The Thames Crossing at Oxford: Archaeological Studies 1979–82

By Brian Durham

With contributions by Marion Archibald, Ian H. Goodall, Alison M. Goodall, George Lambrick, Maureen Mellor, Peter McKeague, Carole A. Morris, Mark Robinson and Bob Wilson.

SUMMARY

A series of excavations and observations from 1979 to 1982 has broadened the background to the late 8th century deposits excavated in 1971. This report includes discussions of new wider concepts of the Thames flood-plain which confirm that there was major engineering on the crossing line at that time; the interpretation of the primary deposit as an artificial causeway is still preferred by the author. The upstream margin of a stone ford indicates how the Late Saxon route negotiated one of the many channels of the river. Evidence of a timber bridge was inconclusive, and the first real improvement to the crossing was a high stone causeway at least 800 m. in length with intermittent flood-openings. A discussion of the dating of this structure suggests the late 11th century, making it the oldest identifiable medieval stone bridge in Britain and possibly in northern Europe.

The stone bridge soon engendered 'ribbon' development against its downstream face, while the necessary reclamation of a building platform on the upstream side had to wait about 100 years. The rescue excavation exposed a tenement beside a flood channel, providing evidence of consolidation of the river-bank, slow blockage of the channel and ultimate encroachment of buildings over it. The stimulus for development of the excavated frontage is attributed to Abingdon Abbey, but it seems that Oseney Abbey gained the 2 m. wide waterside strip and in the end had all the benefit of extending over the redundant channel. A good group of wooden vessels was associated with a late 13th-century property, and the modest quantities of medieval pottery suggest relatively prosperous occupants.

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INTRODUCTION

The predecessor of this report, in Volume XLII of this journal, proposed a very radical alternative view of Oxford's origins.[1] More than thirty years of modern archaeological investigations had failed to provide substantial material evidence of settlement earlier than the 11th century, and it was largely from documentary and numismatic sources that the town was regarded as a West Saxon foundation of the early 10th century, conceivably the late 9th.[2] 79–80 St. Aldates extended the stratified archaeological sequence back to this period and well beyond, and with the aid of clear physical dating demonstrated successive deposits of domestic waste before the mid 9th century. The deposits did not themselves imply settlement, but seemed to be rubbish dumped at the edge of a low linear earthwork

[1] B. Durham, 'Archaeological Investigations in St. Aldates, Oxford'. *Oxoniensia* xlii (1977), 83–203.

[2] The most comprehensive account then available was E.M. Jope, 'Saxon Oxford and its Region', in D.B. Harden (ed.), *Dark Age Britain*, (1956), 234–258.

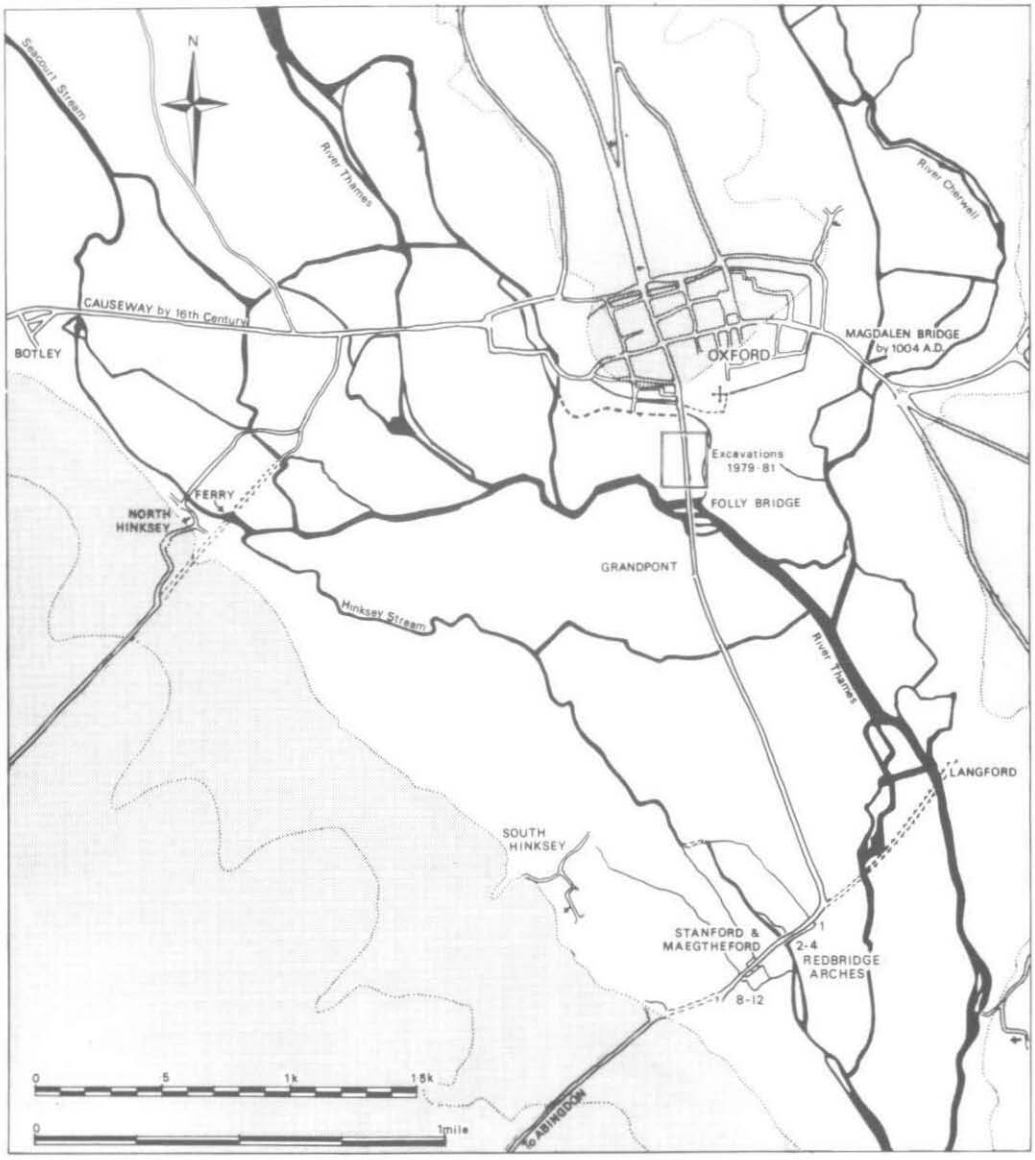

Fig. 1. The Thames and Cherwell at Oxford, showing the principal river crossings.

interpreted as a causeway for a river crossing. The scale of the earthwork suggested a major bridgehead at a time when the Thames was the physical boundary between Wessex and Mercia. The unavoidable but very radical conclusion was that Oxford, as a strategic settlement on the north bank, was initially Mercian.[3]

The search for a site which might corroborate these findings began as early as 1971

[3] B. Durham, *Oxoniensia* xlii, 178-83. For the background of the early Thames crossing see G.M. Lambrick, 'Some old roads in north Berkshire', *Oxoniensia* xxxiv (1969), 78–92; R.H.C. Davis, 'The ford, the river and the city', *Oxoniensia* xxxviii (1973), 258–67.

when the Morris Garages premises were first proposed as an extension to the Telephone Exchange. Advances in micro-circuitry meant that this scheme never materialised, and excavation was delayed while various alternatives were mooted, ultimately the Crown Court development. Only the forecourt was available in 1979, and the following report shows how totally different the site was from its predecessor. Corroboration was clearly impossible: the causeway had evidently never existed here, and certainly by the mid 10th century there was only a broad river channel which was crossed by a ford. The 'Discussion and Conclusions' section draws together the results of the three formally excavated trenches at 65 St. Aldates and a long list of salvage observations. It attempts to show what might be expected of an 11th century stone bridge, and the dramatic topographical changes which may be attributed to it in the centuries after its construction. Grandpont has shaped and possibly even created half of the medieval parish of St. Michael at the South Gate (now included in St. Aldates) and the lessons learnt in these investigations are likely to be relevant to many other stone causeways on broad flood plains.

The format of this report follows that of its predecessor in initially presenting the new evidence, and then going on to put it into a historical perspective in the section titled 'Discussion and Conclusions'. The main innovation is that, following recent recommendations by the chief funding authority (The Directorate of Ancient Monuments and Historic Buildings of the DoE) the printed section includes only a 'digest' of the evidence.[4] The 'detail' is published in the form of microfiche, and has been designed to read as an independent document. All illustrations have, however, been confined to the printed section, on the principle that it makes for easier reference when using either text or fiche.

The work was carried out by the Oxford Archaeological Unit. The writer would like to express gratitude to the Department of the Environment for funding both excavation and post-excavation work and particularly the successive inspectors Brian Davison and Tony Fleming for advice and encouragement. The salvage work was covered by funds from Oxford City Council and many of the Oxford colleges. Access to the 65 St. Aldates site (former Morris Garages) was initially provided by courtesy of Post Office Telecommunications and later with the help and encouragement of Mr P. Wickham of Property Services Agency. Messrs Wimpey Construction provided advice on the shoring of the deeper trenches, and Messrs J. Barney contributed many hours of mechanical excavation. Access to the 33 St. Aldates site was provided by Mr Roli Huggins of the City Architects Department and Mr Eric Bishop of Messrs Benfield and Loxley.

The writer is very grateful to Cecile Tremolet and Duncan Wilson for supervisory assistance on the excavations, to Eleanor Beard, Claire Halpin and Wendy Page for preparation of the drawings, and to Sally Quiney and Jackie Wilson for typing and word-processing of the final draft.

DOCUMENTARY EVIDENCE

H E Salter's *Survey of Oxford* is still unparalleled as a comprehensive study of the documents of an English town.[5] As in the previous investigation at Nos. 79–80 St. Aldates, no attempt has been made to repeat his work, but rather to check its consistency and then try to fit it into the archaeological story. The main problem with the 65 St. Aldates frontage was Salter's uncertainty as to which of the modern boundaries represented medieval tenements.[6] This was not solved by the 1979 excavation (Trench I), indeed it was made

[4] Council for British Archaeology and Department of the Environment, *The publication of archaeological excavations*, (1983); C.B.A., *Manual on the preparation of material for microfiche publication* (1983).

[5] H.E. Salter. *Survey of Oxford*, i–ii, ed W.A. Pantin and W.T. Mitchell, O.H.S., n.s. xiv (1960), xx (1969).

[6] Ibid, ii, Map SWI.

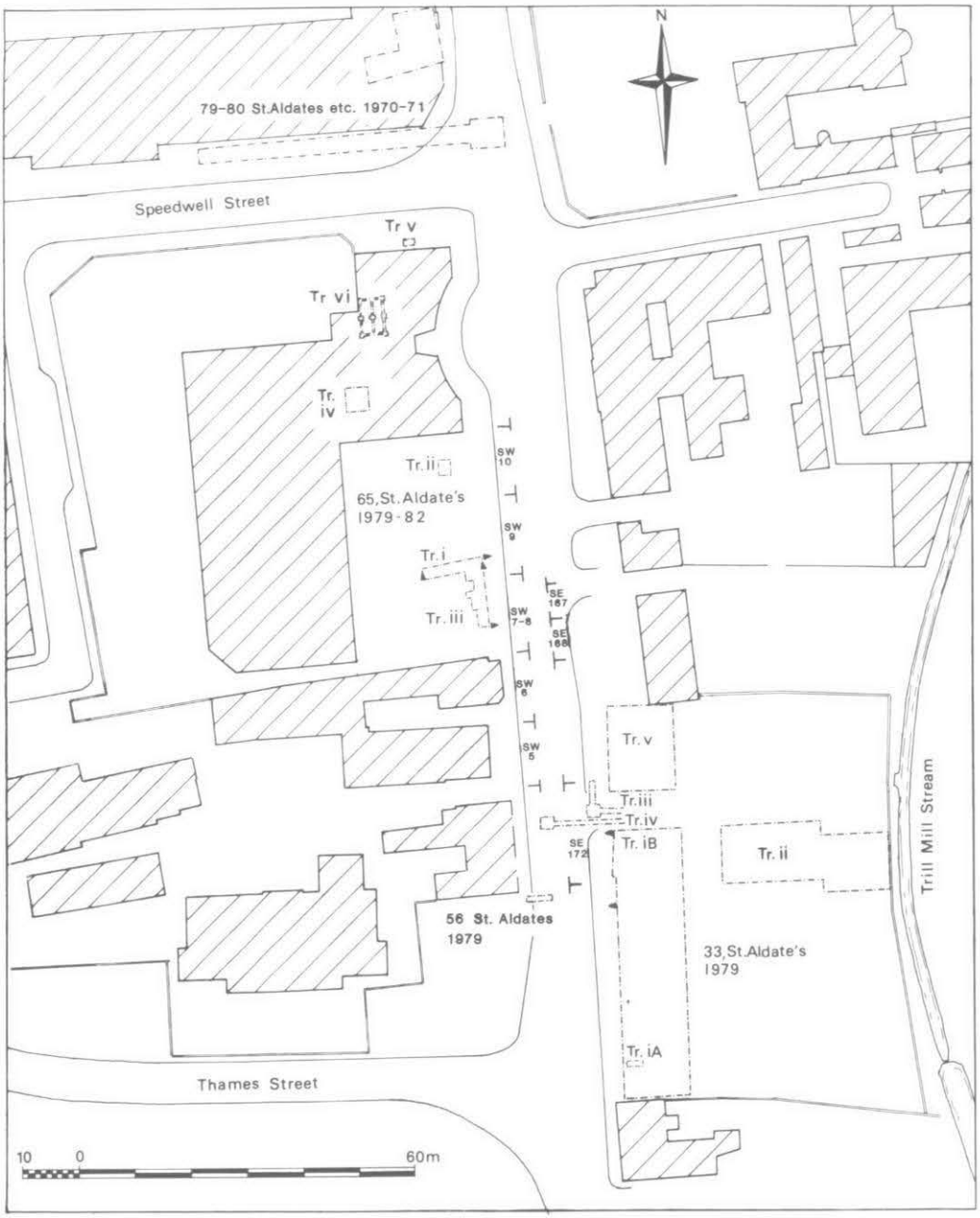

Fig. 2. Location of archaeological and contractor's trenches in St Aldates, 1970–82. 'SW5–SW10' indicate the revision of H.E. Salter's tenement boundaries based on excavated evidence.

worse by the discovery of a river channel which did not appear in the documents. An attempt was made to equate this channel with the *fossa stuppata* (blocked ditch) mentioned in 1279 between SW4 and SW5,[7] but this would have meant squeezing ten tenements (SW5 to SW14) into a frontage of less than 70 m., and destroying Salter's continuous succession for the New College property SW7, No. 62 St. Aldates.[8] An alternative approach was to search for a tenement which appeared to have expanded in the later medieval period to span the old channel, and SW9 seemed the most promising with 3 cottages and a piece of garden to the rear which were confirmed to an adjoining property at the end of the 15th century.[9] None of the excavated evidence seemed to corroborate this however, and it was not until the 1981 excavation that the story could be taken further.

Trench III provided good evidence that the line between the modern Nos. 64 and 65 was both persistent and originally medieval (F310, F310/1, F311) and thus defined the boundary of two tenements. At the same time it was established that this entire frontage had developed along a stone causeway and was likely to be in two blocks separated by the river channel. If Salter was roughly correct in his attribution, the core of the southerly block of frontages paid rent to Abingdon Abbey as chief lord (SW6–7, possibly SW8) while the northerly, i.e. townward block of frontages mostly paid rent to Eynsham Abbey (SW11–12 and SW14 as chief lord, SW10 as owner).[10] On the assumption that these major monastic landlords had a stake in the reclamation and development of these frontages, the blocks fit well with the archaeological model. Eynsham had two mills operating on a stream at the rear of the northern block of tenements, and it is not surprising that it should be involved in the development of the causeway frontage.[11] It will be noted that the most prominent anomaly in this scheme is the Oseney tenement SW9. This was the property distinguished above as showing documentary evidence of expansion to the north. This therefore seems the best candidate for a tenement initially forming the south bank of the channel. The Structural Phase 3 discussions below give a possible explanation of how the Oseney tenement had been inserted into this frontage. It would be the waterside property of Ranulf Piscator (fisherman) in the mid–13th century, perched on a 2 m. wide strip of riverbank against the Abingdon tenement (Ph 4a).[12] The reference to a messuage with two shops in 1345 is consistent with its widening and partitioning (Phase 5a).[13] The buildings had apparently been destroyed by 1339, and the purchaser of the vacant plot, Thomas de Leigh, obtained a remission of rent arrears from Oseney by offering rent from the adjoining property (SW8).[14] Oseney never recorded any rent from this new tenement, however, and the transaction may simply have been a way of expressing the fact that Oseney had aquired a 2 m. strip of SW8 in return for rent remission. The rapid succession of ownership is recorded by Salter, and by 1369 the tenement is called Brodyates (broad gates). This is taken to mean that it had annexed the old river channel to give a wide entry, and by 1497–8 it had extended behind the tenement to the north, when a piece of garden was confirmed to the tenant of the northern property. Three cottages similarly confirmed just previously are assumed to be the row of buildings set back from the street on the Ordnance Survey of 1875, and traceable as far back as Loggan's map (1675) though regrettably no earlier.[15]

[7] *Rotuli Hundredorum*, eds. W. Illingworth and J. Carey, (1812–18) ii, 789.
[8] H.E. Salter, *Survey*, ii, 11–12.
[9] Ibid, 14.
[10] Ibid, 10–12, 15–18.
[11] Ibid, 18–20.
[12] Ibid, 12–13.
[13] W.P. Ellis (ed.), *Liber Albus Civitatis Oxoniensis* (1909), 27.
[14] H.E. Salter, *Survey*, ii, 13.
[15] Ibid, 13–14.

These tentative points of similarity may be the closest we come to matching the documents to the archaeology. Salter's tenement SW9 would therefore be No. 65 St. Aldates, the enlarged riverbank strip plus the infilled channel to the north. This would mean revising Salter's map:[16] SW9 and SW10 would expand, and SW8 would be moved south into the area occupied by the well-documented SW7. This is not impossible because SW7 and 8 seem to be in common ownership in 1279.[17] The main problem is that by the 14th century both pay comparatively high rents, and it is difficult to believe they arose from the division of a tenement with a total rent of 3s. in 1279. The excavation provided insufficient evidence on this tenement to show how this problem might be resolved, however. For present purposes, therefore, it will be assumed that SW7 occupied the 4.9 m. frontage of No. 62, SW8 being the 10.6 m. frontage of Nos. 63 and 64, which at some stage was the Wheatsheaf Inn or part of the Wheatsheaf. The revised frontages are indicated on Fig. 2. By fixing the boundaries of SW9 it can be seen that a river between 6 m. and 16 m. wide had been totally ignored by a succession of 13th and 14th century documents. The explanation is probably that there were so many small streams under the causeway that only the greater ones would generally be recognised as landmarks. The north bank of the 65 St. Aldates stream is assumed to have been the Eynsham Abbey tenement of William Piscator, the only one of the four Eynsham tenements in this block where the abbey was owner instead of chief lord.[18] The difference may be that it was a later addition, because the excavated river channel seemed to be much wider in the 11th century. SW10 would be on the infill of the northern part of this channel, possibly initially on an island between two causeway arches.

THE EXCAVATIONS

An account of the excavation findings is published in microfiche. It is in very concentrated form, merely identifying each feature, and it is ordered in the sequence of the excavation, i.e. the reverse of the historical sequence.[19] The present digest confines itself to the excavation strategy as an introduction to the plans and sections (Figs. 3–6, 14)

Having waited eight years for access to the 65 St. Aldates site, the first trenches were intended to be exploratory, preparing the way for a major investigation of the Morris Garages forecourt. The Excavation Stage plans of Trench I are combined with those of the subsequent Trench III in Figs 3–4, and are ordered in the sequence of excavation. An east-west section is included in Fig. 5. The forecourt was convincingly shown to be a medieval river-channel, and interest in large-scale excavation therefore evaporated. The major advance was that the area had been shown to be more 'watery' than previously thought, and without this knowledge the salvage work across the road at 33 St. Aldates would have been much less intelligible.

The initial trenching on the east side of the road (*33* Trench IB) seemed to have sectioned the basements of a series of buildings fronting a ramp to the medieval bridge. Only a 13 m. length of this section was drawn (Fig. 6) because the available resources were concentrated on dating and interpreting the deeper levels exposed at the north end. Despite several interruptions, a number of small sondages and auger holes were possible. These, however, were only fully interpreted after the detailed pottery report was available, so they contributed relatively little to the excavation strategy. A major advance came with the

[16] Ibid, Map SW1.
[17] Ibid, 11–12.
[18] Ibid, 15.
[19] B. Durham, *Oxoniensia*, xlii, 91–103.

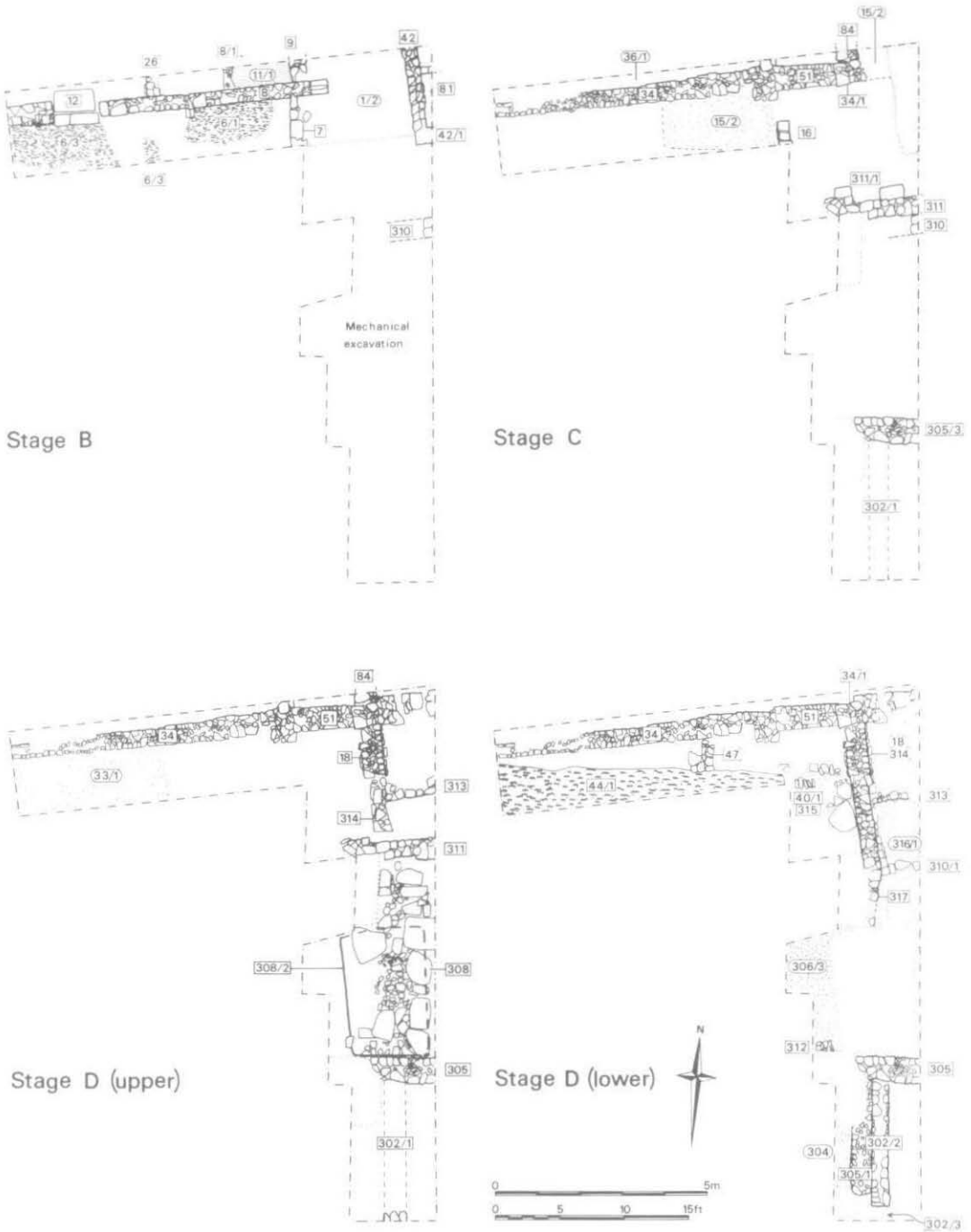

Fig. 3 65 St. Aldates Trenches I and III, plans in sequence of excavation. *Stage B*: Phase 7, *c.* 1770 – *c.* 1860; *Stage C*: Phase 6, *c.* 1650–1770; *Stage D*: (*upper levels*): Phase 5b, *c.* 1450–1650; *Stage D* (*lower levels*): Phase 5a, mid 14th to mid 15th centuries.

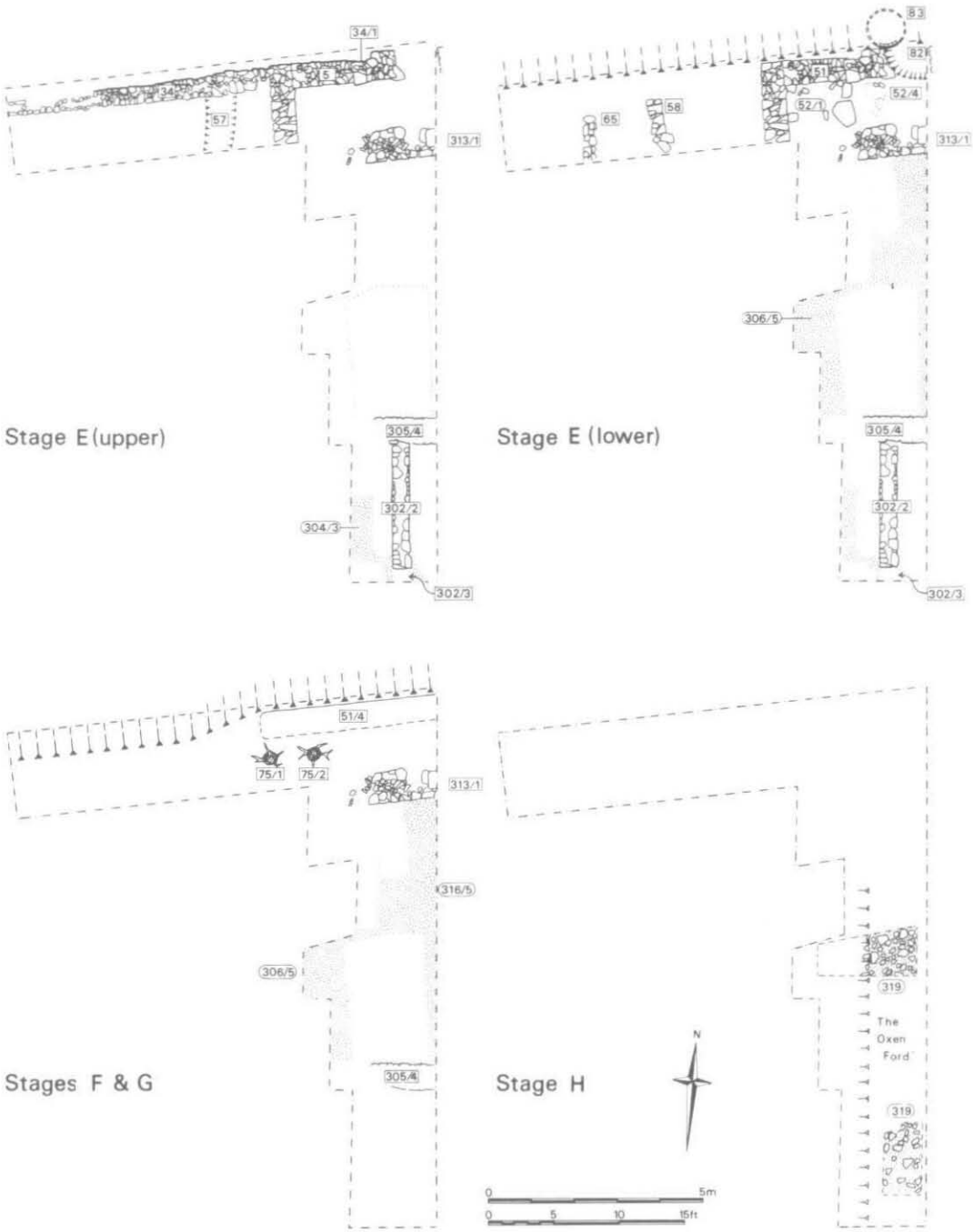

Fig. 4. 65 St. Aldates Trenches I and III cont'd *Stage E* (*upper levels*): Phase 4b, first half 14th century; *Stage E* (*lower levels*): Phase 4a, second half of 13th century; *Stages F and G*: Phases 3 and 2b in the first half of 13th century; *Stage H*, showing the late Saxon ford.

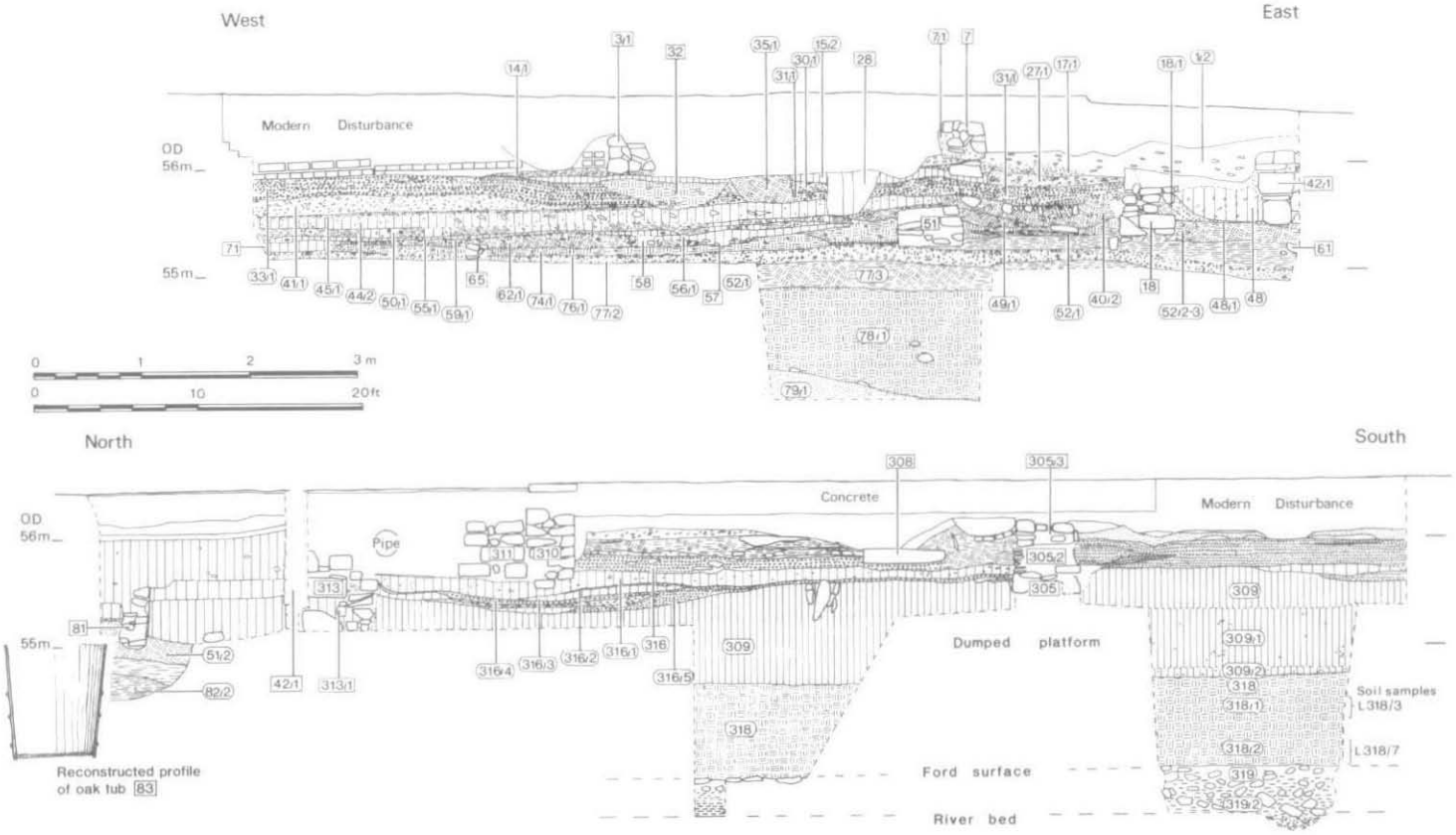

Fig. 5. 65 St. Aldates. *Above*: south section of Trench I (reversed); *below*: east sections of Trenches I and III combined, with profile of F83 projected.

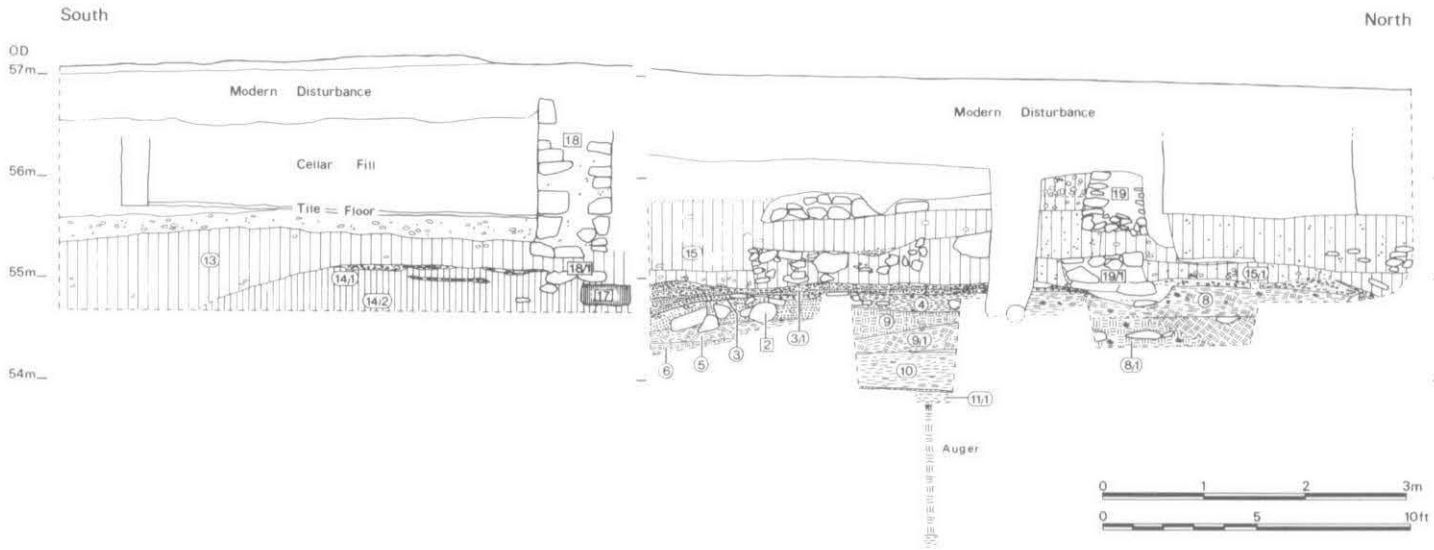

Fig. 6. 33 St. Aldate's: west section of Trench 1B showing progressive infill of a river channel to the south.

sewer connection across St. Aldates. A few months previously an adjacent sewer connection had exposed large quantities of stone rubble (Salvage Observations No 3, Fiche B13). Arrangements were consequently made to watch the new works, and the section illustrated in Fig. 14 was gradually built up. It was beginning to seem that this was more than just the coincidental exposure of two neighbouring bridge abuttments, and that it might be an extensive causeway of solid stone. But at this stage it was very conservatively placed in the 14th century, and there was no hint that it was unusually early.[20] It nevertheless gave weight to the supposition that this 'watery' area had needed a raised causeway, and the development of the adjacent frontages could not be visualised as built up to a level corresponding quite closely with the modern street. The resultant interpretation of the east side of the road is incorporated in the description of Trench IB at *33* St. Aldates (Fiche B09 (p. 10)) and also in the general discussion of Phases 1–2a below. In the context of the overall project the demonstration of the stone causeway suggested that the whole area had been reclaimed from a flood plain, and that all the properties under study were following the medieval practice of building against a bridge. The principal objective of the final excavation, *65* Trench III in 1981, was therefore to show how part of a block of properties had been initially constructed and progressively developed. 19th-century road widening meant that only the backs of the buildings were available, but from experience of a previous St. Aldates site it seemed likely that this would provide the necessary structural evidence. This was generally vindicated, although disturbance by a post-medieval chimney-stack footing and the modern garage foundations meant that the relationships of the deposits could not always be followed out. At the very least, however, the results answered the main problems in matching the medieval documents to definable properties.

Finally, mention should be made of the salvage observations. The strategy arose from the discovery of the stone causeway, and fortunately over the ensuing four years there were sufficient contractors' trenches to give a comprehensive picture of its length and alignment (Fig. 16). Regrettably there was no further archaeological dating evidence, but the discussion section gives the best available account of what seems to be an early Norman bridge.

POTTERY AND OTHER EXCAVATED MATERIAL

Late Saxon, Medieval and later pottery (Fiche D03)

By Maureen Mellor

Relatively small assemblages from the two excavations do not add much to the picture of Oxford's pottery chronology established over many years, but there are a number of new vessel types from the repertoire of local potters, and some interesting imports. The 65 St. Aldates site, on this evidence, would have been using pottery of relatively high quality, equal to its excavated neighbour to the north, rather better than the western suburban tenements at The Hamel.[21]

None of the pre-11th century levels produced exotic pottery, and the first unusual group was several sherds of a pitcher from the Pas de Calais region of France.[22] Ten sherds from three successive silt layers above the late Saxon ford show a progression of fabric types consistent with the abandonment of the ford in the late 11th century. Early 13th-century

[20] B. Durham; 'Oxford: St. Aldates' *C.B.A. Group 9 Newsletter*, x (1980), 158–160.

[21] See M. Mellor in N. Palmer, 'A beaker burial and medieval tenements in The Hamel, Oxford', *Oxoniensia* xlv (1980), 160–82; R. Haldon in B. Durham, *Oxoniensia* xlii, 111–139.

[22] M. Mellor, 'Late Saxon pottery from Oxford, evidence and speculation!' *Medieval Ceramics*, 17–27.

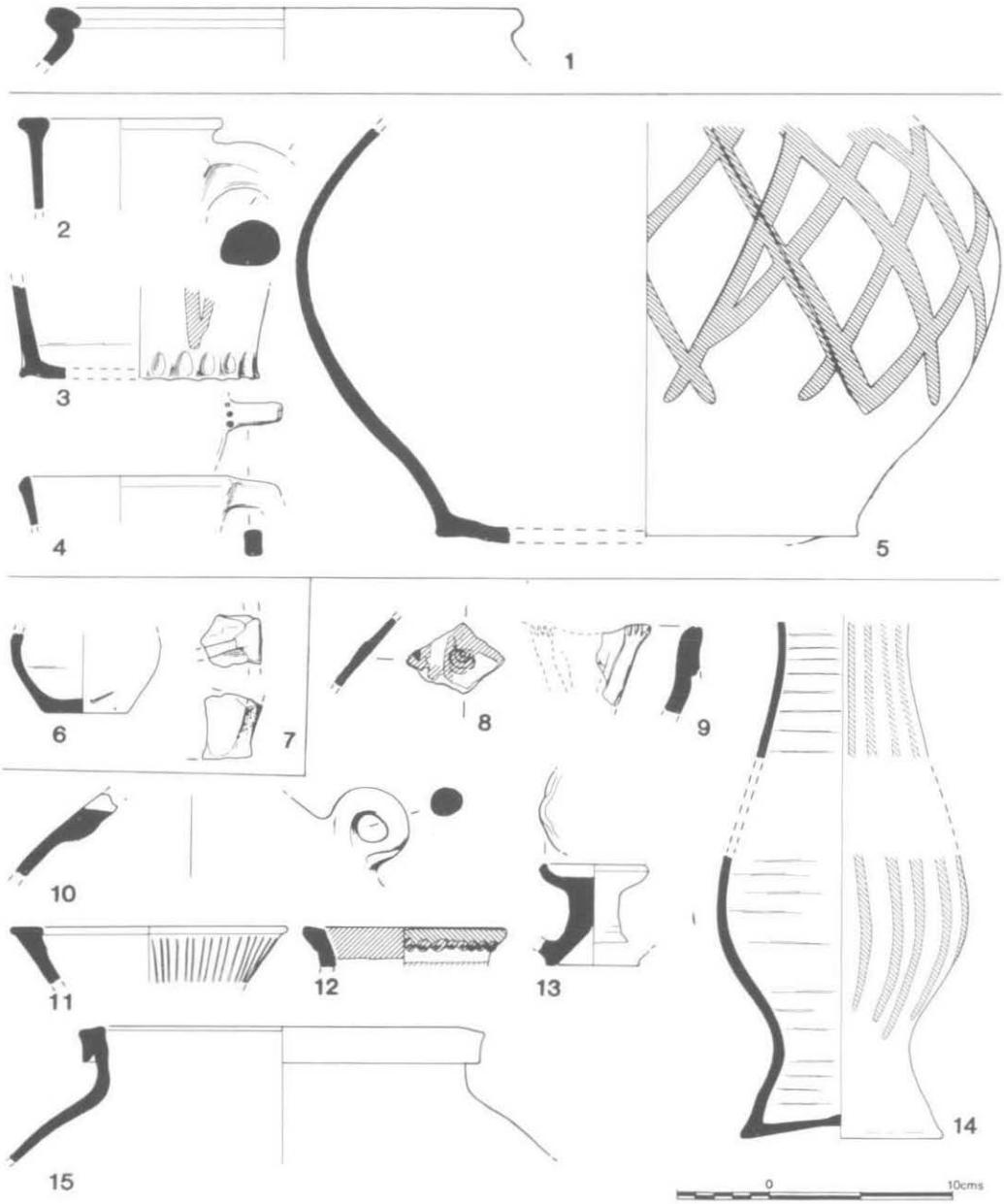

Fig. 7. Medieval pottery: Phase 2b 1. P77/3/1, *CG*; Phase 3: 2. P74/1/1 *ZZ*; 3. P77/2/1 *ZZ*; 4. P72/1/1, *AW*; 5. P74/1/2, *AM*; Phase 4a: 6. P51/3/1, *AP*; 7. P51/1/1, *AM*; Phase 4b: 8. P56/1/2, *AM*; 9. P52/1/1 *AM*; 10. P55/0/2, *AM*; 11. P56/1/1, *AM*; 12. P59/1/2, *AG*; 13. P55/0/1, *AM*; 14. P56/1/3, *AM*; 15. P59/1/1, *AW*.

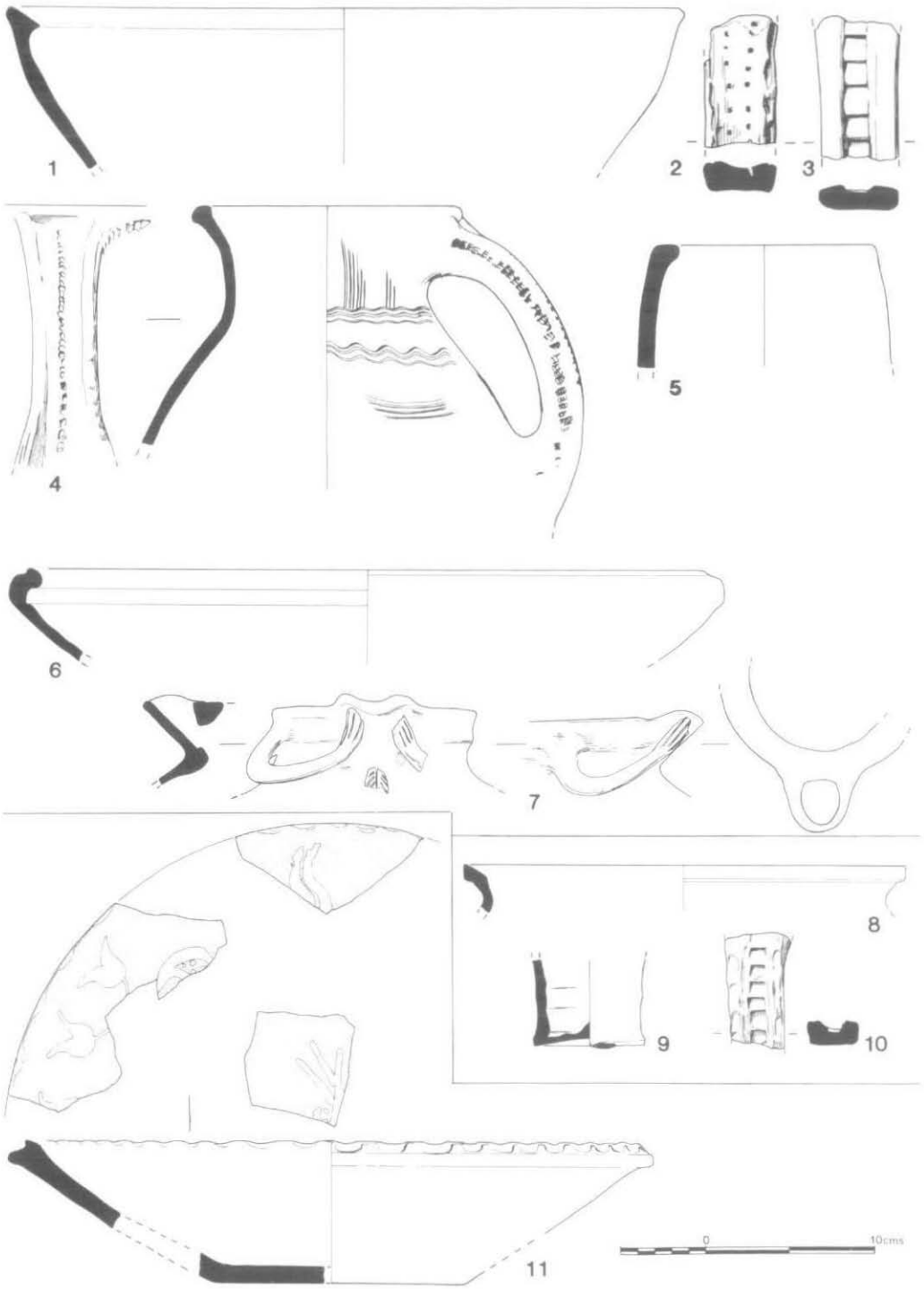

Fig. 8. Later medieval and post-medieval pottery. Phase 5a: 1. P70/2/1, *AM*; 2. P40/2/1, *AM*; 3. P44/3/1, *AM*; 4. P315/0/2, *AQ*; 5. P306/3/1, *ZZ*; 6. P40/2/1, *AQ*; 7. P315/0/1, *AM*; Phase 5b: 8. P36/3/1, *AM*; 9. P36/3/2, *AM*; 10. P33/1/1, *AW*; Phase 7: P1/2/1, *DG*.

occupation on the bridge frontage produced a vessel in a new shelly fabric (*CG*), and in the following phase came a Brill-type pitcher larger than any known from Oxford (17.5 litres, nearly 4 gallons incomplete, Fig. 7 No. 5).

By Phase 4 the flowering of the Brill industry was shown with the first of two anthropomorphic pieces from the site (Fig. 7 No. 9). The second example from Phase 5a is suggested as also being of late 13th to 14th century manufacture, interesting in that it combines the anthropomorphic modelling with a French-inspired 'parrot-beak' type of spout (Fig. 8 No. 7).[23] But returning to Phase 4, mention should be made of the condiment dish (Fig. 7 No 7). Fragments of this vessel were scattered through various levels of this and the following phase. The illustrated sherd is from Phase 4a, but is believed to be intrusive, and it is likely that the vessel belongs to the first half of the 14th century (Phase 4b).

The possibility of redistribution of sherds within a continuously occupied site raises difficulties in deciding which vessels were in use at any one time. Experience from several sites in Oxford now makes it possible to spot many 'residual' sherds, i.e. those which have been disturbed by pit-digging or earth-moving and now lie in association with much later material. This applies first to a highly decorated jug in a fabric typical of the Newbury area recovered in Phase 4b (Fig. 7, No. 12),[24] secondly to the relatively high proportion of sherds ascribed to late 13th century 'triple-deckers' found in levels dating no earlier than 1350 (Phase 5a),[25] and thirdly perhaps to the above mentioned parrot-beak-anthropomorphic jug from the same phase.

Phase 5 adds several vessel forms of the late 14th to 15th centuries which are new to the Oxford 'collection', particularly a wide-mouthed bowl (Fig. 8 No. 1) and strap handles showing a new decorative style (Fig. 8 Nos. 2, 3). It is likely that this trend of new additions to the later medieval catalogue will continue slowly until we find a site with well-preserved levels of this period.

The main interest of the 33 St. Aldates site is more technical. The report attempts to make a chronological framework out of the small, incomplete and somewhat selective pottery assemblages from a typical 'salvage' site. The principal of spot-dating of groups, no matter how small, and then comparing them with the stratigraphy and historical dating appears to work in this case, but it is accepted that the agreements could be no more than coincidence.

Coins, Jettons and Tokens by Marion Archibald (Fiche D13)

The very small group includes a halfpenny of Henry V (1413–22), a French-type Nuremburg jetton and a 17th-century Oxfordshire farthing token.

Iron objects by Ian H. Goodall. (Fig. 9, Fiche D14)

With the exception of a heckle tooth, knife and harness buckle (1–3), the ironwork chiefly consists of items of building ironwork, among which the hinge pivots, U-staple and a clench bolt (4–6, 10) are notable.

[23] G. Lambrick and H. Woods, 'Dominican Priory, Oxford' *Oxoniensia* xli (1976), Fig. 10 P206/1/1,212; R.L.S. Bruce-Mitford, 'Bodleian Extension', *Oxoniensia*, iv (1939), Fig. 24A.

[24] S. Moorhouse, 'The pottery', in C.F. Slade, 'Excavations at Reading Abbey: 1964–67', *Berkshire Archaeological Journ.* lxvi (1973), Fig. 12, No. 14.

[25] M. Mellor in N. Palmer, *Oxoniensia*, xlv, 178.

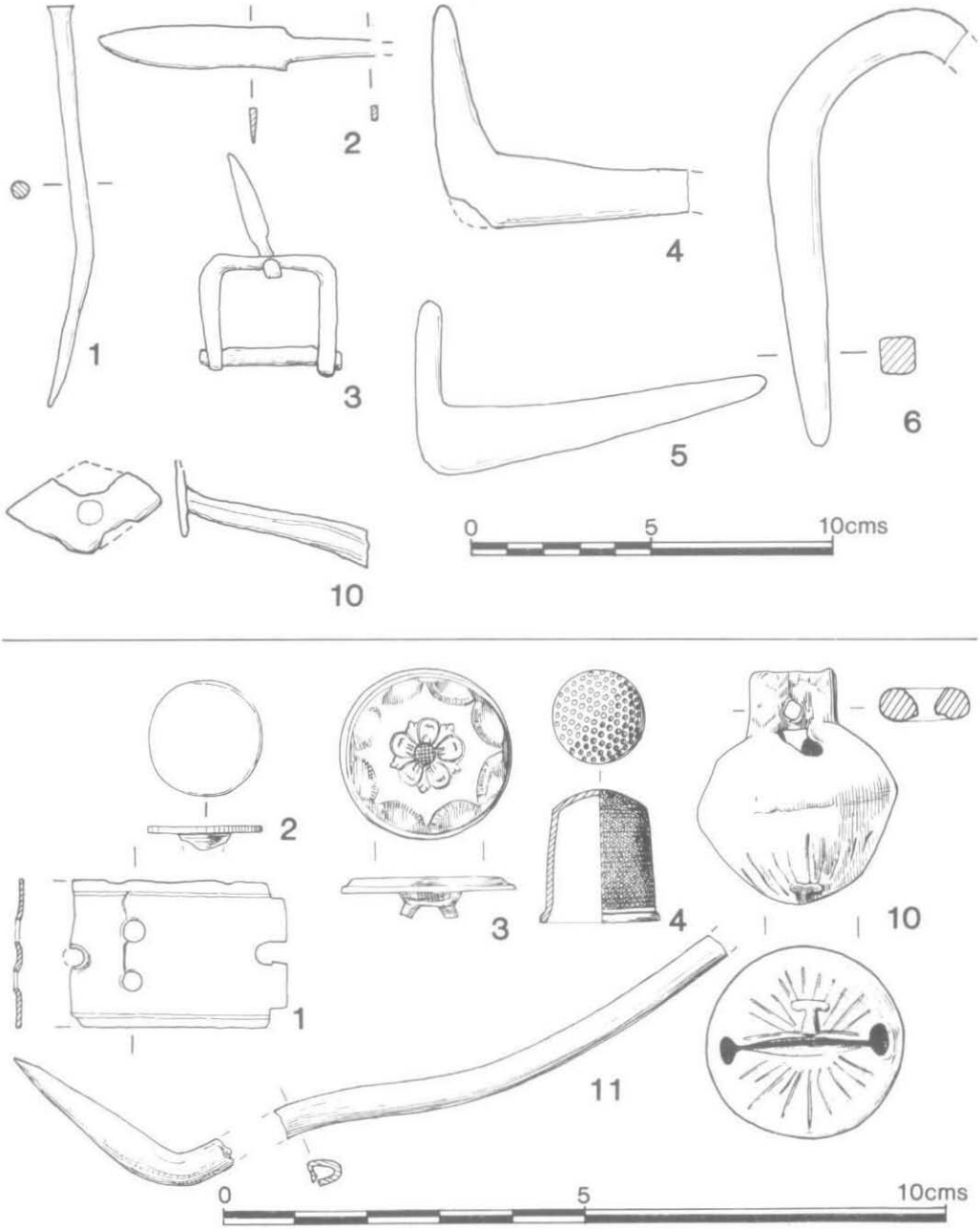

Fig. 9. *Above*: objects of iron ($\frac{1}{2}$); *below*: objects of copper alloy (1:1). See Fiche D14, E03.

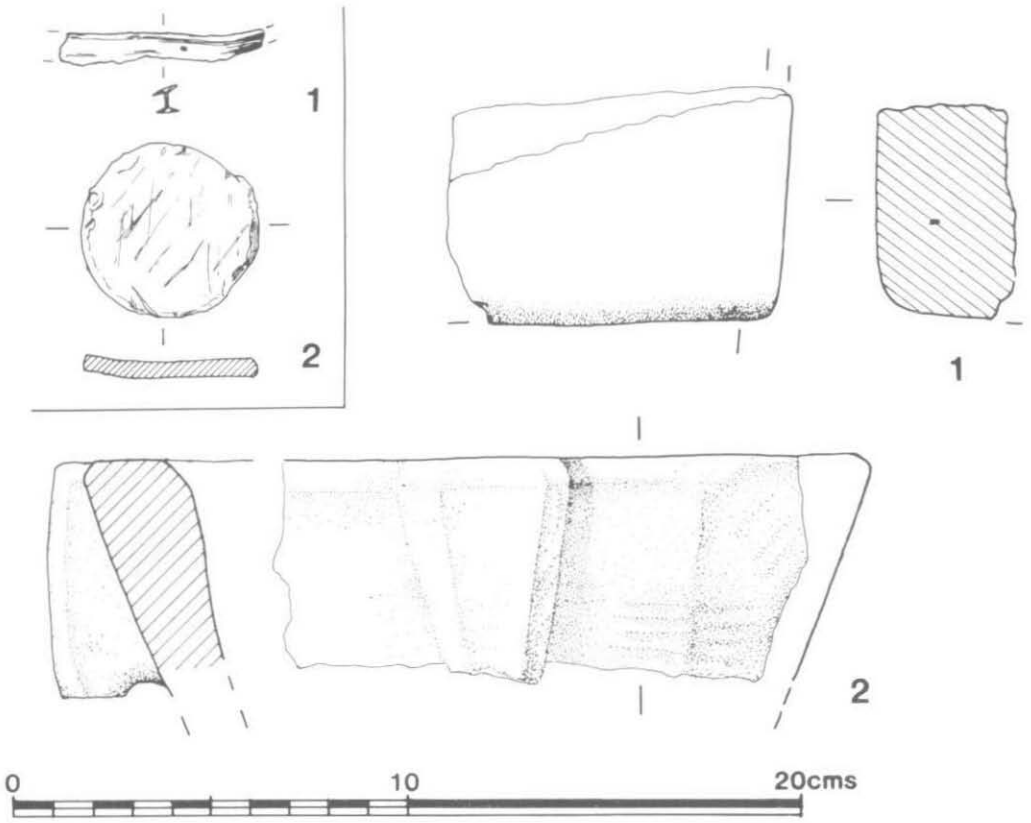

Fig. 10. *Above left*: objects of lead ($\frac{1}{2}$), see Fiche E02; *below*: objects of stone ($\frac{1}{2}$), see Fiche E03.

Objects of Copper Alloy and Lead by Alison R. Goodall (Figs. 9–10, Fiche E02)

There are fifteen objects of copper alloy and three of lead. The copper alloy includes an incomplete medieval buckle plate with a simple incised border and gilding (1); it may have been scrap intended for remelting. There are two buttons (2 and 3), one of them decorated, and a thimble (4), with tapering sides and a shallow domed top; these are from post-medieval contexts. The cast rumbler bell (10), has decoration on its lower half and a 'T' in relief. The binding strip (11) has no rivet holes.

Vessel glass and window-glass

Vessel glass was recovered from three provenances in Phase 8, thirteen in Phase 7 and three in Phase 6. A fragment of an 18th-century wanded bottle SF324 from the makeup of a stone floor is suggested as having fallen into a crack between the stones of this originally 16th to 17th-century paving (see Discussion Phase 5b).

The only items of medieval glass were four fragments of window-glass SF18A–18D from Phase 5a, 14th–15th centuries. All were opaque, 3 fragments had grozed edges, and only one had discernible painting, with an architectural border motif.

No definitive report has been prepared on the glass, and the reader is referred to the original material stored by the Oxfordshire County Museums Service.

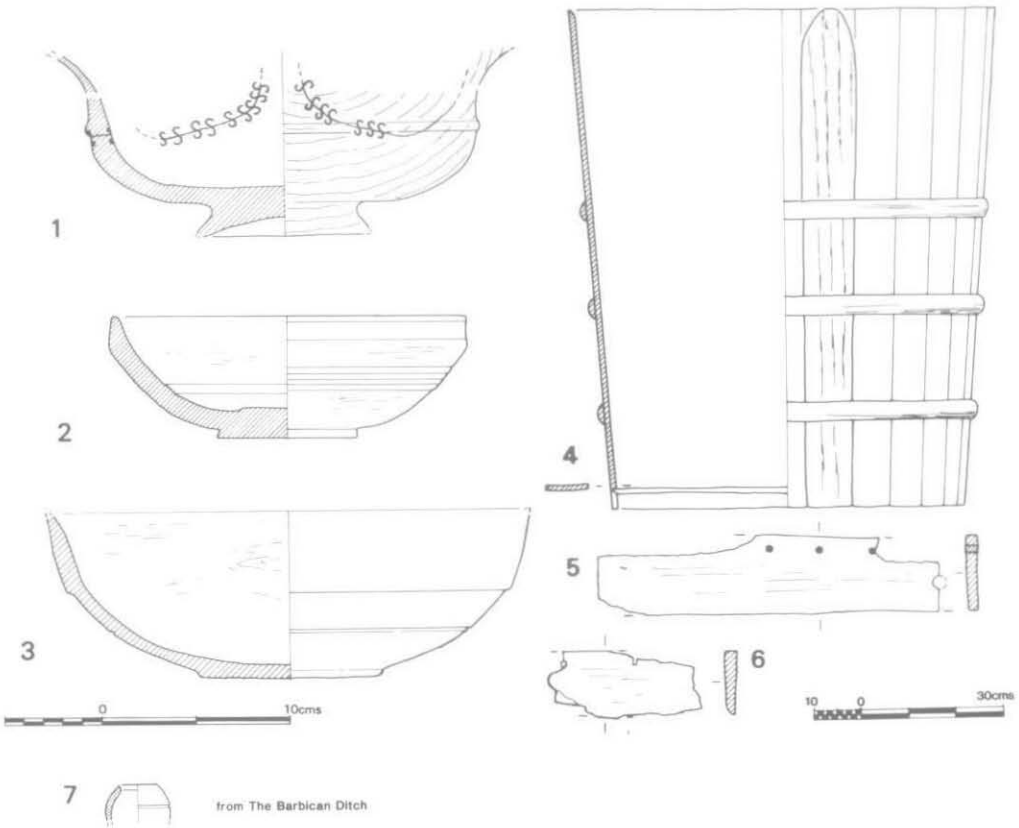

Fig. 11. 1–4, late 13th century wooden vessels ($\frac{1}{4}$); 5, 6 planks with dowels and nail holes, possibly late Saxon ($\frac{1}{10}$); 7. small cup or jar from Oxford Castle, east barbican ditch ($\frac{1}{4}$).

Wooden Objects by Carole A. Morris (Fig. 11, Fiche E04)

Fragments of three wooden bowls were recovered from a 'culvert' at the edge of the excavation area. One bowl was in very poor condition (No. 3). The others were much better preserved, both contriving to give the impression of quality in their finely finished rims, though with thicker bodies. No. 2 was decorated with lathe-cut grooves, No. 1 with a wide band of relief around the girth to complement the out-turned rim and high footring. The especial value of No. 1 is indicated by an elaborate repair method which is so far unique. S-shaped pieces of bronze ribbon had been pushed into the end-grain along the line of a crack, on both the inside and outside surface. Other less complex methods of repairing wooden vessels are known from the archaeological record, (see Fiche E04) but the present example is likely to have combined strength with an enhanced appearance.

When the culvert went out of use, it seems to have been partially blocked by the staves of an oak tub set in the silts of the adjoining river channel. The excavator believed that the vessel was intact, although inaccessibly deep below a corner of the excavation so that only one of the six visible staves could be recovered. Use as a storage tank for live fish is suggested, but an alternative function as a water source is also discussed under the relevant phase (Discussion and Interpretation Phase 4a)

The fiche report includes a note on No. 7, a fragment of a very small lathe-turned

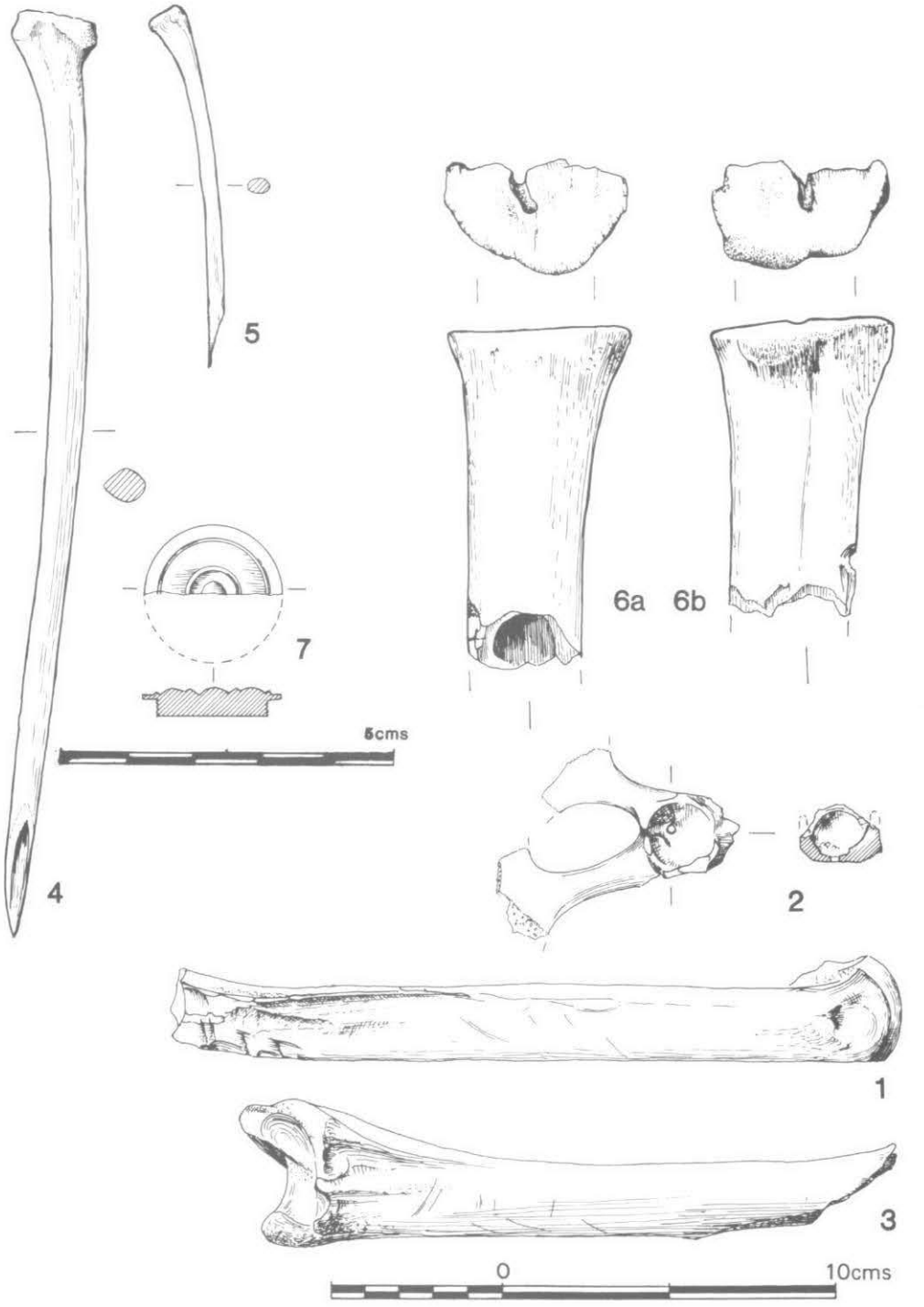

Fig. 12. Bone artifacts (Nos 1–3 and 6, ½; nos. 4, 5 and 7, 1:1, Fiche E08).

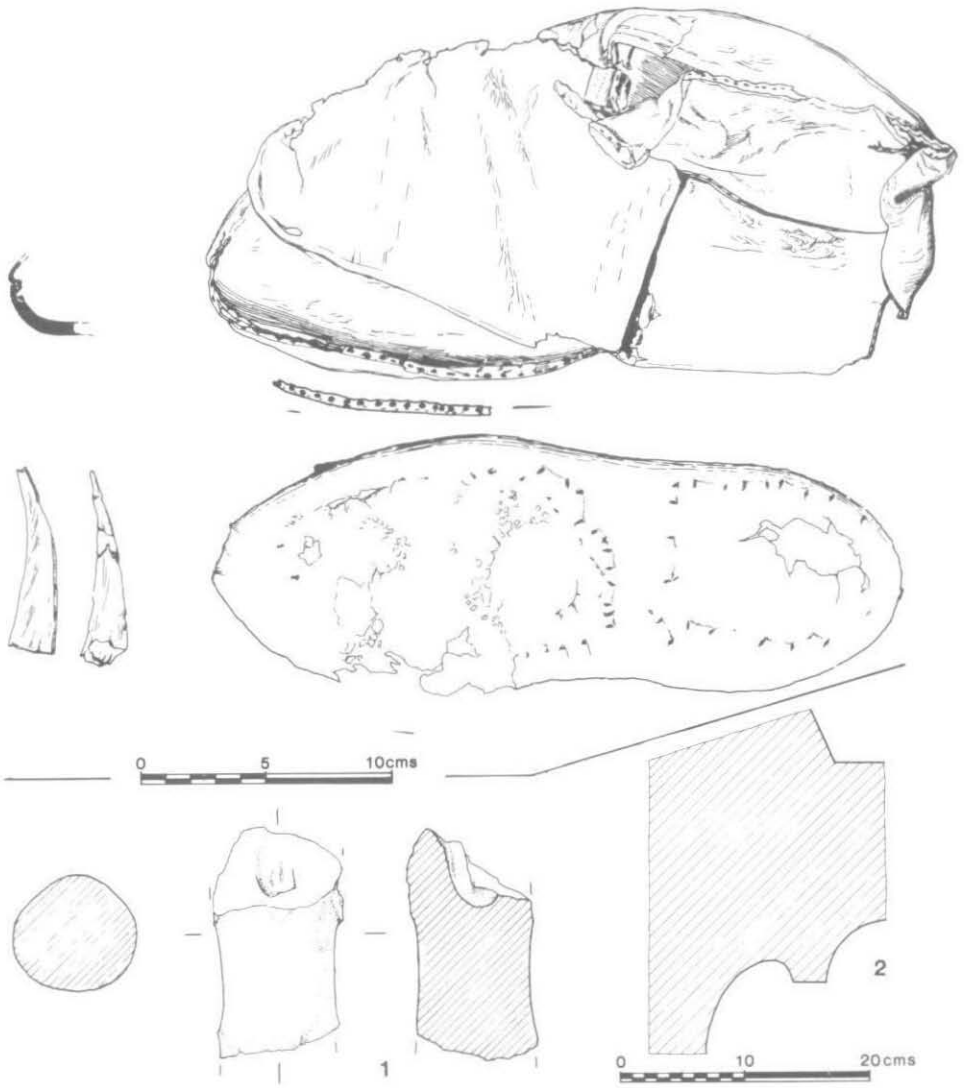

Fig. 13. *Above*: early 13th-century leather shoe (¼) (Fiche E09); *below*: building stone (No. 1, ⅛; No. 2, ⅛) (Fiche E11).

cup or jar from the east barbican ditch of Oxford Castle, which has not previously been illustrated.

Bone Artifacts Fig. 12, Fiche E08

The small group includes a Late Saxon ice skate, a 'medieval pen' and several other objects of obscure purpose. An interesting feature is the recovery of cattle metapodials from a knuckle-bone floor.

Leather shoes etc. Fig. 13, Fiche E09

Only two of the seven items of Late Saxon and medieval leather showed signs of working. The illustrated shoe (Fig. 13) was typical of local early 13th-century construction, with a rand in the sole-upper seam. It was uncertain whether it was a left or right foot.

Animal bones and Shells by Bob Wilson, with fiche contributions by Enid Allison and Andrew Jones (Fiche F02).

Over 1400 bones and marine shells were studied in the context of the environmental development of the site from the river channel and ford, through riparian settlement to fully reclaimed urban tenements. Included in the town refuse were remains of some less common species: wild geese, teal, turkey (post-medieval) and roach. A few pathological bones and the cranium of a medieval cat which had been skinned were noted; age data and bone measurements were recorded with other information.

A relative abundance of cattle bones in the early phase groups is probably explained by the commonness of large fragments among the coarse material which was dumped during the initial reclamation (phases 1 & 2a). Higher proportions of cranial elements in this material indicate some link with the early stages of carcass butchery, but this probably occurred at some distance away, on a town site from which the infill was brought.

A similar prevalence of cranial elements of pig from the 14th- to 15th-century deposits may, however, indicate butchery in the tenement yards, and the presence of home-raised animals.

During the latest medieval or post-medieval phases the relative abundance of bones swings away from cattle and pig and towards sheep. No indications of local commercial butchery and associated carcass processing trades were detected, and most remains appear to have a domestic context.

These trends may result from diminishing space for pig-keeping by city dwellers, and not necessarily from any new prosperity encouraging the purchase of meat butchered in the market. Other possible influences on meat-buying habits may be an increase of sheep-rearing in the surrounding countryside, change in marketing of sheep from the wider region, and change in meat prices.

A small sample may confirm evidence from the Hamel and sites in the city centre that goose bones are more common than domestic fowl on low-lying sites around Oxford;[26] also that towards the post-medieval period the ratio of these species alters in favour of domestic fowl, indicating that this species was better adapted to living on the tenements as they became built up and reclaimed from wet ground.

ASPECTS OF THE ENVIRONMENT OF THE SAXON CROSSING

By Mark Robinson and Brian Durham.

Four samples of alluvial and human waste deposits related to the early crossing were examined for invertebrate and botanical remains to help elucidate the results from the excavation (for full reports see below and Fiche G02).

Stratigraphically the earliest sample, unfortunately undated, was from a layer of humic silt just down-stream of the crossing, which was forming at the edge of an old and silted river channel as an island slowly grew (sample *33* L11). The environmental evidence

[26] R. Wilson, in C. Halpin 'Hinxey Hall, Queen St, Oxford', *Oxoniensia*, xlviii (1983), 69.

suggested a reedswamp with a flow of well oxygenated water through it, but the sample also had a large component of cereal bran. The bran could possibly have been the remains of milled flour lost from a load being carried across the river, but such cereal debris is very characteristic of human sewage. It seems more likely that the mid-late Saxon occupation of this island had already begun, and that the sample included human sewage from the fringe of the occupied area.

The viability of such settlement presumably depended on the river crossing; access from the town would have been via the 65 St. Aldates ford. A sample taken from the silts just above the stones of the ford produced a very long species list. There was a typical stream/river-bed fauna which confirmed that it was indeed a true ford. This fauna was combined with aquatic and waterside species of a well-vegetated river. There was also an assemblage of many plant and insect remains that was urban in character. One noteworthy species represented by seeds was *Bupleurum rotundifolium*, an arable weed that is now almost extinct in Britain. The accumulation of this silt probably resulted from the building of the Norman bridge, leading to the abandonment of the ford and a change in the flow pattern of the river. Urban refuse was perhaps dumped over the parapet of the bridge.

The bridge would have brought improved access to the 33 St. Aldates island to the south, and the salvage excavation results suggest substantial new buildings on the island in the early 12th century. Beside the bridge, presumably between buildings, a heap of agricultural and domestic refuse was burnt, and a detailed report on this interesting assemblage is given below (Sample *33* SF414). The sample seems to indicate that the occupant of the property had carted a fodder crop of peas and beans from an outlying field for threshing at home.

By the 12th century, 0.4 m. of silt had accumulated over the ford at 65 St. Aldates and the molluscan fauna from this level (Sample *65* 318/3) makes an interesting contrast to the assemblage from the newly abandoned ford (Sample *65* 318/7). The higher proportion of terrestrial/marsh species, and the greatly reduced proportion of flowing water molluscs, suggest that it was no longer the bed of a river; indeed, by this period it was possibly already a mudbank or a marsh that was only seasonally flooded.

33 ST. ALDATES: AGRICULTURAL DEBRIS AGAINST THE NORMAN BRIDGE By Mark Robinson

Abutting the Norman bridge causeway was an 11th-century layer of charcoal, L409, which was examined for identifiable plant remains. The results are given in Table 11 (Fiche G13).

Sample SF414: 1kg. dark loam which was extremely rich in charred plant fragments (not wood charcoal).

The sample was dominated by assorted charred debris of *Vicia faba* v. *minor* (small field bean or horse bean) and *Pisum sativum* (pea). Including tentative identifications, the sample probably contained about 70 seeds of each. There were also stem and pod fragments of both species, plus tendril fragments resembling those of pea. It was very difficult to quantify these other remains because positive identifications could only be made on a few of them. An attempt at quantification was made for the pea tendril fragments, 168 being counted, but it is probable that many more went unrecognised. However, it was clear that the majority of the charred fragments in the sample were likely to have been from pea and bean plants. The carbonised seeds would only be a small proportion of the total crop from the plants represented by these remains. Therefore Layer 409 largely comprised burnt threshing debris of these two crops. Debris from the threshing of peas and beans has seldom been discovered in archaeological contexts, although an early Saxon well at Mount Farm, near Dorchester, Oxon. contained *Vicia faba* threshing remains. A couple of the *Vicia faba*

seeds had holes made by the bean beetle *Bruchus rufimanus* Boh. Adults of this pest lay their eggs on the flowers, the larvae then develop in the bean.

Although it is by no means certain, the presence of large quantities of both bean and pea debris in the same deposit, with other species poorly represented, is suggestive of a mixed crop. Peas and beans were sometimes sown together, chiefly as a fodder crop.[27] The upright stems of the bean plants provide support for the climbing peas. It is reasonable to assume that the peas and beans had been cultivated elsewhere, and were only brought to the site for threshing. The marshy ground alongside the reclaimed land flanking St. Aldates is unlikely to have been well enough drained for their cultivation, and there is little indication of wet conditions from the accompanying weed seeds.

It is very likely that Layer 409 resulted from a single fire, presumably the burning of a waste heap. The presence of a few bracken frond fragments, cereals and arable weeds of disparate ecological requirements would suggest that the pea and bean threshing remains had become mixed with some of the usual sorts of urban plant debris.

THE MIDDLE SAXON CLAY CAUSEWAY; ARTIFICIAL OR NATURAL? By Mark Robinson and George Lambrick.

The final section of environmental relevance concerns the still controversial question of a deposit found during the earlier investigations at a more northerly point on the crossing line. These excavations at 79–80 St. Aldates located an extensive deposit of clay 0.5 m. thick beneath various man-made and alluvial accumulations. The clay overlay an aquatic silty clay, dated by a single radiocarbon determination on waterlogged plant material to the 7th century bc, which in turn rested upon the floodplain gravels.[28]

This aquatic silty clay contained rhizomes of *Phragmites communis*, suggesting a reedswamp, and seeds of various other plants indicative of wet, open conditions.[29] *P. communis* is a plant of shallow water and swampy land just above the permanent water table; the level of the top of this underlying deposit suggests that such conditions should have prevailed over a very wide area between the various channels of the Thames at Oxford.

Three radiocarbon determinations on wattle fences from successive levels in the alluvium overlying the clay above this deposit gave dates in the 9th century *AD* (calibrated) while two thermoluminescence dates from pottery also in the earliest silts above the clay both fell into the 8th century *AD*. In interpreting these deposits, Mr. Durham suggested that the thick clay layer had been dumped deliberately, and that its topographical and chronological context indicated that it could have been a causeway over the marshy ground to a strategic river crossing associated with a Mercian settlement, most likely to date from the reign of Offa.[30]

The conclusion that the clay was an artificial Saxon bank was reached without the benefit of more recent observations of Thames floodplain alluvium elsewhere. It is now clear from the reference to the presence of many small shell fragments in the St. Aldates clay that it was alluvium (whether or not it was redeposited) rather than weathered Oxford clay as originally suggested. Oxford clay is characterised by massive shells of *Gryphaea lituola*.

[27] B.H. Slicher van Bath, *The agrarian history of Western Europe A.D. 500–1850*, (1963), 264; J. Thirsk in H.P.R. Finberg (ed.) *The agrarian history of England and Wales*, (1967), 171.

[28] B. Durham, *Oxoniensia*, xlii, Fig. 9, 91, 174–9.

[29] Ibid, 169–72, Sample 523.

[30] Ibid, 174–9.

The recent observations of deposits on other floodplain sites suggest the following sequence of development. Throughout the Neolithic and Bronze Age there is little or no evidence for alluviation taking place on the general surface of the floodplain, and the permanent water table seems to have been relatively low. Until the end of this period, most sites only had a thin covering of soil over the floodplain gravels. In the late Bronze Age or earlier Iron Age there was a general rise in the water table, but still no substantial alluviation. Perhaps in the late Iron Age, but certainly during the Roman period, the deposition of up to 0.5 m. of clay alluvium began on lower-lying sites. For example, similar clay to that at 79–80 St. Aldates was observed covering Iron Age features on the Thames floodplain at Farmoor, and at Drayton Roman ditches were stratified within this type of deposit. It is possible that this phase of alluviation decreased at the end of the Roman period.[31]

These observations do not prove the 79–80 St. Aldates clay layer to have had a natural origin: it could have been redeposited alluvial clay. They do, however, show that our explanation for the presence of the clay layer is a plausible alternative to the causeway hypothesis. Excavations on the nearby site of Blackfriars revealed one metre or more of as yet undated alluvial clays covering the floodplain gravels (which were 0.1–0.37 m. higher than at the St. Aldates sites)[32] As elsewhere, they are variable in character, perhaps due to the proximity of various river channels, and cannot be matched exactly with the deposits at 79–80 St. Aldates. Until there are further exposures of this deposit, the controversy cannot be settled finally. These suggestions may cast doubt on the involvement of Offa, but they do not affect the other evidence for an 8th or 9th century crossing on this line.

THE STRATIGRAPHY OF THE ST. ALDATES CLAY BANK

The writer is grateful to George Lambrick and Mark Robinson for the above contribution, which clarifies their alternative approach to the 8th-century events on Oxford's floodplain. Despite the accumulating data on alluviation, there are, however, many aspects of the stratigraphy of the area which make the clay bank unique and therefore not part of a universal phase of alluviation. None of this evidence is new, but for the reader's convenience it is reassembled below in itemised form. For an archaeological and historical comparison of the two approaches see 'Discussion: Phase 1' below.

1. The pre-clay deposits: apart from three recent sightings at 54.03 m. ± 0.04 m., the top of the flood-plain gravel in ten exposures is very uniform at 53.85 m. ± 0.1 m., and deposits found at St. Aldates might normally be expected to reoccur in some at least of the Blackfriars trenches.[33] In fact, however, there is no counterpart to the St. Aldates reed-bed horizon, nor of the 0.3 m. thickness of silt beneath it.

2. The bank sealing the pre-alluvial level was of fine clay, more consistently blue in colour than any of the upstream sediments.[34]

3. This material ended on the upstream side in a steep slope parallel to the road, and did not reappear for at least 35 m. west of this.[35]

[31] M.A. Robinson and G.H. Lambrick, 'Holocene alluviation and hydrology in the Upper Thames Basin', *Nature*, 308 (1984), 809–14.

[32] G. Lambrick and H. Woods, *Oxoniensia*, xli, Fig. 3.

[33] G. Lambrick and H. Woods, 'Excavations on the second site of the Dominican Priory, Oxford', *Oxoniensia* xli (1976) Fig. 2, Further trenches were dug in 1983 west of Albert Street which gave the three values of *c.* 54.03 m. OD: pers. comm. G. Lambrick.

[34] B. Durham, *Oxoniensia*, xlii, 91.

[35] Ibid, Figs. 9, 40.

4. There was a zone of mixing between the bank material and the underlying reed-bed which suggested trampling at the time of deposition.[36]

5. The clay material had a characteristic lumpy fracture pattern which suggested that it had been redeposited.[37]

6. There was a demarcation between the bank material and the alluvial silts which washed over it from *c.* AD 800.[38]

Some of these factors are subjective and open to dispute. There is nevertheless no doubt that the distinctive pre-clay surface has been observed nowhere else but where it is sealed by this feature; that the feature is localised on the line of the main road; and that after its deposition the type of silting changes to what would be expected of a river meeting an obstructing bank.[39] The absence of a similar profile from other local sites shows that the St. Aldates feature is the exception for the Oxford flood-plain, so it cannot be part of a general phase of alluviation, and the simplest explanation for the bank, despite its width, is still as an artificial earthwork of the late 8th century AD.

Some explanation must be offered for the Blackfriars profile.[40] The simplest is that the Thames at Oxford never overflowed its channels, perhaps owing to the mobile gravel bed, so that there was no appreciable over-bank alluviation until the Mercian bridge-works caused obstructions in the 8th century AD. The absence at Blackfriars of a pre-clay level like that at St. Aldates is more difficult to explain, but it is not impossible that slow additions of silt to a St. Aldates-type deposit would result in gradual mixing, giving the appearance of undifferentiated alluvium.[41]

RADIOCARBON DETERMINATIONS

Three samples of small wattles were submitted to the Harwell laboratory for Radiocarbon analysis. One came from the stonework of the ford, one from a 0.3 m. thick layer of silting above the ford, and one from a wattle fence in alluvial silting in 65 St. Aldates Trench IV at the rear of one of the upstream causeway properties.

TABLE 1

Radiocarbon determinations

Series No Serial No	Material and provenance	Phase	Age before 1950 Date (5570 half-life)	Corrected date[42]
HAR 5339 OX 65A 313	Loose wattles, average 5 yr. growth from silt above ford (L318/2)	Phase 2a	bp 830 ± 70 ad 1120 ± 70	*AD* 1040–1280
HAR 5340 OX 65A 317	Loose wattles with bark, average 5 years growth, from stonework of ford (L319/1)	Phase 1	bp 1020 ± 70 ad 930 ± 70	*AD* 980–1040
HAR 5341 OX 65A 402	Wattles from hurdle, diam c. 30 mm. Possibly revetment of mill stream frontage (F401)	unphased	bp 1080 ± 70 ad 870 ± 70	*AD* 880–1020

[36] Ibid, 91.
[37] Ibid.
[38] Ibid, Fig. 9.
[39] Ibid.
[40] G. Lambrick and H. Woods, *Oxoniensia*, xli, Fig. 2.
[41] B. Durham, *Oxoniensia*, xlii. Fig. 9 (L251), 169–70 (Sample 523).
[42] Calibration according to M. Stuiver 'A high precision calibration of the A.D. radiocarbon time scale', *Radiocarbon*, 24 (1982), 1–26.

The first two results are more or less as expected from the ceramic and historical dating. The excavated margin of the ford is seen to be late 10th to early 11th century (HAR 5340), but this does not rule out the possibility that this was a widening or repair of a 9th-century ford as implied by previous findings to the north.[43] The silt above the ford (HAR 5339) also coincides with the range expected from other dating sources, i.e. between *c.* 1070 and *c.* 1200 (Discussion, Phase 2a). The 'spit' of silt from which the material was recovered lies just below midway in the overall silting of the river channel, and the analysed wattles were collected as general finds from the layer, not specifically associated with the surface of the ford. It is therefore not surprising that the result is relatively late.

The third result is, however, quite different from that expected (HAR 5341). With no ceramic dating it was confidently assumed that the wattle fence in *65* Trench IV was revetting the riverside backyard of a 13th century Eynsham Abbey tenement extending back from the Norman Bridge (see 'Documentary Evidence'). Instead it turns out to be one of the earliest radiocarbon dates from Oxford. If the date is correct, it means that this revetment was on the north bank of the forded channel, and would have been retaining the river-edge upstream of the early crossing. It is difficult to reconcile these two alternatives, and pending further evidence is regrettably necessary to defer a decision on whether this was really a Saxon waterfront.

THE THAMES CROSSING AT OXFORD: DISCUSSION AND INTERPRETATION

The concluding section of this report follows the format of its predecessor for the northern St. Aldates sites, avoiding the introduction of new evidence by cross-referring to specialist sections elsewhere in the printed report and on fiche.[44]

Phase 1: the 10th- to 11th-century ford and causeway (Figs. 4H, 5, 14)

The whole purpose of the project was to get a convincing answer to the question of whether there was an embanked Thames crossing at Oxford in the late 8th century.[45] There was, therefore, some disappointment when the end of the project was in sight and no substantial pre-Conquest levels had been found. The reason was clear enough: the excavation areas were on river channels and the causeway had either never existed or had been swept away as the river changed its course. Revelation came with the first deep 'sondage' on the street frontage at *65* Trench III, which was intended to provide a date for the silts of the underlying channel, but instead came down onto stone paving (L319). The quality of organic preservation indicated that this metalling had always been below river level, and paving of a river-bed logically meant a 'ford'.[46] This has since been confirmed by environmental studies (see above, Environmental Aspects), and the few sherds of pottery support the stratigraphic evidence that it must have been Late Saxon (see Figs. 5, 14). The absence of the causeway was therefore explained.

The 1981 excavation exposed the upstream margin of the ford in two places, showing it to be a linear feature parallel to the modern road (Fig. 4 Stage H). Its construction was variable, mainly close-packed rubble, but with lenses of sand and silt in the northern

[43] B. Durham, *Oxoniensia*, xlii, 178.
[44] Ibid, 175.
[45] Ibid, 176–9.
[46] Ibid, Fig. 9. Organic preservation suggests that the water-level has never dropped below 54.70 since the late Saxon period. The no-flow level of the Thames at Folly bridge is *c.* 54.1 mOD: Thames Conservancy *Statistics* Vol. 1 (1965).

Plate 1. Paving of the late Saxon ford at 65 St. Aldates III. The ranging pole illustrates 1 m. depth of river silt blanketting the ford, with a further 0.8 m. dumped platform above.

sondage. The surface was composed of small (100–150 mm.) slabs of Corallian stone, laid flat but heavily abraded on all faces as though they had been rolled (Plate 1). The archaeological trench had been placed as close as practicable to the modern street, but the body of the ford must be further out, and on the assumption that the Norman stone bridge was built along its downstream edge it has been conjectured as *c.* 7 m. wide. The excavated margin may therefore be an addition, not representative of the main construction, and this would explain the relatively late radiocarbon date of *A.D.* 980–1040 years from wattle fragments sealed within the structure (HAR 5340 corrected, see Table 1).

The reconstructed profile of the ford in Fig. 14 is therefore somewhat imaginative, and there is even less evidence for its overall length. The gravel riverbed at *65* Trench III had given way southwards to an 'alluvial island' at *33* Trench IB, so the ford probably did not extend more than about 35 m. in this direction. Towards the town there are no sightings of sufficient depth, but there can be little doubt that it started from the north bank of the

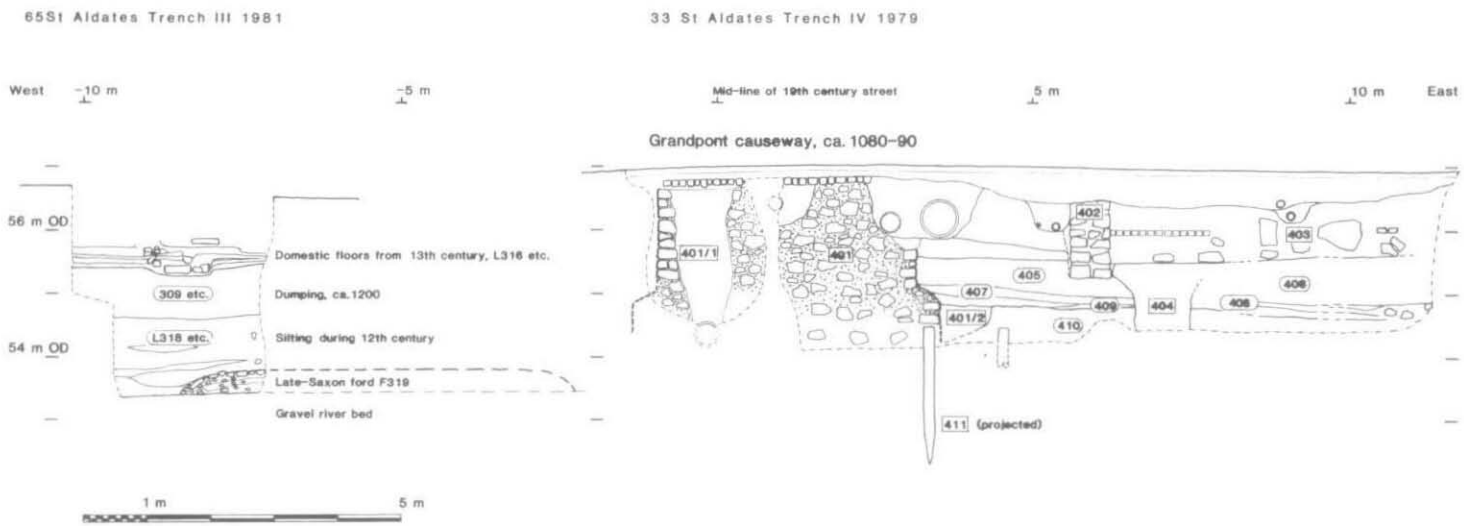

Fig. 14. *Right*: section through Norman causeway and its downstream frontage at 33 St. Aldates IV; *left*: section of the Saxon ford at 65 St. Aldates, projected to show its presumed relationship to the stone causeway which replaced it.

medieval channel seen in *65* Trench II giving a total length of more than 60 m. (see Phase 2a below).

This seems to be the first time a stone ford has been excavated in Britain, certainly one at an important crossing point on a major river. Stuart Brown's excavation of the early 13th-century bridge at Exeter showed no stone paving, but the number of horseshoes and horse-shoe nails sealed by the bridge construction levels showed that the gravel bed of the river had been used as a ford.[47] Many fords must now be inaccessible beneath modern roads and bridges, and would only be seen in exceptional circumstances. In Oxford we were particularly lucky with surprisingly slow ingress of ground-water, and the presence of Messrs. Wimpey Construction who encouraged us to go deeper and closer to the pavement than might otherwise have seemed prudent!

This was not the only ford on the Saxon crossing, since at least two others are known from charter evidence (Stanford, Maegtheford,[48] see Fig. 1), and there must have been either a ford or bridge at the Trill Mill stream.[49] The several streams of the Thames are distributed over a total valley crossing of 2.7 km. In many places the trackway would have been on gravel islands above flood level,[50] but an embankment might be expected on any low-lying stretch. The bank found previously under St. Aldates has been the subject of prolonged dispute,[51] and the writer is grateful to his collegues George Lambrick and Mark Robinson for their contribution to this report which clarifies the alternative approach (see above, 'The Middle Saxon Causeway?').[52] They make the important point that the bank material was alluvium, not Oxford Clay. This does not disprove the embankment thesis, however, since it was always assumed that the clay had come from the line of the Trill Mill Stream to the north, and it is known from recent excavations that this would in fact not produce Oxford Clay but a pale blue clay silt just like the bank material.[53]

The critical question is whether the material was a natural deposit or was dumped by man, and on this point a conclusion has regrettably not been reached. The nearest we can come to agreement is that there was considerable human activity around AD 800 on the flood plain at a point where the line of the river crossing was in due course to be established, and that these events involved major reshaping of the ground surface, whether by the building of a low causeway or the creation of a large shallow basin. Although the 'alluvial' approach does not provide a historical interpretation of these events in terms of Oxford's development, it is accepted that the basin is likely to have been man-made rather than a geological feature since it does not disturb the gravel beneath.[54] So the second point of agreement is that the reshaping resulted from large-scale earthmoving in the area, whether by excavation or by the dumping of imported material. The purpose of the earthmoving must be seen in the light of the subsequent history of the area in a chain of river crossings, taking into account the inclusion of bridgework as one of the customary services in Mercian charters, and also the widening military, trading and cultural connections of Mercia at this

[47] S. Brown, 'The medieval Exe Bridge, St Edmunds church and medieval tenements', *Exeter Archaeological Reports*, forthcoming.

[48] M. Gelling, *Place-names of Berkshire*, iii (E.P.N.S. li, 1976), 729–30.

[49] B. Durham, Oxford: '89–91 St. Aldates, the Trill Mill Stream', *C.B.A. Group 9 Newsletter* xiii (1983), 138. Herbert Hurst's description of timber and stone metalling 4 feet below the road perhaps represents a ramp, either down to a ford or up to a bridge: H. Hurst, *Oxford Topography*, O.H.S. xxxix (1899), 40–41.

[50] O.S. Geological Survey (1938) Sheet 236.

[51] B. Durham, *Oxoniensia* xlii, Fig. 41.

[52] M. Robinson and G. Lambrick, 'Holocene alluviation', *Nature*, 308 (1984), 809–14.

[53] B. Durham, *C.B.A. 9 Newsletter*, xiii, 139, layer 18.

[54] G. Lambrick and M. Robinson, pers. comm.

time.[55] These factors lead to the third consensus, that the earthmoving is likely to relate to construction work on the Thames crossing.

The area of dispute therefore resolves itself into how the embankment profile was achieved, whether by dumping or quarrying. The question is still intractable. George Lambrick and Mark Robinson are not prepared to accept the total absence of clay alluviation in this area in the Roman period, and hence believe that the bank was the surviving part of a natural sediment which had been quarried away on one side[56] The writer believes that more work is needed before the Roman phase of alluviation can be regarded as universal, and is particularly unhappy about the varied and often localised deposits at St. Aldates and the Blackfriars which are being treated as equivalent sediments (see above 'The Stratigraphy of the Clay Bank'). The answer may come from progressively plotting the distribution of the St. Aldates clay in any new exposures, perhaps backed up by a controlled analysis of the micro-morphology of the sediment, although it is accepted that an extensive investigation would be needed to yield a conclusive result.[57] More significant would be a series of radiocarbon dates for the pre-clay surface to confirm the existing single value which used inadequate material and agrees with neither model. In the meantime the present review of the evidence has had the valuable result of showing that Oxford's earliest material heritage is still one of major earthmoving in relation to a Mercian river crossing, and the historical conclusions of the previous report are generally confirmed.

The arguments in favour of placing the embankment at the end of the reign of Offa (757–96) are still preferred, on the assumption that Oxford as a settlement site is geographically and strategically Mercian. The physical dating evidence was used to distinguish between the two most promising historical events, the late 8th-century territorial aggrandisement of Offa's Mercia, and the possibly peaceful annexation of south-east Mercia by Edward the Elder in 911–12.[58] The picture is modified by Professor R.C.H. Davis's suggestion that south-east Mercia was under direct control of Edward's father King Alfred in *c.* 890, but there is still no substantial evidence of an Alfredian settlement at Oxford which might demand an innovative river crossing.[59] Until the archaeological picture is changed it will therefore be assumed that the radiocarbon and thermo-luminescence results favour the Offa interpretation. By implication, therefore, the core of the ford should date from at least as early as the last decade of the 8th century, and would be the southern counterpart of the contemporary Cam Bridge on the eastern frontier of Mercia.[60]

The *Victoria County History* has discussed the reasons for believing that Oxford was named after a Thames crossing on the south side rather than to the west of the town.[61] Accepting that the Saxon names Langford, Maegtheford and Stanford may relate to an originally Roman crossing heading for Cowley, the subsequent medieval history leaves no doubt that the line was diverted northwards to form part of a crossing heading to the site of the medieval town (see Fig. 1).[62] If these lower fords merited independent names, no doubt so did others on the crossing. Two sites have been suggested near the town (see above), at the excavated 65 St. Aldates site and at the Trill Mill Stream just outside the south gate. Each of these may have had a separate name, but there is at present no reason why the

[55] Cf. J. Campbell (ed.), *The Anglo-Saxons* (1983), 101–114.
[56] M. Robinson and G. Lambrick, 'Holocene alluviation', *Nature*, 308 (1984), 807–14.
[57] Pers. comm. G. Lambrick and M. Robinson.
[58] *The Anglo-Saxon Chronicle*, ed. D. Whitelock (1961), 33.
[59] R.C.H. Davis, 'Alfred and Guthrum's frontier', *English Historical Review*, xcvii (1982), 803–810.
[60] A. Gray, 'The ford and the bridge of Cambridge', *Cambridge Antiqu. Soc.* xiv (1910), 126.
[61] *V.C.H. Oxon.* iv, 4.
[62] G.M. Lambrick, *Oxoniensia*, xxxiv (1969), 83.

stonework deep beneath the frontage of the new Crown Court should not have been known to late Saxon travellers as the 'Oxen Ford'.

Returning to practicalities, however, the previous excavations showed that the 9th-century river was regularly depositing silt to the full height of the clay causeway.[63] Logically there must have been 0.9 m. depth of water going over the ford at these times, and it must have been virtually impassable. It is therefore justifiable to ask whether a town as important as Late Saxon Oxford would not merit a bridge. The first stone bridge is post-Conquest (see Phase 2a below) but a timber bridge of the 10th-century Ravning type would be well within the scope of Late Saxon carpentry.[64]. The only possible evidence was a pair of timber piles (Trench IV, see Fig. 14 F411). If they belonged to a bridge it was probably downstream of the ford and the two would be complementary, the ford for heavy loads and stock, the bridge for winter use, lighter traffic and pedestrians. The timber piles would not create the alternate silting and scouring effect of the stone causeway which, as will be seen in the following Phase, was soon to render the ford useless and force all traffic onto the bridge.

Phase 2a: the bridge and its early developments – late 11th to late 12th centuries (Figs. 14–16).

The ford and its channel were silting fast in the first half of the 12th century (Radiocarbon HAR 5339 and pottery). Logically it must by then have been superseded by a new form of crossing. Three entries in the Chronicle of Abingdon Abbey record that a bridge was built at Oxford by Robert D'Oilly, the first Norman sheriff (d.1091–92) and there can be little doubt that this bridge was a Thames crossing on the Folly Bridge line.[65] Perhaps, therefore, this accounts for the abandonment of the ford.

Stuart Rigold has argued strongly that all the great medieval river bridges, particularly those on broad flood-plains, were of timber.[66] The only evidence for a timber bridge at St. Aldates was two well-spaced piles which were undated but which have been argued above as possibly a Saxon bridge. The superstructure of such a bridge would in any case have been displaced by the stone causeway which partially overlay one of the piles (Fig. 14, F401, F411). So if D'Oilly's bridge were of timber, it is likely to have left virtually no trace. But the crossing which replaced the ford left some indirect archaeological evidence. It resulted in the forded channel being choked with 1.25 m. of silt by the late 12th century, followed by 0.7 m. of dumped building platform, while the river was channelled to the north. This suggests that the replacement crossing was more of a 'barrage' than a trestle timber bridge. The requirements would be met by a stone causeway of the type seen in the road section at 33 St. Aldates (Fig. 14) but caution is needed because this would be the earliest medieval stone bridge to be firmly identified in Britain and possibly in northern Europe.[67]

The 4 m. wide ragstone causeway at 33 St. Aldates finds an echo in the open arches south of Folly Bridge (Fig. 16, arches BNC 2–4). They show that the road has been widened three times, and Peter McKeague's survey has shown that the earliest component was the ragstone vault second from the east in each case, with widths between 3.9 and 4 m. (Fig. 15, Fiche C02).[68] If this is the same structure as at 33 St. Aldates it is already 260 m.

[63] B. Durham, *Oxoniensia*, xlii (1977), Fig. 9, L225/6 and /7, L226.

[64] H.E. Salter, *Medieval Oxford*, O.H.S.C. (1936), 15; F. Thacker, *The Thames Highway*, ii (1920), 116–117; E. Roesdahl, *Danmarks Vikingetid* (1980) 53–6; T. Ramskou, *Vikingerne som ingeniorer* (1981), 37–49.

[65] *V.C.H. Oxon.* iv, 4.

[66] S.E. Rigold, *Medieval Archaeology*, xix (1975), 48–91.

[67] I am indebted to David Harrison for discussion on this point.

[68] See also C. Bradford and J. Steane, *C.B.A. Group 9 Newsletter* 12 (1982), 108–9.

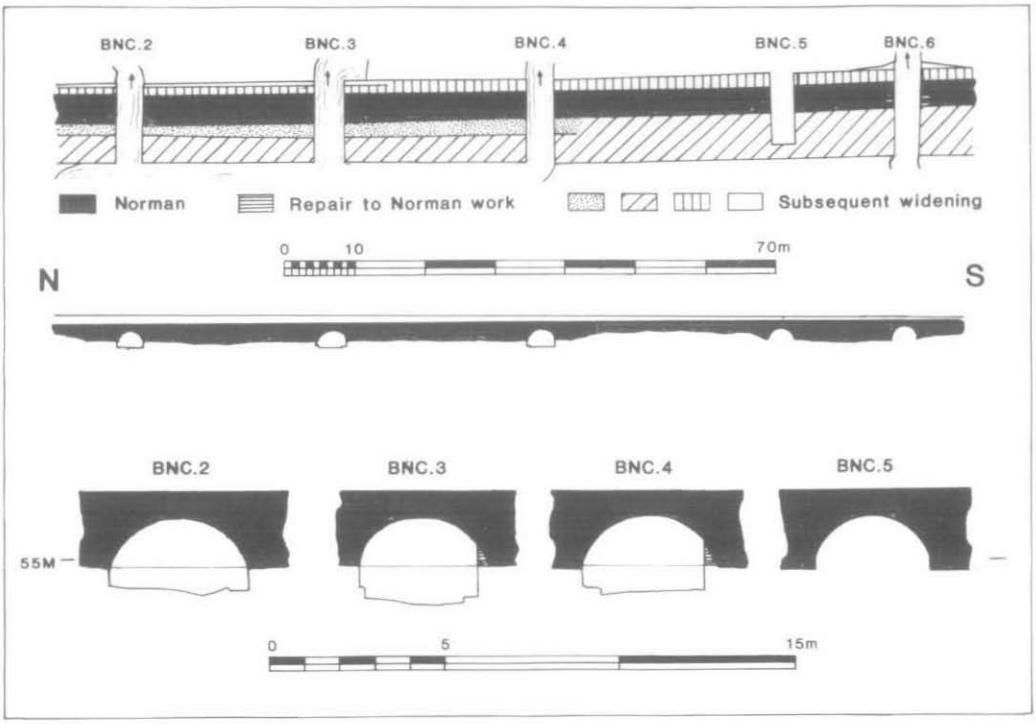

Fig. 15. Survey of Grand Pont arches BNC 2–6 with profiles viewed from the west, by Peter McKeague, 1984.

long, longer than the visible parts of Wallingford or Abingdon bridges (13th and 15th century respectively).

Apart from the undersides of these arches, the original bridge is now totally enclosed by its subsequent widenings. Its core is occasionally exposed in road works, however, and these have provided evidence of further length. Manholes constructed on the existing surface water drain showed solid mortared ragstone in five out of seven cases, the exceptions explained by being too far to the east (Fig. 16 Abingdon Road Trenches I–VI, and Salvage Records, Fiche B13). This takes the causeway a further 450 m. south to the New Hinksey Stream bordering Eastwyke, and accurately corroborates the evidence of a 16th-century map belonging to Brasenose College.[69] At this time there were 17 flood arches visible, and for the purpose of this paper they are numbered BNC 1–17 starting from the north with BNC '0' for the drawbridge in front of the gate tower. Between BNC 11 and 12 the 16th century road seems to dip, but the archaeological evidence suggests that the causeway continues, and the dip is assumed to be an illusion produced by gated access roads ramping up on both sides (Trench VI). The appearance of stone on the west side only at this point (White House Road) suggests that the modern gentle curve is the result of widening, and that in the original scheme this was the angle between two straight causeways.

The topographical and archaeological evidence can therefore be used to reconstruct a stone causeway at least 700 m. long. Was this stone spine with its intermittent arches the original Norman Grandpont? The evidence is not conclusive. The Romanesque arches need

[69] *Brazenose Quartercentenary Monograph* VI, *O.H.S.* lii (1909), Pl iv.

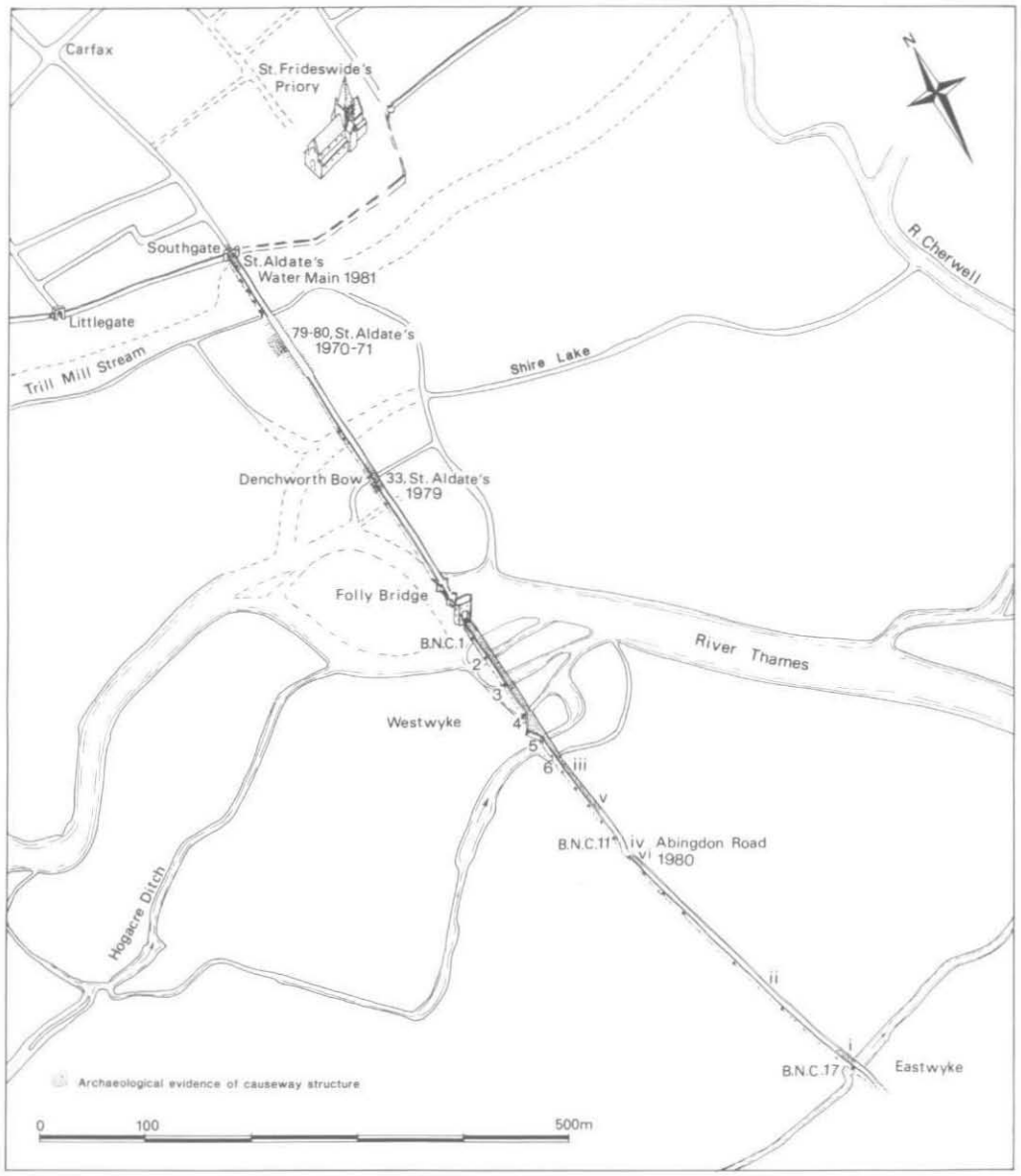

Fig. 16. Axonometric reconstruction of Grandpont *circa* 13th century showing location of salvage excavations etc. BNC 1–17 are flood-arches depicted on Brasenose College map of the 16th century.

be no earlier than *c.* 1200. The pottery dating of the causeway construction level at 33 St. Aldates to the late 11th century is based on small sherd numbers, and the evidence of buildings on this side of the bridge in the late 11th to 12th centuries could be open to other interpretations. Likewise, an explanation of the abandonment and rapid silting of the Saxon ford in terms of a new barrage is untested logic. But there can be no doubt that the silting was part of a major and lasting topographical change progressing in the first half of

the 12th century,[70] shortly after the recorded building of a 'great bridge', and explicable in terms of the stone causeway which can be demonstrated to extend within 100 m. of this point, and which by its sheer length would have warranted the name 'great bridge'. There cannot have been two 'great' bridges in 50 years: it must be D'Oilly's work.

The Romans built bridges of stone, indeed that at Trier still carries main road traffic.[71] Stone bridges in the Saxon period are, however, only known from charter evidence, for which there is a local example near Faringdon, perhaps the forerunner of Radcot bridge, and also at Aston Bampton and Ducklington.[72] But such structures could still be Roman, and the renaissance of the stone bridge is first indicated by the building of an arched bridge of massive stonework across the Wear at Durham *c.* 1099.[73] London Bridge and Avignon in the late 12th century are next oldest, although there is a 'pedestrian' arch in the Ock bridge at Abingdon which John Steane suggests was crossed on foot by Abbot Faritius in 1101.[74] Identifiable early stone bridges are otherwise few: late 12th century at Gloucester; *c.* 1200 at Exeter; pre-1226 for nine bridges on the River Wey, the latter being a case where detailed documentary work and a comparative approach to a series of structures has yielded a date.[75] The Oxford Grandpont is clearly the earliest, however, with a *terminus ante quem* of 1092. The circumstances of its building are unclear: it has always been considered as a 'good work' of D'Oilly's later years in atonement of his early despoiling of churches, although this would put it in a period of economic decline at Oxford.[76] Furthermore, the south route seems almost to diminish in importance, as if high tolls, limited passing width and the destruction of the ford had minimised the economic advantages.[77]

Details of the now-buried northern section of Grandpont have been by-passed in a quest for its date and identity. Three arches are implied, one on the Shire Ditch (the *fossa stuppata* of 1279), and later to become Denchworth Bow;[78] one or possibly two on the excavated 65 St. Aldates channel to the north; finally an arch about 25 m. south of Denchworth Bow deduced from section evidence (Fig. 6). The northern landfall of the causeway is not known. It must end before Speedwell Street, but there is contradictory evidence as to whether a block of Eynsham Abbey tenements are late 12th century reclamation against the causeway or much older (see Radiocarbon Determinations HAR 5341; Fiche B07 *65* Tr IV). A decision cannot be reached on this evidence, but it should be noted that augering well to the north at 65 St. Aldates Trench V suggested yet another

[70] The writer is grateful to John Blair for pointing out the very early documentation of a tenement on the downstream bridge frontage over the forded channel. Dr. Blair compared the rents paid by St. Frideswide's tenants in a charter of Stephen c. 1139 (*Cart. St. Frid.* i, 19) with those recorded in later 12th-century charters. They agree in overall numbers and amount of rent. The rubric of No. 200 (*Cart. St. Frid.* i, 158) shows that in 1180–90 the land of Thorold on the south bridge of Oxford was held by Robert the fisherman for 8s. This agrees with the rent *de terra quam Thoraldus tenuit* in the 1139 charter, and also with the two rents of 4s. from adjoining properties recorded as SE 167 and 168 by H.E. Salter (*Survey*, i, 240–1). Dr. Blair considers that the match is convincing, and hence that the frontage opposite the excavated tenements at 65 St. Aldates was occupied by 1139. This is further evidence that the forded channel had been blocked by this date, and therefore provides a *terminus ante quem* for the stone bridge in keeping with the radiocarbon and ceramic evidence.

[71] H. Cuppers, *Die Trierer Romerbrucken* (1969).

[72] W. de G. Birch, *Cartularium Saxonicum*, iii, 228; M. Gelling, *Place-names of Oxfordshire*, ii, 319; J.B. Davidson, 'Some Anglo-Saxon charters, *J. Archaeol. Ass.*, xxxix (1883), 300.

[73] L.F. Salzman, *Building in England down to 1540* (1967), 365.

[74] Ibid, 376; M.N. Boyer, *French Medieval Bridges*, Medieval Academy of America, lxxxiv (1976), 37–39; J. Steane, *Medieval Bridges in Oxfordshire*. Oxon. Museums Information Sheet 17 (1981).

[75] H. Hurst, 'Excavations at Gloucester 1971–73' *Antiquaries J.* liv, 46–50, Fig. 18; S. Brown, 'Medieval Exe Bridge', *Exeter Archaeological Reports* (forthcoming); D. Renn, 'The River Wey Bridges between Farnham and Guildford,' *Res. Vol. Surrey Archaeol. Soc.* i, 75–83.

[76] *V.C.H. Oxon.* iv, 10.

[77] D.M. Stenton, 'Communications', in A.L. Poole (ed.), *Medieval England*, i (1958), 201.

[78] H.E. Salter, *Survey*, ii, 8.

Plate 2. Causeway arches BNC 2–4 south of Folly Bridge viewed from north-west. The collapse of 1980 affected only the *c.* 18th-century stone skin of the second western widening, the Norman work being well protected in the core of the causeway.

channel rather than gravel, and it would not be too surprising if the bridge extended this far. Finally there is an observation and a contractor's report of similar stonework on the line of the Trill Mill Channel just outside the South Gate, which is interpreted on Fig. 16 as the northern completion of the crossing with four conjectural arches.

Including the three medieval arches at Folly Bridge, and with much conjecture, we have accounted for 30 arches north of Eastwyke. A 17th century estimate would add a further 3 to the south, and 18 on the Red Bridge section, the site of the Saxon Stanford and Maegtheford.[79] The grand total is therefore 51 arches, but no doubt this will be modified by any further work in the St. Aldates area. A full description of the 900-year life of the bridge is beyond the province of this report, and the reader is referred to Thacker and the *V.C.H.* Important points include the six-sided gatehouse known as Friar Bacon's Study on Folly Bridge, with a drawbridge in front of it (BNC'0'). This tower and the suburb which it protects are closely paralleled by the surviving Monnow Gate at Monmouth.[80] The original appearance of the Oxford causeway was probably very similar to the exposed section beyond this defence. Plate 2 shows it at the time when the outer skin between arches BNC 2

[79] F.S. Thacker, *The Thames Highway*, ii (1920), 117. Much of Red Bridge was destroyed or altered by the ramps of the G.W.R. bridge in the 1840s, but some stonework is still visible on the south side: see P. McKeague's survey, Fiche C03.

[80] I. Soulsby, *The Towns of Medieval Wales* (1983), Fig. 67.

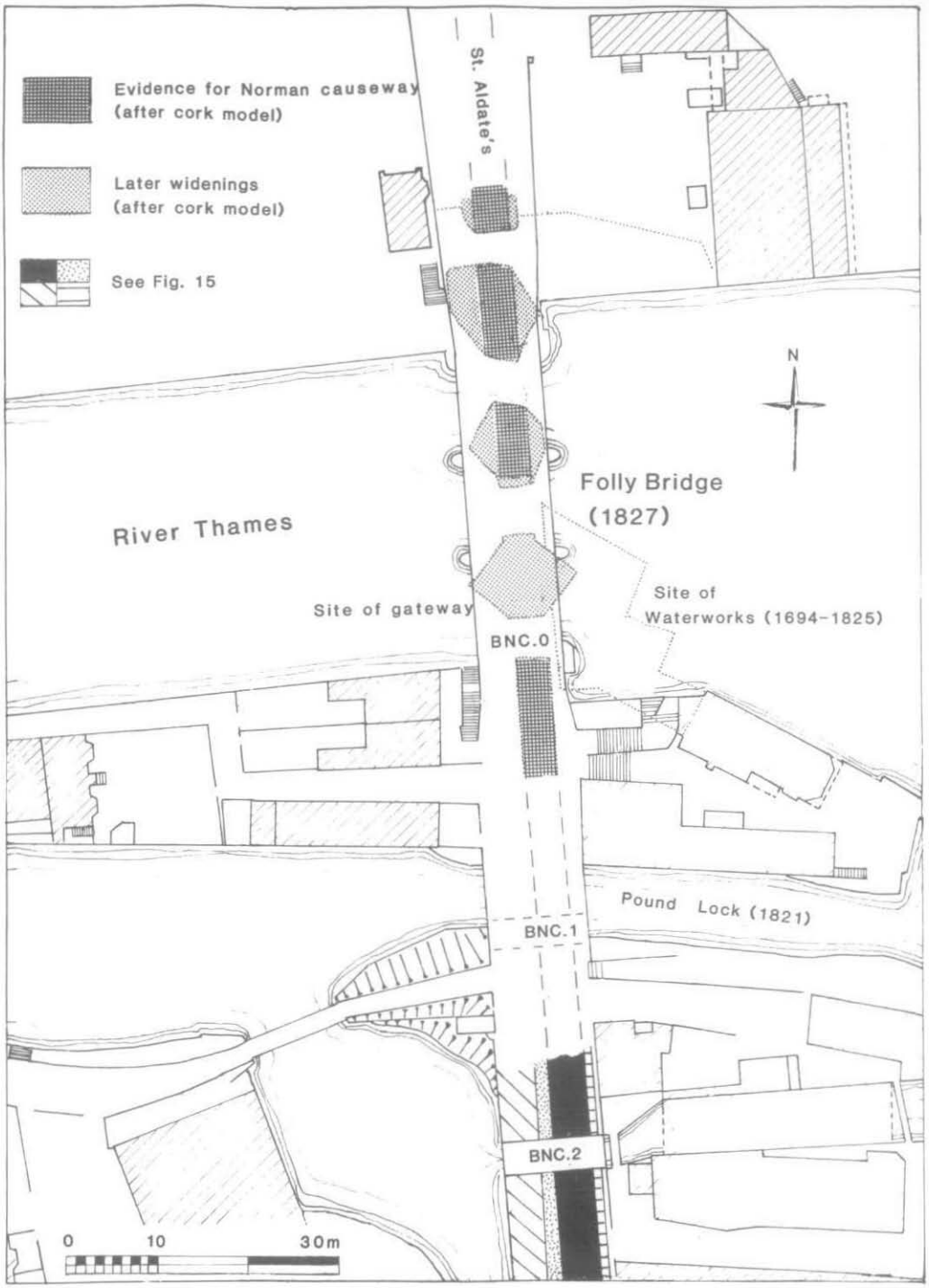

Fig. 16A. Location of the medieval Folly Bridge, based on the cork model which seems to have been made c. 1815–25, before or during demolition (Ashmolean Museum 1878.272). The above reconstruction assumes the model was at a scale of $\frac{3}{16}$ inch to 1 foot (1:64) and embodies conclusions from a scale drawing of the model kindly provided by David Sturdy.

and 3 had collapsed in 1980. The skin of course is the second widening on this side, built after the mid 17th century (clay pipe bowl) but before the blocking of BNC 1 by the pound-lock arch of 1821.[81]

It will no doubt be pointed out that the evidence so far is only for a very long causeway, and that somewhere there should be a wider navigation arch with a higher clearance for masted boats. It would be argued that this section alone can strictly be called a bridge and that in the late 11th century it was most likely to be of timber. Two pointed arches of 13th–14th century appearance survived with alterations till the 1820s at Folly Bridge, flanking an elliptical navigation arch which was presumably 16th or 17th century.[82] There is nothing to show what predated these structures, whether timber or Norman stonework, but as the flow became concentrated on these arches it would be no surprise if the original piers had failed. A navigation arch in stone would have been practicable in D'Oilly's time, perhaps the best evidence being the reference to the late 11th-century arched bridge at Durham mentioned above.[83] The weakness of such an arch on a gravel subsoil would be in its piers: the innovation at Oxford may have been to distribute the flow to so many arches that the scouring effect was minimised, and spaced out so that the failure of one arch would not bring down its neighbours. Perhaps this was the genius behind a successful 11th century stone bridge, and the germ of a renaissance in bridges built to last.

As a post-script to the survey of the causeway arches it was decided to tackle the problem of locating the medieval Folly Bridge removed in 1824. The rechannelling of the river at this time means that virtually no reference points survive, and the solution embodied in Peter McKeague's Fig. 16A depends largely on a very detailed model in cork which must have been made before the bridge was demolished. The logic behind our reconstruction is outlined in Fiche C04–06. It is interesting to see that the waterworks was built obliquely to the bridge, presumably because it was aligned on the hexagonal shape of the gate tower. The question of whether there was a spine of Norman stonework through the bridge is perhaps overstated in Fig. 16A. The model shows straight joints on the underside of the arches, which, at the assumed scale of $\frac{3}{16}$ inch to 1 foot (1:64), would correspond with the Norman causeway width of c. 4 m. But these arches are commonly depicted as pointed or eliptical, and if they correspond to the causeway width it can only mean that they were rebuilt to the original dimension. We have nevertheless reproduced the interpretive shading from a scale drawing kindly loaned by David Sturdy. This suggested that the bridge is a direct development of a continuous causeway, with irregular cutwaters and the gate tower added subsequently.

Sustained though unspectacular archaeological studies have therefore filled out the image of the Great Bridge. The salvage recording at 33 St. Aldates indicated a growth in structural activity which may mean that existing inhabitants of this small island rapidly raised buildings against the causeway (Fiche B10).[84] A layer of charred peas, beans and chaff is probably threshing residue burnt beside the building. Mark Robinson notes that this is not a flood-plain crop, and if it was carted a mile to be threshed beside the bridge it probably means the grower was actually living here (see above, 'Environmental Aspects', Sample *33* L409). At this time, the other side of the bridge at 65 St. Aldates was probably uninhabitable, with the profile of the Saxon ford slowly disappearing beneath yearly layers of river silt and urban refuse (Sample L318/7). It would have become progressively drier

[81] Several vousoirs, presumably of BNC 1, are visible in the west face of the causeway; see also F.S. Thacker, *The Thames Highway*, ii (1920), 121.

[82] *V.C.H. Oxon.* iv, opp. p. 60.

[83] L.F. Salzman, *Building in England*, 364.

[84] See also Note 70.

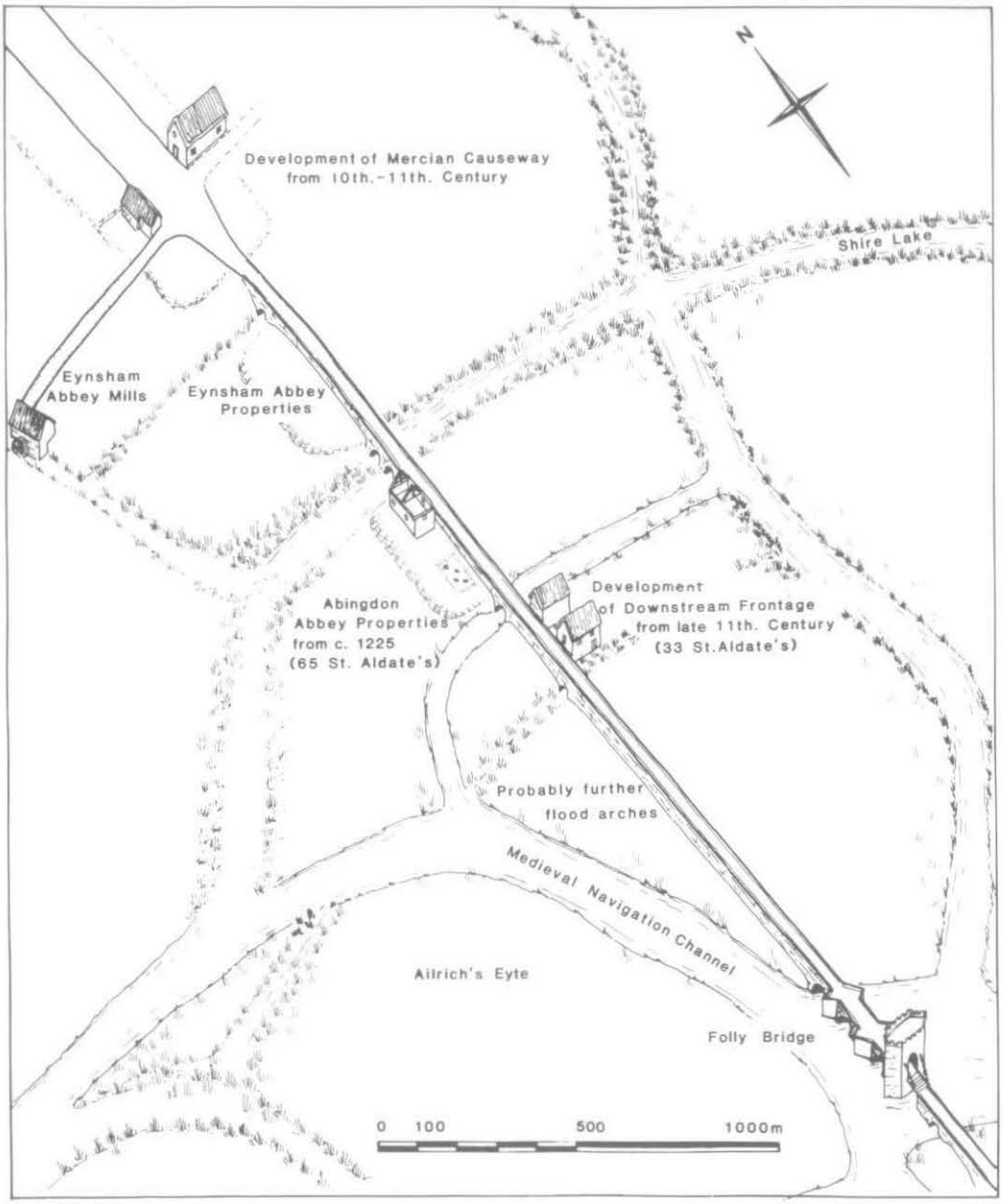

Fig. 17. Part of the parish of St. Michael at the Southgate *circa* 1225: axonometric reconstruction of excavated plots illustrating the main phases of development of the Grandpont frontage.

with the rise in level (Sample L318/3) until its riverine origin had been forgotten, the water passing along channels converging on the causeway arches. At some stage *c.* 1200 a decision was made to dump 0.9 m. of loam and domestic rubbish, presumably over the entire frontage from the 65 St. Aldates channel to Denchworth Bow (L309–L309/2). Documentary evidence suggests that the work was promoted by Abingdon Abbey (see

above, Documentary Evidence) and it can only be seen as a prelude to building, the level having been made up to about 0.6 m. higher than the downstream side, presumably to resist flood-waters penned up in front of the bridge. The level was still 1.3 m. below the deck of the causeway, however, and it is likely that the excavated floors described below were effectively basements, with most living and trading done at 'first-floor' level a few steps up from the roadway.

Phase 2b: late 12th – early 13th century, the first buildings on the upstream frontage (Fig. 4G).

The building platform at 65 St. Aldates has been discussed in the previous phase, although it might justifiably have been treated as an immediate prelude to building. A 35 m. length of the frontage between the two streams, a breadth at least 10 m. out from the causeway and a depth of 0.75 m. would require the importing of two hundred cubic metres of spoil. It is no surprise to find the bridge colonised in this way. London Bridge was bedecked with houses and shops until 1758, and on the Petit Pont at Paris in 1212 an area of the river was leased so that a house could be added to the bridge.[85] Houses were built by the owners of the bridge in La Rochelle to raise rents for the maintenance of the fabric. The excavated buildings at Oxford were of course on comparatively dry land against a causeway rather than propped out from the bridge, but they conform to the medieval pattern of not wasting a profitable frontage.[86] No documents survive before 1250, so the stimulus for this enterprise must be deduced from the later history. Accepting Salter's attribution of tenements it seems that the core of this frontage paid modest rents to the Almoner of Abingdon Abbey, the extremities going to Oseney and the Hospital of St. John (see above, Documentary Evidence). The northern extrimity will be suggested below as growing from an initially narrow riverbank holding, and if the same occured with the St. John's property it would be fair to think that the bulk of the frontage was developed by a single lord, i.e. Abingdon Abbey. By extension, four out of five properties north of the 65 St. Aldates stream paid rent to Eynsham Abbey, and here again the stimulus for reclamation may have come from the ecclesiastical lord, whose mill-race ran at the end of the new tenements.

There is therefore some reason to think that the development of the Grandpont frontage was initiated by major church landowners. It is noticeable that the average tenement width of 11 m. is much greater than the average 6.25 m. of those nearer the town on the Mercian causeway frontage, and only a proportion of this difference can be attributed to the infilling of river channels.[87] The Abingdon frontage as a whole would have started as about 28 m. length in the early 12th century *i.e.* before any infilling. By 1279 it was two tenements, SW6 and SW7/8, and three by the mid 14th century. The excavation spanned most of the northern tenement SW8 but cast no light on how and when it was divided from its southern neighbour. A substantial 19th century widening of the street also meant that the forward 6 m. of the building was inaccessible for excavation, and conclusions have to be drawn from a narrow strip along the back walls. For these reasons the ground plan can only be guessed, but it is clear that the first structure occupied an ample 7 m. along the frontage (F305/4, F313/1), and although the back wall was not seen it must have been at least 8 m. from the causeway. The floors were noticeably uneven, possibly due to subsidence in the soft fill of the platform. It was of course a river-side building, on the edge of the platform within 2 m. of the water. In these circumstances the bank is likely to have been revetted with timber, but if so it did not survive the replacement

[85] G. Home, *Old London Bridge* (1931), 352; M. Boyer, *French Medieval Bridges*, 77.
[86] M. Boyer, *French Medieval Bridges*, 75–77.
[87] H.E. Salter, *Survey*, ii, map SW1.

in stone in Phase 3. The excavation showed only a series of rubbish layers sloping into the channel (L77/3–/5). Two small trees in Phase 3 were probably saplings at this stage. (F75/1, F75/2).

The conclusion for the initial settlement of the upstream frontage is therefore that it included a substantial riverside building occupying part of a spacious property on the new platform.

Phase 3: early to mid 13th century: the first stone waterfront (Fig. 4F)

The first building seems to have been made to last, because there is no evidence of replacement for about 150 years (Phase 5a), despite the obvious problems of subsidence on made-up ground. The main developments during this period affect the waterfront. It was implied above that any revetment beside the first building must have been of timber. It would have given at most a 2 m. wide tree-lined path along the edge of the water. To understand the significance of this narrow strip of property it is necessary to review its subsequent history. The modern boundary between Nos 64 and 65 appears first in the 14th century (Phase 5a), and there is sufficient structural evidence from the excavation to say with some confidence that it arose at this late date from the encroachment of a new water-front building over part of the existing property. The tenement on the water-front strip was ultimately widened again in the other direction over the river channel to become the 'Wheatsheaf' (Phase 7). This therefore appears to be Salter's tenement SW9. But the documentation of SW9 starts in the Oseney rentals as early as 1260, when there was no more than a 2 m. width between SW8 and the river. The Phase 5a structure, dated ceramically to the second half of the 14th century, can be construed as an expansion of this waterfront strip, and there is no alternative but to accept that previously the Oseney property had been perched on the edge of the river channel for its first century of existence. Its frontage may have been slightly wider and it may have been propped out over the stream, which would explain why the stream was ignored in the Hundred Rolls survey of 1279. It must nevertheless have seemed very cramped beside its more comfortably spaced neighbour to the south (see Phase 2b).

The development of this embryo tenement depended on the establishment of a durable river wall. The earliest excavated stonework was of large irregular limestone blocks with yellow gravel packing (F51/4) and contrasted sufficiently with the main wall above it (F51, F34/1) to suggest that it was not simply the foundation. It has thus been treated as a phase in itself, although it is not impossible that there was already a small building close to the street.

Phase 4: mid 13th century to mid 14th century: a permanent stone waterfront and the establishment of the riverbank tenement (Fig. 4E)

The documentation for SW9 begins at 1260, which gives a *terminus ante quem* for the riverbank tenement. The major rebuilding of the river-wall to give an overall height of 1.9 m. (F51, F34/1) may be seen as the first point at which such a building could have had permanent existence at the excavated rear of the site. The strongest evidence for a building was a series of laminated ashy layers appearing at this time (L52/2–/3), which are characteristic of floor-levels within medieval buildings in this part of Oxford.[88] An area of burnt stone in one of these floors suggests a hearth (F52/4), and apart from the narrowness

[88] B. Durham, *Oxoniensia* xlii, 183.

of the 'room', the only major contradiction arises from the discovery of an opening through the river-wall which was construed as a culvert (F82). Considering how water was diverted in and out of contemporary buildings in Winchester, it is possible that this was a device to bring clean water into the building, or to take waste away.[89] The river was already starting to silt up, impairing the efficiency of the culvert, which was blocked by the end of the 13th century. Three wooden bowls were presumably household items dropped into the silts (Fig. 11, Nos. 1–3). Only one side of the culvert was within the excavation, and its width could only be estimated by probing (*c.* 1.0 m.), but its general purpose is indicated indirectly: in the accumulating silts of the river (L73/1–/2) a stave-built tub had been sited directly in front of the culvert entrance, as though to act as a water hole when it ceased to be economic to keep the original structure clear (Fig. 5, F83; Fig. 11, No. 4). Carole Morris suggests that such a vessel could equally be used for keeping fish alive, provided that water flowed through it (see above 'Wooden Objects').

The rear wall of the riverside building was 10 m. from the estimated line of Grandpont. The excavation failed to indicate whether the tenement included a 'yard' extending further back along the bank, but subsequent history would tend to support this. A well-formed drain lined with stone slates (F65) and subsequently a lightweight wall (F58) show that the area was not wasted, although not until the end of this phase is there a permanent stone river wall here (F34, F60).

The riverside activity should not overshadow modifications to the main tenement. During this period an extension was added to the south (F302/2), and apparently also a load-bearing internal partition (F317), which even now was subject to impressive subsidence into the platform material.

The later developments of the primary buildings have been accorded a separate sub-Phase 4b in order to highlight any contrast in pottery, but it must be reiterated that with long narrow trenches imperfectly placed the stratigraphy was not reliable enough to provide more than a broad overall phasing. The main structure of the riverside tenement would have persisted, with continued accumulation of floors (L52/1). To the rear was a cobbled area (F57), possibly enclosed by a wall (F58) but unlikely to be within a building because there was still no river wall here. The revetting of the river had to wait till the end of this sub-phase (F34, F60).

Elsewhere on the site a number of floor accumulations in the main tenement are deemed to belong to this sub-phase, although they could not be differentiated stratigraphically from those of the previous sub-phase (L306/4, L316/3–/4). The earliest demonstrable floors in the south extension are, surprisingly, to the rear, and this is taken to mean that by now a doorway had been opened through the wall (jamb F302/3) leading to a back room.

To conclude, therefore, the excavations suggest that in no more than half-a-century from the establishment of the primary tenement, a second holding had appeared in a marginal position between it and the river.

Phase 5: mid 14th to mid 17th centuries: the establishment of a permanent boundary (Fig. 3D)

It was shown above that by the beginning of the 14th century the river channel was already obstructed, to the extent that a water-butt had to be sunk into the silts to provide a domestic supply. The process of infilling continued, but not at a great rate, because when the riverside tenement came to be rebuilt on an enlarged plan, it was extended over the property of the main tenement rather than over the river channel. A well-constructed stone

[89] M. Biddle, 'Excavations at Winchester 1969', *Antiquaries Journ.* l, 301–2.

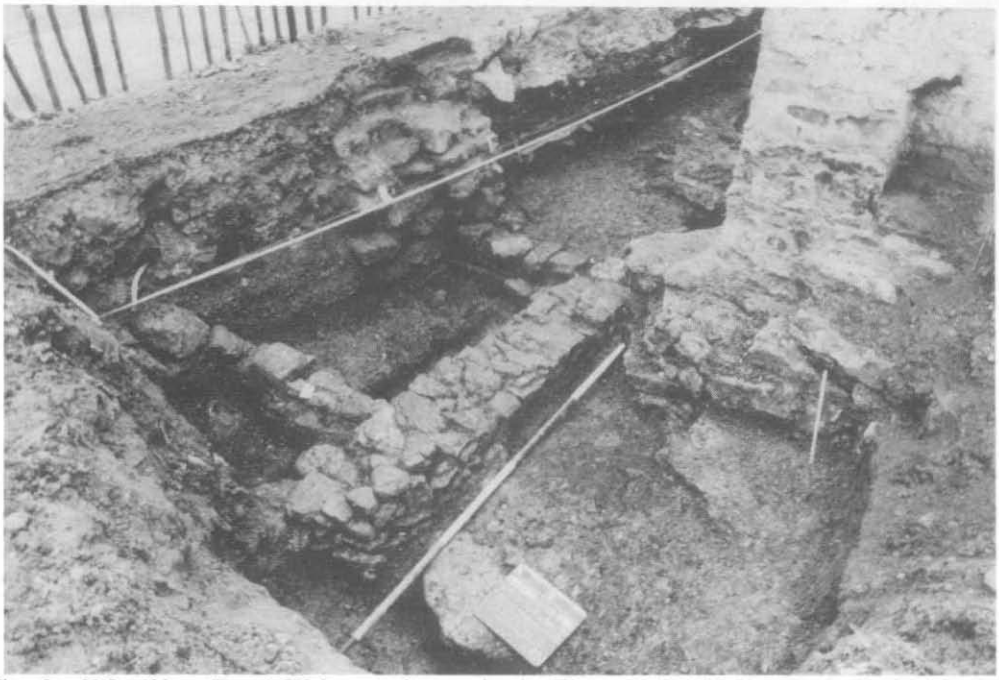

Plate 3. 65 St. Aldates Trench III from north-west, showing Thomas de Leigh's Phase 5 rebuild of the Oseney tenement by 1345. The double wall in the frontage section and the modern garage footing (right) illustrate how de Leigh's enlargement of SW9 has been perpetuated.

rear wall (F18, F314) bridged the old boundary (F313) and extended 2 m. over the floors of its neighbour. A slender partition wall divided the two properties now, insignificant in itself (F310/1), but the precursor of two very solid stone walls which were to define the two properties into the 20th century (F310, F311). So although it is not absolutely certain that the primary wall F313/1 functioned as a property division in the previous phases, there is no doubt that the modern boundary arose out of nothing, across the floor of a room, more than a century after the first settlement of the platform.

Still assuming that the boundary in question is that between SW8 and SW9, there is regretably no evidence of any deal by which Oseney acquired this 2 m. width of the Abingdon tenement. From 1339, however, the two tenements were in the common ownership of Thomas de Leigh, and this is an obvious occasion when the very narrow south tenement might have been enlarged.[90] The slender footing which divides the new property in two (F313) is noteworthy, because in 1345 we find the first reference to two shops.[91] They jointly pay 3s. rent to Oseney, so by this time it would seem that Oseney's territorial gain has already been made.

The backyard of the riverside property seems also to have been refurbished, with pitched-stone cobbling immediately behind the building (L40/2, L315) and an oblique swathe of laid cobbles extending back (F44) and respected by a short section of stone walling (F47). From amongst part of this cobbling came a fragment of a parrot-beak jug with clasped hands which is the first known locally-made copy of a typically French form

[90] H.E. Salter, *Survey*, ii, 12–13.
[91] Ibid; W.P. Ellis, *Liber Albus Civitatis Oxoniensis* (1909), 27.

(Fig. 8, No. 7). The emergence of the name Broadgates under the Oseney property in the late 14th century is taken to mean that there was a wide entry on the frontage, and within the arbitrary documentary framework this can only mean that the bridge arch had been finally blocked, the parapet removed and a ramp created down onto the old channel bed.[92] Thus the Oseney tenement had now extended both north and south.

The main tenement in its slightly contracted form still shows the usual accumulation of black detritus typical of medieval buildings in this part of Oxford (Fig. 5, L316), but only a small fragment survived the Phase 5b events to be available for excavation (see below). The structural plan of this tenement seems to have been retained, F317 still functioning as an internal partition, and putative wall F305/4 being at last replaced by a 'tangible' F305. The last-mentioned wall is carried round into a heavy refacing of F302/2 (F305/1), still respecting the doorway of the previous phase and apparently therefore still functioning as an internal partition.

Structural Phase 5 covers three centuries, a fact which reflects the 'patchiness' of the structural evidence. It seems likely that the broad outlines of the buildings were retained throughout this long period, though probably with replacements such as F317/1 for F317. The yard and river-channel accumulations have been arbitrarily split on the bases of their pottery assemblages, and sub-Phase 5b includes those which on the current chronology are later than about 1450. The most profound structural change occurs in the main tenement towards the end of the phase, however. A large sub-rectangular hole *c.* 2 m. × 3 m. was dug down to the surface of the Saxon ford, a depth of 2 m. It was then filled with stone blocks, the largest measuring 1.05 m. × 0.35 m. × 0.3 m., carefully laid (F308/2) with progressively smaller stones towards the top (F308/1). Wider at the top than the base, it must have been a foundation, presumably for a chimney stack. But there was no fireplace and no burning, and the foundation had simply been surfaced with large flat slabs (F308) extending up to the north wall of the tenement. It is possible that a stack was built and then dismantled, but what seems more likely is that the project was abandoned, and the stack built elsewhere in the house. The extravagant waste of stone suggests that as a commodity it was in plentiful supply, and considering the lack of any but medieval pottery from the deeper levels it is treated as mid 16th century, just after the dissolution of the nearby friaries. This would mean that a clay pipe stem, a turkey bone and a fragment of a wanded glass bottle (1720–60) had fallen between stones during repairs to the paving. The fragment of knuckle-bone decoration between two slabs is typical of the late 17th to early 18th centuries, and may have been added during such a repair (Fig. 12, No. 6).[93]

Phase 5 has therefore seen a trebling of the frontage of the river-side tenement to about 9 m., almost equal to the primary tenement beside it.

Phase 6: mid 17th century to c. 1770: a building over the old channel (Fig. 3C)

The later phases will be covered rapidly because the limited area of excavation cannot do justice to major post-medieval buildings. The second of two early floor levels on the old channel fill is dated by clay pipes to the 18th century (L36/1). This would have been a long building extending well back from the street. Such a rear extension can be traced back through the maps of Hoggar (1850), Davis (1797), Taylor (1750) and Williams (1733); it seems also to be similar on Loggan (1675) but not Hollar (1643) or Agas (1578). For this reason alone Phase 6 is assumed to begin in the mid 17th century. By analogy with its later usage it may already be an inn, but there is no justification for associating this part of the

[92] H.E. Salter, *Survey*, 13–14.

[93] I am grateful to Philip Armitage for the dating of knuckle-bone floors.

building with the references to SW9 as 'le berehouse' and 'brewhouse' which begin as early as the mid 15th century.[94]

Between the two tenements at this time the party wall was double, with a straight-joint down the middle (F310, F311). A possible reconstruction for this area has been prepared, and will be preserved in archive, but since much of the stratigraphy was removed by machine no great reliance can be placed on the evidence. The important conclusion is that the revised medieval property boundary of Phase 5a was now very clearly demarcated, with a thoroughly fire-proof double wall.

Phase 7 c. 1770 – c. 1860: 'The Wheatsheaf' (Fig. 3B)

Clay pipe and pottery dating suggests a major phase of rebuilding about 1770 (F8 etc.). The interior of the building is now quite clearly over the area of the old river channel (floors L10/1, L11/1), and most of the 1979 excavated area shows a neatly cobbled inn-yard. Access to the yard is assumed to be by a passage at the south edge of the property, as shown on Hoggar's map of 1850. The building had been replaced before the first edition of the Ordnance Survey in 1875, so Hoggar's is the only modern map to show it.

In 1850 this frontage constitutes the biggest 'bulge' anywhere in St. Aldates, an estimated 3.5 m. forward of the modern 'back of pavement' line. The line of the Norman causeway is estimated at a further 2 m. forward. The front wall of the Wheatsheaf was therefore probably quite close to the medieval frontage line, and illustrates how much archaeological evidence is sealed beneath the modern street. The opposing frontage has been withdrawn between 6 m. and 12 m. in the 1960s, which means that there will probably never be an opportunity to study the forward parts of the causeway tenements. This underlines the importance of careful excavation of the accessible back areas, and justifies what might be thought of as over-imaginative reconstructions of the hidden areas. The result, as embodied in this report, can be a totally unexpected vision of how this and perhaps many other early river bridges have engendered suburbs which in time have totally obscured their original function.

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[94] H.E. Salter, *Survey*, ii. 14.