandy, hard, coarse grey fabric. Groove on top of rim.
96. Gritty, hard, coarse fabric; light grey core with dark grey surfaces. Groove on top of rim.
97. Sandy, fairly hard, fairly fine fabric; light grey core with dark metallic grey burnished surfaces. Terra nigra.
98. Micaceous, sandy, hard, fairly fine fabric; light grey core and internal surface, dark grey external surface. Two horizontal burnished lines dividing external surface into three zones, with two upper zones containing bands of incised lines, and lower zone a band of comb stabbing.
Dishes:
99. Sandy, hard, coarse fabric; orange core with reduced grey centre and red slip applied to surfaces. Imitation terra rubra.
100. Sandy, soft, fairly fine fabric; light brown core with dark grey surfaces. Three cordons on external surface.
Flagons:
101. Sandy, hard, fairly fine fabric; pink core with reduced grey centre, red surfaces. Cream slip applied to external surface.
102. Sandy, hard, coarse cream fabric.

(g) Masonry Based Wall Between Buildings III and IV. (Nos. 103–108, Fig. 26)
(i) Construction Phase (Nos. 103–105). (Neronian–early Flavian)
Jars:
103. Gritty, fairly hard, coarse, dark grey fabric.
104. Sandy, fairly hard, fairly fine fabric; grey core with darker grey surfaces. Groove around shoulder.
Bowl:
105. Fairly hard, fine grey fabric.
(ii) Possible Construction Phase. (Nos. 106–108). (Neronian–early Flavian)
Jars:
106. Micaceous, hard, fine fabric; red-brown core with grey/dark brown surfaces.
107. Fairly gritty, hard, fairly fine fabric; grey core with dark grey surfaces.
108. Gritty, hard, fairly coarse fabric; grey core, brown-grey internal surface, dark grey external surface. Lightly incised lines covering external surface below rim.

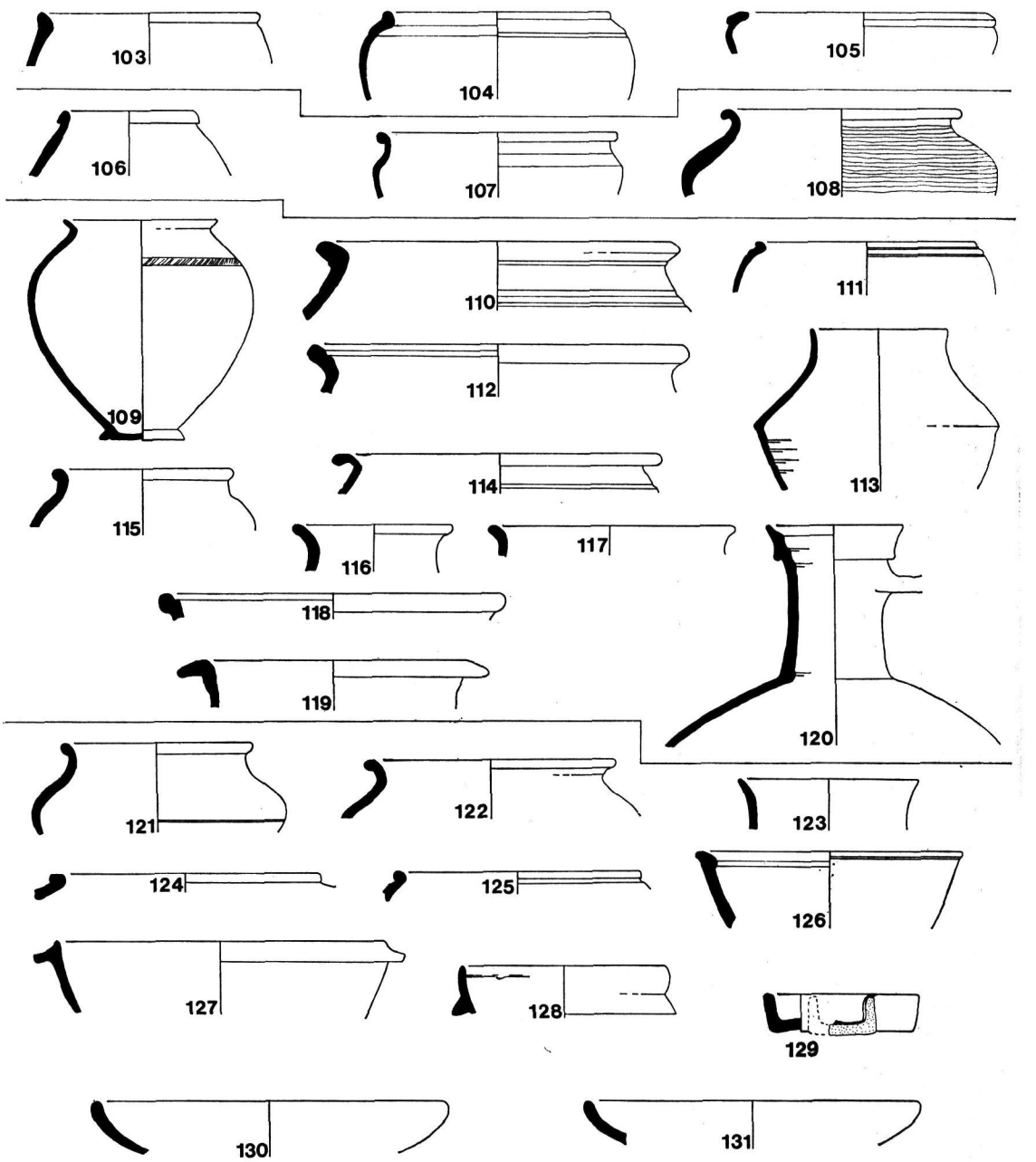

Fig. 26. Toppings Wharf; Roman pottery, 103–31 ($\frac{1}{4}$)

(h) BUILDING IV. (Nos. 109–131, Fig. 26)

(i) Deposits over earlier floors. (Nos. 109–120). (Flavian)

Jars:

109. Micaceous, sandy, hard, fairly fine fabric; red-brown core with reduced grey centre, dark grey surfaces. Band of incised lines on shoulder between two horizontal grooves.
110. Sandy, hard, coarse fabric; pink-buff core, light grey internal surface, very dark grey external surface. Cordon at base of neck.
111. Sandy, fairly hard, fairly coarse fabric; dark grey-brown core with dark grey surfaces. Cordon below rim.
112. Gritty, hard, fairly coarse fabric; grey core with dark grey surfaces. Groove on internal surface below lip.
113. Hard, fine grey fabric.
114. Micaceous, sandy, hard, fairly fine fabric; grey core with dark brown-grey surfaces.
115. Gritty, hard, coarse cream-grey fabric.
116. Gritty, hard, coarse fabric; dark grey core with red/dark grey surfaces.
117. Sandy, soft, fairly fine grey fabric. Lightly burnished external surface.

Bowls:

118. Sandy, hard, fairly coarse fabric; grey core with dark grey surfaces.
119. Micaceous, gritty, hard, fairly coarse fabric; light grey core with dark grey surfaces.

Flagon:

120. Sandy, hard, coarse cream fabric.

(ii) Later floor or floors of subsequent building. (Nos. 121–131). (Flavian)

Jars:

121. Gritty, hard, fairly coarse fabric; grey core, light grey internal surface, darker grey external surface. Groove around lower part of body.
122. Gritty, hard, coarse fabric; dark grey core, light grey internal surface, very dark grey external surface.
123. Sandy, hard, fairly fine dark grey fabric.
124. Shell-tempered, soft, very coarse fabric; grey core with pink-brown surfaces.
125. Sandy, hard, coarse fabric; light grey core with dark grey burnished surfaces.

Bowls:

126. Gritty, hard, coarse fabric; dark grey core with cream/grey/brown surfaces.
127. Gritty, hard, coarse fabric; light grey core with darker grey surfaces.
128. Hard, very fine fabric; light grey-white core with very dark grey surfaces. Terra nigra.

Lamp:

129. Very gritty, very hard white fabric.

Dishes:

130. Hard, very fine fabric; light grey core with very dark grey surfaces. Terra nigra.
131. Slightly gritty, hard, very fine fabric; cream-light grey core with light grey surfaces.

(i) BUILDING V. (Nos. 132–155, Fig. 27).

(i) Construction phase (Nos. 132–140). (Flavian)

Jars:

132. Sandy, hard, fairly coarse fabric; light grey core with darker grey surfaces. External surface and rim burnished. Cordon at base of neck.
133. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Lightly burnished on top of rim. Cordon at base of neck.
134. Sandy, hard, fairly fine fabric; mid-grey core and internal surface, darker grey external surface. Band of incised lattice on shoulder.
135. Sandy, hard, fairly fine fabric; light brown core and internal surface, dark grey external surface. Burnished on external surface and inside rim.
136. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces.
137. Sandy, hard, fairly fine fabric; dark grey core with light brown/dark grey surfaces. Burnished on external surface and inside rim. Two horizontal grooves below neck.
138. Gritty, hard, fairly fine fabric; light grey core with grey/light brown surfaces.
139. Gritty, hard, rather coarse red fabric.

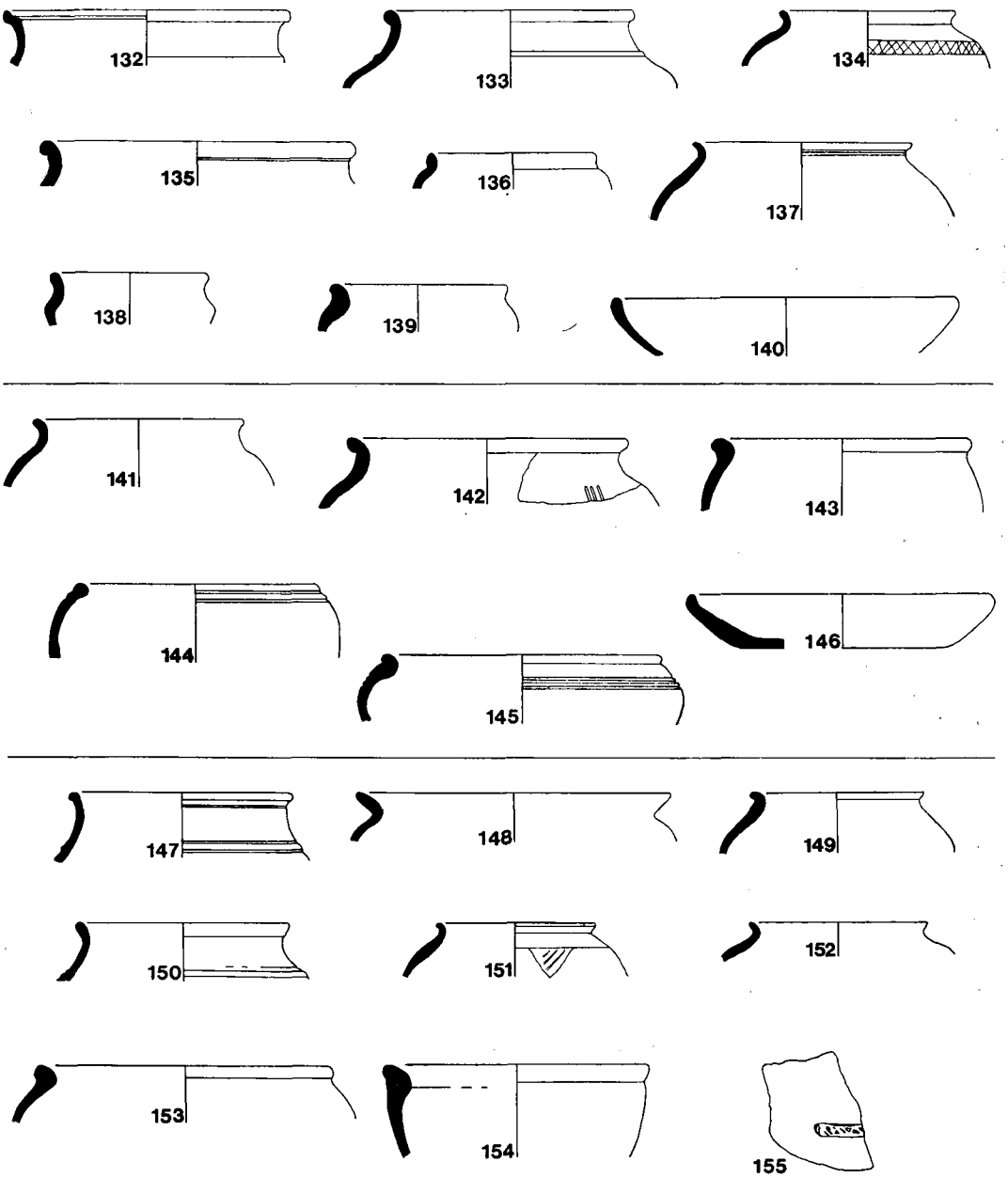

Fig. 27. Toppings Wharf; Roman pottery, 132–55 ($\frac{1}{4}$) except stamp ($\frac{1}{2}$)

Dish:

140. Hard, fine fabric; white core with very dark blue-grey surfaces. Terra nigra.

(ii) Occupation within the building. (Nos. 141–146). (Flavian).

Jars:

141. Micaceous, sandy, hard, fairly fine fabric; light brown core with reduced grey centre, grey surfaces. Traces of burnishing on neck.

142. Gritty, hard, fairly fine fabric; light grey core with darker grey surfaces. Burnished on rim and neck, with three burnished lines on shoulder.

143. Shell-tempered, hard, coarse fabric; light grey core, black internal surface, brown/black external surface.

144. Sandy, hard, fairly fine fabric; light grey core with dark grey surfaces. Burnished on external surface from rim to shoulder. Cordon below rim.

145. Sandy, hard, fairly fine dark grey fabric. Burnished on external surface and inside rim. Two cordons on shoulder.

Dish:

146. Sandy, hard, fairly fine fabric; light brown core with reduced grey centre, dark grey burnished surfaces.

(iii) Destruction Layers filling building. (Nos. 147–155). (Flavian–Trajanic)

Jars:

147. Sandy, hard, fairly fine fabric; white core with grey surfaces. Neck and internal surface inside rim burnished. Cordon at base of neck.

148. Sandy, hard, fairly fine grey fabric. Burnished dark grey slip on external surface and inside rim.

149. Sandy with some grit inclusions, hard, fairly fine fabric; light brown core with reduced grey centre, dark grey surfaces. Burnished on external surface.

150. Micaceous, sandy, hard, fairly fine fabric; grey core, grey external surface, grey-brown internal surface. Cordon at base of neck.

151. Sandy, hard, fairly fine fabric; grey core with light brown/red surfaces. Burnished on shoulder and lip. Three incised lines on shoulder.

152. Sandy, hard, fairly fine grey fabric. Burnished on external surface and inside rim.

153. Grit and grog-tempered, hard, coarse fabric; grey core with black surfaces.

Bowl:

154. Gritty, hard, coarse fabric; grey core with black/grey surfaces.

155. Part of a base with stamp on internal surface. Sandy, hard, rather coarse fabric; light grey core with dark grey surfaces. Sherd abraded.

(j) Alley Between Buildings V and VI. (Nos. 156–173, Fig. 28)

(i) Silt level prior to alley. (No. 156)

Bowl:

156. Sandy, hard, fairly coarse fabric; grey core with red surfaces. Two grooves on top of rim.

(ii) Alley. (Nos. 157–171). (Flavian)

Jars:

157. Sandy, hard, fairly fine fabric; grey core with darker grey surfaces. Groove inside the rim and cordon on shoulder.

158. Gritty, hard, coarse fabric; grey core with light grey/dark grey surfaces. Band of incised lines on shoulder.

159. Grogged, hard, coarse fabric; light grey core with darker grey surfaces.

160. Gritty, with some organic inclusions, hard, coarse fabric; light grey core, black external surface, grey internal surface.

161. Sandy, hard, fairly fine light grey fabric. Cordon on shoulder.

162. Sandy, hard, fairly fine, cream fabric. Cream slip applied to both surfaces.

163. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Lightly burnished on external surface and inside the rim. Groove inside rim and cordon on shoulder.

164. Gritty, hard, coarse fabric; light grey core with darker grey surfaces.

165. Hard, fairly fine fabric; light brown core with reduced grey centre, grey surfaces. Burnished on external surface and rim. Band of wavy combed lines between two grooves on shoulder.

166. Sandy, hard, fine fabric; grey core with darker grey surfaces. Grooved cordon at base of neck.

167. Sandy, hard, fine fabric; light brown core with grey surfaces. Lightly burnished on external surface. Grooves at base of neck and on shoulder.

168. Soft, fine fabric; dark grey core with orange surfaces.

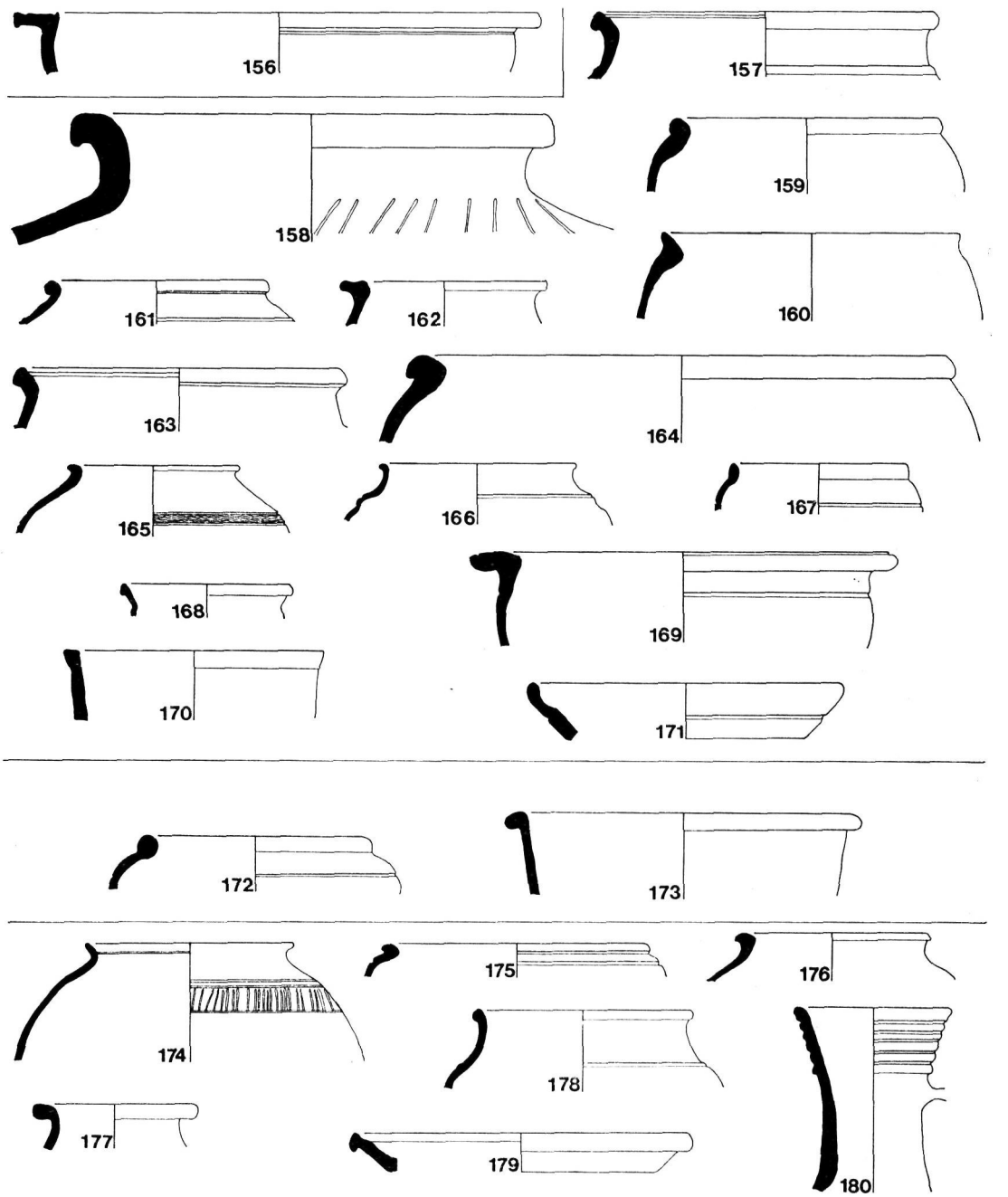

Fig. 28. Toppings Wharf; Roman pottery, 156–80 ($\frac{1}{4}$)

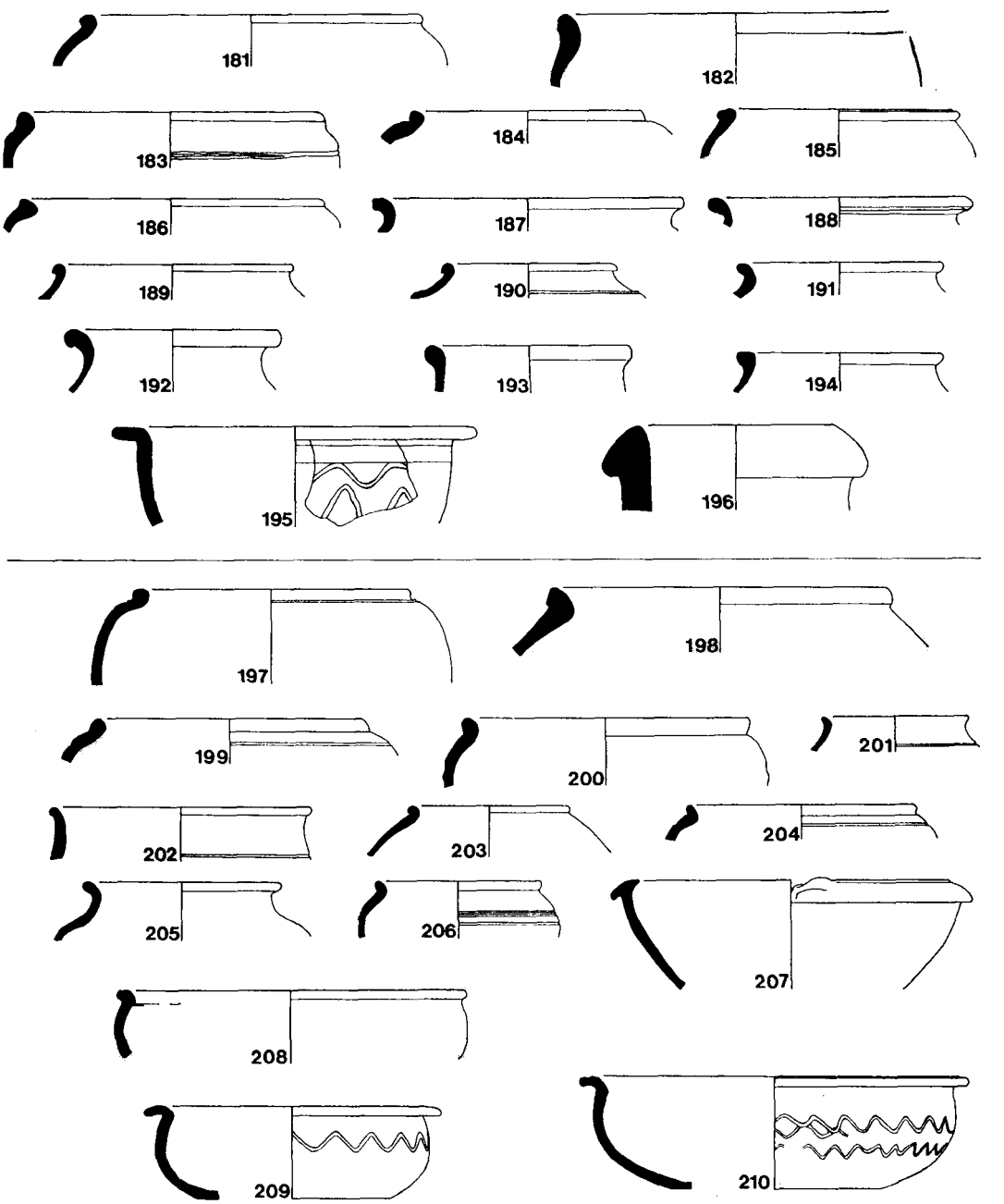

Fig. 29. Toppings Wharf; Roman pottery, 181–210 ($\frac{1}{4}$)

Bowls:

169. Sandy, hard, fairly fine fabric; white core with white/grey/black surfaces. Two grooves on top of rim and one groove on external surface below rim.
170. Gritty, hard, fairly coarse fabric; light brown core with black surfaces. Roughly burnished on external surface.

Dish:

171. Micaceous, sandy, hard, fairly fine light grey fabric. Internal surface of rim lightly burnished. Shallow incised line below rim on external surface, and deep groove around body.

(iii) Soil over alley. (Nos. 172–73). (Flavian-Trajanic)

Jar:

172. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Lightly burnished on rim and on external surface above shoulder groove.

Bowl:

173. Sandy, hard, fairly fine fabric; grey core with darker grey burnished surfaces.

(k) BUILDING VI. (Nos. 174–180, Fig. 28. Nos. 181–196, Fig. 29)

(i) Construction Phase (Nos. 174–180). (Early Flavian).

Jars:

174. Sandy, hard, fine fabric; light grey core with dark grey surfaces. Burnished on external surface and inside rim. Band of incised lines on shoulder between two horizontal grooves.
175. Sandy, hard, fairly fine fabric; red core with reduced grey centre, dark brown surfaces. Lightly burnished on rim. Two horizontal grooves on external surface.
176. Sandy, hard, fairly coarse fabric; grey core with grey/black surfaces.
177. Sandy, hard, fairly fine fabric; dark grey core with black surfaces. Burnished on neck and lip.
178. Hard, fairly coarse fabric; light grey core with red/grey/light brown surfaces. Burnished lightly on neck. Cordon on shoulder.

Dish:

179. Sandy, hard, fairly fine fabric; red/light brown core with grey, lightly burnished surfaces.

Flagon:

180. Sandy, hard, fairly fine red-buff fabric. Traces of cream slip on both surfaces.

(ii) Occupation within the building. (Nos. 181–196). (Flavian).

Jars:

181. Grogged, hard, fairly coarse fabric; buff core with reduced grey centre, dark grey surfaces. Burnished on external surface and rim. Groove on top of rim.
182. Gritty, hard, coarse fabric; light grey core with dark grey surfaces.
183. Sandy, hard, fairly coarse fabric; light grey core with darker grey surfaces. Burnished on external surface. Roughly incised groove on shoulder.
184. Shell-tempered, fairly hard, coarse light brown/grey fabric.
185. Gritty, hard, fairly coarse fabric; buff core with grey reduced centre, grey surfaces. Lightly burnished on external surface.
186. Gritty, hard, fairly coarse fabric; light grey core with dark grey surfaces.
187. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces.
188. Sandy, hard, fine fabric; red core with dark grey surfaces. Burnished on lip. Groove under rim.
189. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Burnished on external surface and inside rim.
190. Sandy, hard, fairly fine fabric; grey core with red surfaces. Cordon at base of neck.
191. Sandy, hard, fairly fine grey fabric. Burnished on external surface and inside rim.
192. Sandy, hard, fairly fine fabric; light grey core with dark grey surfaces.
193. Sandy, hard, fairly fine fabric; buff core with grey-brown surfaces. Burnished on external surface.
194. Sandy, hard, fairly fine grey fabric.

Bowl:

195. Sandy, hard, fairly coarse grey/brown fabric. Burnished on rim, with burnished band beneath rim. Two incised wavy lines beneath burnished band.

Amphora:

196. Gritty, hard, coarse fabric; orange core with light brown surfaces.

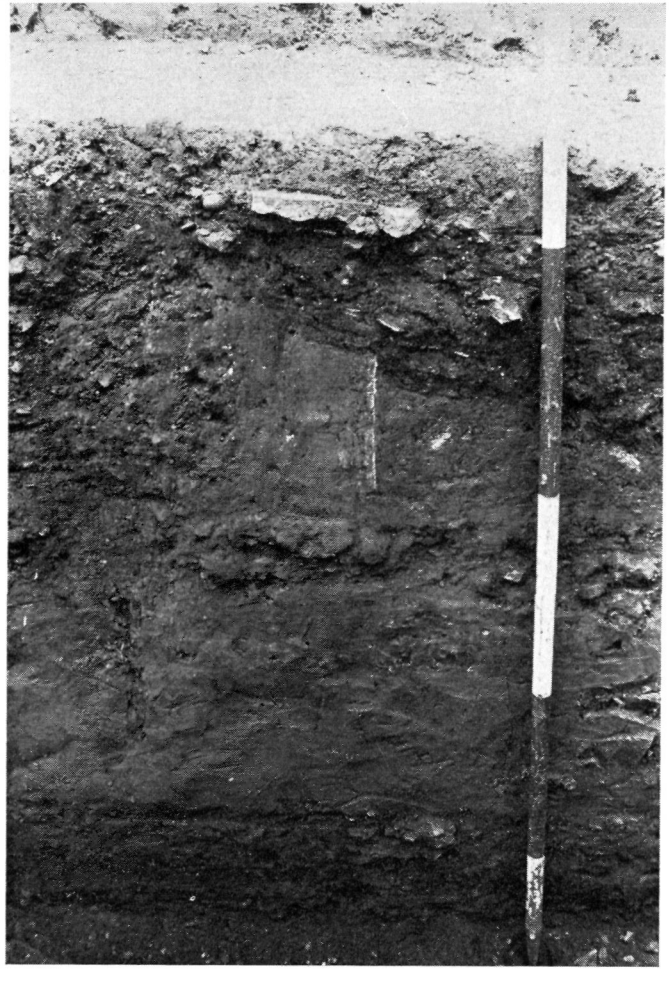

Plate 1. The northern internal clay wall of Building III with plaster facing the clay. Scale in feet

Plate 2. The western internal clay wall of Building III shown in plan. In the section at the top is seen the northern wall, overlaid by rubbish tipped into the disused building. Scale in feet.

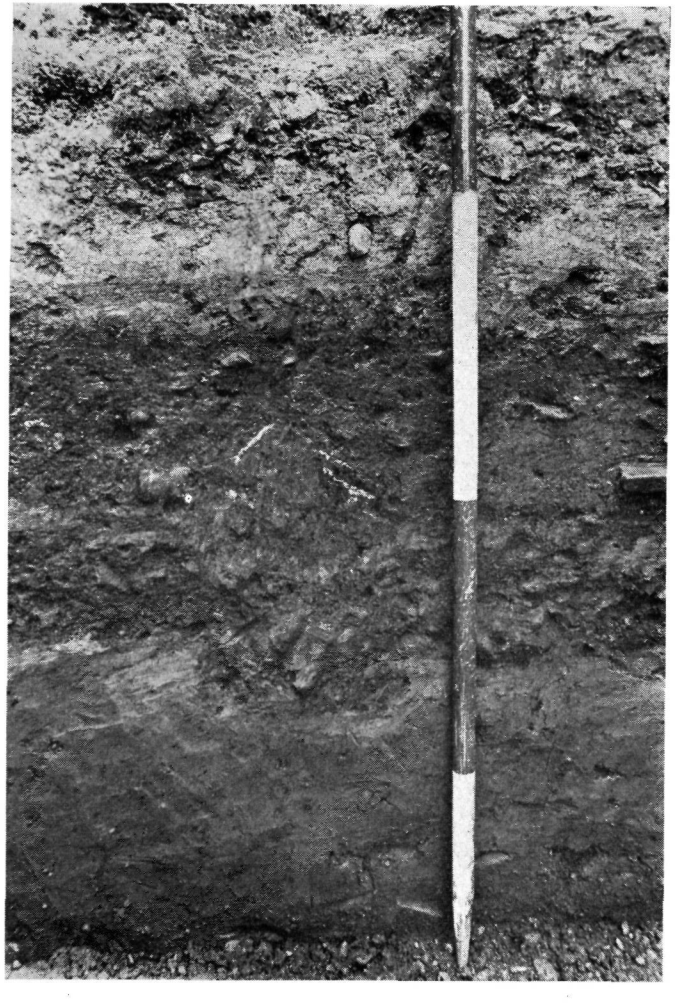

Plate 3. The western internal clay wall of Building III with a possible underlying beam-slot. Scale in feet.

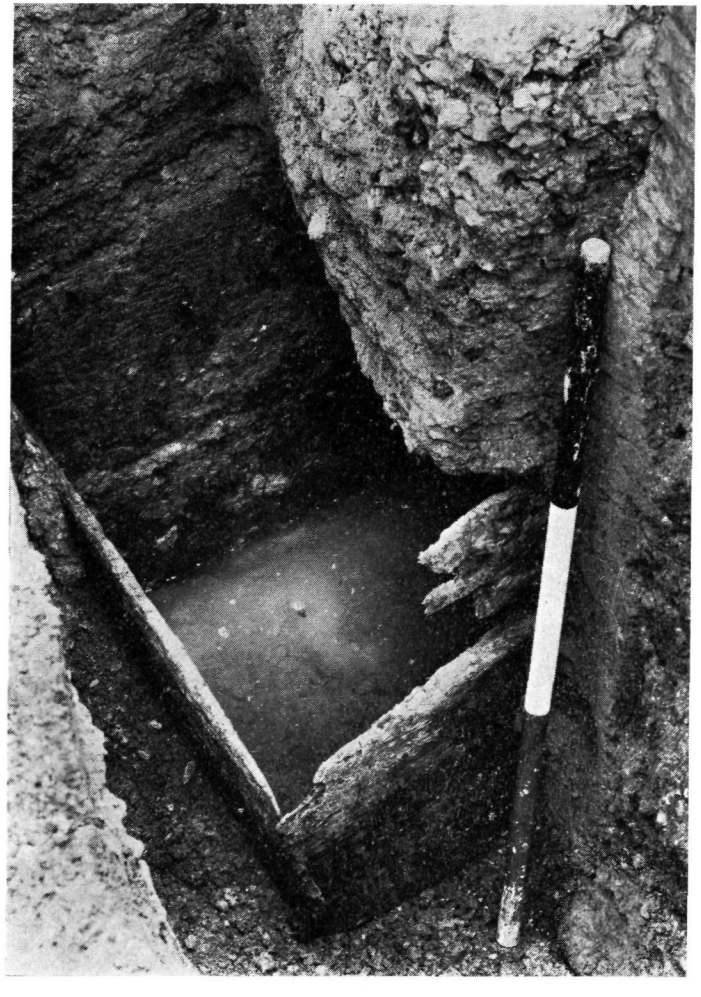

Plate 4. The wooden shuttering of the Roman well. Part of the clay lining is shown to the right of the ranging pole. To the left a modern concrete pillar foundation has intruded into the higher part of the well. Scale in feet. (*Photo: M. V. Conlon*)

Plate 5. The eroded foundations of Building VII's eastern wall overlaid by debris and the post-erosion earth deposits. The ranging pole stands on the northern side of the Roman ditch, the profile of which has been retained in excavation. Scale in feet.

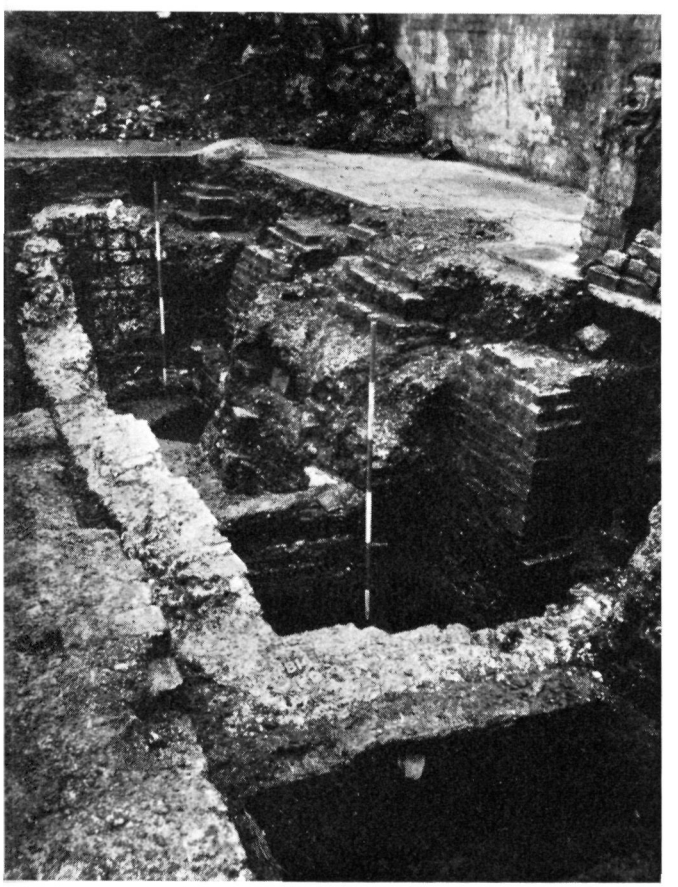

Plate 6. The north, south and western walls of Building X, with a section through the cellar floor shown behind the nearest ranging pole. Scale in feet.

Plate 7. The pewter ampulla, twice actual size

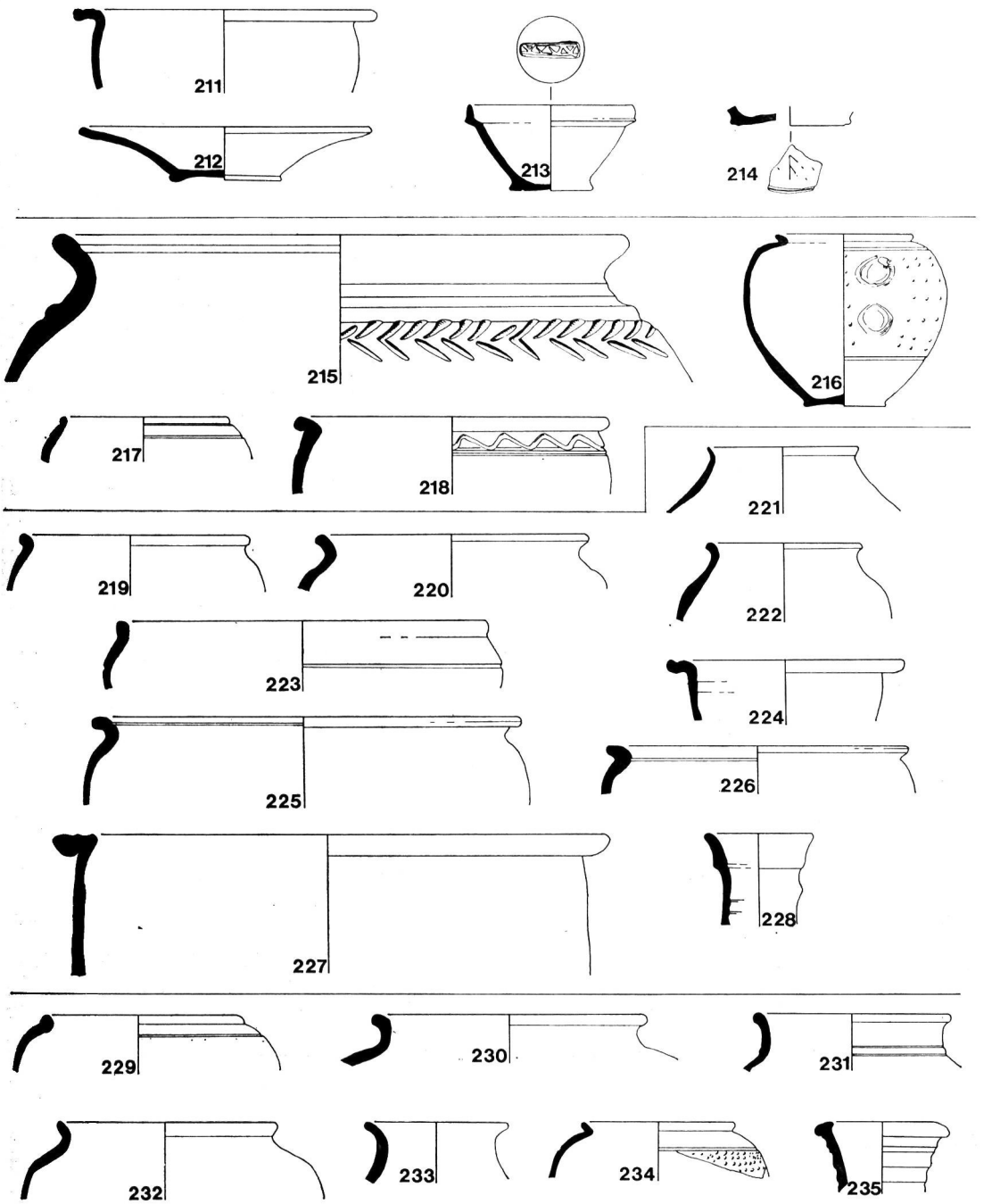

Fig. 30. Toppings Wharf; Roman pottery, 211–35 ($\frac{1}{4}$) except stamp ($\frac{1}{2}$)

(l) AREA EAST OF BUILDING V: Probably later than the destruction of the building (Nos. 197–210, Fig. 29. Nos. 211–214, Fig. 30) (Flavian–Trajanic).

Jars;

197. Sandy, hard, fairly coarse fabric; light grey core with dark grey surfaces. Burnished on external surface. Cordon beneath rim.
198. Gritty, hard, coarse grey fabric.
199. Sandy, soft, fairly fine fabric; red-brown core with reduced grey centre, black surfaces. Burnished on external surface and top of rim. Groove on shoulder.
200. Gritty, hard, coarse, grey fabric. Burnished on top of rim.
201. Sandy, hard, fairly fine grey fabric. Cordon at base of neck. Light grey burnished slip applied to external surface, and running down internal surface. Possibly a "poppy beaker".
202. Sandy, hard, fairly coarse fabric; light grey core with brown surfaces. Burnished on external surface and inside rim. Groove at base of neck.
203. Sandy, hard, fairly fine fabric; buff core with grey surfaces. Burnished on external surface and inside rim.
204. Sandy, hard, fairly fine fabric; grey core with pink-light brown surfaces. Groove on external surface below rim.
205. Sandy, hard, fairly coarse grey fabric. Burnished on rim and neck.
206. Sandy, hard, fairly coarse fabric; orange core with reduced grey centre, grey surfaces. Burnished on rim, with two horizontal burnished lines above shoulder. Three horizontal incised lines on and below shoulder.

Bowls:

207. Possibly a small mortarium. Soft, fine fabric; red core with reduced grey centre. White slip applied internally and externally, with fine sand added to slip on internal surface.
208. Shell-tempered, hard, coarse fabric; grey core with red surfaces.
209. Grogged, vesicular, soft, fairly coarse fabric; grey core, grey internal surface, grey/orange external surface. Groove on top of rim. Incised wavy line below rim.
210. Grogged, vesicular, hard, fairly coarse fabric; grey core and internal surface, grey/brown external surface. Groove on top of rim. Two horizontal incised wavy lines below rim.
211. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Two grooves on top of rim.

Dish:

212. Sandy, soft, fairly fine fabric; orange core with reduced grey centre, dark grey surfaces. Two horizontal burnished lines on internal surface, burnished band near base on external surface.

Bowl:

213. Sandy, hard, fine fabric; light brown-grey core with darker grey surfaces. Illiterate stamp within incised circle on upper surface of base.
214. Part of base. Sandy, hard, fairly coarse fabric; light grey core with dark grey surfaces. Incised graffito on lower surface of base.

(m) PIT 3. (Nos. 215–218, Fig. 30). (Flavian: at least Trajanic on stratigraphic evidence)

Jars:

215. Gritty, hard, coarse fabric; grey core and internal surface, smoothed buff-brown external surface. Cordon at base of neck, with band of incised chevrons below it.
216. Sandy, hard, fairly coarse, pink-cream fabric. Broad bands of barbotine dots and trailed circles of barbotine on external surface, between two shallow horizontal grooves. "Poppy beaker".
217. Sandy, hard, fairly fine fabric; light brown core with reduced grey centre, black surfaces. Two grooves below rim.
218. Gritty, hard, fairly coarse fabric; light brown core with reduced grey centre, darker brown surfaces. Cordon below rim on external surface, with horizontal incised wavy line above.

(n) POST-PIT 7. (Nos. 219–228, Fig. 30). (Flavian)

Jars:

219. Gritty, fairly hard, coarse fabric; dark grey core with very dark grey surfaces.
220. Shell-tempered, gritty, fairly hard, very coarse fabric; grey core with dark grey surfaces.
221. Hard, fine fabric; brown-grey core with dark grey surfaces.
222. Micaceous, hard, very fine fabric; dark brown core with dark grey-brown surfaces.
223. Gritty, hard, fairly coarse fabric; brown-red core with dark grey surfaces. Groove on shoulder.

Bowls:

224. Gritty, fairly soft, coarse red fabric. Groove on top of rim.
225. Grogged, gritty, fairly hard, coarse fabric; grey core with dark grey surfaces. Deep groove on internal surface inside rim.
226. Gritty, hard, coarse fabric; grey core with darker grey-brown surfaces. Groove on internal surface below rim.
227. Sandy, hard, coarse grey-cream fabric. Two grooves on top of rim. Some sooting on external surface.

Flagon:

228. Gritty, hard, coarse pink-buff fabric.

(o) Pit 9. (Nos. 229–235, Fig. 30. Nos. 236–238, Fig. 31). (Flavian–Trajanic)

Jars:

229. Sandy, hard, fairly coarse fabric; brown core with grey-brown surfaces. Burnished on external surface below rim. Groove on shoulder.
230. Sandy, hard, fairly coarse fabric; light brown core, with reduced grey centre, dark grey surfaces. Burnished on external surface and top of rim.
231. Sandy, hard, fairly coarse fabric; light brown core with reduced grey centre, surfaces dark grey. Burnished on external surface and inside rim. Cordon at base of neck.
232. Micaceous, sandy, hard, fairly fine fabric; light brown core with reduced grey centre, dark grey surfaces.
233. Sandy, hard, fairly fine fabric; light grey core with dark grey surfaces. Burnished on external surface and inside rim.

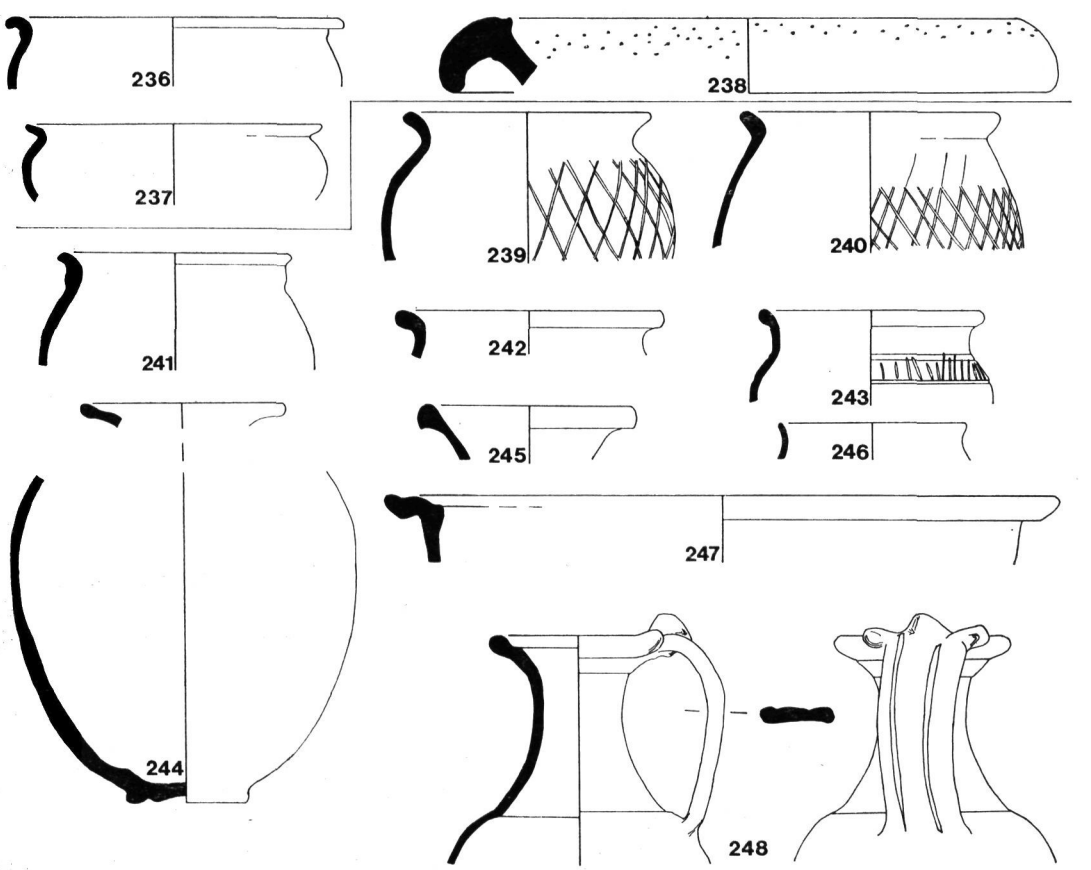

Fig. 31. Toppings Wharf; Roman pottery, 236–48 (¼)

234. Soft, fine pink fabric. Light brown slip applied to external surface. Horizontal groove on shoulder with uneven rows of cream barbotine dots beneath it. "Poppy beaker".
Flagon:
235. Sandy, hard, fairly coarse fabric; cream-pink core and external surface, cream internal surface.
Bowls:
236. Sandy, soft, coarse fabric; light grey-brown internal surface and dark brown external surface.
237. Soft, fine, grey fabric, surfaces burnt.
Mortarium:
238. Sandy, fairly soft, coarse cream fabric. Grits on internal surface of body and upper surface of rim.

(p) WELL. (Nos. 239–248, Fig. 31). (First half of second century)
Jars:
239. Sandy, hard, fairly fine fabric; light grey core with darker grey surfaces. Burnished white slip applied to external surface down to shoulder and inside rim. Burnished lattice on external surface.
240. Micaceous, sandy, hard, fairly fine fabric; grey-brown core with light grey surfaces. Dark grey slip applied to external surface and inside rim, burnished on shoulder and rim. Burnished lattice on external surface below shoulder.
241. Sandy, hard, fairly coarse fabric; dark grey core with black surfaces. Lightly burnished band on shoulder.
242. Sandy, hard, fairly coarse fabric; grey-cream core and surfaces, reduced to grey on outer edge of rim. Traces of soot on external surface.
243. Sandy, hard, fairly fine grey fabric. White slip applied to external surface and inside the rim, burnished on rim, neck and lower part of body. Band of burnished lines between cordon at base of neck and shoulder groove.
244. Sandy, hard, fairly fine red-brown fabric. Mica-dusted external surface.
245. Sandy, hard, fairly fine red-brown fabric.
246. Sandy, hard, fine grey fabric. Burnished light grey slip applied to both surfaces.
Bowl:
247. Sandy, hard, fairly fine fabric; pink-brown core and surfaces, reduced to grey on the rim. Two grooves on top of rim.
Flagon:
248. Micaceous, fairly soft, fine fabric; grey core, orange external surface and inside the rim, the rest of the internal surface grey with orange streaking. Three knobs of clay applied to join between rim and handle. Surface of handle, knobs and area of body around base of handle very gritty.

3. ANALYSIS:

An analysis of the forms, fabrics and decoration of the illustrated pottery had been based on 242 of the drawn examples, and the results are given below, together with the findings from a similar analysis carried out on the total number of sherds from a selected area of the site (T.14).

FORMS:

The majority of illustrated vessels were jars (63%), which, with beakers (4%), accounted for two-thirds of the total. Of the minority forms, bowls (19%) and dishes (6%) comprised the only other large group. Other forms represented were minimal: flagons (5%), mortaria (2%) and amphorae (1%).

FABRICS:

In the analysis of fabrics represented in the drawn pottery, surface colours and inclusions in the clay were examined. These inclusions were probably for tempering, although sand and grit can occur naturally in clay.

Sand (73%) and grit (18%) were by far the most common inclusions. The numbers of vessels tempered with grog (6%) and shell (3%) were minimal, while vegetable inclusions

were found in only 1% of the vessels, always with some other form of temper. Only neckless jars, bead-rim jars and one bead-rim bowl were shell-tempered.

A grey surface colour, caused by reduction, was the most common, occurring on three-quarters of the published vessels, and was found on the majority of jars, bowls and dishes; none of the flagons, mortaria or amphorae were reduced. About a tenth of the vessels had an oxidised orange or red surface colour, while only about a twentieth were white or buff.

T.14. POTTERY ANALYSIS:

The early Roman pottery (Flavian/Flavian-Trajanic) associated with Building I and the alley was also examined. All sherds were classified according to colour of section, temper and hardness of fabric.

1. Colour was determined by the colour of the fabric in cross-section:
(a) Red; (b) Grey or black; (c) White or cream.

2. Extraneous material included in the clay (sherds were double counted if more than one temper was apparent):
(a) Sand; (b) Grit; (c) Grog; (d) Shell.

3. Degree of hardness was established by the impression which could be made by a finger nail.

The results of the analysis of sherds clearly showed a similarity to the results obtained in the analysis of the drawn vessels. Although "hardness" was not included in the latter, an examination of the vessel descriptions shows that overall only 10% were defined as "soft".

		Drawn Vessels (242) %	*Sherds* (889) %
Colour	Grey	75	68
	Red	12	15
	Buff	7	17
	White	6	
Temper	Sand	73	84
	Grit	18	17
	Grog	6	2
	Shell	3	2
Hardness	Hard	90	94
	Soft	10	6

DECORATION:

Of the drawn vessels, 35% appeared undecorated, although in some cases very little of the body had survived.

The most common type of decoration was a burnish (34%), although this is perhaps better described as a finish. In about half of these vessels the burnish was accompanied by some other form of decoration. Of the minority varieties, simple grooves (24%), cordons (14%) and slip (9%) were the only large groups. Other types of decoration occurred only on small numbers of the drawn vessels: bands of incised lines (5%), bands of burnished lines (3%), bands of combing (2%), mica dusting, lattice and barbotine (1% each). There was only one glazed rim. The comparative rarity of these types of decoration again could

be due to the fact that on some vessels, little more than the rim has survived. On bead rim jars only burnished grooves and cordons were used, while the only decoration applied to flagons and mortaria appears to have been slip.

INCLUSIONS BY VESSEL FORM

	Total	*Jars*	*Bowls*	*Dishes*	*Flagons*	*Beakers*	*Mortaria*	*Amphorae*
Sand*	177	106	32	14	8	10	6	1
Grit	43	28	10	1	3	0	0	1
Grog	15	11	4	0	0	0	0	0
Shell	7	6	1	0	0	0	0	0
TOTAL	242	151	47	15	11	10	6	2

*Sand includes the 20 vessels which had no visible inclusions or which contained only mica.

SURFACE COLOUR BY VESSEL FORM

	Total	*Jars*	*Bowls*	*Dishes*	*Flagons*	*Beakers*	*Mortaria*	*Amphorae*
Grey	182	126	38	14	0	4	0	0
Red	30	15	3	1	6	2	2	1
White	14	4	2	0	3	1	3	1
Buff	16	6	4	0	2	3	1	0
TOTAL	242	151	47	15	11	10	6	2

4. A NOTE ON SOURCES:

As Joanna Bird has indicated (*Trans. London Middlesex Archaeol. Soc.*, 24 (1973), 39), at present knowledge of pottery production centres supplying London in the late first century A.D. is limited. Evidence from the sites in the City of London is minimal. The only kilns in close proximity to the city, known to have supplied the London market are those at Highgate Wood. Although Highgate products have been identified from Southwark sites, they seem in general to be limited to second century A.D. contexts, and it seems probable that what survives of the early Roman settlement at Toppings Wharf was too early to have used the kilns at Highgate Wood as a major source for coarse pottery. Very few of the drawn vessels can be attributed to these kilns; the grogged bowls with wavy line decoration (81, Trajanic; 209 and 210, Flavian-Trajanic) were possibly made at Highgate, although in form only one (81) bears a strong resemblance to Highgate material. (See *London Archaeol.* 1, 38, 150, 300). Of the finer grey wares, the beakers (201, Flavian-Trajanic; 246, first half second century) could also be Highgate products, although the out-turned rim of 201 is not typical of Highgate wares. These kilns also produced grogged bead-rim jars; Nos. 9, 68, 153, 159 and 181 are all possible Highgate products, but this attribution is not at all certain.

Other kilns close to London which could have supplied the settlement at Toppings Wharf were those on Watling Street at Brockley Hill. It is possible that the flagons (180, Early Flavian; 21, 120, 228, Flavian; 235, Flavian-Trajanic; 102, 83, 85, Trajanic) and the reed-rimmed bowl (94, Trajanic) were produced at this site.

DECORATION BY VESSEL FORM

		Jars								
	Total	*Necked*	*Un-necked*	*Bead-rim*	*Bowls*	*Dishes*	*Flagons*	*Beakers*	*Mortaria*	*Amphorae*
Total number of vessels	242	86	30	35	47	15	11	10	6	2
Undecorated	84	20	13	13	16	6	8	2	4	2
Burnished area	83	41	12	14	8	5	0	3	0	0
Groove	57	16	6	10	19	2	0	4	0	0
Cordon	34	22	3	4	2	1	0	2	0	0
Slip	22	5	3	0	3	2	3	4	2	0
Incised band	12	5	1	0	5	1	0	0	0	0
Burnished line band	6	5	0	0	1	0	0	0	0	0
Incised line	8	6	0	0	1	1	0	0	0	0
Combed band	5	2	1	0	1	0	0	1	0	0
Mica-dusted	3	1	0	0	1	1	0	0	0	0
Burnished lattice	2	0	2	0	0	0	0	0	0	0
Barbotine	2	0	0	0	0	0	0	2	0	0
Glaze	1	0	0	0	0	0	0	1	0	0
TOTAL DECORATIONS	319	123	41	41	57	19	11	19	6	2

E.V. MEDIEVAL AND TUDOR POTTERY

BY CLIVE AND JEAN ORTON AND PAT EVANS

List of excavation reports referred to:

Note: BROB stands for *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek.*

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Basing House: S. Moorhouse, "Finds from Basing House (*c.* 1540–1645): Part I", *Post-Medieval Archaeol.*, 4 (1970), 31–91 (BH).
Borough: D. J. Turner, "A Late Medieval and Post-Medieval Pottery Sequence from 199 Borough High Street, Southwark", *Surrey Archaeol. Colls.*, 68 (1971), 97–107 (S).
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Eynsford Castle: S. E. Rigold, "Eynsford Castle and its Excavations", *Archaeol. Cantiana*, 86 (1971), 109–72 (E).
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Waltham Abbey 1970: P. J. Huggins, "Waltham Abbey, Monastic Site and prehistoric evidence 1953–67", *Trans. Essex Archaeol. Soc.*, 3rd series 2 (1970), 216–66 (WA).
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Winchester: B. Cunliffe, "Winchester Excavations 1949–1960, 1 (1964) (W).
Writtle: P. Rahtz, "King John's Hunting Lodge at Writtle, Essex", *Soc. Medieval Archaeol. Monograph*, 3 (1969) (Wr).
Zandenburg: J. G. N. Renaud, "Zandenburg, Zealand", BROB, 7 (1956), 95–108 (Z).

INTRODUCTION:

This report is in five sections, dealing with pottery from (i) pre-erosion medieval levels, (ii) the erosion levels, (iii) the deposition levels, (iv) the late medieval features above the deposition, and (v) the "Tudor" levels.

Each section starts with a description of the fabrics represented; a coding system is employed for the broad fabric groups, new categories are introduced as they appear. Exceptional sherds which do not fit any of the categories are called "M" (miscellaneous) and are described individually.

A table follows showing the quantities of each fabric (in terms of the estimated number of vessels represented). Some vessels are represented in more than one layer, and are therefore over-counted. However, a fair idea of the *relative* proportions should be given. The presence of residual Roman pottery is denoted by a "P".

Individual descriptions of drawn and other notable sherds come next; conventions used in the descriptions are: (i) colour: a hyphen indicates an intermediate colour; while a solidus (/) indicates a mixture of colours (*e.g.* red-brown means a colour between red and brown, red/brown means red in parts and brown in parts); (ii) hardness: "hard" means "cannot be scratched with the thumb nail", "soft" the opposite, and "fairly hard" that considerable effort is needed to scratch the sherd; (iii) texture: "fine-sandy" means that the fabric feels sandy, but individual grains cannot be seen; "coarse-sandy" means that they can be seen, while "gritty" means that the shape as well as the existence of individual grains can be seen. For the off-white sherds, in which sand, if present, is more usually apparent, only the term "fine" (no sand apparent) and "sandy" are used.

Site reports are referred to by site name in the text; a list of the full references is given above and the locations of these and other sites mentioned are shown on the map (Fig. 32). Solid circles indicate sites for which a reference is given; hollow circles indicate other sites and shading represents more general "areas". Codes used on the map are given in the list of references: other sites are: B=Beauvais, C=Cologne, Ch=Cheam, F=Frechen, L=Laverstock, R=Raeren, Sb=Siegburg, SN=St. Neots, So=Southampton, St=Stamford; and the areas are: ES=East Surrey, Li=Limburg, WS=West Surrey.

The conventions used in the illustrations are based on those recommended by R. H. Smith (*World Archaeol.* 2 (1970), 212–218). Glaze is represented by a uniform screen, and slip by random stippling. Glaze or slip covering the entire surface of a vessel is not shown.

Each section closes with a discussion and comments on dating.

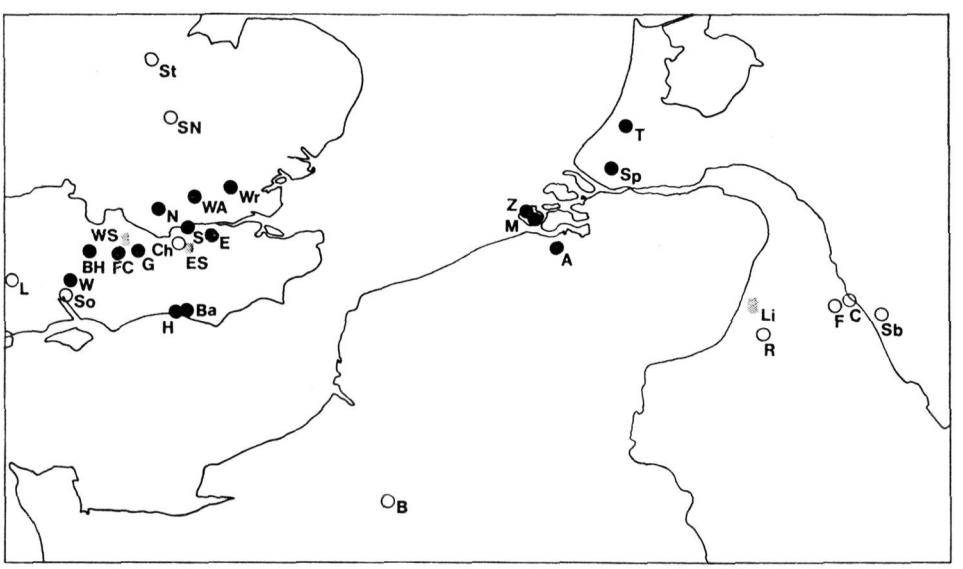

Fig. 32. Toppings Wharf; Map of N.W. Europe showing location of sites and areas referred to in the Medieval and Tudor pottery Report (1:6,000,000)

1. The Pre-Erosion Levels:

Shelly fabrics predominate in these features (see Table 1). Most common is fabric A2: a grey shelly/sandy fabric with red/brown or grey/black surfaces. There are some sagging bases in this fabric but no rims. A rather softer shelly fabric (A1) is also present: this has no sand, and a "soapy" feel, and is presumably a derivative of the St. Neots-type fabric. One vessel in a hard grey gritty fabric (B) is represented. The coarse-sandy sherds (C) seem to correspond to fabric (i) at Northolt; they are hard and grey, some being very light grey, or with a pinkish tinge. The fine-sandy unglazed sherds (D1) give some problems; they are small and featureless and might well be Roman. There is one very small sherd (M) which may be Saxon; it is grey/brown and lumpy with shell and possibly grass tempering.

TABLE 1: POTTERY FROM THE PRE-EROSION MEDIEVAL LAYERS

Feature		Fabric R	A1	A2	B	C	D1	M	Total
B VII WALL		P		2					
PIT		P	1	5		1			
PIT		P	2	4	1	3	3	1	
TOTAL		P	3	11	1	4	3	1	23

A twelfth century, or possibly early thirteenth century date is indicated for these pre-erosion features.

2. THE EROSION LEVELS:

In these features the emphasis shifts to the fine-sandy fabrics (D1 – unglazed and D2 – glazed) although none with all-over white slip (D3) are present (Table 2). These sherds are either red with spots of orange glaze or grey with a green glaze. Two of the latter are decorated with vertical applied clay strips, one of which has impressed decoration, while a third has a "scaly" decoration. There are also some coarse-sandy sherds (C) similar to those in the pre-erosion layers, and a little of the grey gritty (B) and shelly/sandy (A2) fabrics. Of particular interest is a small sherd in an off-white "Surrey"-type fabric (E2) with green/yellow glaze. None of the pottery was worth drawing.

TABLE 2 : POTTERY FROM THE EROSION-LAID GRAVEL

	Fabric R	A1	A2	B	C	D1	D2	E2	Total
TOTAL	P	0	2	2	5	1	8	1	19

Nineteen sherds from 10 locations in the erosion gravels were examined. A date just before 1300 is indicated; if earlier, one would not expect any Surrey-type vessels, and if later, one would expect a higher proportion of them.

3. THE DEPOSITION LEVELS:

The earliest large groups of pottery come from these layers, in which a wide range of fabrics is represented. Slightly more than half of the vessels are in the fine-sandy fabric, D1/2/3 (see Table 3), compared with about 25% in coarse-sandy fabric (C), 15% in shelly fabrics (A), 5% in gritty fabrics (B), and 4% in off-white fabrics (E).

The most common shelly fabric is hard, rough and grey and contains some sand as well as large pieces of shell. Surfaces are either black, red-brown or yellow-brown. Minority fabrics include a softer grey shelly/sandy fabric and one with grit or possibly chalk as the secondary filler. Very few sherds with only shell and a "soapy" feel (*i.e.* A1) are present. Rims in the majority fabric are generally strongly out-turned with a flat (but not usually horizontal) top, and squared-off end. Simpler rims occur in the minority fabrics. Decoration is not common, and consists of (i) thumbing on the top of the rim, or (ii) applied thumbed strips, either horizontal or vertical.

The sherds in the gritty fabric are generally reduced, although some are partly oxidised. Very few rims or bases occur, and the decoration is limited to incised lines and dots.

Two fabrics predominate in the coarse-sandy group. One has much coarse sand and is very variable in colour; basically grey, it shades off to buff, pink-buff, cream or off-white at a surface. The second is a uniform light or mid-grey, sometimes with darker surfaces, and contains less sand. Of the sherds drawn, only Nos. 21 and 27 fall into this category. A number of unusual over-fired sherds occur in these features: No. 28 illustrates the category. Glaze is rare but not unknown on the coarse-sandy sherds.

Reduced fabrics are most common in the fine-sandy group, although oxidised fabrics (red or buff) are well represented. Over 90% of the sherds are glazed (D2) and some unglazed sherds (D1) may well belong to partially glazed vessels. Glaze is most often green: orange, yellow and brown glazes also occur as does polychrome glazing (combinations of green, brown, red and yellow). A wide range of decorative techniques are employed; these are grouped as: (i) applied clay strips, either plain or with impressed patterns; (ii) simple patterns executed in white slip: horizontal or vertical lines, loops, lattices, vertical strips (often over a white slip coating); (iii) white slip patterns associated with polychrome glaze: broad strips, pellets and narrow strips outlining a band of a different glaze; (iv) patterns on overall white slip, reserved bands and combed sgraffito decoration.

The few off-white sandy sherds are divided roughly equally between unglazed and glazed (with green or yellow glaze). None are decorated. The finer sherds (E1) are described individually.

TABLE 3: POTTERY FROM THE DEPOSITION LAYERS

	R	A1	A2	B	C	D1	D2	D3	E1	E2	E3	E4	M	Total
Total	P	3	65	25	108	21	181	34	5	11	0	0	1	454
Percentages	—		15		5	24	5	40	8		4			100

INDIVIDUAL DESCRIPTIONS (Nos. 1–25, Fig. 33)

FABRIC A2

(a) *Bowls:*

1. Small everted rim sherd in hard grey fabric with shell and chalk. Both surfaces are hard, smooth and grey, slightly darker than the fabric. Worn and encrusted.

(b) *Jars and Cooking Pots* (i) everted rims with thickening:

2. Rim sherd in hard pale grey shelly/sandy fabric. Surfaces are rough; interior and top of rim are red, exterior is dark grey. (See Waltham Abbey, 1970, Fig. 12, No. 37).
3. Rim sherd in hard grey shelly/gritty fabric. Surfaces have a rough "patchy" appearance but feel fairly smooth; interior is buff and exterior red.

(b) (ii) squarish everted rims with flat top:

The rims in this group are strongly out-turned, to a horizontal or almost horizontal angle.

4. Rim sherd in fairly hard grey shelly/sandy fabric. The surfaces are light yellow-brown, smooth, but slightly abrasive.
5. Rim and body sherds in hard grey shelly fabric with some grit. The surfaces have been smoothed but have a rough, hard feel. Exterior is dark brown/black, interior is dark khaki-brown. Vertical thumbed strip on the exterior.
6. Rim sherd in black shelly/sandy fabric, shading to brown near the surfaces, which are also brown.
7. Rim sherd in hard light grey shelly/sandy fabric, shading to pink-buff near surfaces. Exterior is dark grey/black, interior pink-buff.

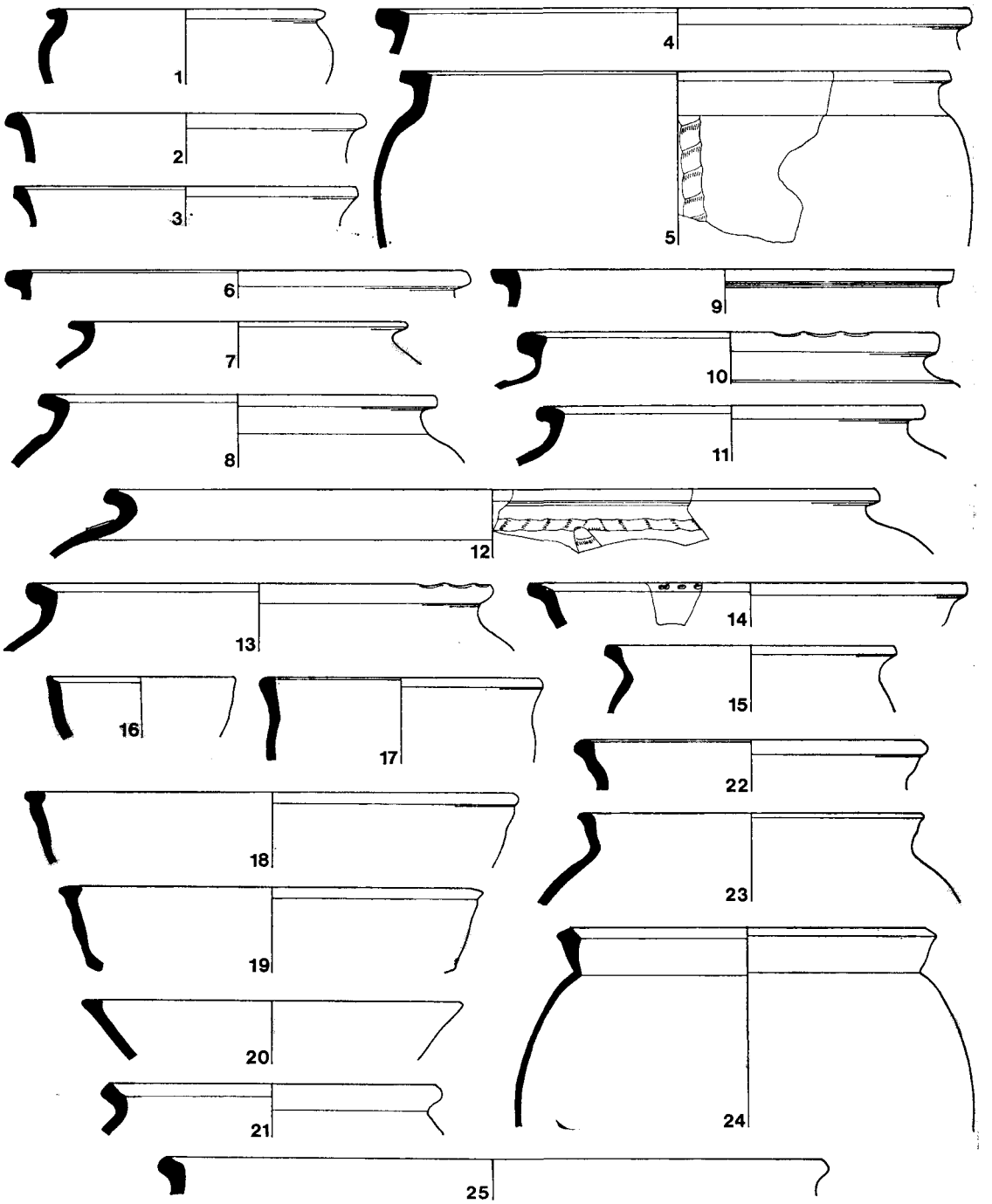

Fig. 33. Toppings Wharf; Medieval pottery from the Deposition Layers 1–25 ($\frac{1}{4}$)

8. Rim sherd in hard grey shelly/sandy fabric, shading to brown near surfaces. Exterior is black, interior light brown.
9. Rim sherd in light grey shelly/sandy fabric, shading to buff near surfaces, which are also buff. (Borough Fig. 1, No. 2).
10. Rim sherd in hard light grey shelly/sandy fabric, shading to buff near the surfaces. Exterior is black and interior dark brown. Group of three thumb impressions on the rim.
11. Rim sherd in fairly soft grey shelly/sandy fabric. The surfaces are fairly soft, grey-brown and smooth; exterior is darker than the interior.
12. Large rim sherd in hard grey shelly/sandy fabric. Surfaces are hard and rough; exterior is brown/black and interior is red-brown. There is a thumbed-strip "collar" with a near-vertical thumbed-strip leading up and over it.
13. Rim sherd in hard light grey shelly/sandy fabric. Surfaces are also grey; exterior is slightly darker. Group of three thumb impressions on rim.

FABRIC B

(a) *Bowl:*

14. Rim sherd in hard grey/brown gritty fabric. Interior surface brown and exterior blackened. Four small impressions on upper surface of rim.

(b) *Jar or Cooking Pot:*

15. Thickened everted rim sherd in hard dark grey gritty fabric. Exterior surface light brown.

FABRIC C

(a) *Bowls:*

16. Rim sherd in hard light grey coarse-sandy fabric. Both surfaces are grey on upper part, shading to pink on lower part. Patch of a possible green glaze on exterior.
17. Slightly everted rim sherd in hard grey coarse-sandy fabric. Exterior surface black, interior grey-black.
18. Expanded rim sherd in hard coarse-sandy fabric, shading from grey at exterior surface to off-white at inner surface. Patches of black on exterior.
19. Expanded rim sherd in hard grey/off-white coarse-sandy fabric. Surfaces are hard and rough, exterior is black/grey and interior black/off-white.
20. Expanded rim sherd in hard grey coarse-sandy fabric. Surfaces are hard and dark grey/black. Possibly a lid.

(b) *Jars or Cooking Pots:*

21. Simple everted rim sherd in hard light grey coarse-sandy fabric. Dark grey surfaces. (See Northolt, Fig. 67, No. 42).
22. Everted and expanded rim sherd in hard grey/buff coarse-sandy fabric. Surfaces are hard and rough and a dirty cream in colour. Worn and encrusted.
23. Everted and slightly expanded rim sherd in hard dark grey coarse-sandy fabric, shading to buff near the surfaces, which are also buff and have been smoothed. Turning marks on interior.
24. Large sherd of everted and expanded rim in hard light grey coarse-sandy fabric, shading to pink-brown near surfaces. Exterior is buff, interior is grey with cream-coloured streaks. Spot of green glaze on the rim.
25. Simple everted rim sherd in hard grey coarse-sandy fabric, shading to buff near surfaces, which are also buff. Exterior has been smoothed.

(Nos. 26–36, Fig. 34)

26. Flat-topped everted rim sherd in hard light grey coarse-sandy fabric. Surfaces are pink-buff.
27. Everted rim sherd in hard light grey coarse-sandy fabric.

(c) *Jug:*

28. Small "flagon"-like rim sherd in very hard grey coarse-sandy fabric, shading to grey-buff near surfaces, which have a purple tinge and a fine yellow deposit. Overfired.

FABRIC D

(a) *Jars:*

29. Small everted rim sherd in hard brown sandy fabric. Exterior and top of rim are black. Encrusted.
30. Small everted rim sherd in hard light grey fine-sandy fabric, shading to orange-brown near surfaces, which are also orange-brown. Patchy green/yellow glaze, mainly on exterior and top of rim.

(b) *Jugs:*

31. Flat-topped rim sherd in hard buff fine-sandy fabric. Surfaces are hard and sandy; exterior and top of interior have worn yellow glaze, rest of interior is brown and unglazed. (See Borough, Fig. 1, No. 5).
32. Flat-topped rim sherd in hard grey fine-sandy fabric, shading to red near exterior surface, which is glazed mostly green with some red/yellow. Glaze extends a short way down inner surface, rest of which is purple-grey and very hard. Spurred handle.
33. Flat-topped rim sherd in hard grey fine-sandy fabric, shading to pink/buff at surfaces. Patches of olive glaze on exterior and spots of it on interior.
34. Flat-topped rim sherd in hard grey fine-sandy fabric, shading to grey-brown at surfaces. Patchy olive glaze on exterior.
35. Rim sherd in hard light grey fine-sandy fabric. Interior surface is orange with some white slip, exterior has a cream slip and mottled green glaze.
36. Base and body sherds in hard red fine-sandy fabric. Surfaces are hard and slightly sandy with all-over white slip. Exterior has yellow glaze with "pitted" appearance. Decorated with applied bands of red clay over the slip. Irregular thumb-pressing and sagging base. Very squat jar. Possibly an import.

(Not illustrated):

FABRIC E1

One sherd in hard white "chalky" fabric with smooth apple-green glaze.
One sherd in very fine white fabric, mottled green glaze on exterior. French?
One sherd in thin white fine-sandy fabric, with brown painted line on exterior.
One sherd in fine white fabric with yellow glaze on exterior.
One sherd in fine off-white fabric, green glaze on both surfaces. Clay strip applied under glaze on exterior.

OTHER FABRICS (M)

One small sherd in buff fabric with pink core. Raised horizontal band on exterior, covered with red paint.

DISCUSSION:

More than 450 sherds from 43 separate locations were examined. The shelly/sandy fabric A2 seems to correspond to fabric (g) at Northolt, which has been dated to 1050–1150. The simpler forms (Nos. 2 and 3) would fit in well with this date (No. 2 has an eleventh–twelfth century parallel at Waltham Abbey) but the more complex rims (Nos. 4 to 13) are best paralleled in shape by the thirteenth century hard sandy fabric (k) at Northolt. Similar "squared-off" rims in shelly or shelly/sandy fabrics were found in thirteenth century levels at Eynsford Castle. (Phases Z [late twelfth–early thirteenth century] and A [early thirteenth century] for the shelly fabrics, and phase B [mid-thirteenth century] for the shelly/sandy fabric), although there they were horizontal or down-turned and not up-turned, as many of the Toppings Wharf examples. At 199 Borough High Street a rim similar to No. 9 was ascribed to the thirteenth century, supporting a general conclusion of a thirteenth century date for these rims. A source in West Kent seems likely. The few small sherds in fabric A1 are of St. Neots' type and presumably rather earlier (tenth or early eleventh century).

Little can be said about the gritty fabrics: the everted and slightly expanded rim, No. 15, is probably of eleventh or twelfth century, but the bowls are difficult to date.

The coarse-sandy fabrics fit best with Northolt fabrics (i)/(j) and (k). The former, which are in the majority, are of "Limpsfield" type (East Surrey) and have the expanded rims characteristic of the twelfth century in South-east England (*e.g.* at Northolt and Brighton). The latter fabric is less well represented, but can be paralleled (No. 21) at Northolt and seems to be of thirteenth century Elstree type.

The sandy fabrics D are of types common in the London area in the period 1250–1350. Those with overall white slip may be in imitation of the fine white fabrics being imported in the last quarter of the thirteenth century; this technique is known in both Essex (*e.g.* at Writtle, fabric groups E, G, H) and in West Kent; on balance a Kentish origin seems more likely.

The white sandy fabric (E2) is of Surrey type, generally thought to have started production about or just before 1300. This fabric tends to be extremely common in fourteenth century deposits in the London area, and its relative scarcity here suggests a date little, if at all, after 1300.

In these features we have a wide range of pottery, dating mainly from the twelfth and thirteenth centuries, dispersed fairly uniformly throughout the depth of the deposits, and all in good condition (only some of the Roman material shows signs of water-rolling). This suggests a deliberate dumping rather than a gradual build-up of water-laid deposits.

4. THE POST-DEPOSITION LEVELS:

The wide range of fabrics present in the deposition layers continues into these post-deposition layers, though in different proportions. The shelly fabrics have declined from 15% to less than 10%, the coarse-sandy fabrics from 24% to 16%, and the fine-sandy (excluding the white slipped D3) from 45% to 37%. There is a large increase in the "white" element: fine-sandy fabrics with all-over white slip increase from 8% to 18% and off-white fabrics from 4% to 12%. A new fabric (E3: buff sandy, similar to E2 but darker) appears for the first time in some of these features. (See Table 4).

For fabrics A–D, the same detailed variants and techniques of decoration occur as in the deposition layers. A minority of fabric E in this group is decorated: applied vertical strips under the glaze are most common, there are also single examples of a curved applied strip, shallow combing, and brown painted line on an unglazed surface. (Cheam style, see Pl. G in B. Rackham, *Medieval English Pottery*, 2nd ed., 1972.) Some features contain material in apparently post-medieval fabrics.

TABLE 4: POTTERY FROM THE POST-DEPOSITION FEATURES

	R	A1	A2	B	C	D1	D2	D3	E1	E2	E3	M	Total
TOTAL	P	7	54	46	122	61	221	138	13	75	13	8	757
Percentages	—	8		6	16	8	29	18	12		2	1	100

INDIVIDUAL DESCRIPTIONS (Nos. 37–53, Fig. 34)

FABRIC A

(a) *Jars or Cooking Pots* (i) everted rims:

37. Straight everted rim sherds in hard grey shelly/sandy fabric. Surfaces are hard and fairly smooth; exterior is pink and interior grey. Robbing of Wall 3.

38. Everted rim sherd in hard grey shelly/sandy fabric. Surfaces are black/brown. Layers above Wall 2 foundation.

(ii) Simple thickened rim:

39. Rim sherd in "soapy" shelly fabric shading from grey exterior to red-brown interior. Diameter greater than 5 in. Wall 2 foundation. (See Waltham Abbey, 1973, Fig. 19, No. 4).

(iii) Squarish rims with flat top:

40. Everted rim sherd in hard dark grey shelly/sandy/gritty fabric. Surfaces are hard, pink-buff, show sand or grit and are pitted where shell has been eaten out. Turning marks on both surfaces. Wall 2 foundation.

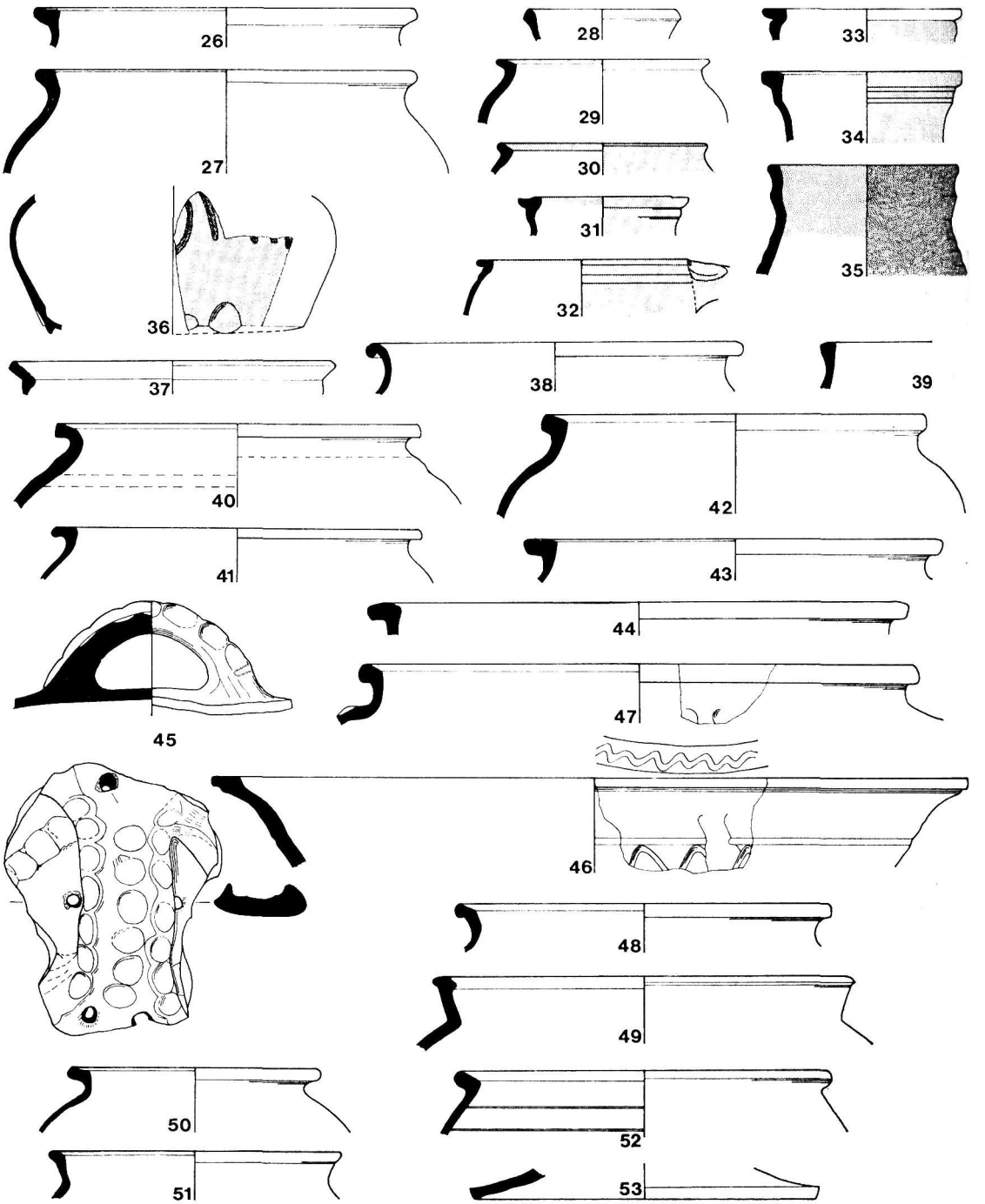

Fig. 34. Toppings Wharf; Medieval pottery from the Deposition Layers 26–36, and the post-Deposition Features 37–53 ($\frac{1}{4}$)

41. Everted rim sherd in fairly hard dark grey shelly/sandy fabric. Surfaces are smooth and dark grey. In Wall 3. (See Borough, Fig. 1, No. 2).
42. Everted rim sherd in hard grey shelly fabric (large pieces of shell), shading to brown near surfaces. Exterior is dark brown/black, interior is red-brown; both surfaces are hard and slightly irregular to the touch. Faint turning marks on the interior. Layers above Wall 2 foundation.
43. Flat-topped everted rim sherd in hard light grey shelly/sandy fabric, shading to orange near surfaces. Exterior is light orange, interior and top of rim are buff. Above T6 gravel spread. (See Borough, Fig. 1, No. 2).
44. Flanged rim in hard grey shelly/gritty fabric, shading to red near surfaces, which are also red. Robbing of Wall 3.

(b) *Fire Cover:*

45. Handle and part of surrounding area. Fabric is fairly hard, red, shelly/sandy, grey in core. The upper surface is red and the lower grey/buff but blackened. The handle is heavily thumbed: the sides have been pulled upwards and together, and there is a row of shallow thumb impressions on the centre-line. There are also thumbed strips leading up to the handle. There are six holes ("vents"), two at each end of the handle and two in line with its transverse axis. All holes have been pushed through from the upper surface. Robbing of Wall 3.

FABRIC B

(a) *Bowl or Dish:*

46. Flat-topped rim sherd in hard light grey/dark grey gritty fabric. Surfaces hard and rough; exterior is light grey and interior dark grey. Decorated with incised horizontal groove and wavy line overlaid by vertical applied strip. Incised wavy line on top of rim. Above T2 gravel spread.

(b) *Jars or Cooking Pots:*

47. Everted and expanded rim sherd in hard light grey gritty fabric, with dark grey surfaces. Beginning of an applied strip on the shoulder. T6 burnt debris above gravel spread.
48. Bevelled everted rim sherd in hard dark grey gritty fabric, with slightly darker surfaces. Wall 2 foundation.

FABRIC C

(a) *Jars or Cooking Pots:*

49. Everted and expanded rim sherd in hard light grey coarse-sandy fabric, shading to buff near surfaces, which are pink-buff with apparently an off-white slip. Layer above deposition.
50. Everted and bevelled rim sherd in hard grey coarse-sandy fabric. Exterior surface is buff and interior dark grey. Encrusted. Wall 2 foundation.
51. Everted and expanded rim sherd in hard light grey/off-white coarse-sandy fabric. Wall 2 foundation.
52. Everted rim sherd in hard light grey coarse-sandy fabric. Surfaces are darker grey; exterior slightly "metallic" and turning marks on interior. Wall 2 foundation.

(b) *Lid:*

53. Sherd in hard grey/buff coarse-sandy fabric. Exterior surface blackened. Wall 2 foundation.

(Nos. 54–70, Fig. 35)

(c) *Jug:*

54. Complete base in hard grey coarse-sandy fabric (with a few large grits). Surfaces are rough and pink-brown. Strong turning marks on interior. T6 gravel spread above deposition.

(d) *Miscellaneous:*

55. Straight rim sherd (?dripping pan) in hard black/brown coarse-sandy fabric. Exterior is black; interior brown with patch green glaze. Hand made. Wall 2 foundation.

FABRIC D

(a) *Dishes/Bowls:*

56. Rim sherd in hard grey sandy fabric with red surfaces. Patchy yellow glaze on interior. Wall 2 foundation.
57. Rim sherd in hard brick-red sandy fabric with grey core in thicker parts. Surfaces are brick-red with some mica. Wall 2 foundation.
58. Small rim sherd in hard grey fine-sandy fabric. All-over white slip and patches of green glaze. Wall 2 foundation.

(b) *Jars:*

59. Rim sherd in hard light grey sandy fabric with dark grey surfaces. Wall 2 foundation.

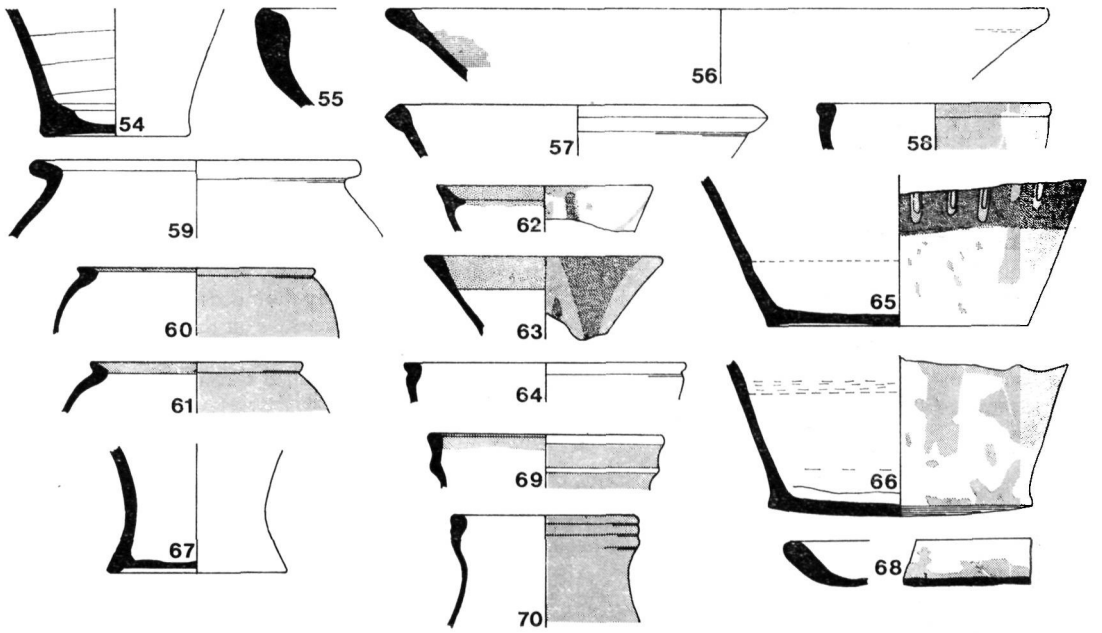

Fig. 35. Toppings Wharf; Medieval pottery from the post-Deposition Features, 54–70 ($\frac{1}{4}$)

60. Rim sherd in hard sandy grey fabric. Mottled dark green glaze on exterior and top only. Wall 2 foundation.
61. Rim sherd in hard grey sandy fabric. Surfaces are red-brown with patchy mottled green glaze on exterior and top only. Wall 2 foundation.

(c) *Jugs:*

62. Rim sherd in hard grey fine-sandy fabric, red at surfaces. White slip on exterior and interior down to a "ledge" about 0.4 in. below rim. Exterior decorated with vertical strip of applied white slip and lines and spots of green/yellow glaze. Layers above Wall 2 foundation.
63. Rim sherd in hard grey/red fine-sandy fabric. White slip on exterior and upper part of interior. Exterior decorated with brown clay bands applied over the slip, and a pale green/yellow glaze over all. Wall 2 foundation.
64. Rim sherd in hard grey fine-sandy fabric, shading to pink-buff at surfaces. Exterior is pink-buff with spots of olive-green glaze, interior is pink-grey. Robbing of Wall 3.
65. Sherds of almost complete large base in hard grey fine-sandy fabric with red-brown margins. Exterior surface is smooth and pink with white slip over upper part and a glaze, varying from a continuous green over the slip to a spotty orange lower down. Interior is brown-pink and sandy. Decoration of vertical applied red-brown clay bands over the slip. T6 gravel spread above deposition.
66. Slightly sagging base in fairly hard red fine-sandy fabric. Interior surface is brown with a few small spots of orange glaze. Exterior is pink-brown, with patches and spots of green/mottled green-orange /orange glaze. One very large grit ($\frac{1}{4}$ in.) is visible. T6 debris above gravel spread.
67. Base in fairly hard grey fine-sandy fabric, shading to red-brown at surfaces, which are hard, red-brown and smooth, showing signs of wheel-turning. Few spots of orange glaze on underside. T14—no exact location.

(d) *Miscellaneous:*

68. Straight rim sherd (?dripping pan) in hard dark grey sandy fabric. Patchy green-yellow glaze on interior. Wall 2 foundation.

FABRIC E2

Jugs:

69. Rim sherd in hard off-white sandy fabric with yellow tinge. Worn green glaze on exterior, top and upper part of interior. Rest of interior has a cream-coloured slip. Robbing of Wall 3.
70. Rim sherd in hard off-white sandy fabric. Mottled green glaze on exterior. Wall 2 foundation.

(Not illustrated)

FABRIC E1

Two sherds in fine pink/white fabric with pale yellow glaze on exterior. Stamford? T6 burnt debris above gravel spread.
Two sherds in fine white "chalky" fabric with mottled pale green glaze on exterior. Layers above Wall 2 foundation.
Sherd in fine white fabric, green glaze on exterior and "scaly" decoration. Layers above Wall 2 foundation.
Three sherds in fine white fabric with mottled green glaze on exterior. Vertical applied clay strips with "impressed-lattice" decoration. Wall 2 foundation.
Sherd in fine off-white "chalky" fabric, apple-green glaze on exterior. Wall 2 foundation.
Sherd in very fine white fabric (Saintonge). Layers above Wall 2 foundation.
Sherd in fine off-white fabric with glossy mottled green glaze. Wall 2 foundation.
Four sherds in fine white fabric with pale green/clear glaze on exterior. One is a small straight rim. Wall 2 foundation.
One similar sherd with diagonal applied clay strip. Wall 2 foundation.

OTHER FABRICS (M)

One small flat-topped rim sherd in hard fine-sandy fabric, grey with red margins, olive glaze on both surfaces and white slip on interior. Tudor? Layers above Wall 2 foundation.
One hard red sandy sherd, olive glaze on exterior. Tudor? Layers above Wall 2 foundation.
One sherd in grey fabric with brown margins, white slip and crazed yellow glaze on exterior. Tudor? Layers above Wall 2 foundation.
One sherd in hard red sandy fabric with spots of red glaze on interior. East Anglian. Wall 2 foundation.
One sherd in hard red sandy fabric with crackled yellow glaze on exterior. Wall 2 foundation.
Two sherds in red fine-sandy fabric with grey core, glossy orange glaze on both surfaces. Wall 2 foundation.

DISCUSSION:

The sherds in fabrics A–C seem to have the same origin and dating as those in the underlying deposition features, from which they may have been derived. Of particular interest is the fire-cover handle (No. 45). Although fire-covers have now been reported from a number of sites both in England (*e.g.* Laverstock, Hangleton, Northolt, Winchester) and Holland (see Hangleton, 135–8 for discussion of English and Dutch fire-covers), this example is atypical in being in a shelly fabric and having a number of small vents rather than two large ones.

Fabric D would have continued into the first half of the fourteenth century, when it would have been contemporary with fabric E2. The buff Surrey fabric (E3) is generally given a later date (*e.g.* 1350–1425 at Northolt, as fabric (m)). However, it seems likely that much of the pottery in these features is survival material from earlier deposits, so the evidence suggests no finer dating than fourteenth or fifteenth century for these layers. The foundation trench for Wall 2 and the layers above it seem to be later than the other deposits. The former contains pottery of the late fourteenth–early fifteenth century, while the latter contains pottery similar to that found in the Tudor features and is probably of late fifteenth or early sixteenth century date.

5. THE TUDOR FEATURES:

Fabric I predominates in these layers (see Table 5); it is a hard rough sandy fabric, which breaks with a "crumbly" fracture. The fabric colour varies: grey and red are commonest, often in the same sherd. About 60% of the pottery in this fabric has some glaze, in a wide range of greens, yellows or oranges (I1). A further 10% is also glazed, but in a dark purple or purple-brown (I2) and the remaining 30% is unglazed (I3). There are four basic forms represented: bowls or dishes with horizontal handles and small pulled-down feet, globular vessels with vertical loop handles, everted rims and tripod or ring feet, dripping pans, and jars with small pulled-down feet.

Next most common is fabric E, the bulk of which is of categories E2 or 3 (sandy). There are also a few sherds of a finer fabric (E1) with glossy green glaze ("Tudor green") or in a very hard fine fabric with a red slip, yellow glaze and sgraffito decoration (E4 Beauvais type). Other fabrics not previously met are:

F: stonewares, mostly with a grey fabric and surfaces and a colourless/brown glaze (category F1 Raeren type) but with some other examples (see descriptions).
G: a buff fine-sandy fabric, sometimes with white slip or yellow glaze.
H: a "dense" grey fabric, which breaks with a smooth fracture. It usually has white slip and yellow glaze on interior surfaces.

About 20% of the pottery consists of residual Roman or medieval material (fabrics A to D). In addition these are a few sherds which do not fit any category and are therefore described individually (M).

TABLE 5: POTTERY FROM THE TUDOR FEATURES

		Fabric											
	R	A–D	E1	E2/3	E4	F1	F2	G	H	I1	I2	I3	M	Total
TOTAL	P	49	10	76	6	15	3	7	12	116	18	50	6	368
Percentages	—	13	3	21	2	4	1	3	3	31	5	13	2	100

INDIVIDUAL DESCRIPTIONS. (Nos. 71–93, Fig. 36)

FABRIC E2

(a) *Bowls or Dishes:*

71. Sherd of flanged rim in hard off-white sandy fabric, with a pinkish tinge near surfaces, which are however off-white with greyish patches. Robbing of Wall 2.
72. Sherd of flanged rim in hard off-white sandy fabric, with hard, greyish sandy surfaces. Base floor Building VIII.

(b) *Jars or Jugs:*

73. Sherds of base in hard white sandy fabric, with white interior and spots of green glaze on exterior and underside. There is one vertical flat "face" perhaps indicating a costrel. Rust-stained. Fill of Building VIII.
74. Sherd of inward-sloping rim in hard off-white fabric, with green glaze on exterior and upper part of interior. Worn and encrusted. Fill of Building VIII.
75. Sherd of base in hard off-white sandy fabric, with a rich green glaze on interior and a paler mottled green glaze on the exterior and underside. Base floor of Building VIII.
76. Sherd of rim in hard, off-white sandy fabric, with green glaze on both surfaces. There is a groove on the upper surface of the rim. Worn. Robbing of Wall 2.

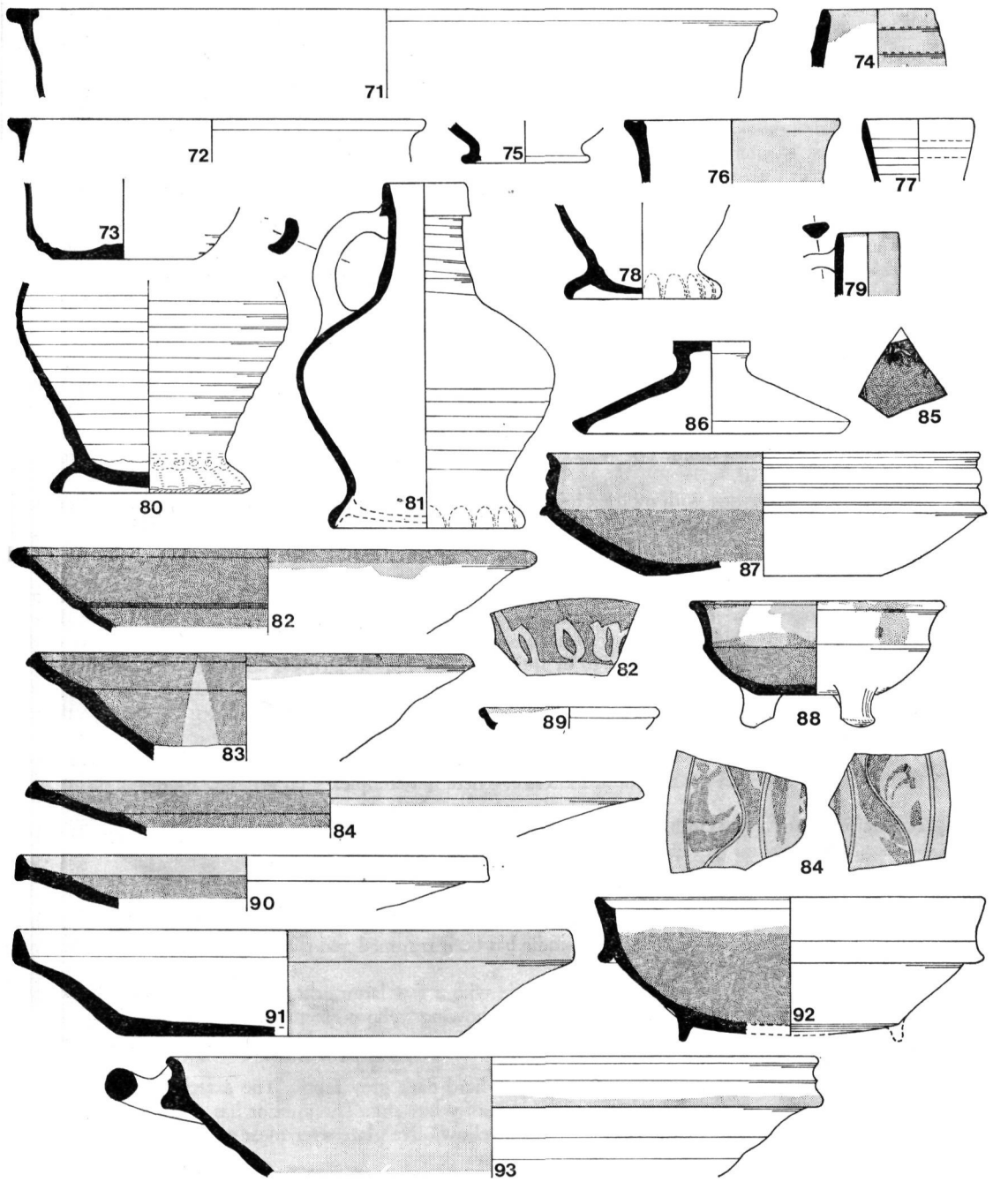

Fig. 36. Toppings Wharf; pottery from the Tudor Features 71–93 ($\frac{1}{4}$)

FABRIC F1

77. Sherd of "tulip-mouth" rim in pale grey stoneware, with colourless glaze on exterior and yellow-brown glaze on the interior. Both surfaces have ribbing: that on the exterior is the less pronounced. Floor of Building X. (*Cf.* gp23, Baynards Castle; unpublished material from recent excavations at this site was examined by the authors).
78. Sherd of "frilled" base in grey stoneware, with light brown/colourless glaze on exterior and colourless glaze on interior. Fill of Building VIII.
79. Sherd of straight-sided rim in grey stoneware, with brown/colourless glaze on exterior and top of interior; rest of interior is brown and unglazed. Fill of Building VIII. (*Cf.* gp23, Baynards Castle).
80. Lower part of a flagon in hard pale grey stoneware, with colourless glaze on both surfaces. The base is "frilled" and there are pronounced turning marks on both surfaces. Fill of Building VIII.
81. Several sherds of a flagon in hard pale grey stoneware. The glaze, which covers both surfaces, is colourless except for a patch of brown on the shoulder. There is a single handle, strong ribbing on the neck and lower part of body and a "frilled" base. Fill of Building VIII. (See Spangen, Fig. 3, No. 3; and Zandenburg, Fig. 3, No. 3).

FABRIC F2

(Not illustrated)

Sherd in grey stoneware with brown glaze on exterior and none on interior. Part of an "oak-leaf" decoration in relief on the exterior. Cologne type. (See Farnham Castle, Fig. 1, No. 26). Fill of Building VIII.

Two featureless sherds in fine off-white stoneware with smooth cream-coloured surfaces. Siegburg type. Fill of Building VIII.

Sherd in grey stoneware with mottled brown glaze on exterior and colourless glaze on interior. Frechen type? Base floor of Building VIII.

FABRIC E4

82. Rim sherd of a plate in hard white fine fabric. The upper and interior surfaces are covered by a red slip, in turn covered by a yellow glaze which has dribbled slightly down the exterior. The rest of the exterior is hard, off-white/brown and shows traces of turning. The decoration on the outer part of the plate consists of sgraffito lettering. Fill of Building VIII.
83. Rim sherd of plate or dish in hard off-white fine fabric. The interior surface has a yellow glaze over a red slip (showing a sgraffito streak at one point); these continue a short way down the exterior, the rest of which is off-white and smooth. Fill of Building VIII.
84. Two rim sherds of a plate in hard white fine fabric. Yellow glaze covers the upper surface, the upper part of the exterior and the red-slipped interior. There is a complex sgraffito decoration. Fill of Building VIII.
85. Flat fragment (of a tile?) in hard off-white fine fabric. There is a yellow glaze and red slip on the upper surface, with sgraffito lettering. Fill of Building VIII.

FABRIC H

86. Lid sherd in hard pale-grey "dense" fabric with a few large grits. The surfaces are hard, red-brown and show strong signs of turning. The handle has been trimmed and is poorly finished. Fill of Building VIII.
87. Sherd of small dish in hard grey "dense" fabric with a few large grits. The exterior is red/black, unglazed and rough, while the interior is glazed, showing yellow-green over a white slip in the lower part and green/brown in the upper part. The rim is badly twisted and the sherd may be from a waster. Fill of Building VIII.
88. Rim and base sherds of a small tripod skillet in hard dark grey fabric. The exterior is hard, purple-brown with a spot of purplish glaze and splashes of white slip. The interior has continuous white slip in the lower part, patches of it on the rim, and a yellow/olive glaze over most of it. The finish is crude. Fill of Building VIII.

FABRIC G

89. Rim sherd of small dish in hard buff fine fabric. Both surfaces have a yellow glaze over a white slip, but at the rim the slip is brown. Fill of Building VIII.

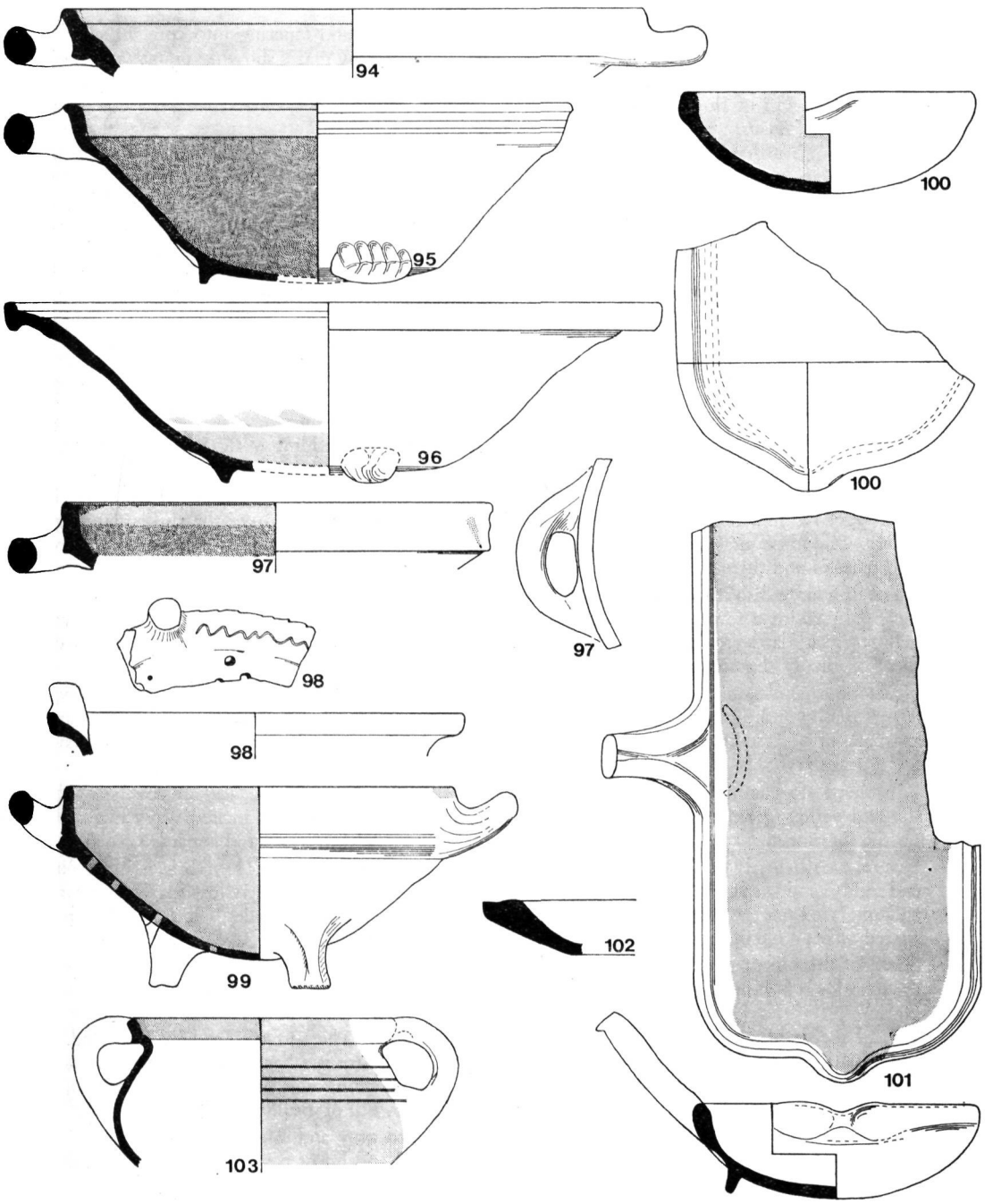

Fig. 37. Toppings Wharf; pottery from the Tudor Features, 94–103 ($\frac{1}{4}$)

FABRIC II

(a) *Plate*

90. Rim sherd of plate in hard red sandy fabric, grey at the rim and tapering into core. Exterior surface is black and smoothed, but now worn. Upper surface has yellow glaze, showing orange and green over red and grey fabric. There is a white slip on the "bowl" of the upper surface, with traces of a cracked yellow glaze. Fill of Building VIII. (*Cf.* gp 23, Baynards Castle).

(b) *Dishes and Bowls:*

91. Sherds of dish in hard orange sandy fabric. The surfaces are hard; the exterior has orange/green glaze, worn in places, and the underside is also glazed. The interior surface is badly worn, with sparse traces of dark red slip. Fill of Building VIII.

92. Sherd of bowl in hard grey sandy fabric, shading to brown at surfaces, which are hard and sandy. The exterior is orange-brown at the rim shading to dark brown at the base; the interior is red-brown except where it has white slip and green glaze. There are three of four feet, and possibly a horizontal handle. Fill of Building VIII. (See Spangen, Fig. 5, No. 1; and Zandenburg, Fig. 7, No. 7—(which is larger)).

93. Two sherds of dish in hard grey/buff sandy fabric. The surfaces are hard; interior is glazed (green over grey, yellow over buff fabric), exterior is buff with spots of yellow-green glaze. There is a stripe of yellow glaze around the lower edge of the rim. Fill of Building VIII. (See Aardenburg, 1965, Fig. 4).

(Nos. 94–103, Fig. 37)

94. Sherd of a dish in hard sandy fabric, light grey in core but orange/brown at surfaces. Patchy olive grey on interior, and spots of glaze on the horizontal handle. Fill of Building VIII. (See Zandenburg, Fig. 3, No. 9—(which has no handle)).

95. Sherd of bowl in hard red sandy fabric. Exterior is black with small patches of orange glaze; interior is dark red with white slip, covered with a glaze which shows yellow over the slip and orange elsewhere. One horizontal handle and one pulled-down foot are present; originally there would have been two handles and three feet. Fill of Building VIII.

96. Sherd of a large dish in crumbly red-brown fabric, grey in thicker parts of the core. Exterior is yellow-buff, flaky, with a few traces of a black surface. Interior surface is hard and rough, red-brown with yellow/green glaze, continuous at the base but thinning out towards the rim. There is one pulled-down foot; originally there would have been three. Fill of Building VIII.

97. Horizontal handle sherd of a dish in hard sandy light red fabric, with dark grey core. A brown glaze covers the lip and the top $\frac{1}{2}$ in. of interior; below that the glaze shows yellow over a white slip. There are patches of brown glaze on the handle and of yellow slip on the exterior. Fill of Building VIII. (*Cf.* gp 23 Baynards Castle; and see Fig. 21, No. 69, Waltham Abbey, 1973).

98. Rim sherd of a chafing dish in orange sandy fabric with grey core. Both surfaces are covered with white slip and yellow/green glaze, which is patchy on the exterior. There is an incised wavy line decoration on the interior and a notching on the rim. Fill of Building VIII. (*Cf.* gp 1, Baynards Castle).

99. Several small sherds of a colander, including two feet and one handle. The fabric is hard, pink-buff and sandy, and the surfaces are smooth. The interior has a slightly mottled yellow glaze; exterior is buff and unglazed except for small areas round the holes and above the handle. The holes are irregularly spaced at 0.4 – 0.9 in. between centres. Fill of Building VIII.

100. Sherd of dripping pan in yellow/brown sandy fabric, orange in core. The interior has a yellow glaze; the exterior is buff but burnt on one side. Fill of Building VIII. (*Cf.* gp 23, Baynards Castle—but in a grey fabric).

101. Several sherds of dripping pan in hard buff/red sandy fabric. The surfaces are hard pink and crudely smoothed; interior is mostly covered with a yellow glaze. There is a handle (probably) half-way along one side and a single "steadying" foot beneath it. The surviving end has an off-central spout. There are traces of burning on both surfaces, opposite the handle. Fill of Building VIII.

102. Small sherd, probably from a dripping pan. Fabric is hard grey and sandy, red near surfaces. Interior surface has brown glaze; exterior is light brown, unglazed and burnt near the rim. Fill of Building X. (*Cf.* gp 23, Baynards Castle—but with green glaze).

(c) *Cooking and Chamber Pots:*

There seems to be a distinction between cooking pots, with two handles and tripod feet, and chamber pots with one handle and ring foot. Some vessels are too fragmentary to be put into a category with any certainty.

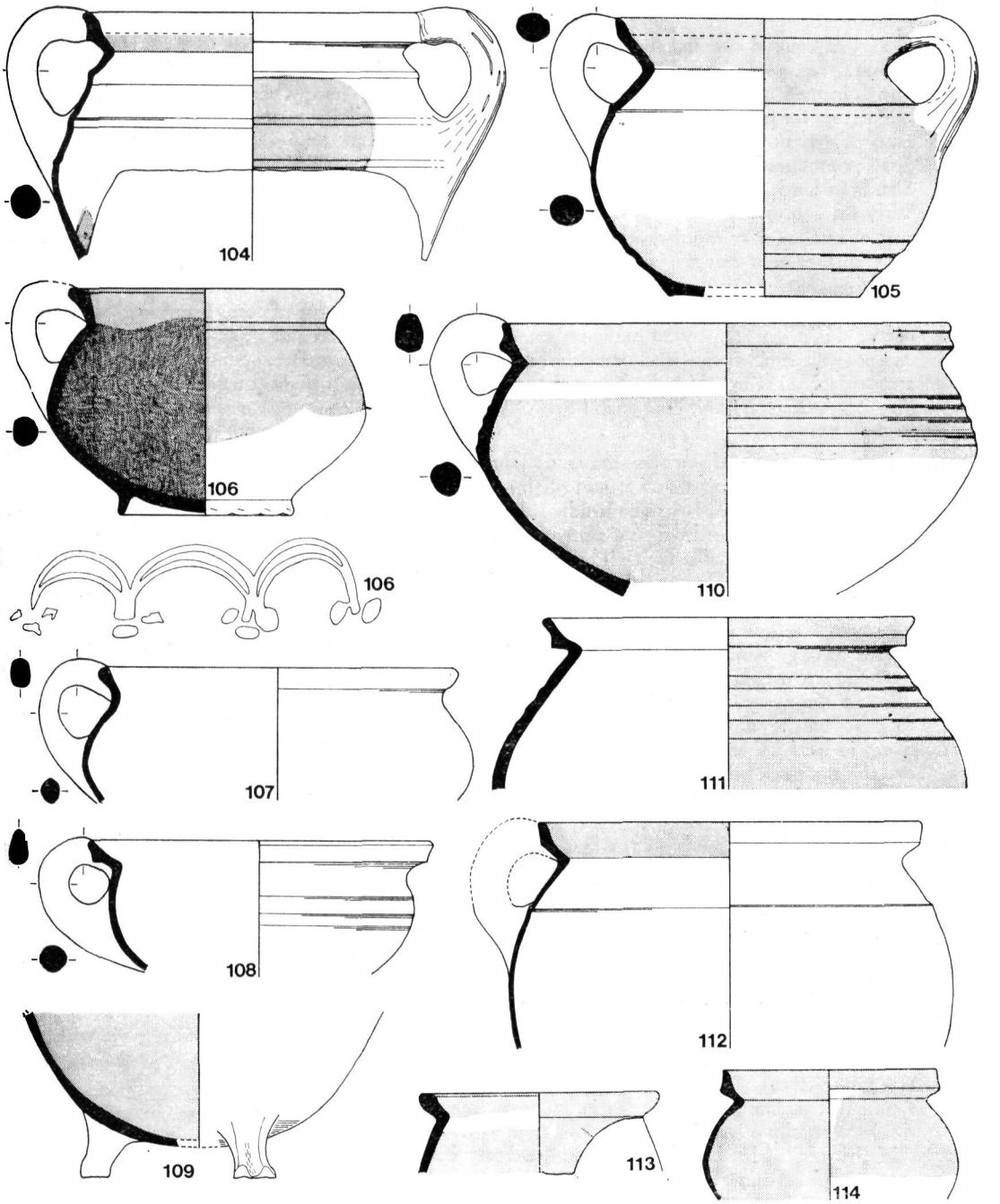

Fig. 38. Toppings Wharf; pottery from the Tudor Features, 104–14 ($\frac{1}{4}$)

(i) *Cooking Pots:*

103. Sherds in hard grey fairly coarse fabric, shading to red at interior surface. Both surfaces are hard and red-brown, with a green glaze on the exterior and upper part of interior, but avoiding the handles. Hollowed everted rim and slight ribbing on shoulder. Fill of Building VIII. (See Middelburg, Fig. 9).

(Nos. 104–114, Fig. 38)

104. Sherds in hard pale grey fabric. Surfaces are hard: interior is "lumpy" but exterior is sandy. Interior is buff except for green-glazed areas at rim and towards base; exterior varies from buff to black, with large areas of green/orange glaze away from the handles, which are brown and have large vertical cracks. Two pronounced ribs on shoulder. Fill of Building VIII. (See Middelburg, Fig. 9).

105. Sherds in hard grey sandy fabric, shading to red-brown at surfaces, which are hard, red-brown and fairly smooth. There is one large ($>\frac{1}{4}$ in.) grit visible in the fabric. Exterior (except for handles) and part of interior have mottled olive glaze, encrusted in places. One pronounced rib on the shoulder and three smaller ones near the base. Fill of Building X.

(ii) *Chamber Pot:*

106. Almost complete, in hard orange sandy fabric, grey in thicker parts of core. Exterior is orange-brown except where covered by an orange glaze. The interior is glazed and shows yellow on a white slip, except at the rim where it is an orange/green. The upper exterior surface, opposite the handle, has a triple arcade decoration in white slip under the glaze. The ring base is slightly frilled. Fill of Building VIII. (See Zandenberg, Fig. 3, No. 5; and Pl. XXIV, No. 1).

(iii) *Either:*

107. Rim and handle sherd in coarse red sandy fabric, shading to black near exterior on lower part of body and rim, and with grey patch at join of rim and handle; there is one large grit ($>\frac{1}{4}$ in.). The surfaces are rough, with olive glaze. The handle is black and unglazed. Fill of Building VIII.

108. Rim and handle in hard red-buff sandy fabric. The exterior surface has a hard orange glaze except for on and around the handle, which is buff/black. The interior has an orange/green glaze. The glaze is pitted with small burst bubbles, and the general finish is crude. Fill of Building VIII.

109. Tripod base in hard buff/grey sandy fabric. The surfaces are hard: the exterior is black/grey and sandy; interior has yellow glaze and shows scratch marks. Fill of Building VIII.

110. Sherds of large vessel in hard grey/orange sandy fabric. The surfaces are hard and rough: the interior has green/brown glaze except for an "inaccessible" zone which is brown, while the exterior has a similar glaze on the upper part but is black lower down. The handle is unglazed and grey-brown. There are four ribs on the shoulder. Fill of Building VIII.

111. Sherd in hard red sandy fabric, with a few large grits. The interior surface is hard, brown and sandy; exterior has thick olive glaze except in small patches where the surface shows black. There are five ribs on the shoulder. Fill of Building VIII. (See Ter Does, Fig. 12, No. 5; and Basing House, Fig. 16, No. 167 —but reduced).

112. Sherds in hard grey sandy fabric. Both surfaces are red-brown and unglazed, except for the interior at the rim, which has an olive-green glaze. There is one pronounced rib on the shoulder. Fill of Building X.

(iv) *Small Pipkins:*

113. Rim sherd in hard red sandy fabric. Surfaces are sandy and pink, except where covered by a glossy yellow/olive-brown glaze. There is the beginning of a slip decoration on the exterior. Base floor of Building VIII.

114. Rim and other sherds in hard red/buff sandy fabric, with buff sandy surfaces. Exterior surfaces and interior of rim are partly yellow-glazed; rest of interior has glossy yellow/green/brown glaze, with patchy and streaky appearance. Fill of Building VIII.

(Nos. 115–129, Fig. 39)

115. Rim sherd in fine grey sandy fabric, red near interior which is grey/brown. Exterior and interior of rim have patchy olive glaze. Fill of Building VIII.

116. Rim sherd in hard red sandy fabric with hard grey/black sandy surfaces. Exterior has olive-brown glaze, spotty in places and glossy elsewhere. The interior has an unusual pale green glaze. The lip is unglazed. Base floor of Building VIII.

(d) *Jars:*

117. Base sherd in hard fine red/grey sandy fabric with red/grey surfaces. Interior has an orange glaze. The foot has been "frilled" with fingertip impressions. Fill of Building VIII.

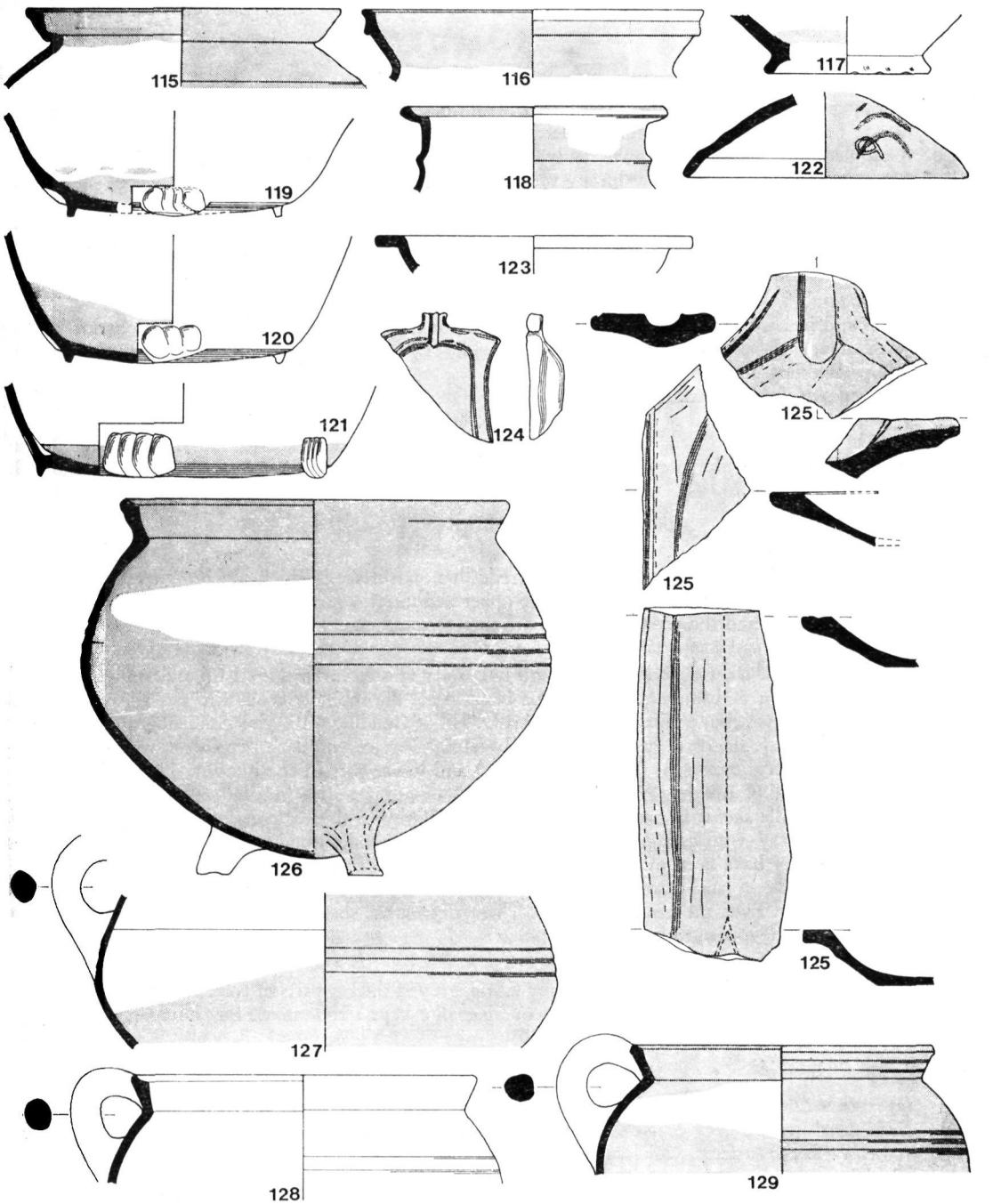

Fig. 39. Toppings Wharf; pottery from the Tudor Features, 115–29 ($\frac{1}{4}$)

118. Rim sherd in hard red sandy fabric. The surfaces are hard: interior is grey-pink and exterior deep pink. There is yellow glaze on upper surface of lip, and mottled yellow/orange glaze on lower part of exterior. Fill of Building VIII.

(e) *Large Storage Jars:*

119. Base sherd in hard grey fabric, containing large particles of flint and chalk. Exterior is black with spots of orange/green glaze; interior is red-brown with thick green glaze on base, thinning out up sides. There is one pulled-down foot: originally there would have been three or four. Fill of Building VIII.

120. Complete base in friable brown sandy fabric. The surfaces are hard, brown and have been crudely smoothed. There is an irregular lumpy yellow glaze on the lower part of the interior. Four pulled-down feet. Fill of Building VIII.

121. Base and sherds in hard buff-red coarse fabric. Surfaces are hard, rough and buff, shading to red near a patchy yellow/orange glaze on the exterior and base of the interior. Sagging base and (probably) five feet. Fill of Building VIII.

(f) *Others:*

122. Lid sherd in hard red fabric with grey core. Interior is hard red and fairly smooth; exterior is lumpy with orange glaze. There are three arches of white slip under the glaze, one is cut by an incised "P". Fill of Building VIII.

123. Flanged rim sherd in hard pale grey coarse sandy fabric. The surfaces are hard and rough, and both have a yellow-grey glaze. Fill of Building VIII.

124. Part of a miniature dripping pan in buff/grey fine sandy fabric (not the usual fabric of this group). There is an off-white bubbly patchy glaze on the upper surfaces. Possibly a toy or sample. Fill of Building VIII.

FABRIC I2

(a) *Dripping Pan:*

125. Three sherds in hard grey sandy fabric, reddish near surfaces, which are brown or purple-brown. There is a patchy purple/green glaze on the upper and interior surfaces. The general finish is crude. No two sherds join, and the positions shown are therefore estimated. Fill of Building X.

(b) *Cooking Pot (probable):*

126. Several sherds of large tripod vessel in hard red sandy fabric. Surfaces are hard and sandy, with purple glaze on exterior and interior, except for a band inside the shoulder. Four ribs just above girth point. No handles present but probably two originally. Fill of Building VIII. (See Zandenberg, Fig. 3, No. 8).

127. Body and handle sherds in hard orange sandy fabric. Surfaces are dark purplish-brown, with a glossy purple glaze on the exterior (except the handle) and lower part of the interior. Three ribs just above girth point. Fill of Building VIII.

128. Rim and handle sherds in hard orange sandy fabric, grey in thicker parts of core. Surfaces are hard: dark purple-grey, with dark purple-brown glaze except on and around handle, where it is patchy. Two ribs: there may have been more. Fill of Building VIII. (See Ter Does, Fig. 10, No. 2).

129. Rim and handle in hard orange sandy fabric. Surfaces are hard, with dark purple glaze except on zone inside shoulder. Even the handle is glazed. Three ribs on the shoulder and ribbing on the neck. Fill of Building VIII. (See Zandenberg, Fig. 7, No. 1).

(Nos. 130–138, Fig. 40)

130. Rim and other sherds in hard orange sandy fabric, grey in thicker parts of core and lowest part of body. Surfaces are brown, with a purple glaze covering all except a zone inside the shoulder. Two faint ribs just above girth point. Fill of Building VIII.

FABRIC I3

(a) *Plate or Dish:*

131. Rim sherd in hard grey coarse sandy fabric, with many small and one large air bubble. The fabric is red towards the surfaces, which are brown, hard and rough. Fill of Building VIII. (*Cf.* gp 23, Baynards Castle).

(b) *Jar:*

132. Rim and handle sherds in hard red sandy fabric, grey in core of handle. Interior surface and upper part of handle are orange. Exterior and rest of handle are dark brown. Fill of Building VIII. (*Cf.* gp 88/1 Baynards Castle).

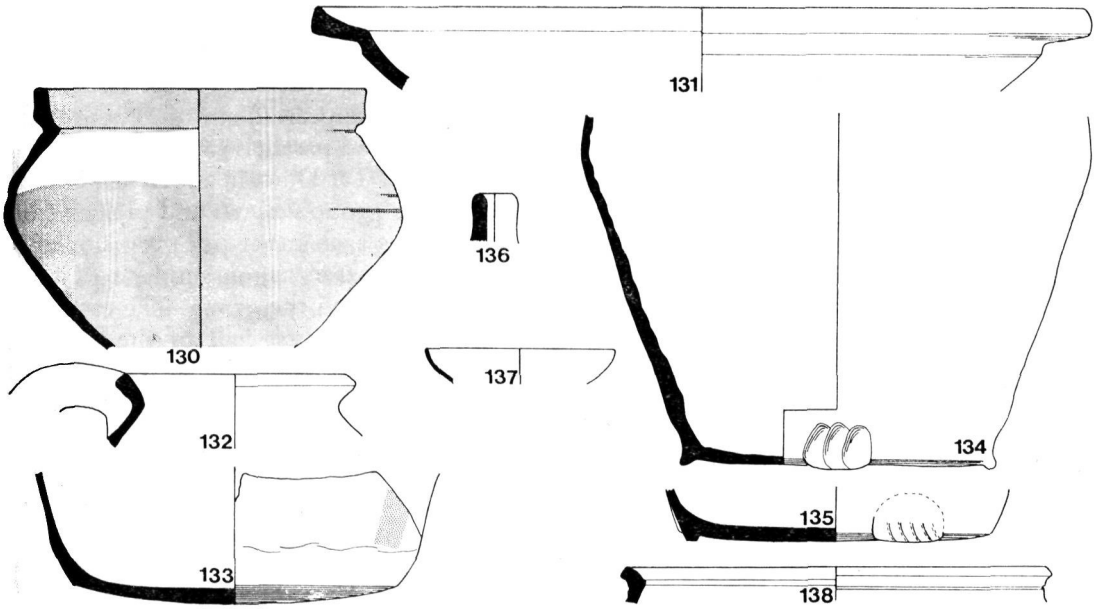

Fig. 40. Toppings Wharf; pottery from the Tudor Features, 130–38 ($\frac{1}{4}$)

(c) *Large "Storage" Jar:*

133. Base in hard red sandy fabric, grey in thicker parts of core. Surfaces are hard, red, sandy and crudely finished. There is a patchy smear of cream-coloured slip on the exterior. Fill of Building X.
134. Lower part of large jar in hard orange/brown coarse sandy fabric. Exterior surface is dark brown; interior is light brown with cream-coloured patches. Four pulled-down feet. Fill of Building VIII.
135. Base sherd in hard red sandy fabric. Surfaces are hard: exterior is red-brown, sandy and rough, while interior is red, smooth and has traces of white paint. One pulled-down foot is present; there would probably have been three originally. Fill of Building VIII.

OTHER FABRICS

136. Complete small rim in buff-yellow fabric with white tin-glazed surfaces. There is a vertical green stripe on the exterior. Probably from a flask. Fill of Building VIII.
137. Rim of cup in Cistercian ware; hard fine red fabric with thick glossy dark purple glaze. Fill of Building VIII.
138. Residual medieval rim sherd in hard brown gritty fabric with reddish surfaces. Robbing of Wall 2.

(Not illustrated)

Sherd of pale yellow fabric with white tin-glazed surfaces; both show faint traces of decoration but are badly worn. (Imported probably from Spain or Italy). Robbing of Wall 2.

Two sherds in very hard brown fine sandy fabric, one with all-over white slip on exterior. Probably East Anglian. Robbing of Wall 2.

Sherd in very hard pale grey sandy fabric. Buff interior and pink-brown exterior surfaces. Possibly imitating stoneware, or over-fired. Robbing of Wall 2.

DISCUSSION:

The majority of the pottery in fabric I appears to be of Dutch origin and of late fifteenth to early sixteenth century date. The influence of the Netherlands pottery at this time is discussed in P. Brears *The English Country Pottery* (1971), 27–31, who describes four characteristic Dutch forms, (i) chamber pots with a ring base and a single handle, (ii) fire pots, (iii) tripod pipkins or cooking pots with loop handles, (iv) bowls with horizontal handles. He also mentions large jars with small pulled feet. All except (ii) are present in this group.

Similar assemblages are known from at least five Dutch sites. A group from the moat at Spangen included pipkins and bowls showing general similarities (Figs. 2, 5 and 6) and a good parallel to No. 92. A Raeren flagon similar to No. 81 was with the group. The deposit was earlier than 1572 (when the castle is known to have disappeared) and the report dates the parallels to the fifteenth and sixteenth centuries. Two good parallels to pipkins Nos. 111 and 128 were found in the outer ditch at the manor house of Ter Does, in a fifteenth century deposit. The castle at Zandenburg yielded parallels to this group's bowls and pipkins from two rubbish pits (Figs. 3, 4 and 7). Particularly striking is a chamber pot very similar to No. 106, even to the "arcade" slip decoration. Again, a Raeren flagon similar to No. 81 (and dated independently to "not before 1500") was found with the group. The castle was demolished in about 1550 and both pits were dated to the "first half of the sixteenth century". A small group of vessels from a brick cess-pit (dated to *c.* 1500) at the Abbey of Middelburg (Fig. 9) shows strong similarities with the pipkins and chamber pot from Toppings Wharf. Finally, a bowl from Aardenburg, dated to the late fourteenth or the early fifteenth century, parallels No. 93.

Another good source of parallels are Dutch paintings of the sixteenth and seventeenth centuries. For example, Maes' "A sleeping maid and her mistress" (1655) has a strainer as No. 99 and a pipkin as No. 110; Adrien van Ostade's "An alchemist" (1661) has a vessel similar to No. 107, while William Duysten's "Man and Woman playing trick-track" (*c.* 1630) shows a man filling his pipe from a vessel shaped as No. 88 (fabric H).

However, none of these sources give us a close dating for the group. Recent excavations at Baynard's Castle (London) have yielded three closely dated groups in which parallels can be found. The first, group 88/1, dated to 1499 or 1500, has similar tripod pipkins, but with more pronounced and simpler rims, and an unglazed jar close to No. 132. Groups 1 and 23 (both dated to around 1520) contain a great deal of material paralleling the plates, bowls, pipkins, dripping pans and chafing dish, as well as general parallels for fabrics I 1, 2 and 3, H and some of the stoneware (see individual descriptions).

Similar groups are also known from other major ports (*e.g.* Southampton, Exeter), and are dated to the span 1450–1550. The Southampton pottery is thought to have originated from the Limburg area of Holland. Beauvais plates similar to No. 82 have also been found at Southampton and have been dated to the first half of the sixteenth century. The grey Raeren stoneware is commonly dated to about 1500 (see, for example, comments on the stoneware from Westminster Abbey).

On this evidence, Building VIII can be securely dated to the first half of the sixteenth century, with a "most likely" date of about 1520. The floor levels of Building X can be given a similar date, but rather less securely (on the basis of only two sherds of stoneware). The robbing of Wall 2, with a great deal of residual material and no really distinctive sherds, can only be given a general dating of 1450–1550, and a date rather earlier than the above is possible.

The distribution of pottery of these forms appears to tail off rapidly away from the coast. A handled bowl similar to No. 97 is known from Waltham Abbey 1973, a rim similar to No. 111 from Basing House, a pipkin showing some similarities from Farnham Castle (Fig. 1, No. 13; deposit dated 1521) and a tripod pipkin in the purple glaze of fabric I 2 has recently been found at Guildford Park Farm (not yet published). A nearby excavation at 199 Borough High Street produced no pottery parallel to this group, although one pit there was dated 1500–1525.

Although the stoneware and Beauvais ware are certainly imports, the Dutch pottery could be either imported or locally made (*e.g.* by Dutch potters). (See Note 24 in Documentary Sources above). For example, the form of No. 124 is Dutch but the fabric is not. However, the fabric differs from the rest of the group, some of which have distinctive large (>$\frac{1}{4}$ in.) purple grits in the fabric, presumably the outcome of a failure in clay preparation. The origin of these grits is not known, but they have not been observed in any local pottery, and support the idea that this group is imported.

The existence in these features of a high proportion of low-quality domestic vessels for which the local demand is apparently low can best be explained by the establishment of a Dutch trader here, who continued to use familiar pottery brought from "home".

CONCLUSIONS:

Contrary to the published evidence from earlier excavations (Southwark, Borough), the pottery from Toppings Wharf indicates early medieval (eleventh and twelfth century) activity in this area. Local wares, from Surrey, Kent or London, predominate throughout the medieval period, but there is a sudden increase in imported pottery, mainly from Holland but also from France and the Rhineland in the sixteenth century.

E.VI COINS

BY M. J. HAMMERSON

ABBREVIATIONS:

RIC: Roman Imperial Coinage.

LRB 1/11: R. A. G. Carson, P. V. Hill, J. P. C. Kent, *Late Roman Bronze Coinage*, Part 1/11 (1965).

BARNARD: F. P. Barnard, *The Casting-Counter and the Counting-Board* (1916).

DETAILED COIN LIST:

Notes: 1. Left-hand numbers list coins in chronological order.
2. All coins bronze, unless otherwise stated.
3. Dates refer, where possible, to period during which coin was minted; otherwise to reigns.
4. Probable condition at time of deposit, discounting corrosion effects as far as possible, to give a relative guide as to the length of time during which a coin may have been in circulation: A=unworn; B=slight wear; C=average wear; D=fairly heavy wear; E=very heavy wear.

		Date	*Condition*	*Provenance*
1	Agrippa, As, rev. Neptune left, with dolphin and trident, RIC (Tiberius) 32	23–32	D	Alleyway between Buildings I & II
2	Caligula, Dupondius, DIVVS AVGVSTVS type RIC (D.A.) 8.	37–41	C/D	Destruction Layer, Building III
3	Barbarous Imitation, Claudius I, Minerva rev., type of RIC 65, 27mm.	Claudian-early Neronian	B	Building IV
4	„ „ 26 mm.	„ „	C	Post-destruction deposits, Building V
5	„ „ 27 mm.	„ „	B/C	Foundation of Building V
6	„ „ 26 mm.	„ „	B	Building V
7	„ „ 25 mm.	„ „	B/C	Destruction Layer, Building III
8	„ „ 25 mm.	„ „	C	Building IV
9	„ „ 24 mm.	„ „	A/B	Alleyway between Buildings V & VI
10	Claudian Imitation, rev. type of liberty (RIC 69), 23 mm.	„ „	B/C	Foundation of Building VII
11	Claudian Imitation, rev. type uncertain, 24 mm.	„ „	D	Unstratified
12	Nero, As, rev. Victory l, RIC 329	55–68	B	Building III
13	Vespasian, As, type VICTORIA NAVALIS	67–79	C	Pre-erosion Pit 6
14	Domitian, Dupondius, rev. type uncertain	85–96	C	Building X
15	As, illegible	First–second century	?	Erosion gravels
16	„ „	„ „	?	Ditch I
17	Hadrian, Denarius, rev. AEGYPTOS, RIC 297	134–138	C	Unstratified
18	Antoninianus; obv., radiate hd, r., rev, uncertain figure	Second half, third century	C	Unstratified
19	Constantine I/II, rev. BEATA TRANQLTAS, mint PLON (London)	320–24	A	Late Roman black earth
20	Urbs Roma, Mint TRS, LRBI–58 (Trier)	330–35	A	Victorian pit
21	Constans or Constantius II, rev. GLORIA EXERCITUS (1 standard)	335–41	C	Unstratified
22	Barbarous imitation, GLORIA EXERCITUS (1 standard) type	340's	C/D	Medieval deposition
23	„ „	„	B	Erosion gravels
24	Constantius II, rev.: GLORIA EXERCITVS (2 standards)	341–6	C	Modern intrusion
25	Constantius II or Constans, ditto type, Mint TRS, LRBI–158 to 168 (Trier)	„	C	Medieval deposition
26	Constantine II, probably barbarous imitation (obv. CONSTANTINVAVG), rev; 2 victories, VICTORIAE DD AVGQNN	345–48	A	Late Roman black earth
27	House of Constantine, AE3, uncertain type	330's–40's	C	Unstratified
28	„ „	„	?	Unstratified

		Date	*Condition*	*Provenance*
29	Magnentius, rev. VICTORIAE DD NN AVG ET CAE(S), LRBII–56 to 61, mint TR ( ), (Trier)	351–53	A	Late Roman black earth
30	Valentinian I, rev. GLORIA ROMANORVM	364–75	C	Gully I
31	Valens, rev. SECVRITAS REIPVBLICAE	364–78	B/C	Unstratified
32	House of Valentinian, rev. ditto	,,	D	T12 fourth century pit
33	House of Valentinian, rev. GLORIA ROMANORVM	,,	C/D	Medieval deposition
34	Barbarous imitation, 9 mm.	Fourth century	?	Medieval deposition
35	Barbarous imitation, 9 mm.	Third/fourth century	?	Erosion gravels
36	Three barbarous coins, 8 mm., $7\frac{1}{2}$ mm., 7 mm.	,, ,,	?	Foundation Building VII
37	French jetton; obv. figure on throne; rev. ornate cross. *Cf.* Barnard Pl. V. 23	Mid. fourteenth century	C/D	Medieval dock
38	Probably Nuremberg Counter, though small	Fifteenth century	C	Unstratified
39	Ditto, though border legend rather wider than normal. Possibly as late as sixteenth century	Fifteenth/sixteenth century	B/C	Building VIII
40	27 mm., possibly a late medieval counter, worn flat	Uncertain	?	Unstratified
41	Unofficial type Farthing; obv. King's Head (James I?); rev. letters, uncertain. Possibly a Southwark token	First half seventeenth century	C	Below seventeenth century cellar
42	"Rose" Farthing of the small late type	,, ,,	B	T12 chalk wall
43	Unofficial type Farthing; one side with inscribed band round floral spray; other side uncertain. Possibly a Southwark token	,, ,,	B/C	Unstratified
44	Unofficial type Farthing, obv. with peacock or similar bird; rev. inscribed band with central design (uncertain)	,, ,,	C	Unstratified
45	William III, Halfpenny	1699–1701	E	T14 eighteenth century wall footing
46	George II, Farthing	1736	B/C	Below eighteenth century cellar floor
47	George III, Penny	1797–1807	B	Below concrete cellar floor
48	Illegible Halfpenny	Eighteenth century	E	Below eighteenth century cellar floor
49	Worn Halfpenny	Nineteenth century	E	Unstratified
50	Worn Halfpenny	Nineteenth/twentieth century	?	Eighteenth-nineteenth century brick-lined pit

While coins from most periods of the Roman occupation are represented in the finds, a rather high peak is found in the period to the reign of Nero (54–69), to which 12 out of the 38 identifiable Roman coins are attributable (*i.e.* almost 30%). The Flavian period is, by comparison, poorly represented, as is the period of Trajan-Hadrian, with only one coin. There is then a fairly normal gap in the coinage for the remainder of the second century, but coinage of the third century is very poorly represented, with only one specimen, a considerably lower proportion than usual. A second, more normal, peak is seen with the coinage of the House of Constantine (11 examples, though this is still low by comparison with the Claudian-Neronian peak). However, the low survival rate of fourth century levels, through later destruction by building, suggests that the original total of coin losses of that period could have been far higher.

Of specific interest is the fact that all of the nine Claudian coins are the well-known imitations of official types that are found in varying proportions with their prototypes on many sites, proportions of 50–75% imitations being by no means uncommon; and this figure is reinforced by finds from excavations at 207 Borough High Street, where, of a further 15 Claudian coins found, 13 were imitations. It is hoped to treat all these coins together in greater detail in a future paper.

SUMMARY OF COINS FOUND

Tiberius	1	Magnentius	1
Caligula	1	House of Valentinian	4
Claudius I (Barbarous Imitations)	9	Other barbarous third–fourth century	5
Nero	1	Medieval	4
Vespasian	1	Seventeenth century	4
Domitian	1	William III	1
Uncertain Asses., first–second century	2	Hanoverian	3
Hadrian	1	Nineteenth–twentieth century	2
Late third century radiate	1		—
House of Constantine: 320–24	1		52
330–41	4	Illegible	19
Barbarous Imitations: 330–41	2		—
345–48	1		71
Uncertain: 330–48	2		—

E.VII. METAL SMALL FINDS

BY R. TRIBBICK

A broad division is made into Roman, Medieval and post-Medieval, the latter being from an eighteenth century context.

1. ROMAN—PERIOD OF EARLY ROMAN SETTLEMENT

(unless otherwise stated, in and around the buildings)

A. THE METAL OBJECTS—bronze unless otherwise described.
(Nos. 1–9, Fig. 41)

1. Bow brooch with hinged pin (missing) 7.5 cm. long. Crude markings on the cross-arm. *Cf.* J. W. Brailsford, *Hod Hill*, 1 (1962), Fig. 8, C60.
2. Two bow brooches with sprung pin (one with coil only present). Incomplete. *Cf. Hod Hill*, 1, Fig. 6.
3. Bow brooch as 2 above, but complete in length—6 cm. Perforated catch-plate. *Cf.* as in 2.
4. Lock bolt for six-pin key. Raised web presumably to assist location of the key and prevent it overshooting the holes.

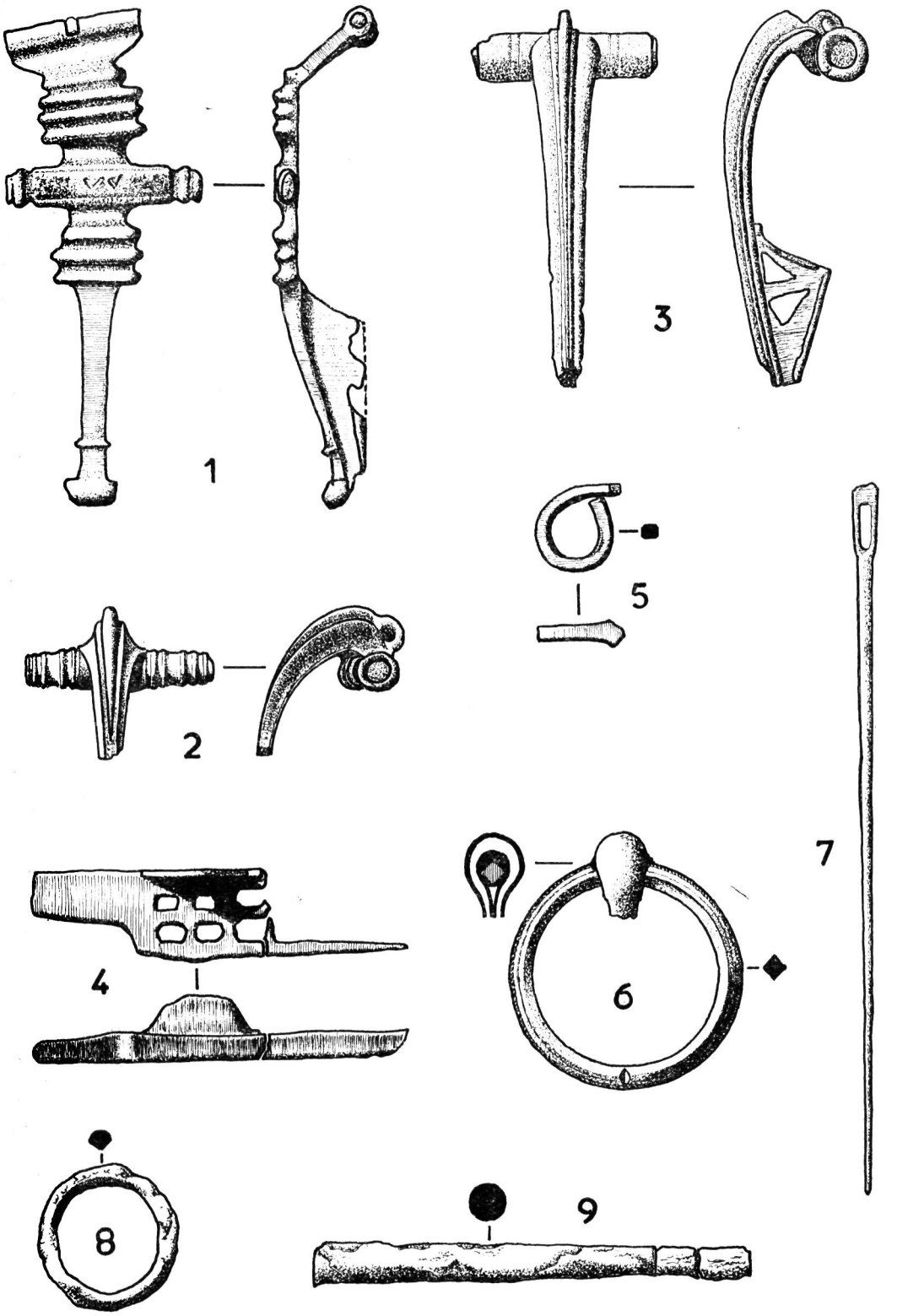

Fig. 41. Toppings Wharf; metal small finds, Roman (1/1)

5. Small turn of square wire with flattened, pointed end. Similar but larger piece is exhibited in Verulamium Museum as a bracelet detail.
6. Brooch, circular, 3.6 cm. dia., with fine raised decoration on a rhombic section. Remains of the pin indicate a double-skin construction, pivoting on a circular zone applied to the rhombic form. Ditch I.
7. Needle, 11.2 cm. long. Rectangular eye in a flattened end. Three other needles were found, but with broken eyes.
8. Ring, 2.2 cm. dia. Possibly not a finger ring as the inside diameter is sharp. This may, however, suggest that the ring is in an unfinished condition.
9. Rounded tapering bar, 6.5 cm. long, with traces of wood at the smaller end.

(Nos. 10–11, 76, Fig. 42)

10. Circular cup, incomplete, but about 1.5 cm. dia. and hemispherical in form. A laminated inset, predominately calcium-carbonate, could be the remains of a pearl or worked shell.
11. Handle, 5.8 cm. across with central raised decoration.
76. Waisted fitting, 4.4 cm. long, with two holes 3.5 cm. dia., 2.2 cm. apart. Each hole faced with a shallow depression 1.2 cm. dia. on one side. The reverse side flat, except for the hollow in the raised area at one end. May be one of a pair mounted back to back, with a ring, for example, trapped in the hollow raised end. Facings at the two holes suggest a pivoting action.
12. Sixteen sheet fragments. Pieces of sheet, either brought as scrap for re-melting or unrecognisable fragments of objects. Occupation and dump layers in Trenches 12 and 14, including Buildings I and V.
13. Twenty-five irregular fragments. Fragments of bronze either brought for scrap for re-melting or unrecognisable objects. Occupation and dump layers in Trenches 11, 12 and 14, including Buildings I and V.
14. Wire fragment, 2 mm. dia., 5 cm. long.
15. Fragments of a tapered tube. Possibly a stylus case. Ditch I.
16. Nails, two 5 cm. long.

IRON

17. One hundred and twenty-two nails. These were of building-construction size. Eighty-six of these were found in and around the buildings.
18. Spike, head at right-angle, shank 1.0 cm. square, 10 cm. long. Probably used to secure a wooden frame to masonry.

LEAD

(Nos. 19–20, Fig. 42)

19. Weight. Integral suspension eye, $9\frac{1}{2}$ oz. Slightly tapered cylindrical form. Well.
20. Weight. Iron suspension eye (corroded), 17 oz. Opposed conical form. Well.
21. Disc, 4.8 cm. dia., 3 mm. thick. Central hole 5 mm. dia. Second hole dia. 2 mm. at 1.0 cm. from centre. No inscriptions or decoration.
22. Small fused fragment, about 1 cm. cube.
23. Twisted sheet fragment 9 cm. long, 4 mm. wide.
24. Sheet fragment 4 cm. long, 3 mm. wide. Ditch I.

B. THE METAL-WORKING RESIDUES

(Nos. 67, 73, Fig. 45)

67. Piece of copper sheared from heavy-gauge plate. No tin detected. From higher unsealed levels.
72. Bronze-melting slag. A glassy silicate with discrete bronze particles which is formed during the melting of bronze for casting, by combination with the crucible. Gully outside Building V and top floor of Building I.
73. Runner for a small casting in bronze. The shrinkage cavity in the flat face distinguishes this from a headed pin. Ditch I.
75. Ironsmithing slag. Iron-rich silicate, resulting from the accidental combination of iron-oxide scale and the furnace lining clay. Also from hammer welding, where the scale on the heated iron is intentionally combined with silica in the form of sand to clean the iron surfaces before hammering them to form the weld. Building I and Building V.

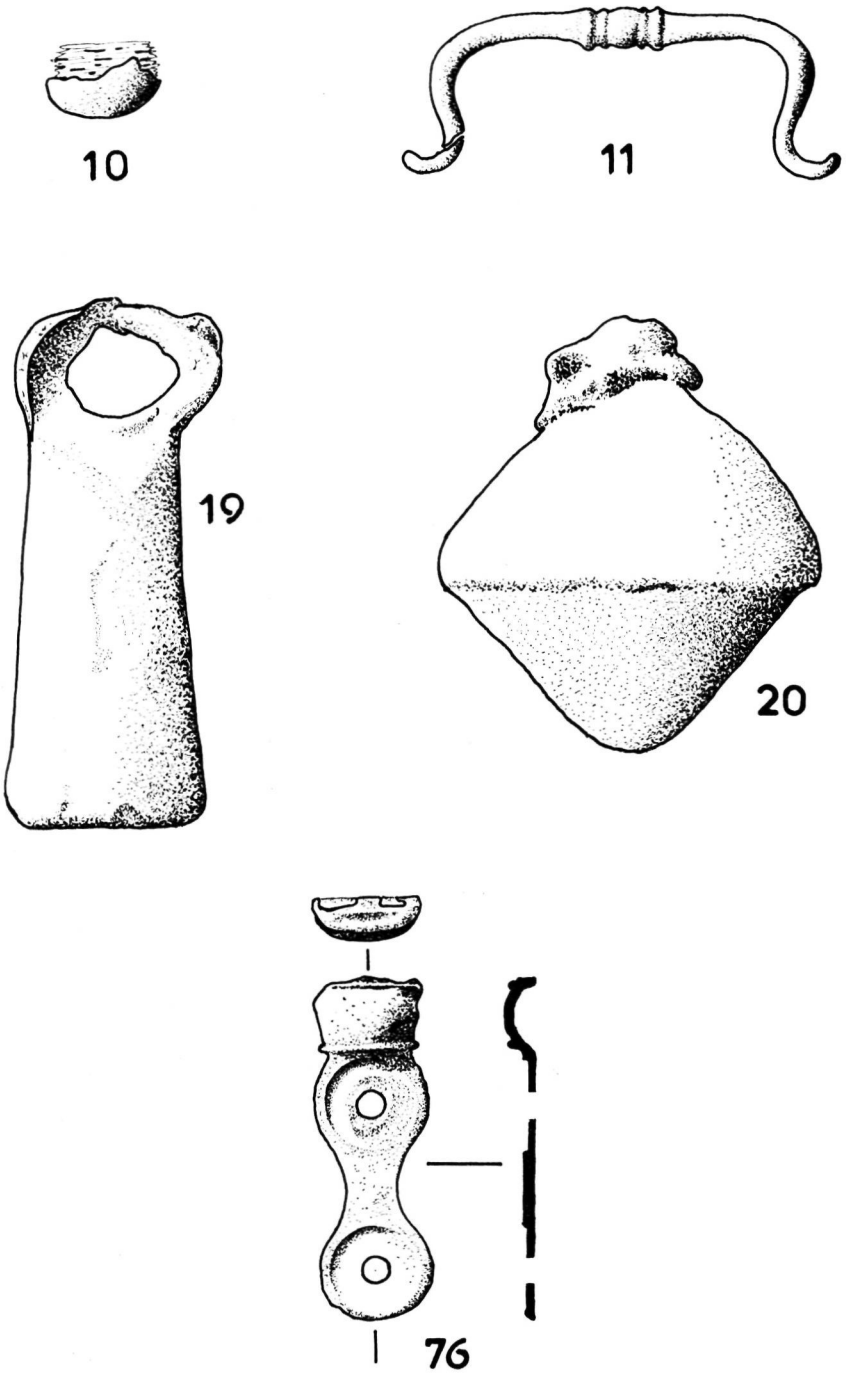

Fig. 42. Toppings Wharf; metal small finds, Roman (1/1)

DISCUSSION:

Of the fifteen bronze objects, seven are items of adornment. The others, three needles, part of a lock, a tapered rod, a handle, and two nails, can be interpreted as household effects. The iron and lead objects, equally, would seem to need no more than one dwelling to yield them.

The bronze objects were distributed as follows: "Adornment"—three inside buildings; two outside buildings; two in the ditch; one unstratified. "Household"—four inside buildings; two outside buildings; two unstratified.

The metal-working slags were predominantly from iron-smithing operations, but amongst those in Building I and Building V, isolated fragments of bronze melting slag were identified. Building I showed the greatest slag concentration, with 18½ lb. recovered; 1 lb. 13 oz. came from the area of Building V.

If any of the bronze objects are associated with the metal-working activity, they might be expected to be those from Building I and Building V, but there is no direct evidence to connect any of the objects with local production.

The area with the greatest number of nails does not correspond with the area containing the most slag. Nail production is not a convincing explanation for the iron slag, as local nail making would almost certainly start with a suitable size of raw material and not involve the production of much slag.

No semi-finished iron objects were identified to enable an alternative explanation for the slags to be offered.

The bronze casting runner (73) from Trench 8 seems to confirm local bronze working. The fact that it is divorced from the bronze slags of Buildings I and V is not surprising, as it would be understandable to conduct the fettling (trimming of the casting) away from the heat and fumes of the casting area.

The amounts of iron and bronze slag recovered do not seem to justify the conclusion of operation on an industrial scale, but as it is also unlikely that all the necessary apparatus and skill would be gathered for a few isolated sessions, it is possible that we have seen only scatter from a nearby industrial site, not uncovered by this excavation.

2. MEDIEVAL AND TUDOR

A. THE METAL OBJECTS—bronze, unless otherwise described.

(Nos. 25–33, Fig. 43)

25. Decorative bar with traces of gold over-lay. Length of rivet shank suggests mounting on leather rather than wood. Deposition layer.
26. Pin, silver, 4.2 cm. long. Spherical head 1.2 cm. dia., with granular surface bearing traces of gold. Pit or hearth in Building X.
27. Plain circular brooch, 3.0 cm. dia. Blunt pin, for use with prepared holes. See London Museum, *Medieval Catalogue*, 274–75. Probably thirteenth to fourteenth century. Building X.
28. Shaped object, possibly not complete. A possible "Face" in the contours. Erosion gravels.
29. Finger ring with round setting. Stone(?) missing. Building IX.
30. Pendant with claw-set blue cabochon. Mineral not identified but traces of gold on metal suggests a gem rather than glass. Deposition layer.
31. Hook, rivet shank suggests mounting on leather. Building VIII.
32. Pointed rod with hook, probably brooch or buckle pin (broken). Dock.
33. Chain. Figure-of-eight link. Deposition layer.

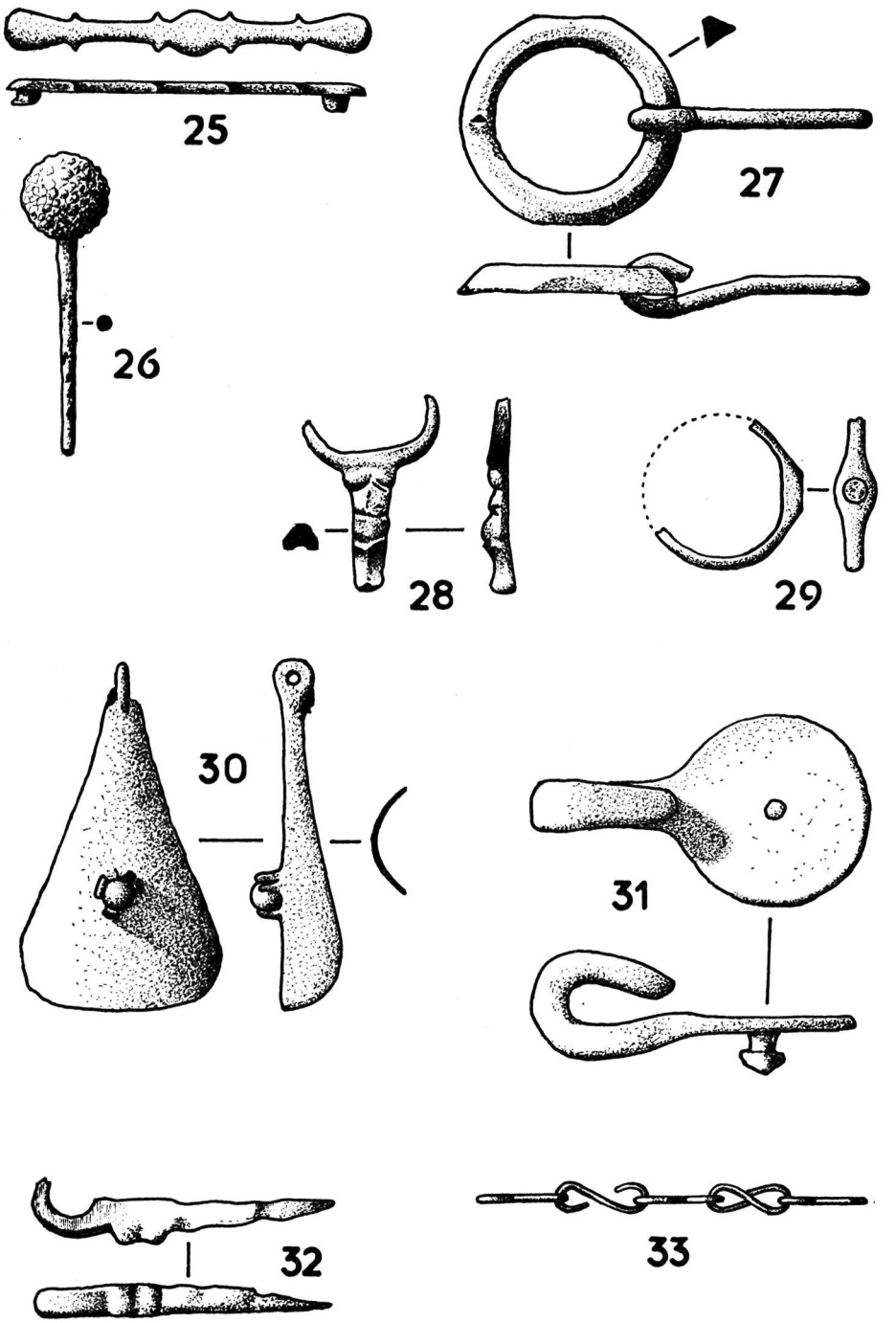

Fig. 43. Toppings Wharf; metal small finds, Medieval and Tudor (1/1)

(Nos. 34–43, Fig. 44)

34. Buckle. Plain. Deposition layer.
35. Bezel fragment, about 13 cm. dia. Building IX.
36. Cupped disc, 1.8 cm. dia., with central square hole possibly a leather-work fitting. Deposition layer.
37. Ring, 1.6 cm. inside, 2.3 cm. outside, crudely made, possibly not finished. Building X.
38. Finger ring, 1.7 cm. inside dia. Bi-convex section with lipped edges. The outer diameter bears an inscription in straight-line characters. This appears not to be purely decorative, but the sense is obscure, and it may be degraded by much repetition. Dock.
39. Key. Simple casket-form. Two of this form were found. Deposition layer.
40. Key. Symmetrical casket-form of the general type IX. London Museum, *Medieval Catalogue*, 135, Fig. 42. Deposition layer.
41. Disc. Shape suggests a scale-weight, but no value is marked. Top layer or layer above Building X.
42. Small cup in heavy gauge material. If No. 41 above is a weight, this may be part of the same nesting set. Lack of markings *may* suggest that these were in process of manufacture. Dock.
43. Pivoted cover. Deposition layer.
44. Sheet object, 3.5 cm. long, 1.6 cm. wide, with a central slot at each end. Building VIII.
45. Heavy sheet fragment, 5 mm. thick, apparently from the rim of a vessel about 50 cm. in dia. Dock.
46. Finger ring, 1.7 cm. outside and 1.1 cm. inside dia. Silver but completely corroded through section. No decoration visible. Trench 1, post-deposition pit.
47. Twenty-three sheet fragments. One from erosion gravels; six from the deposition layers; five from Building VIII; two from Building IX; five from Building X; two from the Medieval Dock/Tudor structure; one from the post-deposition pit; and one unstratified.

IRON

48. Ring, square section 6.5 cm. outside dia., 4.5 cm. inside. Deposition layer.
49. Ring, 4 cm. outside and 3 cm. inside dia. Rectangular section 2.5 cm. wide. Building IX.
50. Staple, 4.3 cm. long. Spikes 2.0 cm. apart. Deposition layer.
51. Fastener, 8 mm. square, shank bent at 90° giving limbs 10 cm. and 30 cm. long. A head has been formed at each end 2.5 cm. dia. Medieval post-deposition.
52. (Fig. 51). Ampulla in pewter. No joint is visible between front and back and the method of manufacture appears to have been by "slush" casting where the metal is poured into the mould (probably metal) and then immediately poured out to leave a thin hollow shell. Sealed by dry crimping after filling with water. (See Pl. 7 and Appendix for full discussion). Deposition layer.

LEAD

53. Circular block, 5.5 cm. dia., 2 cm. thick. One face marked X X followed by six pecks in a rough circle; by the same graver. The opposite face deeply marked with apparently unrelated depressions leaving a 5 mm. border. Weight 18 oz. Possibly not a weight but a soft pad for small metal-shaping operations. Dock.
54. Sheet fragment, 4 cm. long, 1 cm. wide. Small portion removed by two chisel cuts. Dock.
55. Strip, comprising two strips joined along the length with overlap; 6.5 cm. long. Dock.
56. Sheet fragment resulting from trimming an edge 8 cm. long. Medieval post-deposition.
57. Sheet fragment resulting from trimming a corner 4 cm. by 4 cm. Building X.
58. Sheet, 2.5 cm. square, one edge curled. Building VIII.
59. Sheet, broken, accurately squared corner piece 3 cm. by 2 cm. Dock.
60. Fused fragment, 6 cm. on major axis 5 mm. thick. Deposition layer.
61. Sheet, three-folded in "S" fashion and flattened, 5 cm. by 4 cm. Dock.
62. Bar fragment, 4.5 cm. long and approximately 1.0 cm. square. Dock.
63. Strip fragment, 8 cm. long, 6 mm. wide. Wall cut in T1.

B. THE METALWORKING RESIDUES

(Nos. 68–71, Fig. 45)

68. Part of a bronze ingot with evidence of a saw-cut through the section. Dock.
69. Buckle casting in bronze with runner in position showing how the casting was fed and with the flash untrimmed. Medieval post-deposition layers.
70. Bronze piece in the form of spillage from the crucible. Medieval post-deposition layers.

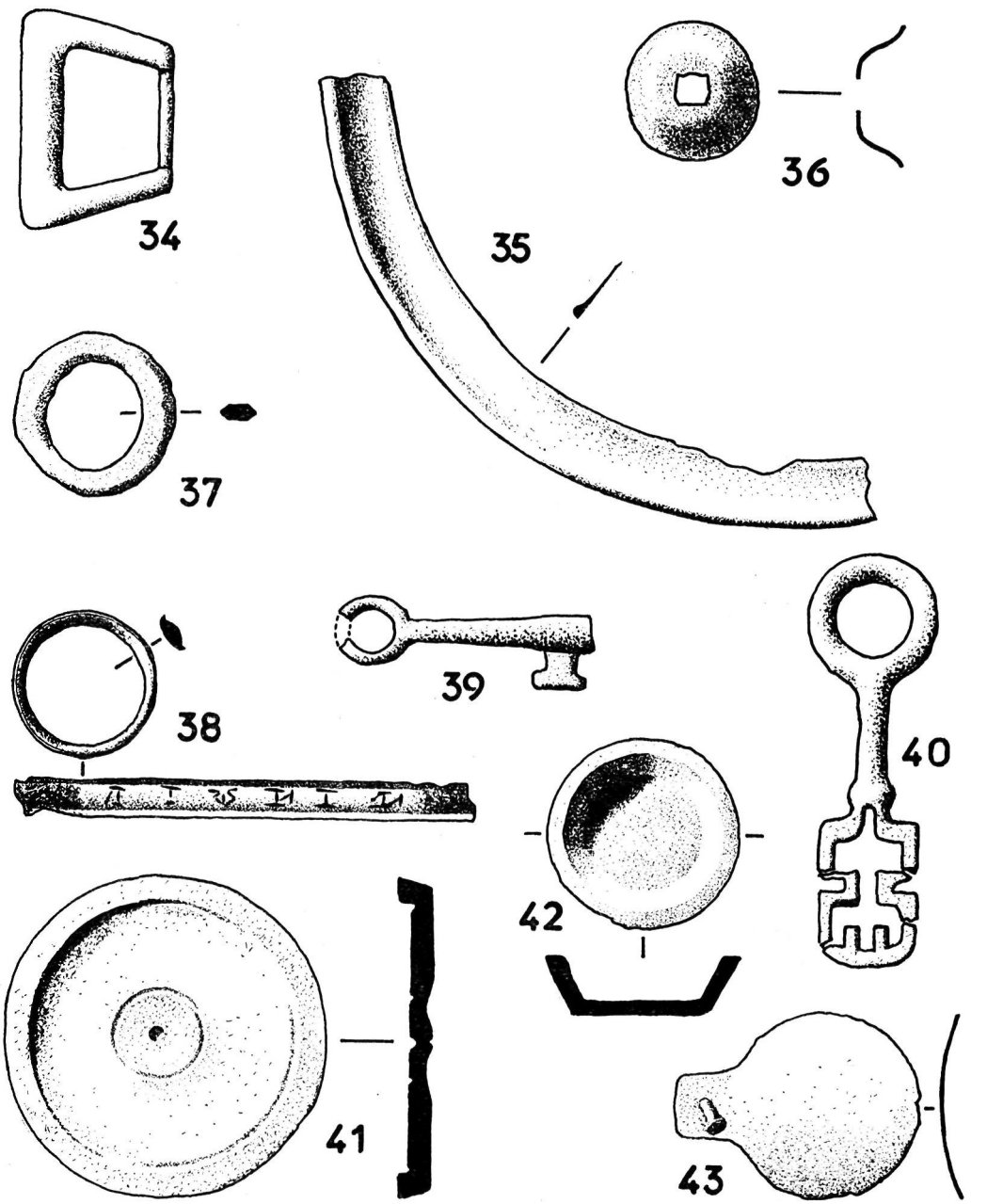

Fig. 44. Toppings Wharf; metal small finds, Medieval and Tudor (1/1)

71. Irregular piece of bronze, probably raw material. Two such pieces were found, both from the same location. Dock.
72. Silicate slag with discrete bronze particles. As with the Roman slag this results during the melting of bronze as for casting. Dock.

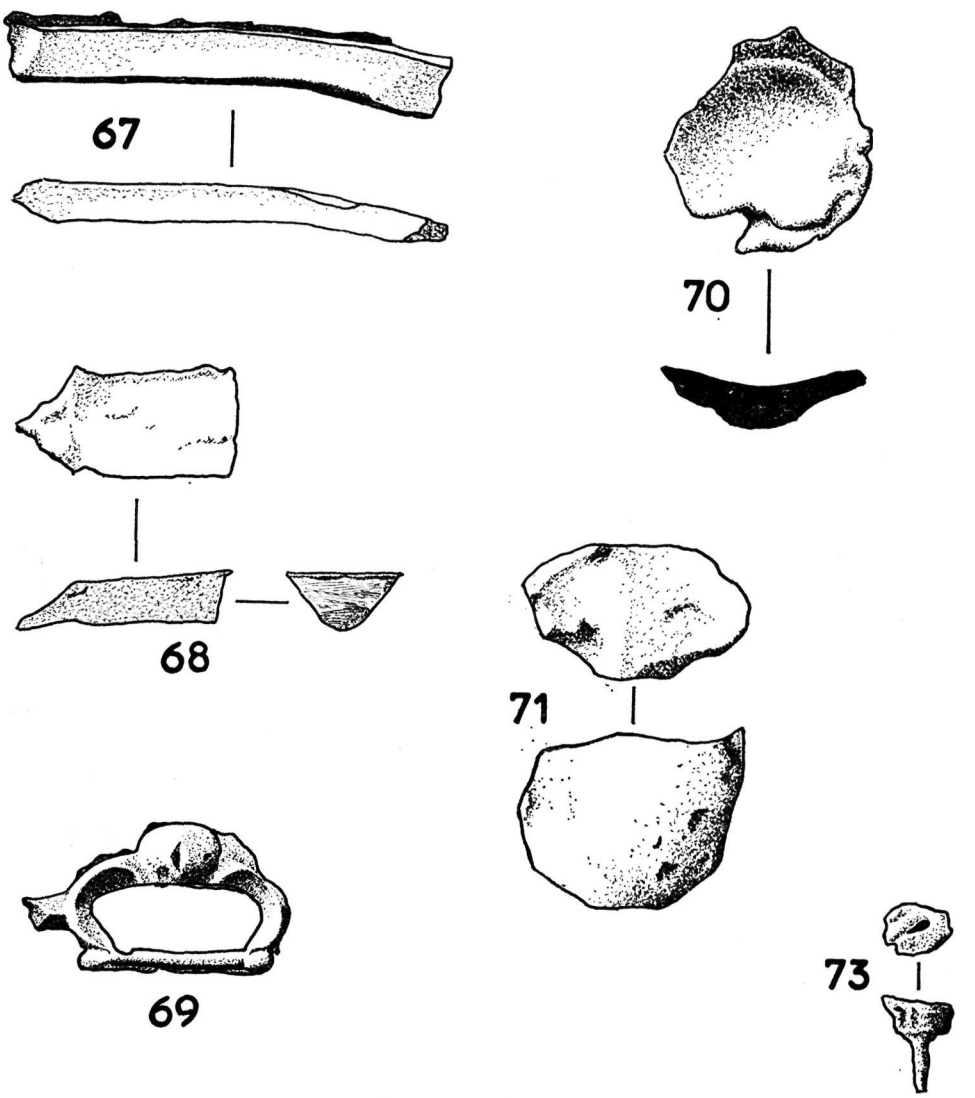

Fig. 45. Toppings Wharf; metal working, Roman and Medieval (1/1)

DISCUSSION:

Of the twenty three non-ferrous objects, other than lead base, twelve are items of adornment and none is of strictly domestic use.

In attempting to account for the presence of these objects, the metal-working activity in the area must be considered in addition to the more usual possibilities of abandoned household effects or accidental loss.

The post-deposition layers and the medieval dock yielded bronze melting evidence (see below), although in both cases this was in a secondary context; the raw buckle casting (69) shows the type of object being produced in the area. None of the objects found is out of scale with this activity.

Of the lead objects and fragments, the ampulla (52) could well be an accidental loss in the Thames. Six of the nine lead fragments came from the slag-bearing area of the dock as did the large block (53). These sheet fragments all suggest local lead working, but the ampulla had been crimped to seal it and presumably it was filled and sold at the shrine of origin and lost, rather than made, in the area.

The metal-working residues found in the dock and the post-deposition layers strongly suggest that bronze casting was conducted in the vicinity. No analyses have been carried out, as the re-use of scrap frustrates attempts to establish a link between raw material and finished object. The ingot (68) suggests that some fresh material was bought. The solitary thick vessel fragment (45) could well illustrate the re-use aspect as no other parts of this large object were found.

The distribution of finds shows Trench 13 as the source of most metal-working evidence and the wooden structure (Building IX) as the main concentration of objects and fragments. It is possible that some, if not all, the objects in Trench 13 were part of a collection of scrap awaiting re-melting and casting into fresh pieces. Lead was frequently added to bronze to increase fluidity and the lead fragment (61) folded over and flattened, suggests preparation for melting either in the bronze or for re-use as lead. Such preparation would be good economic practice as it reduces the area to weight ratio and thus reduces the oxidation losses during melting. A number of the bronze fragments appeared to have been treated in a similar way.

3. EIGHTEENTH CENTURY

A. THE METAL OBJECTS

BRONZE:

64. Buckle. Cast with integral decoration in apparent imitation of set stones. Eighteenth-century pit.

UNSTRATIFIED:

65. Thimble. Dimpling in spiral pattern. Internal dia. of 1.8 cm. suggests male and therefore industrial or seafaring use.
66. Chain. Found in several pieces, total length 55 cm. Circular links formed from square-section wire, dry butt-joints.

B. METAL-WORKING:

74. Stone mould for three plain buckles. No metal contamination; probably unused.

E.VIII. SMALL FINDS

BY IRENE SCHWAB

ROMAN

(Fig. 46)

1. Faience melon bead. Building VI.
2. Part of Faience melon bead. Building I.
3. Pottery sherd of soft pinky/orange fabric; traces of white slip on outer surface. Broken and repaired in antiquity. Top Roman level, Trench 8.
4. Tile fragment with two paw-marks, probably of dog. Coarse red sandy fabric. Building I.
5. Marble slab (broken), 4.9 x 4.0 x 1.6 cm. Probably from East Mediterranean (Greece or Sicily). Two surfaces worked. Between Buildings V and VI.
6. Chert piece, possibly used for smoothing; 5.0 x 2.3 x 1.2 cm. Possibly Jurassic, if so, from Portland, Dorset. Building V.
7. Whetstone of calcareous sandstone, probably from south-east England (Kent or Surrey). Polished on surface from frequent use. Well cut through Building VI.
8. Bracelet (broken) of bituminous shale, possibly from Kimmeridge, Dorset. Lathe-turned. Plano-convex shape. Small groove on the carination. Building V.
9. Tessera of chalk. Secondary calcareous deposit (tufa) on surface, possibly from the water binding the tessera into the mosaic. Probably from Gravesend quarries. Between Buildings V and VI.
10. Part of jet inlay(?). Decorated on one surface. Back surface slightly concave. Upper bar perforated. Ditch I.
11. Gaming counter of polished bone. Hole in centre where turned on lathe. Four concentric circles engraved on one surface. Under-surface slightly convex. Building III.
12. Gaming counter of polished bone. Turned on a lathe. Flat surface with carinated edge. Building V.

(Fig. 47)

13. Twelve gaming counters of polished bone. All are lathe-turned, have flat surfaces, and are chamfered on both edges. The inscriptions were made with a pointed object. The decoration may be very stylised laurel wreaths or garlands. (See *Britannia*, 3 (1972), 357–359). Building I:

    (a) Dark brown. SIIXTIII with decoration engraved on one surface, P retrograde below it. IVNIII with decoration on reverse. Dia. 16.5 mm.; thickness 2 m.m
    (b) Dark brown. SIIXTIII with decoration engraved on one surface. IVNIII.F(ecit) and soldier(?) facing right with loin-cloth, shield and decoration on reverse. Dia. 17 mm.; thickness 2 mm.
    (c) Mottled dark and light brown. SIIXTIII with much decoration on one surface. IVNIII with decoration on reverse. Dia. 16 mm.; thickness 2 mm.
    (d) Dark brown. SEIXTIII and decoration including quadruped (fox?) engraved on one side. RUFINUS and decoration on reverse. Dia. 15.5 mm.; thickness 2.5 mm.
    (e) Mottled brown. SIIXTIII and decoration on one side. IVNIII and decoration on reverse. Dia. 16 mm.; thickness 2 mm.
    (f) Mottled brown. Broken on one edge. SIIXTIII and decoration on one side. IVNIII and decoration on reverse. Dia. 16.5 mm.; thickness 3 mm.
    (g) Light brown. SEXTI and decoration on one side. Reverse plain with hole in centre made by lathe. Dia. 17 mm.; thickness 4 mm.
    (h) Mottled brown. SEXTI underlined on one side. Reverse plain with lathe hole in centre. Dia. 17 mm.; thickness 6 mm.
    (i) Light brown. SEXTI and decoration on one side. Reverse plain with lathe hole in centre. Dia. 17 mm.; thickness 4.5 mm.
    (j) Light brown. SEXTI and decoration on one side. Reverse plain with lathe hole in centre. Dia. 17 mm.; thickness 4.5 mm.
    (k) Light brown. Plain on both sides. Lathe hole in centre of one surface. Dia. 16 mm.; thickness 4.5 mm.
    (l) Dark brown. Both surfaces randomly scratched. Notched around edge. Dia. 17 mm.; thickness 2 mm.

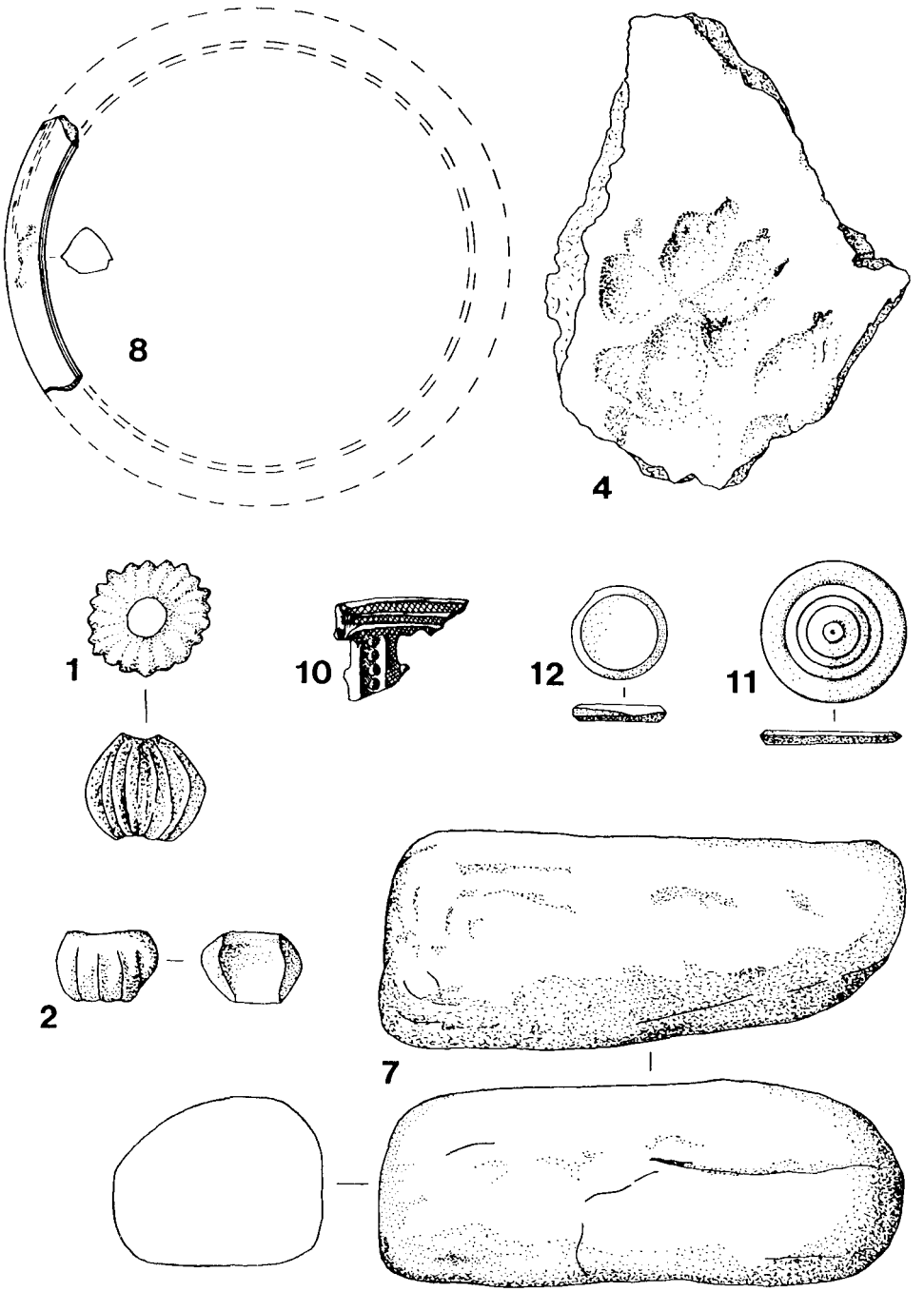

Fig. 46. Toppings Wharf; small finds, Roman (1/1), except Nos. 4 and 7 ($\frac{1}{2}$)

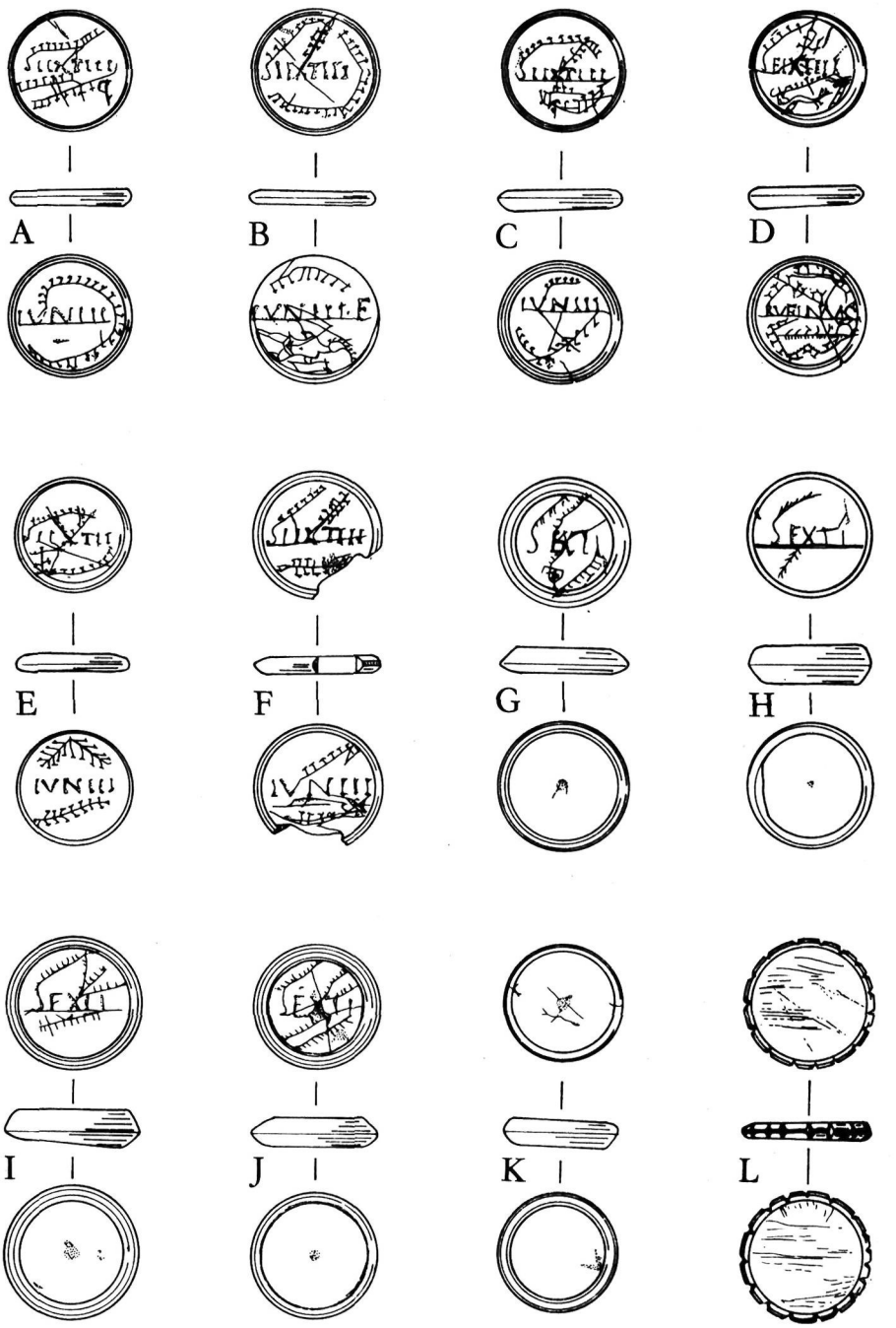

Fig. 47. Toppings Wharf; Roman gaming counters A–L (1/1)

MEDIEVAL AND TUDOR

(Nos. 14–17, 26, Fig. 48); (Nos. 18–20, 22, 24, 27, Fig. 49)

14. Spindle whorl of soft, off-white, sand-tempered pottery. Plano-convex. Four shallow concentric grooves engraved on convex surface. Deposition layer.
15. Spindle whorl of soft, off-white pottery. Plano-convex, but flattened around perforation. Three concentric grooves engraved on convex surface. Pit in deposition layer.
16. Spindle whorl of hard, dark grey, coarse sand-tempered pottery. Both surfaces convex but flattened area has patch of applied clay. Slight ridge around part of carination. Building XI.
17. Loom(?) weight roughly formed of fired clay. Sand-tempered. Traces of burning on one side. Building VIII.
18. Hone of schist. Perforated at one end by drilling from both sides. Source of schist either in Aberdeenshire or in Norway. Deposition layer.
19. Hone of fine-grained calcareous sandstone. Flattened on one side. Source of sandstone in south-east or eastern England, but not in London area. Trench 8, pre-erosion pit.
20. Hone of schist. 10.0 x 2.3 x 1.3 cm. Broken at both ends. Slightly wedge-shaped. Perforated at wider end. Dock.
21. Hone of schist. 10.2 x 3.0 x 1.8 cm. Wedge-shaped. Broken towards thick end. Dock.
22. Spherical bead of jet. Dia. 1.5 cm. Lathe-turned. Perforation 1 mm. through centre. Building IX.
23. Polished bone pin broken at both ends. Length 4.7 cm.; dia. 0.4 cm., but narrower towards extremities. Construction layer of Building VII.
24. Polished bone tine, with arrow-head point, possibly from comb. Decoration of three concentric circles engraved on shaft, on both surfaces. Building VIII.
25. Polished bone knife handle. Hollowed in centre for tang. Length 8.7 cm.; width 1.9 x 1.3 cm. Deposition layer.
26. Polished bone tool. Pointed at one end. Shallow indentation at thick end may mean it is an unfinished netting needle. Length 14.1 cm.; width 1.2 x 1.0 cm. Probably from deposition layer.
27. Worked bone. T2 robber trench through medieval wall.

E.IX. GLASS

BY IRENE SCHWAB

Much of the dating and identification of the glass was kindly provided by Dr. D. B. Harden.

ROMAN

(Nos. 1–12, Fig. 50)

1. Pillar-moulded bowl. Pale green. Lathe-polished top and inside of rim, but original fine finish over ribs. Two incised grooves on inside half-way down rib with lathe-polishing around. First century, probably not later than 75–80. Ditch I.
2. Rim and neck of jug. Brown. Awkward break in neck where handle broken off. First century; *cf.* Radnage jug in British Museum. *Antiq. J.* 47 (1967), 238–40, Pl. 43, Fig. 7, No. 17. Ditch I.
3. Neck and rim of large-necked flask, probably with a triangular body. Pale green. First century. Between Buildings V and VI.
4. Rim of two-handled stemmed cantharos. Pale green with applied white blob, originally one of many scattered on outer surface. Flavian; *cf.* C. Isings, *Roman Glass from Dated Finds* (1957), 54 (Form 38). Between Buildings V and VI.
5. Neck of small bottle with glass folded inwards for rim. Blue-green. Building III.
6. Rim of bottle, probably prismatic. Green. Could be second century. Possibly second phase of Building IV.
7. Rim of unguentarium. Pale green. First century. Building I.
8. Rim of bottle, probably prismatic. Green. First or second century. Building V.
9. Base of unguentarium. Light green. First century A.D.
10. Base of unguentarium. Tall type. Thick green glass. First century. Destruction over Building V.
11. Base of large square bottle. Green. Slightly domed base with four concentric circles moulded in it, one indistinct. Building I.

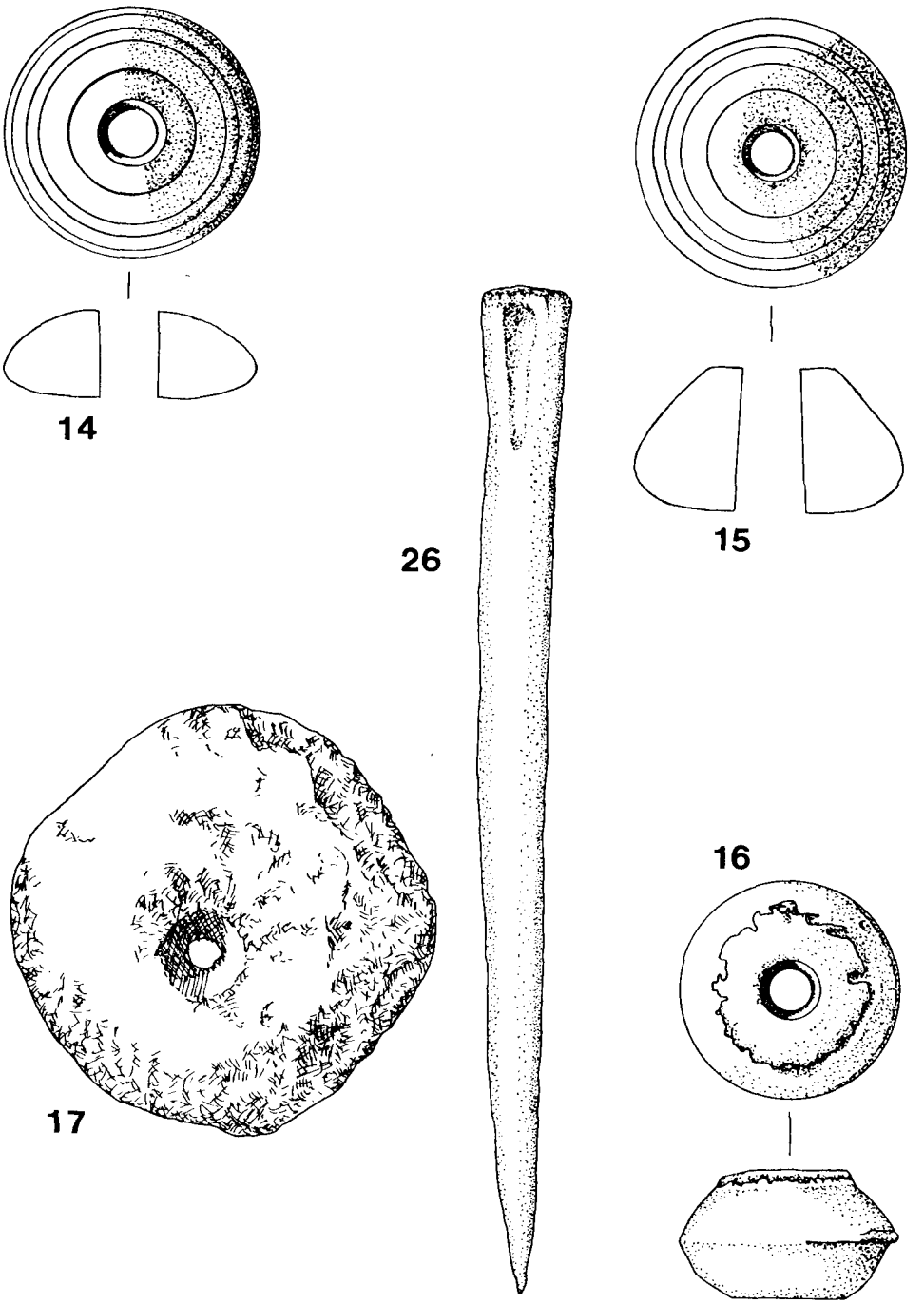

Fig. 48. Toppings Wharf; small finds, Medieval and Tudor (1/1)

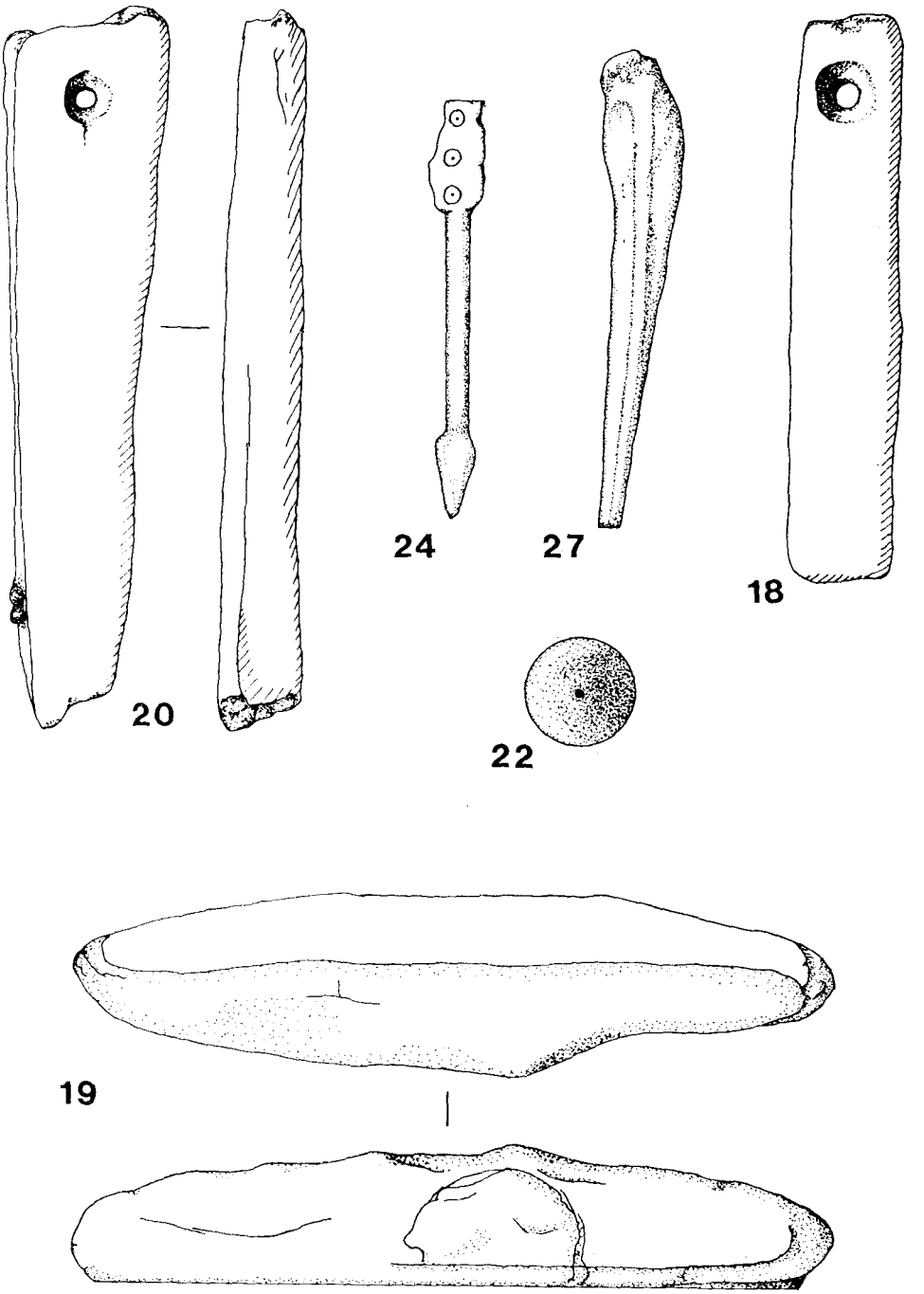

Fig. 49. Toppings Wharf; small finds, Medieval and Tudor (1/1)

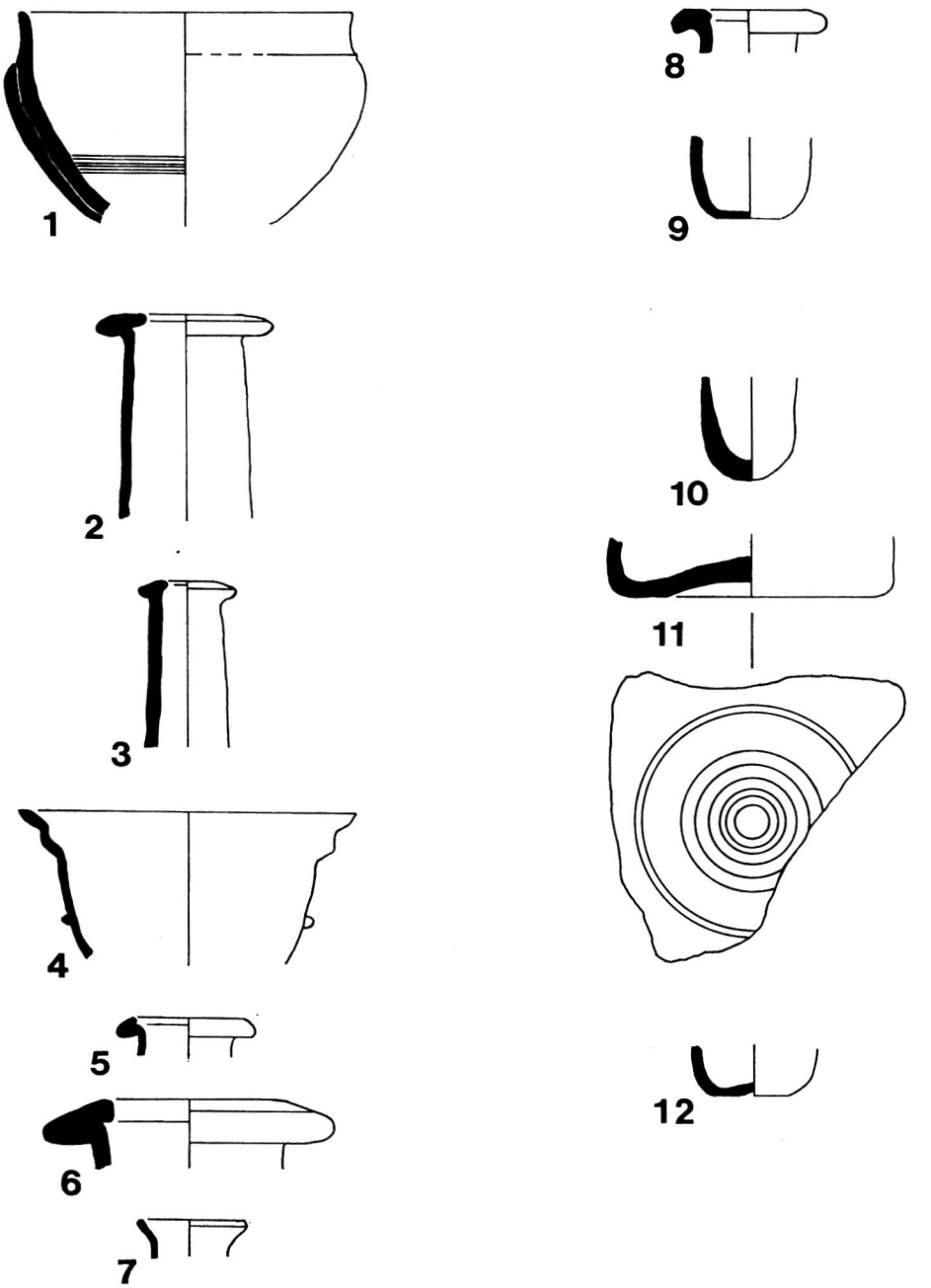

Fig. 50. Toppings Wharf; Roman glass, 1–12 ($\frac{1}{2}$)

12. Base. Pale green. Fill of Building III.
13. Body fragment 1 mm. thick. Pale yellow-green. Smooth on inside, rough and slightly pitted on outside, with four horizontal lines (wheel incisions) 1 mm. wide, the bottom two abraded. Probably originally the lines were dull and the surface shiny. From straight-sided beaker. Building VI.
14. Body sherd. Very pale blue. Smooth inside, rough outside surface and three horizontal lines (wheel incisions). *Cf* No. 13. 1 mm. thick. Occupation outside Building V.
15. Flat handle. Green. Four narrow and one broad rib on outer surface. First or second century. Well.
16. Jug handle. Green. Three central ribs. Distorted by a fire. First century. Ditch I.
17. Part of body of pillar-moulded bowl. Sherd from space between pillars. Green. Area just below rim was polished and now appears dull. Traces of polishing also on inside. Alley between Buildings V and VI.
18. Folded rim of bowl or wide-necked jar. Pale blue-green. Flattened on top. Late Roman black earth.
19. Counter. Light blue opaque glass. Plano-convex shape. Dia. 1.55 cm.; height 0.65 cm. Building III.
20. Flat body sherd of hexagonal or square prismatic bottle. Pale green. First or second century. Between Buildings V and VI.
21. Tail of jug handle. Green. Probably from bulbous tall-necked type. First century. Building V.
22. Handle fragment and body sherd. Dark blue. Late-first century. Building VI.
23. Top part of handle. Light green. Slightly rounded. First century. Building VI.
24. Edge of central rib and outer edge of angular handle. Dark blue. Building V.
25. Folded base of small jug. Pale green. Second century. Late Roman black earth.
26. Rim and body fragment of pillar-moulded bowl. Pale green. Worn surface. Construction layer between Buildings V and VI.
27. Rim of vase. Yellow. Later Roman pit.
28. Base of a handle. Light green. First century. Building IV.
29. Body fragment. Very pale blue. Building III.
30. Flattened base of bowl or flask. Dark blue. First century. Building IV.
31. Gaming counter. Off-white opaque glass. 1.8 cm. dia.
32. Gaming counter. White opaque glass. 1.1 cm. dia.
33. Gaming counter. Blue opaque glass. Broken and polished.
Nos. 31–33 from pit, possibly later than Building III.
34. Two sides of square bottle. Green. 3 mm. and 4.5 mm. thick.
35. Two fragments of Hofheim-type bowl. Very pale green. Wheelmarks in a shallow groove probably just below rim. Another incised line below. First century. *Cf.* C. Hawkes and M. Hull, *Camulodunum* (1947), Pl. 88.
36. Body fragment. Pale green with many bubbles. Possibly fourth century.
37. Fragment. Colourless. Post–70 A.D., probably second century.
Nos. 34–37 Pit, later than Building III.
38. Gaming counter. White opaque glass. Plano-convex shape. Broken patch on upper surface. Dia. 1.7 cm., height 0.6 cm. Ditch I.
39. Pillar-moulded bowl. Brown and white millefiore glass. Plain rim. Part of pillar remaining. Probably made in Italy (Rome or Campania), Claudian, *cf.* Radnage bowl mid-first century (different colour) in *Antiq. J.* 3 (1923), 334, Pl. 35. Pit possibly later than Building IV.
40. Base of unguentarium. Pale green. Possibly a stamp on base; *cf.* in B. Cunliffe *Excavations at Fishbourne* 1961–69 2 (1971), 358, No. 86, Fig. 142. Pit possibly later than Building IV.

MEDIEVAL

41. Linen smoother. Surface very weathered, therefore it is of potash glass which was used from 1000–fifteenth century. This is a Viking type, but probably dated eleventh–twelfth century; *cf.* Dudley Waterman, "Late Saxon, Viking and early Medieval finds from York", *Archaeologia*, 97 (1959), 96 and Fig. 22, Nos. 36–7. Medieval deposition layer.

E.X ANIMAL BONES

BY DERRICK RIXSON

INTRODUCTION:

The animal bone was in good condition, but mainly fragmentary and in many cases each trench or feature layer yielded only two or three fragments. As the bones from each trench or feature layer were sorted into species and individual animals for recording, there were many instances whereby one individual was represented by just one bone fragment. Under these circumstances, the total number of individuals for each species must be regarded with reservations, but the numbers of each species and of each age group can be compared proportionally.

The report of the findings is divided into Romano-British, Medieval and Tudor. The Romano-British bones come from the levels of the first and early second century settlement, the Medieval bones from the deposition layers and the gravels of the dock, and the Tudor bones from the infilling of Building X.

METHOD:

The bones of each trench or feature layer were sorted and recorded separately. They were sorted into species and then into skeletal order. The details recorded under each species were:

(i) Number of bones or fragments of each bone.
(ii) Minimum number of animals in each species (Table 1).
(iii) Any evidence based on fusion or non-fusion of epiphyses or tuberosities.
(iv) Age category based on fusion state of bones and dental state (Table 2).
(v) Number of animals represented by bones of different parts of the body (Table 3).

The minimum number of individuals was recorded in respect of each trench or feature layer; therefore, if a trench or feature layer yielded just one fragment of sheep bone it would be recorded as one individual under sheep.

The age categories into which individual animals were placed were as follows:

Age Category:

"A" The following epiphyses would be unfused: Distal humerus, proximal radius, proximal 1st and 2nd phalanx, also the ischium, ilium and pubis would be unfused.
Dentition: temporary premolars, no molars or 1st molar only present.

"B" The above epiphyses would be fused with the following being unfused: distal metacarpus, distal metatarsus, distal tibia, trochanter minor of the femur.
Dentition: Temporary premolars and 1st and 2nd molars only.

"C" All the above epiphyses would be fused with the following being unfused: proximal humerus, distal radius, the olecranon process of the ulna, distal ulna, proximal and distal femur; proximal tibia (proximal fibula in pig), tuber calcis, tuber coxae, tuber ischii, also the epiphyses of the vertebrae.
Dentition: all premolars permanent and all molars fully erupted.

"D" All the above epiphyses and tuberosities fused.
Dentition: as for "C" with 3rd lower molar fully in wear on all cusps.

In many cases only the distal or proximal part of a bone was found which would place the animal in any of two or three age categories, which has given rise to the categories A/B or B/C, etc. (*e.g.* distal half of a metacarpus which is unfused=A/B category; proximal half of humerus which is unfused=A/B/C category; distal half of a tibia which is fused=C/D category). Where separate bone fragments of a species from one trench or feature layer could belong to the same individual and fall into overlapping age categories, the age category common to all the bone fragments would be the one recorded (*e.g.* distal fused tibia=C/D category plus a distal unfused femur=A/B/C age category—reported as one individual in C age category).

As some of the bone material was adequate to identify an individual, but was not the part of the bone to show evidence of age, the total number of individuals reported exceeds the total of individuals shown in the separate age categories.

The division of bones into separate parts of the body were as follows:

(i) Forequarters—Scapula, humerus, radius, ulna, carpus, cervical and thoracic vertebrae.
(ii) Hindquarter—Os coxae, femur, tibia, fibula, tarsus, lumbar and sacral vertebrae.
(iii) Feet—Metacarpus, metatarsus, phalanges.
(iv) Head and Teeth—Skull, mandible, horn cores, teeth.

This division of bones was only applied to cattle, sheep and pigs.

FINDINGS:

Many of the bones of cattle, sheep and pig from each period showed signs of chopping indicating that they had been butchered for food. There were no consistent chopper marks on the bones to indicate any particular method of cutting up the carcases. The nature and type of bone generally would be consistent with the bone residue from normal household waste.

1. ROMANO-BRITISH:

Cattle (*Bos Taurus*): The Romano-British layers contained predominantly cattle bones whereas in the Medieval and Tudor layers, cattle, sheep and pig were more evenly represented; although with the small amount of bone from the Medieval and Tudor layers this fact should not be regarded as significant.

The age distribution of the cattle (Table 2) tended slightly towards the more mature and older animals, the younger animals (A and B categories) possibly representing casualty animals. Different parts of the carcase were evenly represented (Table 3) by the bone material indicating that whole animals or at least all parts from different animals were consumed as food on this site.

Sheep (*Ovis Aries*): The total number of individual sheep (Table 1) was about one third of the cattle numbers.

The age distribution of the sheep (Table 2) was fairly even and there was no significant difference in the numbers of individuals represented by bones from different parts of the body.

Goat (*Ovis Caprinae*): Bones of goat which were identified distinct from sheep represented two individuals. Bones which could not be identified as goat distinct from sheep were listed as sheep.

Pig (*Sus Scrofa*): The total of individuals was about two thirds that of cattle and twice the numbers of sheep (Table 1). The age distribution of the pigs was fairly even (Table 2) and there was no significant difference in the numbers of individuals represented by different parts of the body (Table 3).

Horse (*Equus Caballus*): There was a small amount of bone representing seven individuals.

Dog (*Canis familiaris*): Bone material of dog represented two individuals.

Other Species: There was a number of fragments of bone of deer representing five individuals and part of the ulna of a hare. There was also a number of bones and fragments of birds, mainly domestic fowl.

MEDIEVAL:

The bones from these layers were mainly cattle, sheep and pigs in fairly even proportions for each. The numbers were too small to show any significance in age distribution (Table 2) and the different parts of the body represented by the bone (Table 3).

In the fourteenth–fifteenth century gravels of the dock were the proximal ends of two metacarpal, proximal ends of six metatarsal and the distal end of one metatarsal of cattle which had been carefully sawn through using a fine-toothed saw. It is very unlikely that this sawing was carried out as part of the butchering of the animals, as it is so much easier to remove the feet of the animals by severing the ligaments and tendons to separate the metacarpal/carpal joint and the metatarsal/tarsal joint. It is highly probable that the parts of the bone found on the site were the waste parts and that it was the rest of the metapodial bone that was used after the proximal part was sawn off, possibly as a handle of a knife or some other tool.

The bone material representing one dog consisted of an ulna and radius which were fairly large. The measurements are as follows:

	Total Length	*Maximum Width Lateral–Medial*		*Mid-shaft Width Lateral–Medial*
		Proximal	*Distal*	
Ulna	242 mm.	24 mm.	9 mm.	13 mm.
Radius	210 mm.	24 mm.	32 mm.	17 mm.

3. TUDOR:

Mainly cattle, sheep and pig represented fairly evenly (Table 1). As with the Medieval, the age distribution of the animals (Table 2) and the different parts of the body represented by the bone could be regarded in no way significant as the numbers were too small.

A fragment of one human clavicle was found within the east wall of Building VI.

TABLE 1—MINIMUM NUMBER OF INDIVIDUALS OF EACH SPECIES

	Cattle	*Sheep*	*Goat*	*Pig*	*Horse*	*Dog*
Romano-British	107	35	2	70	7	2
Medieval	10	8	1	6	–	1
Tudor	8	8	–	4	1	1

TABLE 2—MINIMUM NUMBER OF INDIVIDUALS IN EACH AGE CATEGORY

	Cattle			*Sheep*			*Pigs*		
Age Category	*Romano-British*	*Medieval*	*Tudor*	*Romano-British*	*Medieval*	*Tudor*	*Romano-British*	*Medieval*	*Tudor*
A	1	–	2	1	–	–	1	–	–
A/B	2	2	–	3	–	1	11	1	–
A/B/C	–	–	–	–	–	–	1	–	–
B	2	–	–	1	1	–	2	–	–
B/C	7	1	2	1	–	1	6	–	1
B/C/D	3	–	–	1	–	–	2	–	–
C	2	–	–	4	–	2	5	1	–
C/D	6	1	–	5	–	1	3	–	–
D	15	–	–	3	5	3	5	–	–

TABLE 3—NUMBER OF INDIVIDUALS REPRESENTED BY BONES OF DIFFERENT PARTS OF THE BODY

	Cattle			*Sheep*			*Pig*		
	Romano-British	*Medieval*	*Tudor*	*Romano-British*	*Medieval*	*Tudor*	*Romano-British*	*Medieval*	*Tudor*
Fore-quarter	49	6	6	16	3	1	32	2	2
Hind-quarter	50	4	5	18	1	3	26	–	3
Feet	51	3	3	13	2	3	24	1	–
Head	37	4	3	11	3	6	27	4	1

E.XI ROMAN OYSTER SHELLS FROM BUILDINGS III AND IV

BY K. D. THOMAS

Over 400 specimens were examined from the levels above the top surviving floor of Building IV and the rubbish deposits filling Building III.

All are of the species *Ostrea edulis L.* which occurs around the British Isles and from Norway south to the Iberian Peninsula, the Atlantic coast of Morocco and into the Mediterranean and Black Sea. The species is very variable in size and form, this being related more to extremely local conditions, associated with substratum, than to geographically-determined factors. As a result, it is not possible to say from where the shells were derived. They may have come from local populations, or from abroad.

Measurements on the size and weight of sub-fossil oyster shells may enable the calculation of the amounts of animal protein eaten (by comparison with the average animal weight/shell weight ratio of modern specimens). This may enable an estimate of the importance of oysters in the diet, assuming a certain minumum essential daily calorific intake per human individual. However, in order to do this, some knowledge of the human populations which once inhabited the site must be available. In particular it is essential to have some idea of the numbers of people involved and the periods of occupation. In the present case such information is not available, so time-consuming measurements on the shells were not made.

The fact that the oyster shells occur throughout the site suggests that they may have been a regular part of the diet of the inhabitants. It is not possible to say how important they were in the economy of the occupation, or if they formed a seasonally-important part of the diet.

E.XII THE CLAY WALL FROM BUILDING III AND THE PLASTER FROM BUILDING VI

BY PAMELA PRATT AND ELIZABETH PYE

(a) Examination of a section of the northern internal clay wall in Building III with an applied Plaster Surface.

The fabric of the wall and the surrounding soil fill was very damp and the plaster was soft and crumbly. Removal of the soil from the plaster surface for examination purposes proved to be very damaging, while the material was damp, and it was therefore decided to remove a section of the wall with some of the surrounding soil, so that it could be examined carefully under laboratory conditions. A section approximately 40 cm. was lifted and transported to the Institute of Archaeology conservation laboratory where it was allowed to dry out in controlled conditions over a period of months. Gradual drying caused the plaster to harden and it was then possible to remove the soil fill and examine the plaster and the wall support behind it.

Results of the Examination:

The wall is made up of a light brown compact clay, approximately 18 cm. thick, with organic and ceramic inclusions. It is easily distinguishable from the soil fill which is darker in colour and looser in texture.

The organic particles are distributed at random throughout the clay and therefore cannot be interpreted as a wattle-type support. The presence of ceramic fragments, up to 2 cm. in size, suggests that the wall may be of a pisé type.

The wall is rendered, on one side only, with two coats of lime plaster which differ from each other in texture and thickness. The first, applied directly to the wall surface, is approximately 15 mm. thick and contains a high proportion of well-graded sand filler.

Almost pure lime was used for the final plaster layer which is not more than 1.5 mm. thick in this section of plaster.

Both layers are in a friable condition which suggests that calcium carbonate has been leached from the plaster by acids present in the burial environment. The surrounding soil contains the remains of much organic material which has deteriorated in the damp conditions, producing organic acids which will have raised the acidity of the soil and attacked the plaster. Because of this it is difficult to calculate the percentage of lime to filler in the original plaster mixes.

Examination of the plaster surface did not produce any evidence that it had been painted. It must, therefore, be assumed that this section was undecorated.

(b) Examination of fragments of Painted Plaster from Oven I in Building VI.

This was examined to determine the composition of the plaster and to identify the pigments.

All the samples examined were of lime plaster and in section showed that they were made up of three plaster layers differing in thickness and texture. These are probably the upper layers of a much thicker plaster, as the very coarse layer characteristic of this type of plaster rendering is missing.

The layer furthest from the painted surface is approximately 7.5 mm. thick and contains well-graded sand and fine gravel filler; the largest particle is not more than 2 mm.

in size. The second layer, 5 mm. thick, contains well-graded fine sand only. To this layer had been applied a white lime wash, not exceeding 1 mm. in thickness and containing a very small percentage of fine sand filler. This final coating served as a smooth ground for the paint.

Microscopic examination of a section of one of the samples showed that there was no clear division between the paint layer and the fine plaster, suggesting that the background colour had been applied before the plaster had set and while it was still damp. Further examination indicated that decorative detail had been applied to this background layer, using a pigment bound with an organic medium which proved impossible to identify.

The pigments remaining on the plaster were identified by chemical analysis with the following results:

Red pigment	—	haematite
Yellow pigment	—	yellow ochre
Green pigment	—	terre verte
White pigment	—	lime white

These are all earth pigments commonly used in wall painting and easily obtainable.

APPENDIX

THE LEAD AMPULLA

BY BRIAN W. SPENCER

(See E.VII No. 52, Fig. 51, and Pl. 7)

Returning from Paris in 1179, Gerald of Wales went first to visit the spot where Thomas Becket had been brutally murdered some nine years earlier. Before leaving Canterbury he bought a souvenir—a leaden ampulla. This little flask would have contained a drop of the water reputedly tinged with St. Thomas's blood and popularly held in the highest esteem for its miraculous healing and protective properties. Gerald and his companions then set out for London, intent on visiting the Bishop of Winchester whom they knew to be in residence in Southwark. They arrived at Winchester Palace in the middle of a chapter-meeting and the Bishop, breaking off to greet them, at once perceived the ampullae that hung about their necks and observed that they must have come from Canterbury.[1]

Though commemorative badges were already known to pilgrims at three or four major continental shrines, these Canterbury ampullae were almost certainly the first travel souvenirs to be manufactured in England. And so universal was the impact of Canterbury's new saint that within four years of Becket's death Canterbury ampullae were said to be as well-known everywhere as the ubiquitous shells of Compostella pilgrims. This must have been especially true at London, Becket's birthplace. By 1177 "old" Canterbury ampullae brought back by Londoners were already being melted down.[2]

Not many ampullae were to find their way so quickly into the melting-pot, however, and among the survivors the example from Toppings Wharf turns out to be very nearly the earliest. It is certainly the earliest piece of tangible evidence of a Londoner's pilgrimage and of the cult that was to fill the medieval city with memorials to its most famous son and spiritual champion. On stylistic grounds there can be little doubt that the ampulla was made around 1200. Associated archaeological evidence, on the other hand, suggests that the

ampulla was deposited late in the thirteenth century. These disparate dates are perhaps best explained by the well-attested tendency among the more devout to keep their pilgrim souvenirs as lifelong devotional and talismanic objects. Some even took them to the grave or bequeathed them to relatives or took other measures to ensure the continued preservation of their pilgrim signs.[3]

Fig. 51. Toppings Wharf; ampulla (2/1)

Recent discoveries at Southampton and elsewhere have helped to advance our knowledge of the dating and development of Canterbury ampullae manufactured between about 1180 and 1280.[4] Nearly all the specimens that survive from this period are so closely interrelated that they probably represent a tiny proportion of the massive output of a single workshop operating under the cathedral's authority, within or very close to the precincts of Christchurch. Outside the main class but of the same period, however, there exist a few novelties, all of them differing markedly from the more conventional group as well as from each other. Their idiosyncrasies suggest the work of free-lance ampollers, back-street competitors to the official trade in pilgrim souvenirs, who were often the subject of dispute and litigation in major pilgrim resorts.

It is to this group of sports that the ampulla from Toppings Wharf belongs. Only one other ampulla can be compared to it and that was found at Stone Bridge, Bristol, in 1897.[5] Though they were cast from different moulds, the iconography is essentially the same in both.

Despite a more corroded surface, the Bristol specimen provides guidance on some of the details obscured by folds and creases in the more battered specimen from Southwark.

The ampulla is a slim, flat-sided, flask-shaped vessel with a pair of handles at the neck. On one side (Pl. 7) is depicted a scallop-shell, its corrugated surface reaching as far as the handles. Above the shell is shown St. Thomas's head, his face untypically bearded and his mitre worn athwart the head in the manner that went out of use in about 1200.

The scallop was essentially the emblem of St. James the Great. From the beginning of the twelfth century it was also the sign or badge worn by pilgrims to his famous shrine at Compostella. Outside the Holy Land it was, in fact, the earliest of all pilgrim badges. But just as St. James came to be regarded as the patron saint of pilgrims and to be regularly depicted in pilgrim's dress, so also did the scallop-shell come to be looked upon as the emblem of pilgrimage itself and in pictures of the later Middle Ages pilgrims, no matter where they had come from, were usually shown with a scallop-shell to mark their identity. It was natural, therefore, that shrines other than Compostella should decide to incorporate this symbol in the designs of their own pilgrim souvenirs, although the practice was vigorously opposed by the archbishops of Compostella. The shells on the ampullae from Southwark and Bristol, however, are the only instances of its use at Canterbury.[6]

As with most ampullae from Canterbury, the other side (Fig. 51 and Pl. 7) contains a representation of Becket's martyrdom. Four knights were implicated in his murder and occasionally all of them are depicted, assailing Becket from the left. Most ampullae, however, are content with a single knight, Reginald Fitzurse, who was thought to have delivered the fatal blow. But the Southwark ampulla portrays two knights, one in front of the archbishop, the other behind, and both hacking with swords at Thomas's skull. The arrangement of the figures in this way appears to be unique among the prolific representations of this scene.

The knights are dressed in hauberks of mail with slit skirts reaching to the knees, mail-hose and conical helmets with nasals, a type which was generally superseded after 1200 by the flat-topped helm that enclosed the head. The knight on the left is wearing prick-spurs. St. Thomas, again bearded, is dressed in full pontifical vestments, including a low-crowned mitre. As he begins to sink under the sword-blows, he retains a hold on the cross-staff before him. Above and to his left is depicted a hanging lamp, an allusion, very probably, to the apocryphal story that developed after an altar had been set up on the site of the martyrdom. Though Becket had stood his ground against the knights and had violently resisted their attack, popular belief soon held that he had been slain while kneeling submissively in prayer at an altar.

NOTES

[1] *Giraldi Cambrensis Opera*, ed. J. S. Brewer (1861), 1, 53; *The Autobiography of Giraldus Cambrensis*, ed. H. E. Butler (1937), 72.

[2] *Materials for the History of Thomas Becket*, ed. J. C. Robertson (1875–85), 1, 464–65.

[3] See B. W. Spencer on "Medieval Pilgrim Badges" in *Rotterdam Papers: a Contribution to Medieval Archaeology*, ed. J. G. N. Renaud (Rotterdam, 1968), 137–53.

[4] See B. W. Spencer on "The Ampullae from Cuckoo Lane" in Colin Platt and Richard Coleman-Smith, *Excavations in Medieval Southampton, 1953–69*, 2 (1974); "An Ampulla of St. Egwin and St. Edwin" in *Antiq. Journ.*, 51 (1971), 316–18.

[5] Bristol Museum G2772.

[6] See B. W. Spencer, "A Scallop-shell Ampulla from Caistor and comparable Pilgrim Souvenirs" in *Lincolnshire History and Archaeology*, 1, No. 6 (1971), 59–66.

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