

MIDDLE SAXON EVIDENCE AT COOK STREET, SOUTHAMPTON (SOU 254)

By M F GARNER

with contributions by P ANDREWS, JUSTINE BAYLEY, JENNIFER BOURDILLON, DUNCAN H BROWN, P R COTTRELL, MIKE HEYWORTH, DAVID A HINTON, JOHN HUNTER, JACQUELINE I McKINLEY, D M METCALF, ELIZABETH PIEKSMA, *and* I D RIDDLER

ABSTRACT

Archaeological excavations, in advance of redevelopment, and a watching brief at Cook Street in Southampton between 1986 and 1989 examined part of the south-west corner of the Middle Saxon town of Hamwic. An inhumation cemetery and occupation evidence were bounded on the west by a north-south ditch. The cemetery included burials in the ditch, three penannular ditches, and nine graves. Evidence for buildings, animal husbandry and butchery, antler working, and silver and copper-alloy working was revealed.

well preserved evidence of Middle Saxon, medieval and later occupation. Full-scale excavations were therefore funded by the Council as areas became available after demolition, in 1987 and 1988. The Council-funded teams were supported on the full-scale excavations of Trenches 3 to 5 by a Community Programme Project funded by the Manpower Services Commission. Goulden and Sons Ltd, the prospective developers, provided help in the form of plant and fencing.

INTRODUCTION

Project Background

The Cook Street site is named after the street which runs across the middle of the area. It is coded SOU 254 by Southampton City Council. The site is centred at SU 424116 in the St Mary's area, which is on the west bank of the River Itchen (Fig 1). The site is located in the south-west corner of the Middle Saxon settlement of Hamwic and about 300 m to the east of the north-eastern corner of the medieval walled town. The Cook Street area was considered in the 1980s to be a run-down part of the town and Southampton City Council designated it for improvement.

The archaeological importance of Hamwic was well known and the costs of archaeological work were considered to be a potential drawback to redevelopment. The Council therefore funded trial excavations in 1986 to evaluate the archaeological potential of the area.

The trial trenches, Trenches 1 and 2, revealed

Geology and Topography

The area of Hamwic is located on low-lying land which slopes gently to the south-south-east (Fig 1). The modern ground level is about 3.5 m OD at Cook Street and at Six Dials, at the northern end of Hamwic, is about 5.6 m OD. The Middle Saxon shore line might have been about 100 m to the west of its present position, and possibly included areas of lagoon, salt marsh and gravel spit (Morton 1992, 20–24).

The natural deposits encountered at Cook Street were similar to the rest of Hamwic being brickearth (a fine sandy silt – probably a redeposited loess) overlying gravel. The brickearth generally reduces in thickness across Hamwic to the south-south-east but at Cook Street it thins to the west-north-west. At the west end of Trench 1 where it was about 0.2 m thick the top was about 2.1 m OD and at the south-east corner of Trench 5 where it was 2 m thick the top was about 3.4 m OD. Neither the base of the gravel, nor the water table, which usually lies within the gravel, was encountered.

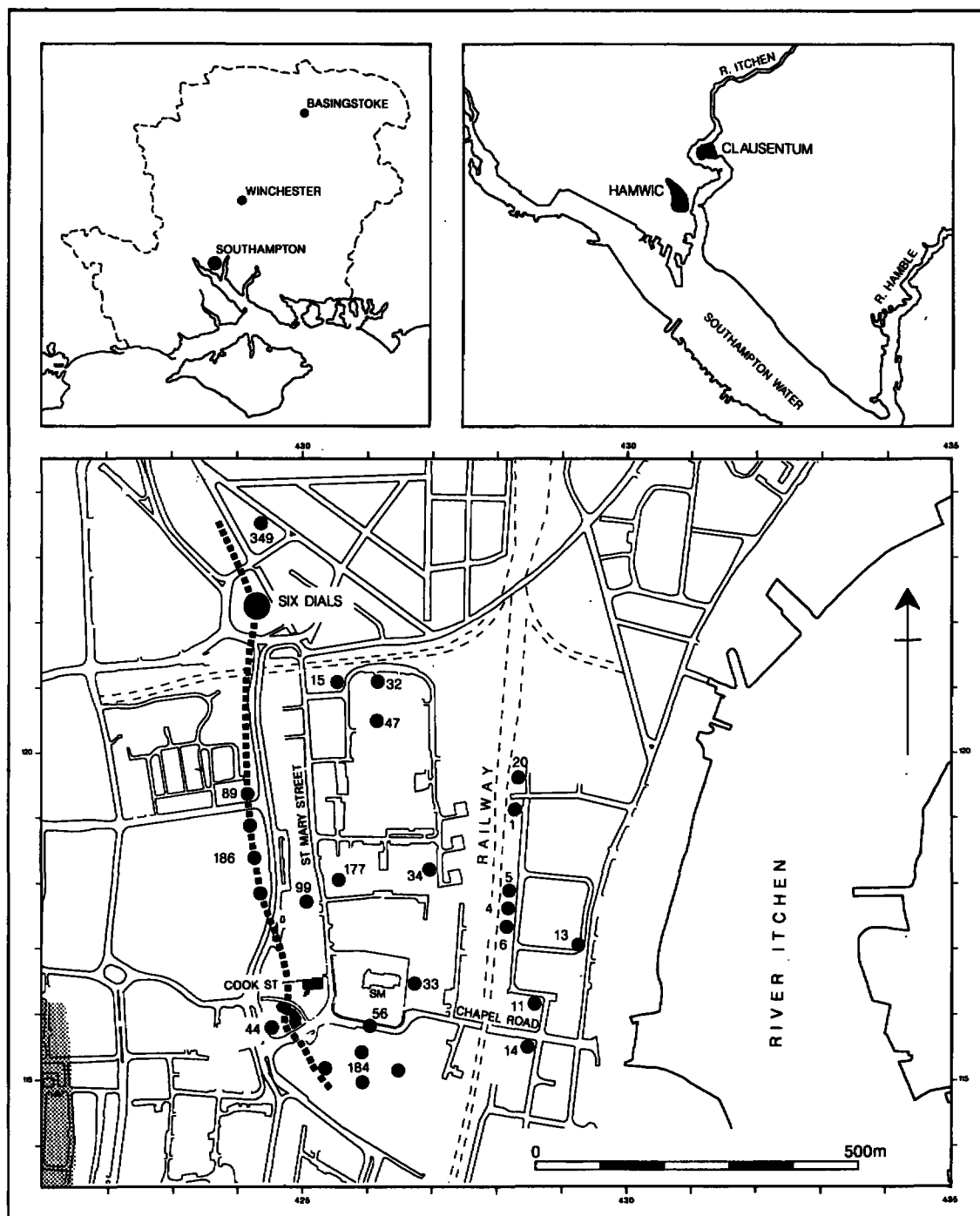


Fig 1. The location of Cook Street and other places mentioned in the text. 'SOU' prefixes are omitted from the site numbers. The stippled area represents part of the medieval walled town. The line of squares marks the approximate western limit of Hamwic. **SM** is St Mary's Church.

Methodology and Phasing of Work

The site was investigated in several phases between April 1986 and May 1989. The first phase was an evaluation with the excavation of Trenches 1 and 2. Full-scale excavations followed with the excavation of Trenches 3, 4 and 5 in 1987–8. A watching brief was carried out on the redevelopment of Trench 5 in 1989.

Trenches 1, 2, and 3 were completely excavated with the exception of parts of large features. Features in most areas of Trench 4 were at least partially excavated. The east end and northern strip, adjacent to Chapel Street, were the only parts of Trench 5 to be excavated.

RESULTS SUMMARY

Introduction

Despite its urban setting and long periods of human activity Cook Street was not a typical deeply stratified urban site in that there was a paucity of archaeological layers beyond the limits of negative features. In most parts of the site layers of dirty brickearth overlay *in situ* natural brickearth. Some of them were probably disturbed and contaminated *in situ* natural brickearth but others were redeposited. Features of prehistoric to Late Saxon date were cut through some of these brickearth layers. Above these features and layers was a fairly homogeneous dark soil, up to 1 m thick at the west and thinning to virtually nothing at the east. Most of the medieval and later features on the site were dug through the dark soil layers. Above these layers were post-medieval and modern soils, and modern make-up layers, surfaces, and foundations.

A simplified stratigraphic sequence is outlined above and approximate dates are given, but there were several problems in precisely dating this sequence. Most of the medieval and earlier layers contained very few datable finds. Negative features were usually more productive of datable finds but the levels from which the features were dug were often difficult to distinguish. The sequence from natural brickearth at the bottom

to modern dark soils at the top was generally a gradual diffusion with few clear boundaries. It was difficult to distinguish horizons in the dark soils but the artefacts they contained were progressively older from top to bottom. The partial mixing of these soils is probably the result of intermittent ploughing from a surface that got progressively higher. Summaries of the archaeological results of all periods of human activity other than Middle Saxon appear in microfiche.

Post-Middle-Saxon Disturbance

There is little evidence of Late Saxon activity at Cook Street. Most of it is represented by loamy soil layers in Trenches 2, 3, and 4. They are thought to be the result of agricultural activities including ploughing. Ploughing was probably responsible for destroying Middle Saxon positive features, such as banks, mounds, and middens, and surface layers. Two large features have been phased to the Late Saxon period. An east-west ditch (1525) in Trench 3 was dug across Middle Saxon ditch 1355. On the street frontage on the south-east side of Trench 4 a very large feature interpreted as a hollow way (2104) was found. This would have destroyed all shallow-to-medium-depth-features, including all burial features, in this area.

There was more disturbance during the Middle Ages, and features dating to this period were found in all trenches. The most destructive of the medieval features would have been the pits and ditches. There were two ditches at the west end of Trench 5, and a larger ditch (4360) to the east. Three more ditches were found at the north end of Trench 3. Pits were located in all trenches but they were particularly deep and numerous in Trenches 2 and 5.

Post-medieval activity disturbed Middle Saxon deposits. Trenches 2 and 5 in particular had fairly dense scatters of pits. The part of Trench 5 adjacent to St Mary Street had several large stone-filled foundation trenches.

Buildings constructed in the 19th century did very little damage to archaeological deposits. Many of their foundation trenches did not reach the natural brickearth. The east corner of Trench



Fig 2. The major Middle Saxon features in Trenches 3 and 4. The early Middle Saxon features are hatched. The inset shows the positions of all trenches and ditch 885/1355. See Fig 9 for the key.



Fig 3. The major Middle Saxon features in Trenches 1, 2, and 5. The early Middle Saxon features are hatched. The asterisk marks the position of grave 4610.

4 at the junction of Cook Street and St Mary Street was removed by a deep cellar. Four brick-lined pits, interpreted as soakaways, destroyed archaeological deposits in Trenches 1 and 3. There were some deep features on Trench 5 but they were in unexcavated areas. A foundation trench (1807), forming four sides of a square, was dug into the top of penannular ditch 1898 thereby destroying some important relationships.

Some of the most destructive negative features were dug in the 20th century. Two large east-west air-raid shelters, over 1 m deep, were constructed across Trench 3, virtually dividing it into three strips. Substantial parts of Middle Saxon ditch 1355 and pit 1128 were removed as were the west end of grave 2423 and a large part of penannular ditch 2443 (Fig 2).

MIDDLE SAXON FEATURES

Introduction and Dating Evidence

Middle Saxon activity at Cook Street has been divided into three main periods using stratigraphic and finds-dating information, and the evidence of parallels.

Stratigraphic evidence

The evidence was limited due to a paucity of Middle Saxon layers and intercutting features. By far the longest sequence on the site was a complex of three pits in Trench 5, which included over 150 Middle Saxon contexts. There was nothing comparable to this sequence on the rest of the site.

Artefactual evidence

Well dated finds were not abundant. Only one Middle Saxon coin was recovered. About 80 fragments of glass were recovered from Middle Saxon contexts. Most of them were very small body fragments from vessels and difficult to date with certainty. A quarry of window glass could be of later 7th century date. Worked bone, copper alloy, and silver objects were recovered in only small quantities. The metal objects, in particular, might have been used for a long time before they were lost or discarded.

Pottery provided most of the dating evidence but only 9.7 kg was recovered from pre-Conquest contexts. It is mainly the pottery that has been used to provide absolute dates, following Timby (1988, 111–16).

Parallels

The most obvious candidate for dating by parallels is the cemetery which has been dated to the early 8th century.

Phases

i) The early Middle Saxon period could start in the late 7th century at Cook Street. It can be divided into two phases on the basis of the pottery and stratigraphy. The earlier phase includes the burials, and ditch 885/1355. The later phase includes twelve pits and might overlap a little with the mid Middle Saxon phase.

ii) The longest chronological period is mid Middle Saxon approximately from the middle of the 8th to the middle of the 9th centuries. Only three pits (272, 3037, and 3039) are mid Middle Saxon.

iii) Only one feature (pit 4073) is late Middle Saxon.

Many contexts could not be closely dated and they have been assigned to a miscellaneous (uncertain) Middle Saxon phase.

Early Middle Saxon 1

The ditch

A ditch running approximately north-south was found in both Trenches 1 and 3. The ditch was numbered 885 in Trench 1 and 1355 in Trench 3. Although there is an unexcavated gap of 35 m between the two trenches it is considered that 885 and 1355 are the same ditch (Figs 2 and 3).

Ditches 885 and 1355 both had a rounded V-shaped section but 1355 was slightly larger. Ditch 1355 was generally 0.9 m deep and 1.6 m wide whereas ditch 885 was 0.8 m deep and 1.45 m wide, but the ratio between depth and width was similar. It is probable that both features had been truncated by later activities which were more intensive in the area of Trench 1.

Ditch 885 was stratified above natural deposits

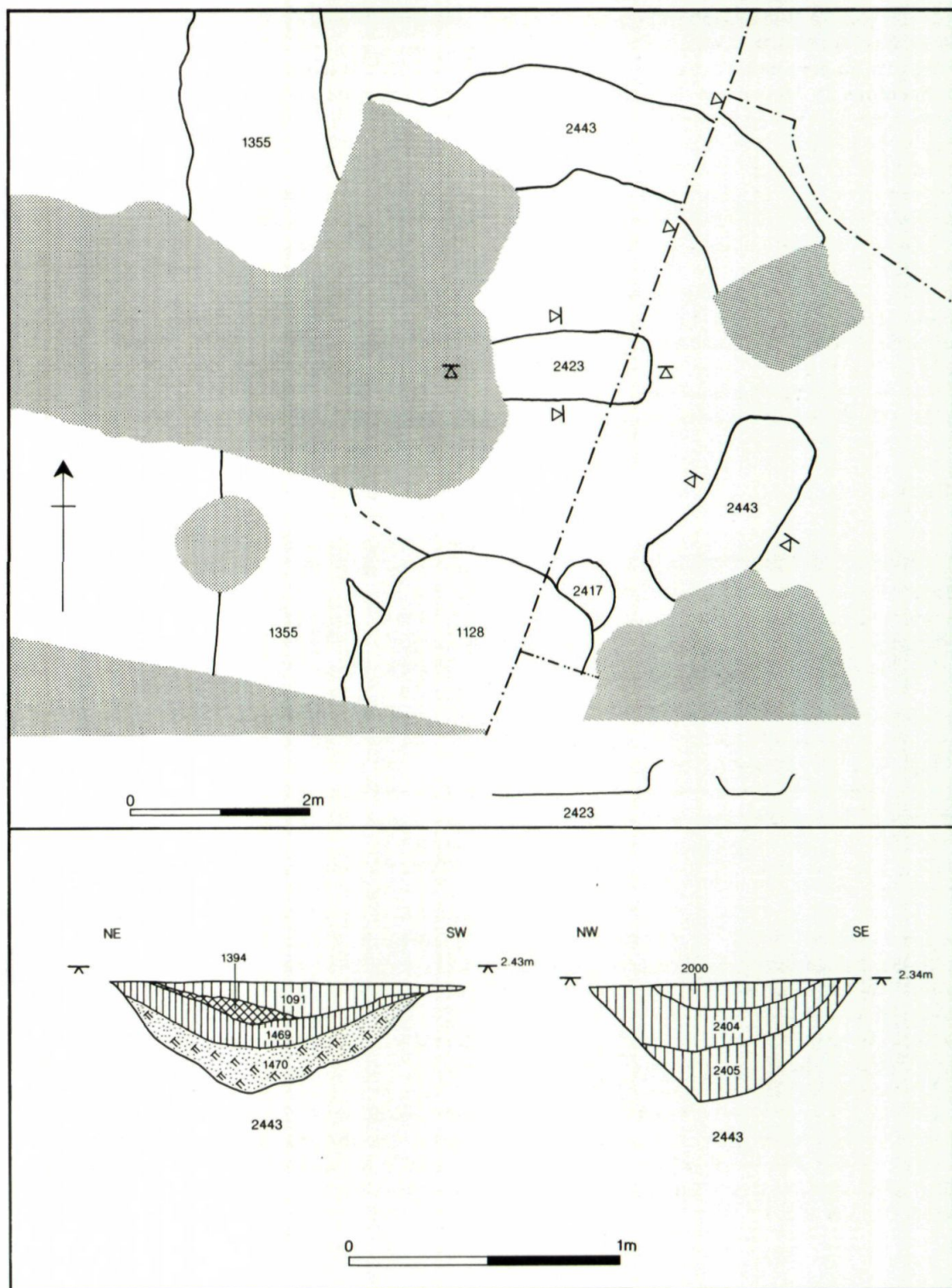


Fig 4. Penannular ditch 2443, grave 2423, and other early Middle Saxon features.

and below soils of probable medieval date. The excavated fills contained no readily datable finds but the finds are consistent with a Middle Saxon date, except for small fragments of modern brick which are intrusive. They came from around a Victorian brick-lined pit which had removed all but part of the lowest fill of the ditch. The finds included animal bones, burnt flint, fragments of iron, and iron slag. More significant are a partial human skeleton (201) and a skull (304), both from primary fills (see below).

Ditch 1355 was above a prehistoric layer and below early Middle Saxon pit 1128. One of the air-raid shelters destroyed most of the relationship between ditch 1355 and penannular ditch 2443, but all of the stratigraphic evidence indicates that these two ditches were roughly contemporary. Ditches 2443 and 1355 had two fills in common so they were, at least partially, open at the same time.

A wider range and much larger quantity of finds was recovered from ditch 1355 probably because a much greater volume was excavated. The main finds were of pottery, animal bone, burnt daub, iron slag, and burnt flint. The ditch also contained human remains. Skeleton 1396 was in the highest fill of the north end of the ditch and skull 906 was in the central section.

There is no evidence of a bank associated with the ditch. Ditches 885 and 1355 were dug, presumably through top soil, through natural brickearth and about 0.2 m into the gravel. The large volume of material was probably deposited somewhere nearby, and a bank would have been a normal solution although this material could have been put to other uses. The brickearth could have been used for making daub, and perhaps for pottery. Allowing for a 0.2 m truncation, about 44 m³ of brickearth would have been extracted when the ditch was dug between the north of Trench 1 and the south of Trench 3. The gravel could have been used to metal streets or yards.

If there was a bank and it was east of the ditch it could have been an obstacle to the digging of features in this area but in Trench 3 there were three main features in that position: penannular ditch 2443 and pit 1128, both early Middle

Saxon, and pit 1399 which can not be more closely dated than Middle Saxon.

The primary fills of the ditch, particularly in Trench 3, consisted mainly of brickearth (Fig 7) with few finds. These deposits may have derived from the erosion of a brickearth bank.

The secondary fills of the ditch consisted mainly of loamy soils and contained more finds. Animal bone, including large pieces, were relatively abundant. Part of a partially articulated horse skeleton in 1355 is notable and perhaps paralleled by articulated cattle vertebrae in 885. A major difference between the two lengths of ditch is that the human remains and articulated animal bones were from the primary fills of ditch 885 but the secondary fills of ditch 1355. Almost all of the Middle Saxon pottery from the ditch was in the secondary fills.

The cemetery by Jacqueline I McKinley and M F Garner

Evidence for a Middle Saxon cemetery was found in two areas: Trench 1 and the west end of Trench 5; and Trench 4 and the adjoining part of Trench 3 (Figs 2 and 3). It is unlikely that two cemeteries would have been so close together so it is assumed that they are two parts of the same cemetery.

The southern burials (Figs 4, 5, and 6)

The southern group comprised six burial features. Two were graves surrounded by penannular ditches, a third was a penannular ditch which was without an associated grave, and there were three other graves. In addition, human remains were found in ditch 1355; a skull (906) in a lower secondary fill and part of a disturbed skeleton (1396) in the top fill. There were further remains in post-Middle-Saxon features. The three penannular ditches were similar in size and shape. Ditches 2443 and 1899 both had a central grave, containing a west-east burial, and a causeway on the east side aligned with the grave. The three graves not enclosed by penannular ditches contained fragments of bone in an extremely poor state of preservation but they were not damaged by later features and it is assumed that they had all contained complete skeletons.

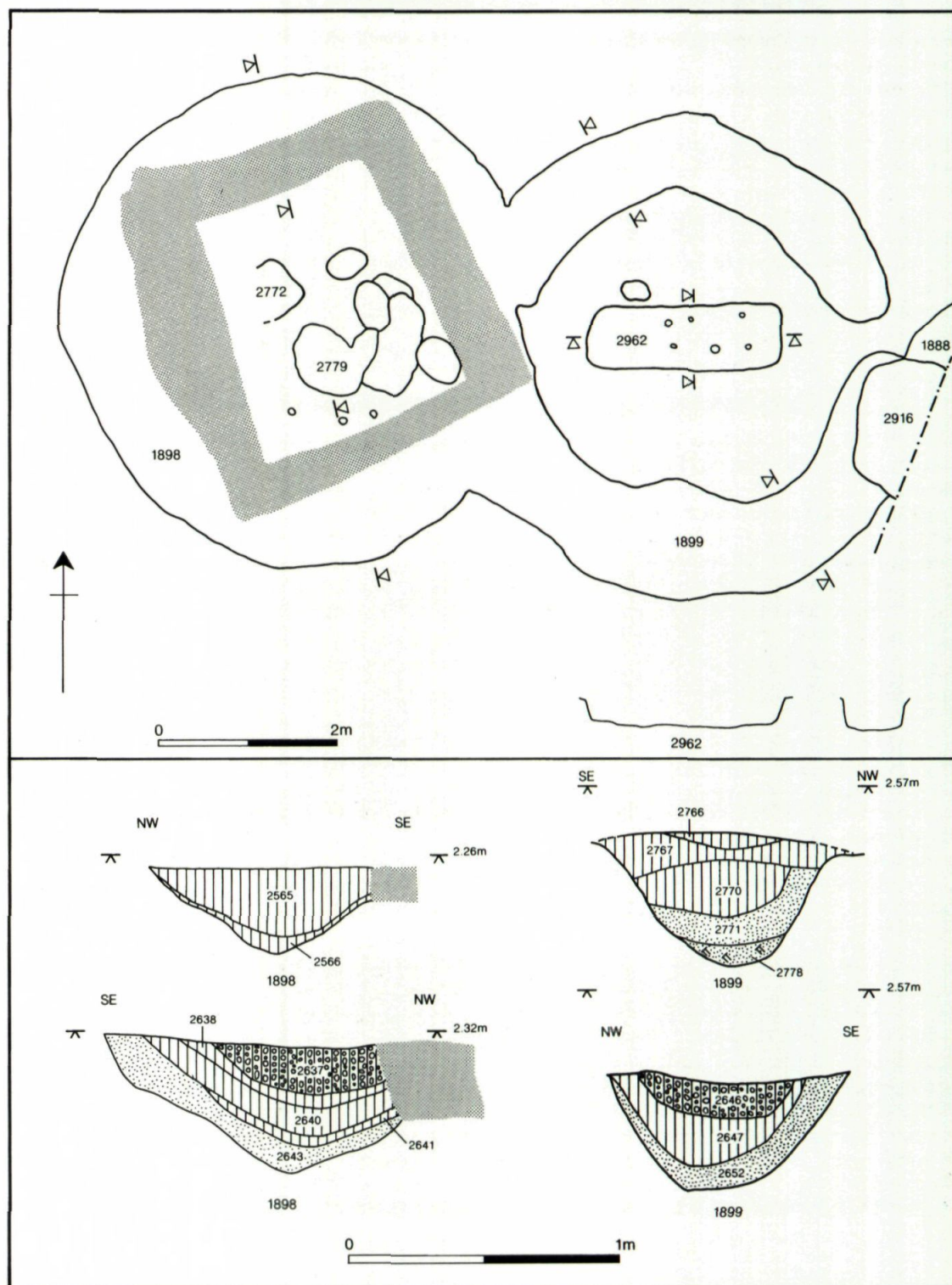


Fig 5. Penannular ditches 1898 and 1899, grave 2962, and other Middle Saxon features.

Burial 1

Bone group F: context 1396; ditch 1355.

c 10% recovery including elements of skull, axial, upper and lower limb.

Age: juvenile.

The skeleton was probably a west-east burial. Teeth and skull fragments were at the west end of the scatter; with rib and vertebrae fragments in the centre; and lower, and a few upper, limb fragments at the east end. The skeleton was probably damaged by ploughing, and by the excavation of Late Saxon ditch 1525. The burial might have been in a shallow grave, cut into the top fills of ditch 1355, but there was no surviving evidence of this.

Bone Group U: context 1604; ditch 1525, Trench 3.

c 1% recovery, elements of axial and lower limb.

Age: juvenile.

Comment: Probably the same individual as F.

Burial 2

No grave associated with penannular ditch 1898 was found despite an intensive investigation. A possibility is that the burial had been in a mound formed of upcast brickearth from the ditch.

A modern foundation trench had destroyed some important evidence and it was impossible to determine whether ditch 1898 had had a causeway. Little survived of the overlap (Fig 5) between ditches 1898 and 1899 but it was possible to see that 1898 had been excavated through some of the lower fills of 1899. These two penannular ditches were of a very similar size. The ditches were generally 1.0 m wide and 0.5 m deep. The enclosed area was about 11 m² and the diameter was about 3.8 m. The two features are on a similar alignment.

Burial 3

Bone Group I: context 2966; grave 2962.

length 2.45 m; width 0.80 m; depth 0.44 m.

c 20% recovery including skull, axial and lower limb.

Age: older mature adult. Sex: ?

This grave had probably contained a complete articulated skeleton but it was poorly preserved. This was the only burial to have associated artefacts. An iron knife blade (item 1391) was positioned between the left elbow and the body, and two pins and a chain (item 1370) were on the upper left chest.

Wood stains were visible along the north and possibly the south side of skeleton 2966 (Fig 6). They were about 1.8 m long and the northern stain was discontinuous.

Burial 4

Bone Group H: context 2436; grave 2423.

length 2.07 m+; width 0.94 m; depth 0.42 m.

c 70% recovery including elements of axial skeleton, upper and lower limb.

Age: older mature adult. Sex: male.

Pathology: morphological variation – talus notch

Comment: Possibly the same individual as G.

Penannular ditch 2443 and its central grave (2423) had been damaged by an air-raid shelter which had removed the skull, and by Middle Saxon activity. This ditch was slightly larger than the other two, being 1.3 m wide and 0.4 m deep. The enclosed area was about 16 m² and the diameter was about 4.5 m. The missing skull might be 906, see below.

Wood stains were visible on all surviving sides of skeleton 2423 (Fig 6). The surviving dimensions of the wooden container were about 1.8 m by 0.58 m. A stain across the foot end was 0.71 m long.

Feature 2417 might have been part of the ditch – only part of it survived because Middle Saxon pit 1128 was dug through it. There were at least two causeways: one on the east side; and one on the south side by pit 1128.

Bone group G: context 906; ditch 1355.

c 20% recovery elements of skull and axial skeleton.

Age: older adult. Sex: ?male.

Pathology: dental caries; dental abscesses; dental calculus; periodontal disease; osteophytes – atlas/axis.

Comment: Possibly the same individual as H.

The skull faced south and was revealed when the south wall of the air-raid shelter was removed. The mandible was missing but the atlas and axis vertebrae were present. The suggestion is that the skull belongs to skeleton 2436 from grave 2423, which was disturbed during the construction of the shelter.

Burial 5

Bone group X: context 2713; grave 2597.

length 2.10 m+; width 0.92 m; depth 0.43 m.

Skull: Enamel of seven maxillary and two mandibular teeth, and fragments of enamel from a minimum of two mandibular molars.

Age: young/younger mature adult. Sex: ?

Pathology: calculus

Feature 2547 was set into the top fill of grave 2597. It was 1.58 m long, 0.32 m wide and up to 0.16 m deep. It was on the same alignment as the grave but to the south of the centre. It may have held a marker.

Burial 6

Bone group Y: context 2960; grave 2959.

length 1.90 m; width 0.78 m; depth 0.43 m.

Lower limb fragments.

Age: older subadult/adult.

Burial 7

Bone group Z: context 2664, grave 2655.

length 1.75 m+; width 1.00 m; depth 0.40 m.

c 1% recovery; axial, upper and lower limb fragments.

Age: older subadult/adult.

Comment: small fragments difficult to identify but are probably parts of the same bones. The bone is very degraded.

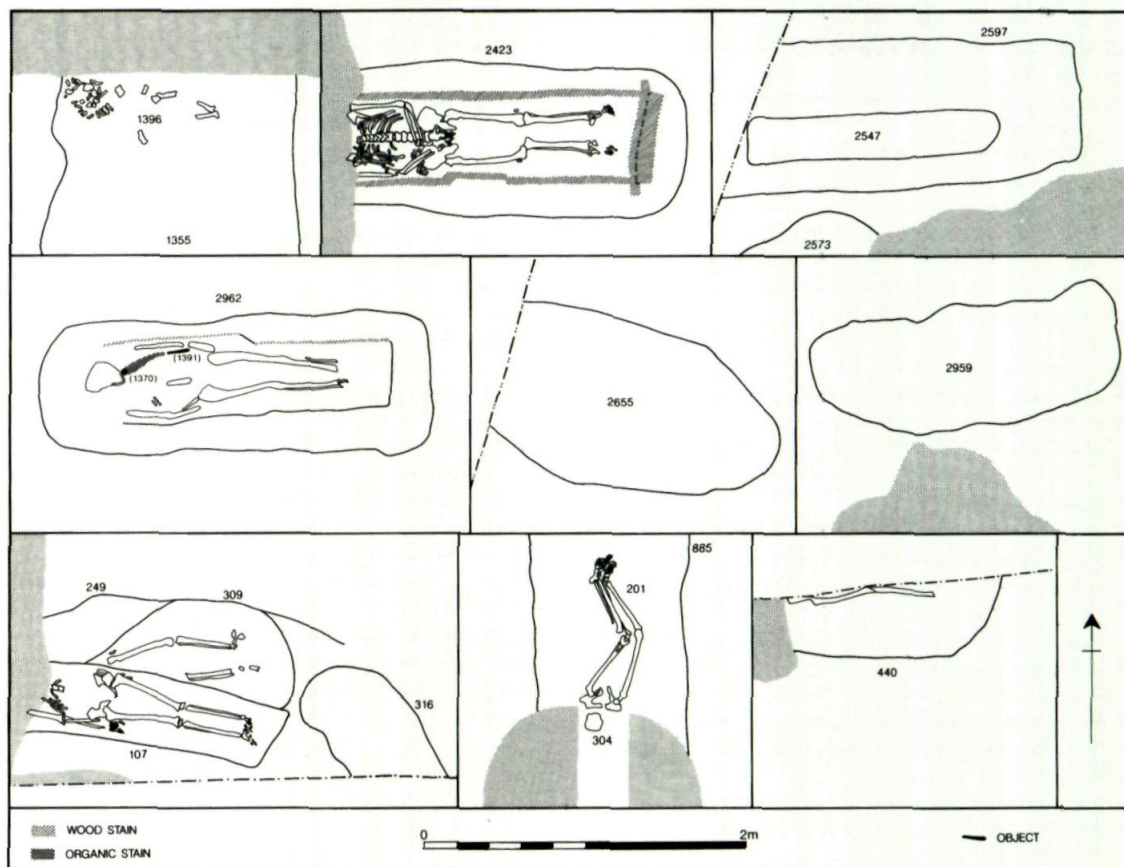


Fig 6. Graves and burials. The numbers in brackets are item numbers.

Burial 8

Bone group V: context 2616; hollow way 2104.

A humerus was recovered from a medieval fill of hollow way 2104. It is possible that it was disturbed from a Middle Saxon grave in the medieval period.

c 1% recovery, element of upper limb.

Age: mature/older adult. Sex: female.

Pathology: pitting – proximal humerus.

The northern burials

The northern group comprises three graves, a possible penannular ditch, and human remains in primary fills of ditch 885, all in Trench 1, and one grave in Trench 5. The three graves in Trench 1 were roughly in a row (Fig 3).

Burial 9

Bone group C: context 442; grave 440; Trench 1.

length 1.23 m+; width 0.43 m+; depth 0.27 m.

c 10% recovery including elements of lower limb.

Age: adult. Sex: ??female.

The grave was damaged by a modern foundation trench and it continued beyond the edge of the trench. The body was aligned west-east. The right leg only was recovered.

Burial 10

Bone group D: context 308; grave 309; Trench 1.

length 1.20 m+; width 0.45 m+; depth 0.06 m.

c 12% recovery including elements of skull, axial, upper and lower limb.

Age: adult. Sex: ?

The burial was damaged by grave 107, which was damaged by pit 109. The body was aligned west-east.

Bone groups K, L, Q, R, and S: contexts 102, 110, and 407; pit 109; Trench 1.

Several fragments of human bone were recovered from post-medieval pit 109. All are probably from the same adult male and they could belong to skeleton 308 (D).

c 3% recovery, skull, rib, and upper limb fragments.

Age: adult. Sex: ?male.

Comment: Possibly the same individual as D.

Burial 11

Bone group E: context 247; grave 107; Trench 1.

length 1.40 m+; width 0.42 m; depth 0.10 m.

c 50% recovery including elements of skull, axial, upper and lower limb.

Age: 1) young/younger mature adult. Sex: female.

Age: 2) immature, possibly the same individual as B (burial 13).

The skeleton was destroyed at the west end by post-medieval pit 109. This grave also contained some immature bone fragments including a left ulna. The only other immature bone from the site is skull 304 (burial 13) and McKinley suggests that they might be from the same individual.

Burial 12

Bone group A: context 201; ditch 885.

c 30% recovery including elements of axial skeleton and lower limb.

Age: older mature/older adult. Sex: ?male (gracile).

Pathology: osteoarthritis – bilateral hip joint; morphological variation – calcaneal double facets.

The skeleton had been damaged by the insertion of a modern feature, and only the bones of the pelvis and legs survived. The body was probably fresh and complete when it was buried as almost all of the smaller bones were present. No grave cut was visible and the body was apparently deposited in the open ditch, and presumably covered. The skeleton was supine with the feet to the north and the legs flexed to the right so that the knees rested on the east side of the ditch, and were 0.11 m higher than the feet and pelvis. The skeleton was within and above the lowest fill (043/114) of the ditch.

Burial 13

Bone group B: context 304; ditch 885; Trench 1.

c 5% recovery including skull fragments.

Age: immature.

Comment: Possibly the same individual as E2 (burial 11).

Skull 304 was in a remnant of the same fill immediately to the south of the pelvis of burial 201. It had been crushed by the insertion of feature 039. It is likely that the skull was deposited by itself in the ditch.

Burial 14

Bone group J: context 4671; grave 4610; Trench 5.

length 0.80 m+; width ?; depth 0.25 m.

c 1% recovery, fragment femur.

Age: subadult/adult.

This was the only grave to be identified in Trench 5 and this was during the watching brief. It had been cut at the west end by what appeared to be a Middle Saxon well and on the south side by the modern construction trench under observation.

Burial 15

Feature 316 was a curved linear feature but only part of it was exposed by the trench so its complete size and shape are unknown. Its date is also uncertain but it is pre-Conquest. It may have been the same feature as 249, which was cut by grave 309. Only one side of feature 249 survived but it probably had similar dimensions and shape to feature 316, and it was on the same alignment (Fig 6). Feature 249 was shallow at only 0.15 m deep compared with 0.25 m for feature 316. The maximum surviving width of 316 was 0.6 m. If 249 and 316 were parts of a penannular ditch it would have had a similar diameter to the examples on Trench 4. A central grave would have been over 1 m to the south of the trench so would not have been found.

Human Remains – Methods

by Jacqueline I McKinley

The age of immature individuals was assessed from the stage of tooth development and eruption (van Beek 1983), and the stage of ossification and epiphyseal bone fusion (Gray 1977, McMinn and Hutchings 1985). The age of adults was assessed, from the stage of epiphyseal bone and cranial suture fusion (McMinn and Hutchings 1985, Webb *et al* 1985); tooth wear patterns (Brothwell 1972) and the general degree of degenerative changes to the bone.

Age categories, rather than age in years, are used in view of the difficulties surrounding the accurate assessment of age for adults over 25/30, (that is, following final epiphyseal fusion), a problem compounded where the entire skeleton has not been recovered. The age categories used are:

juvenile	5–12 yr
subadult	13–18 yr
young adult	18–25 yr
mature adult	25–40 yr (younger 25–30 yr, older 31–40 yr)
older adult	40 yr+

The sex of the adults was assessed from the sexually dimorphic traits of the skeleton (Bass

1987), including maximum cranial vault thickness 1a and 1b according to Gejvall (1981). As with age assessment, a combination of methods and scoring of traits has been used in order to overcome any methodological bias or variations in sexual morphology within the group. Three levels of reliability have been used: ?? for possible, ? for probable, and unquestioned. These levels are felt necessary because of the paucity of information in some cases and unclear or contradictory dimorphism in others.

The excavation archive contains details of bones recovered (skeleton sheets), measurements (taken according to Brothwell 1972, Bass 1987, and Gejvall 1981), and description of pathological lesions. The report was submitted in February 1992.

Discussion by Jacqueline I McKinley

Bone-recovery rate was generally very low with an average of only about 20% of the skeleton being represented. Bone from half of the burials was in very poor condition, doubtless resulting in some loss, but disturbance was also responsible for poor recovery from some burials.

A minimum of thirteen individuals were identified. Though not conclusive, the skull and cervical vertebrae (G) recovered from ditch 1355 to the west of grave 2423 could originate from the 'headless' burial (H) in that grave. The skeletal elements in bone groups K, L, Q, R, and S probably represent the same adult male. Fragments of immature cranial vault (B) recovered from ditch 885, are probably scatter from the immature individual (E2) in grave 107. Immature lower limb bones (U) from ditch 1525 probably represent the same individual as bone group F from ditch 1355.

The small size of the group and low level of bone recovery in most cases precludes much demographic comment. The cemetery was obviously used for the burial of both sexes and a wide age range; it probably represents an ordinary domestic cemetery.

Pathological lesions were noted in bones from burials 12 (older mature/older adult male), 4 (older adult male), and 8 (mature/older adult female). Burial 12 had slight bilateral osteoarthritis in the hip joints. Burial 4 showed numerous dental lesions. Burial 8 had slight

pitting in the proximal humerus. Again, the poor level of bone recovery precludes any discussion of the health of the population as reflected by these observations.

Animal bone was found in graves with burials 10, 11, and 14. It was mainly small fragments and some of it could have been intrusive. Bone groups M to P and T were all animal. Elements represented were usually ribs or caudal vertebrae or both.

Table 1 Summary of age and sex of the human remains

<i>age</i>	<i>number</i>	<i>female</i>	<i>male</i>
juvenile	1		
immature	1		
subadult/adult	1		
older subadult/adult	2		
adult	2	1	
young adult	1		1
young/mature adult	2	1	
mature/older adult	1	1	
older mature adult	1	1	
older mature/older adult	1		1
older adult	1		1

Size of the cemetery

A minimum of twelve and a maximum of fourteen individuals were recovered from Middle Saxon contexts. Fragments of human bone recovered from later contexts may be from the same individuals, with the exception of the humerus from the hollow way which could have been disturbed from a Middle Saxon burial but is not from any of those identified. In addition to the human remains there were two penannular ditches, if feature 249/316 is counted, which probably had associated burials but were not found. This gives a possible total of fifteen Middle Saxon burials within or very close to the trenches (seven in the northern and eight in the southern group) in an area of about 500 m². Other burials in these two areas may have been completely removed by later activities or simply not found. The unexcavated area between these two groups covers about 1000 m² so it should have about 30

burials based on a similar density. If the cemetery did not continue to the south or north of the site it would have comprised about 45 burials.

It has been suggested that penannular ditches were located on the periphery of some cemeteries (see for instance Hogarth 1973, 118). If this was the case at Cook Street it is possible that almost the full extent of the cemetery was revealed. The determination of the limits of the cemetery awaits further work.

Burial practices

Two basic forms of burial were present; the graves with penannular ditches and those without. A third form may be the placing of human remains in ditch 885/1355 rather than in graves. However the only definite example of interment in the ditch is skeleton 201, and skulls 304 and 906 were possibly disturbed from burials elsewhere. Skeleton 1396 may have been buried in a grave dug into the top fill of the ditch.

Three, or possibly four, penannular ditches and seven or eight graves without penannular ditches were present. The reason for these two different practices is unclear. It is apparently not chronological as penannular ditches 1898 and 1899 post-date grave 2959, skeleton 1396 was buried after the excavation of penannular ditch 2443, and in Trench 1 grave 309 was dug into the fill of possible penannular ditch 249/316. Only one other penannular ditch has been recognised in Hamwic – at SOU 32 in the northern half of the town (Morton 1992, 175).

Grave furniture

There were wood stains in graves 2423 and 2962 (Fig 6). They were probably the remains of coffins or other containers. No nails or other objects that might have held coffins together were found but this is not unusual. It is possible that planks were used to line the graves, but as the side planks were up to 0.25 m away from the grave edges they would have required some other support. There were six stake-holes in the bottom of grave 2962 (Fig 5) and stakes could have held side planks in place. It is possible that the planks moved inwards in the grave due to the weight of backfill around them so that they were originally closer to the sides of the graves. There were discontinuities in

the wood stains on the north side of the grave 2962 and on the south side of grave 2423 (Fig 6). They are probably due to movement in the graves after burial and are consistent with grave linings or coffins made of reused wood. There was a possible cross-piece in grave 2423. Its size and shape in section were difficult to determine – it was about 0.06 m square at one point but was possibly larger elsewhere. A grave (F418) at SOU 32 held a coffin on two wooden cross-pieces of a similar size (Morton 1992, 172–3). Modern disturbance to the west end of grave 2423 could explain the lack of a cross-piece here. If this was a cross-piece it supports the case for a coffin in this grave. Apart from the other example in Hamwic the other English find spots are all in Kent such as at St Peter's (Hogarth 1973, 112–3). Similar features are known from the Low Countries (see, for instance, de Boe 1970, 9–103; and Verwers 1978, 252–305).

It is possible that graves other than 2423 and 2962 held containers but no wood stains survived or were recognised. Other evidence for the use of containers is the position of the bones. Morton takes a 'tightly constrained burial' as evidence of the corpse being 'in a coffin or shroud' and 'significant movement of bone, apparently within an open space after burial' as evidence of a coffin or other wooden container, at other cemeteries in Hamwic (Morton 1992, 133 and 178). Unfortunately, only one skeleton in a grave, apart from the two discussed above, had survived well enough for consideration. This skeleton (108) was tightly constrained but the grave is particularly narrow at only 0.44 m wide compared with 2962 at 0.86 m and 2423 at 0.95 m wide. The narrowness of grave 107 was sufficient to constrain the arms of skeleton 108.

Grave markers

The penannular ditches were probably quarry ditches for an earthwork. The lower fills of all three penannular ditches consisted mainly of brickearth and this may be derived from the earthwork. There is little evidence for the earthworks being internal or external to the ditches. Whichever form of earthwork was constructed it would have acted as a marker for the grave. One other grave (2597) has evidence

for a marker. A parallel is known from SOU 32 where F397 has been suggested as a grave marker (Morton 1992, 174). A similar feature was also found at SOU 34 (*ibid*, 193).

Chronology

Several of the burials were above natural or prehistoric layers, and below medieval layers. In the absence of any definite evidence to the contrary it has been assumed that all of the burials were roughly contemporary and the evidence indicates that they belonged to the early Middle Saxon period.

There were several burials with some associated Middle Saxon finds-dating evidence. Ditch 855/1355 contained an early Middle Saxon pottery assemblage; the penannular ditches and associated grave in Trench 4 contained several Middle Saxon pottery sherds and the grave also contained metal artefacts consistent with a Middle Saxon date; and two pottery sherds, one Middle Saxon and one prehistoric, were recovered from grave 2597.

Some of the key stratigraphic relationships are uncertain as many of the features were filled with redeposited brickearth and were dug through or sealed by layers of redeposited brickearth. Grave 2959 was older than the penannular ditches in Trench 4 as it was sealed by a layer (2162) which was cut by them. The penannular ditches were filled by layers cut by early Middle Saxon pit 2916. Grave 2655 was also dug into layer 2162, and it was below medieval layers. Grave 2597 was cut into natural brickearth and was also below medieval layers. The relationship between penannular ditch 2443 and ditch 1355 is not certain but layer 1109 filled parts of both of them and was cut by early Middle Saxon pit 1128 within ditch 2443. The dating evidence for ditch 885/1355 is discussed above. The three graves in Trench 1 were apparently below medieval layers. All three cut features that have been phased to the Middle Saxon period with varying degrees of certainty. Feature 249, which was cut by grave 309, might have been part of a penannular ditch, as discussed above. Grave 4610 in Trench 5 was cut by a probable Middle Saxon well and both features were sealed by medieval soils.

The burials are apparently Christian indicating

a date no earlier than the middle of the 7th century, and probably no earlier than the end of that century. The penannular ditch at SOU 32 was part of a cemetery dated to the first half of the 8th century (Morton 1992, 179). Cemeteries with similar features such as penannular ditches and graves with cross-pieces have been excavated at sites in south-east England including St Peter's, Broadstairs, Kent (Hogarth 1973) and Orsett, Essex (Hedges and Buckley 1985). They have been dated to the late 7th and 8th centuries. The individual in grave 2962 was buried with linked pins and an iron knife. At Winnall, Hampshire, grave 8 contained an adult female skeleton with artefacts including a pair of linked pins and an iron knife, and is dated to the second half of the 7th century (Meaney and Hawkes 1970, 11 and 36-7).

The dating evidence from Cook Street and the evidence of parallels in Hamwic and beyond indicate an early 8th-century date for the Cook Street cemetery.

The Pits

Probably less than a quarter of pit 1888 was exposed by Trench 4. It measured 1.32 m by 0.62 m by 1.25 m deep and was completely excavated (Fig 7). The pit was dug through a dirty brickearth layer (2760) and natural brickearth, and 0.49 m into gravel. The exposed edge was nearly straight and the sides sloped steeply to a gently dished base. There was some undercutting – probably due to collapse of the gravel sides. Several of the nine fills consisted mainly of brickearth. Very few finds were recovered, the most numerous were burnt daub and animal bone. One prehistoric, one Roman, and three Middle Saxon pottery sherds were also recovered.

Pit 2371 in Trench 4 was observed in the sides of two post-Conquest features that had been dug into it. It was not excavated so its full size and shape are not known. The observed dimensions were 2.50 m by 0.75 m by 0.73 m deep. It was dug into the top of natural gravel. All five of the fills consisted mainly of redeposited brickearth. Due to its large size it is unlikely to have been a grave.

A small pit (2857) in Trench 4 had four fills, but only part of it survived as it had been

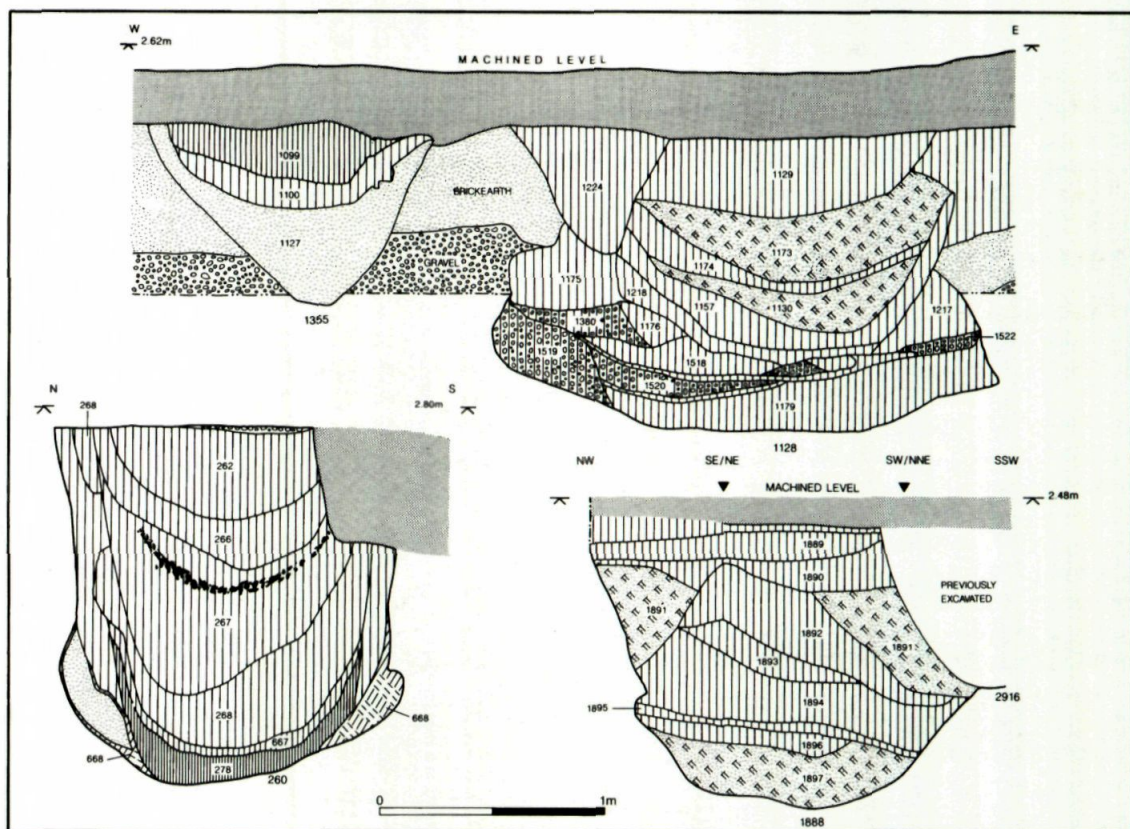


Fig 7. Early Middle Saxon features: pits 260, 1128, and 1888, and ditch 1355. See Fig 9 for the key.

damaged by uncertain Middle Saxon pit 2238. The only finds recovered were a prehistoric pottery sherd, burnt flint and plant remains.

Structural and other Features

A total of 123 structural and other features are assigned to this phase, of which the vast majority were small and contained only one fill, usually redeposited brickearth. They have been identified as stake-holes, miscellaneous features, post-holes, and small linear features. They include 97 features in Trench 4 clustered in five main groups across the trench. One group of features was enclosed by penannular ditch 1898. It comprised post-holes, stake-holes and other features. Two of the features (2772 and 2779) contained artefacts. About half of a crucible (item 1303) and pieces of

burnt flint were recovered from feature 2779. The crucible had been used for melting silver, see below. Feature 2772 contained an iron chisel (item 1312).

There was a series of gravel layers in the penannular ditches on Trench 4. On the south side of penannular ditch 1899 there were five layers above the fills. These layers contained extremely abundant fine to coarse gravel in a silt loam matrix and were strongly compacted. The combined thickness of the layers was at most 0.21 m. A gravel layer in the top of penannular ditch 1898 was probably contemporary. Gravel layers did not survive beyond the limits of these features but they could have been destroyed by later activity. Pit 2916 was dug through them. It is possible that they were the remains of a street or yard.

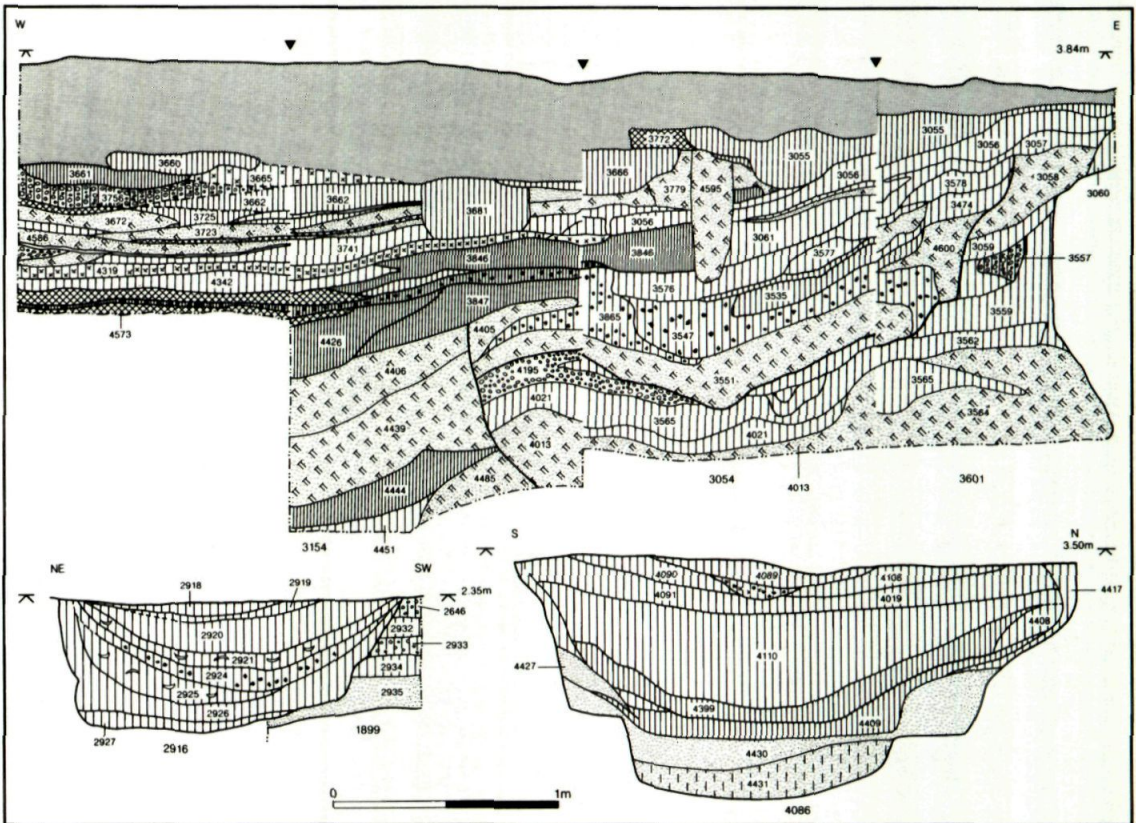


Fig 8. Early Middle Saxon pits 2916, 3054, 3154, 3601, and 4086.

Early Middle Saxon 2

Pits

Pit 260, Trench 2, was 1.54 m long, 1.28 m wide and 1.57 m deep. It was dug through the brickearth and 0.49 m into gravel. The sides were almost vertical to the top of the gravel where they were undercut probably due to collapse. The lower sides sloped gently in to a rounded base. Nine fills were identified (Fig 7). The sides and lowest fill (668) of the pit were cess-stained and soil samples taken from the lowest fills (278, 662 and 668) contained faecal matter. Fill 278 also contained the most complete Middle Saxon pottery vessel from the site. The pit also contained a large quantity and wide range of domestic rubbish.

Pit 370, Trench 2, was at least 1.68 m by 1.62 m, by 1.97 m deep. The deepest part of the excavated base was 0.79 m below the top of natural gravel. The sides were vertical through the brickearth and then sloped inwards to a flat base. Nine fills were identified. No cess staining was recorded but a soil sample of 466 contained small-mammal coprolites. A large quantity of

domestic and industrial waste was recovered by excavation, particularly animal bone and iron slag.

Pit 1128 was the larger of the two Middle Saxon pits in Trench 3 (Fig 7). It was damaged by air-raid shelter 904 so its full size is unknown. The surviving dimensions were 2.95 m by 2.75 m, by 1.75 m deep. It had the largest volume and, with a total of 61, the largest number of fills of all the Middle Saxon pits excavated at Cook Street. About one quarter of the pit was excavated to its base. It was sub-circular in plan. There was a great deal of variation in the shape of the sides but they were generally near vertical and slightly undercut where they were dug through natural gravel. Despite the pit's large size the finds were not numerous but included pottery, animal bone, flint, and stone. The finds recovered from soil samples were more numerous and included animal bone, plant remains, iron slag, and coprolites and cess. The latter includes small mammal and probable dog coprolites. Cess staining was recorded in some of the lower fills but not on the sides of the pit. Pit 1128 cut three Middle Saxon features: 1733 – part of penannular ditch 2443, 2417 –

possibly part of 2443; and an irregular amorphous feature (1780).

In Trench 4 probably less than one quarter of pit 1880 survived. The surviving dimensions were 1.01 m by 0.54 m, by 0.30 m deep (Fig 2). This was completely excavated. The surviving edge was curved in plan view, and sloped gently to an almost flat base. The only finds recovered from the single fill of the pit were burnt flint. The pit was dug through a Middle Saxon layer (2995) of dirty brickearth.

Probably about half of pit 2916 was exposed by Trench 4. It was 1.70 m by 0.91 m by 0.59 m deep, and was completely excavated. The pit was possibly sub-rectangular. The sides were irregular and steep, and undercut in places (Fig 8). The bottom was fairly flat and at the level of the top of the gravel. Most of the ten fills contained a wider range and larger numbers of finds than the other pits in this area. The excavated finds included animal bone, marine mollusc shells, burnt daub, and fragments of bone comb, glass, and iron. There were also several copper alloy fragments including parts of two pins and a tack. Nine pottery sherds were recovered. They were Middle Saxon with the exception of a medieval sherd from fill 2924. This weighed less than 1 g and is considered to be intrusive. The pit was sealed by a medieval layer.

Probably about one quarter of pit 2996 was exposed by Trench 4, it measured 1.22 m by 0.86 m by 0.59 m deep. The shape was rounded in plan view and profile but was irregular. The finds, which were mainly small fragments, included animal bone, glass, burnt daub, oyster shells, charcoal, and eleven sherds of pottery. Pit 2996 gave the largest assemblage of small-animal bones of all the Middle Saxon features at Cook Street. All ten of the sampled contexts contained small fish bones and they were probably deposited as cess. The pit was sealed by a medieval layer (2994).

Three pits at the east end of Trench 5 were approximately half excavated (Fig 8). Their relationships with the features to the north of the bank are unknown (Fig 3). It is possible that some of them are the same features. Pit 3601 was cut by pit 3054 which was cut by pit 3154.

Pit 3601 was at least 2.6 m by 1.9 m by 1.4 m deep. The pit was dug into natural brickearth. The sides were vertical at the top and undercut lower down. In plan view the surviving edge was roughly semi-circular. It was not excavated to the bottom. Several of the 23 fills were redeposited brickearth. Fill 3562 contained a large amount of charcoal, and several pieces of burnt flint, burnt daub, and burnt bone. The finds from the whole pit were of a wide range but few in number.

Pit 3054 was dug into fills of pit 3601 and its shape has probably changed due to slumping of these fills. It was at least 2.3 m by 2.1 m and about 1.1 m deep. It had sloping sides and a rounded bottom (Fig 8). In plan view it had one straight edge. Two of the twelve fills (3503 and 3547) contained a high proportion of charcoal. The pit also contained pieces of iron slag, hearth lining, fuel ash slag, iron, copper alloy, clay mould, and crucible. Antler-working waste was also recovered.

Pit 3154 was at least 2.6 m by 1.6 m by 2.0 m deep. It was not excavated to its base (Fig 8). The south side was vertical and so probably was the east side, which cut through fills of pits 3601 and 3154, before it slumped. In plan, the exposed part of the pit was roughly semi-circular. Nine fills and layer 4404, immediately above them, have been grouped into one phase. A large amount of metal-working debris was recovered from these contexts, particularly from layer 4404 (not illustrated because it did not appear in section), including iron slag, hearth bottoms, and crucible sherds. The pit also contained a wide range of domestic rubbish and waste from antler-working. Pit 3154 was dug through Middle Saxon feature 4390. Little of it survived and its full size and shape are unknown.

Filling the depression above the fills of the three pits were 66 Middle Saxon layers (Fig 8). Seventeen features, mainly stake-holes and post-holes, cut some layers and were sealed by others. Most of the layers and features are phased to the early Middle Saxon period, and fourteen layers and four features are phased to the mid Middle Saxon period. The early Middle Saxon contexts contained similar finds to the pit fills below them.

Pit 3377, in Trench 5, was only partially excavated and its full size and shape are unknown. Seven contexts were identified as fills of the pit but three of them (3378, 3379 and 3381) contained medieval and post-medieval material. At least one of the fills (3875) was cut by mid Middle Saxon pit 3039. Fill 3380 has a mid Middle Saxon pottery assemblage and fills 3812, 3813, and 3875 have an early Middle Saxon pottery assemblage. The Middle Saxon fills of pit 3377 contained a wide range of domestic rubbish but they were not recovered in large quantities. The pit was dug into Middle Saxon layer 3209.

Pit 4086, in Trench 5, was damaged on the south-east side by post-medieval trench 4045. It was 2.44 m by about 2.35 m by 1.15 m deep. It had a very irregular shape with roughly horizontal shelves in the mainly vertical sides (Fig 8). The bottom did not reach natural gravel. The pit had nineteen fills, and finds were recovered from all but three of them – providing one of the most interesting assemblages at Cook Street. This assemblage included the only seat from the site, and relatively high numbers of glass-vessel sherds, worked bone objects, pottery, and animal bone. The bone was notable for a high proportion of pig, post-cranial goat, goose, and herring bones. Pit 4086 was cut by Middle Saxon feature 4158.

Pit 4400 was not completely exposed by Trench 5 (Fig 3). The exposed part was half excavated to the base. In plan view the pit was probably roughly oval. It was about 1.9 m by 1.8 m and 1.35 m deep. The sides were near vertical and the base was flat. Metal-working debris was recovered from several of the ten fills. This included crucible sherds, clay mould fragments, and iron slag. Also recovered were several fragments of iron and copper alloy. The pit also contained a wide range of domestic rubbish. Pit 4400 was dug into natural brickearth and was sealed by medieval layers 4174 and 4200. Some of the fills were cut by medieval feature 4487.

Structural and other Features

There were seventeen features, mainly stake-holes and post-holes in the excavated part of the pit complex. Thirteen features are phased to the early Middle Saxon period and four features to the mid Middle Saxon period. The features were dug into layers that filled the depression caused by compacting pit fills. Some of the layers comprised clean brickearth which had been burnt *in situ* and they were possibly floor levels in a structure in domestic or industrial use: see below. There is no obvious patterning in the positions of the features in the pit complex.

Uncertain Middle Saxon

Pits

Several features partially exposed by the trenches, largely destroyed by later activity, or not excavated might have been Middle Saxon pits. They include: feature 836 in Trench 1; three features in Trench 2; feature 2573 in Trench 4; and features 3298, 3369, 3471, 4007, 4017, 4142, 4237, 4303, and 4307 in Trench 5. Three pits observed on the watching brief on Trench 5 are assigned to this phase – pits 4608, 4612, and 4622 which was probably a well.

The northern edge of pit 1399, in Trench 3, was removed by the digging of Late Saxon ditch 1525 (Fig 9). The surviving dimensions were 1.29 m by 1.10 m, by 0.41 m deep. The pit was roughly oval in plan and semi-circular in section. It was completely excavated. Finds recovered from the four fills include animal bone, burnt flint, burnt daub, part of a bone comb (item 450), and a small prehistoric pottery sherd.

The full size and shape of pit 2238, in Trench 4, is not certainly known as it was cut on two sides by medieval pits (2202 and 2206). The original size of the pit was approximately 1.6 m by 1.5 m and it was 0.45 m deep. It had an irregular sub-circular shape with sides varying in slope from near vertical to a gentle curve. The bottom was roughly flat but irregular and just penetrated natural gravel. Several of the eight fills consisted mainly of dirty brickearth or contained lumps of brickearth. The main finds were animal bone, burnt flint, burnt daub, and charcoal. Also recovered were three very small sherds of pottery. Pit 2238 cut two Middle Saxon features (2858 and 2860) and was sealed by a medieval layer.

Pit 3998, Trench 5, was partially exposed and excavated. Two roughly straight sides were exposed. It measured approximately 2.5 m by 1.2 m and was excavated to a depth of 0.31 m. It was probably a deep pit and might have been the same feature as pit 3601, to the south of the baulk (Fig 3). The pit cut two Middle Saxon features (3965 and 4542) and was cut by two Middle Saxon features (4007 and 4017).

Structural and other Features

Several features, mainly stake-holes, in Trenches 1, 2, and 5 are assigned to this phase. Most of the features were scattered across the trenches and no patterns were recognised in their distribution; they appear in microfiche.

Linear feature 333, Trench 1, had regular steeply sloping sides and a flat bottom and was about 0.55 m wide and 0.42 m deep. It was at least 2.6 m long (Fig 3). The function of this feature is unknown.

Fourteen stake-holes were in two alignments parallel to the north and west edges of mid Middle Saxon pit 272 in Trench 2. They might have been part of a structure associated with the pit, such as an enclosing fence.

In Trench 5 there was an alignment of seventeen features, including stake-holes, post-holes, and linear features. The main feature in the alignment was linear feature 4160, which was aligned west-south-west to east-north-east. Feature 4158 might also be associated with this group. This group of features might have been part of one wall of a building but there were no other similar alignments of features.

Mid Middle Saxon

Pits

Pit 272 in Trench 2 was 1.56 m long, 1.31 m wide and 1.43 m deep. The sides were near-vertical and the base almost flat. It had six fills. It produced the largest number of animal bones recovered by excavation from a Middle Saxon feature at Cook Street. Other excavated finds included coprolites, stone – mainly ferruginous sandstone, iron-smithing slag, and a hearth bottom. Lines of stake-holes were roughly parallel and close to the north and west sides of pit 272 (Fig 9). They might have been associated with the pit.

Pit 3037, in Trench 5, was approximately half excavated to its base. It was about 2.5 m by 1.5 m by 0.66 m deep, and was roughly oval in plan and gently dished in section. The five fills contained a small quantity of domestic rubbish. The pit was dug through a prehistoric layer and was sealed by a post-medieval layer.

Pit 3039 was partially exposed by Trench 5 (Fig 3). The exposed part measured 1.74 m by 0.88 m. It was excavated to a depth of 1.4 m but the bottom was not reached. The pit was probably rectangular and had near vertical sides. Nine fills were identified and one (3873) was very cess-stained. Samples from this fill and fill 3872 contained abundant small cess fragments. The pit contained a wide range of domestic rubbish and a bone

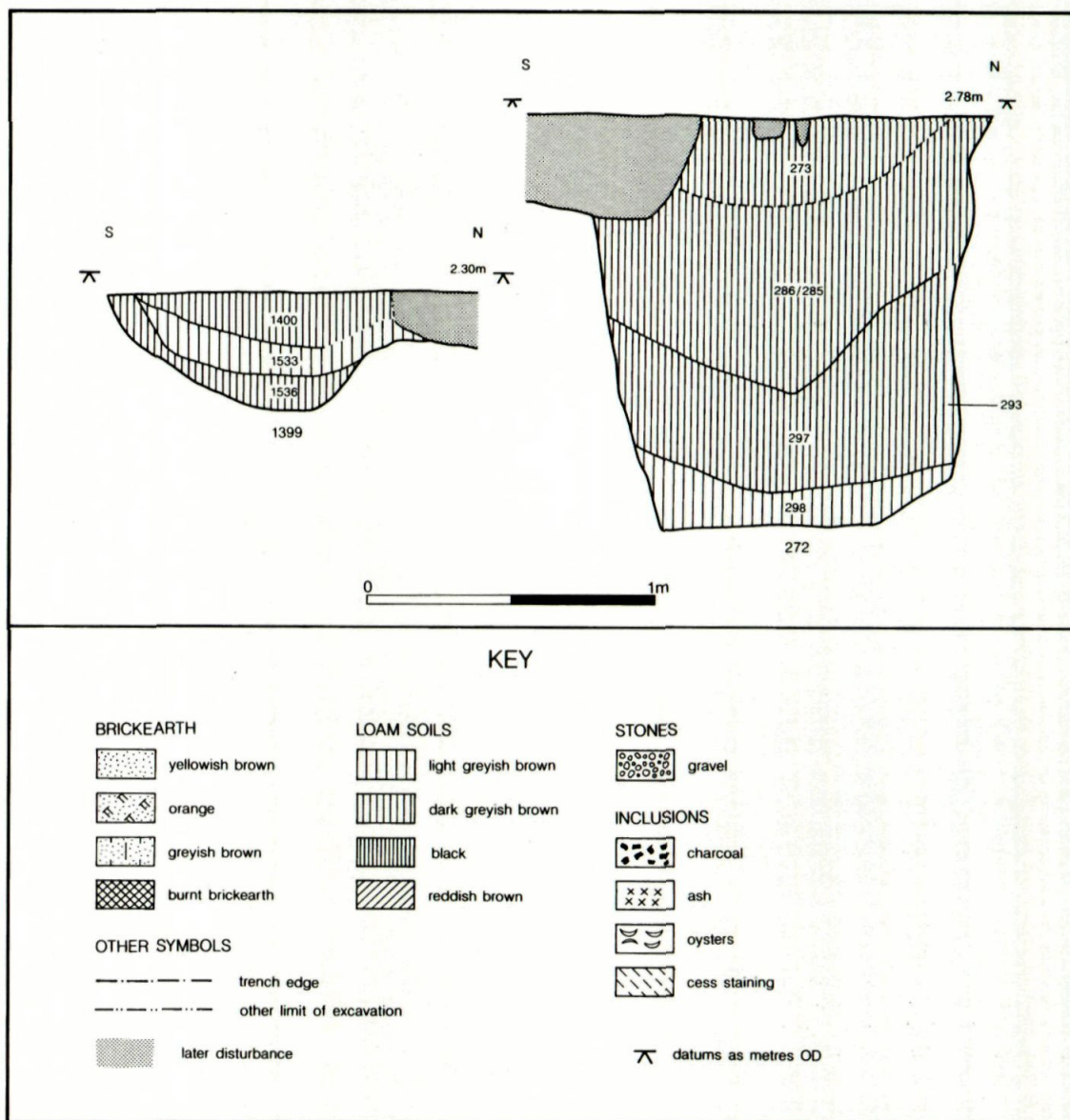


Fig 9. Top: uncertain Middle Saxon pit 1399 and mid Middle Saxon pit 272. Bottom: key to sections and plans.

pot die (item 1491 from fill 3817). The pit was cut by post-medieval feature 3162 and cut Middle Saxon pit 3377.

Three pits observed in section on the watching brief on Trench 5 contained pottery that indicates a mid Middle Saxon date. Pit 4619 was at least 1.6 m wide and 1.0 m deep. The sides were nearly vertical and the bottom almost flat. They were cess-

stained. The pit cut pit 4621 and just penetrated natural gravel. Pit 4621 was at least 1.2 m wide and 0.8 m deep. It had gently sloped sides and contained abundant burnt material including daub and charcoal. It was dug into brickearth. Pit 4644 was at least 2.00 m across and 1.6 m deep. It had gently sloping sides, and was dug through the brickearth and into gravel.

Structural and other Features

Four small features in the pit complex in Trench 5 are phased to the mid Middle Saxon period. They were dug into layers that filled the depression caused by compacting pit fills. Some of the layers comprised clean brickearth which had been burnt *in situ* – possibly floor levels.

Late Middle Saxon

Pit 4073 is the only feature at Cook Street assigned to the late Middle Saxon period. It was damaged by later activity but was roughly oval in plan measuring about 0.7 m by 0.6 m. It was half excavated to its base which was 0.42 m deep. There were four fills but the highest one was medieval. Finds from the Middle Saxon fills included animal bones and seventeen pottery sherds. The pit was dug into natural brickearth and cut by post-medieval feature 3810.

Pit Types

It is difficult to determine the functions of the Middle Saxon pits at Cook Street and some of the pits might have had several uses. Only five pits were completely excavated and only eleven of the partially excavated pits were dug to their base so there is little evidence to aid classification of many of the pits. Morton (1992, 42–6) groups Hamwic pits into four main types: wells, deep rubbish pits, storage pits, and other pits. The types have been listed here from the deepest to the shallowest, in general terms. In Hamwic the wells penetrated the natural gravel in which the modern water table is found, and rubbish pits usually penetrated the gravel but rarely more than 0.2 m (*ibid.*, 45). The storage pits, although usually deep, did not penetrate gravel. Morton grouped a range of miscellaneous shallow features as “other pits” and suggested several functions including brickearth extraction and industrial uses. Almost all of the pits ended their lives as depositories for rubbish irrespective of their original use. The deep rubbish pits were usually rounded in plan and section and the storage pits were usually rectangular in plan and section. Morton argues that the only pits provided with linings were storage pits and the shafts of wells,

and that the only features intended as cess pits were some of the deep rubbish pits. Morton’s interpretation of the deep, square pits as storage pits is not the usual one. The usual view is that they were cess pits (Addyman and Hill 1968, 83; Barrett and Holdsworth 1980, 37–9; Andrews forthcoming).

One reason for the excavation of some or all of the Middle Saxon pits at Cook Street was to supply brickearth for making daub or pottery. Several of the pits penetrated gravel and this might have also been deliberately extracted for use.

Pits 1399, 1880, 2238, 2573, 3037, and 4073 were probably all less than 0.7 m deep, and they did not penetrate the gravel. They were generally rounded in plan and section. It is suggested that they were dug to extract brickearth, and that pit 4086 is a larger version. Pit 4086 was 1.15 m deep but it did not penetrate the gravel. Its shape was very irregular in plan and section. All seven of these pits were dug largely into undisturbed brickearth.

Pits 1128, 1888, 3154, 3601, and 4400 approximately fit into the deep-rubbish-pit category. They were at least 1.25 m deep but only pits 1128 and 1888 definitely penetrated gravel. Pits 3154 and 3601 might have been dug into gravel but they were not archaeologically excavated to their bases. There is some evidence that pit 1128 was used as a cess pit, and it did not contain as much rubbish as the other pits.

Pits 260, 272, 370, and 3039 were sub-rectangular in plan and had near-vertical sides. They were at least 1.4 m deep. Pit 3039 was not excavated to its base so it is not certain but likely that it penetrated the gravel. The other three pits were dug into the gravel between 0.29 m for pit 272 and 0.79 m for pit 370. The sides of pits 260 and 3039 were cess-stained and faecal material was recovered from all four pits. They might have been used as cess-pits before large quantities of rubbish were deposited in them. They are the closest in shape to storage pits but they were dug into gravel. It is possible that they were lined despite a lack of evidence. The life of cess pits as well as storage pits would have been increased by the use of linings. The lines of stake-holes on the north and west sides of pit 272 might have been

the remains of an associated structure such as an enclosing fence. Any stake-holes on the south side would have been destroyed when feature 299 was dug.

The three remaining pits (2916, 2996, and 3054) that were excavated to their bases were fairly shallow and did not penetrate gravel. None of them had near-vertical sides and their full shape in plan is unknown. They all contained reasonable quantities of rubbish, including many small fish bones in pit 2996 that were probably deposited as cess. They were probably not intended to be used as cess pits as they did not penetrate gravel. Presumably they were not dug to extract brickearth as all of them were dug into earlier pits. They are categorised here as small rubbish pits.

Pits 3377 and 3998 were only partly exposed and excavated. No particular function for them can be suggested. Pit 2371 was exposed in section but not excavated. Its fills consisted mainly of redeposited brickearth so it is unlikely that it was intended to be a rubbish pit or to provide brickearth. Nothing is known of the uses of six pits (3298, 3369, 3471, 4007, 4017 and 4237) in Trench 5 that were only partially exposed in plan and were not excavated. The depression above the fills of pits 3054, 3154 and 3601 might have been used as an industrial feature – it is discussed below.

Six pits were observed on the watching brief of Trench 5. Pit 4622 was obviously a well – the only Middle Saxon example at Cook Street. Pits 4612 and 4619 were probably cess-pits originally. Pit 4644 was probably a deep rubbish pit. Only parts of pits 4608 and 4621 were observed and no particular function for them is suggested here.

MIDDLE SAXON FINDS

Introduction

Finds were recovered from the site by hand during excavation and by sorting from soil samples. The methods of sampling are detailed in microfiche. The finds were processed and recorded following the system used by Southampton City Council.

Glass by Mike Heyworth and John Hunter

A total of 88 fragments of glass were recovered from Middle Saxon contexts. The greater majority of the fragments are too small to allow anything other than a basic description. Many of the pieces conform to the translucent light blue/light green colouring which characterises much of the glass recovered from excavations at Hamwic. Although any classification is largely impossible due to the size of the pieces, previous experience in dealing with the large corpus of glass from Hamwic suggests that most of the fragments are from the palm-cup/funnel-beaker vessel forms which are characteristic of the Middle Saxon period in north-west Europe. A further feature of much of the material from Cook Street is the number of pieces exhibiting surface weathering or devitrification, factors normally associated with non-durable glasses of the medieval period, although possibly brought about by exceptional soil conditions.

A small number of vessel rims are included in the material, including both tubular and rounded rim forms. Most of the fragments are plain, undecorated vessel fragments, although a number feature aspects of decoration which are familiar from other sites in Hamwic (Hunter 1980, 59–72; Hunter and Heyworth forthcoming). Several fragments exhibit traces of applied and marvered trails, a decorative technique relatively common among 7th- and 8th-century glasses. Two of the trails are of opaque yellow glass (items 154 and 2386). More spectacular, although also not uncommon amongst Middle Saxon glass, are two fragments with reticella rods decorating the surface of the vessels. Item 2483 has a reticella rod containing alternate bands of opaque yellow and opaque white glass, whilst item 1683 simply has an opaque white spiral.

A small number of mould-blown vessel fragments can be identified amongst the assemblage (items 1380 and 1671, for example), although the forms of the vessels are indeterminable. A complete cylindrical bead (item 933) of alternate opaque yellow and pink spirals is worthy of note.

A complete or near complete quarry of window glass (item 3070) is also present amongst the

assemblage. Its shape suggests use in a mosaic-type design of individual glass quarries. These tend to be associated with later-7th-century glazing, partly through the general absence of later evidence. A number of early window quarries exhibit red streaking or clouding within the metal similar to the discoloration in this piece.

A catalogue of the glass fragments is included in microfiche.

Pottery by Elizabeth Pieksma

Introduction

Methodology

A total of 966 sherds, weighing 9700 g, from pre-Conquest contexts were quantified by weight and sherd count. Rim percentages and diameters were also recorded. Fabrics were identified with the aid of a $\times 10$ binocular microscope. Vessel form has been taken to a broad basic level and has not been referenced to any form corpus. Any vessel cross-fits between contexts were also recorded.

Pre-Roman and Roman pottery has been broadly divided according to fabric. The small amount of medieval material (73 sherds weighing 315 g) has been characterised with reference to the Southampton fabric type series. This material will not be discussed further here. The Saxon material has been identified in accordance with the fabric type series published by Jane Timby (1988), where full fabric descriptions can be found. A new fabric identified in the Cook Street assemblage has its full fabric description presented in microfiche. Since its creation, the Saxon type series has been subject to very little revision or addition. The most significant development of the type series has been the grouping of the Continental imports into whitewares, greywares, blackwares and oxidised wares. These groups will be used in the following discussion.

Pottery Fabrics

Pre-Roman

A total of 56 sherds, weighing 303 g was recovered. They are all from handmade vessels.

By weight 95% are flint-tempered or grog-tempered, and the rest are sandy wares.

Roman (Group XI)

A total of eighteen sherds weighing 68 g was recovered. They fell into four broad groups: fine wares, samian, grog-tempered and miscellaneous.

Middle Saxon

A total of 819 sherds weighing 9014 g has been assigned a Middle Saxon date. They account for 93% of the total assemblage by weight and 85% by sherd number.

The fabrics fall into two main groups: local handmade coarsewares; and wheelmade fine-wares imported from the Continent (imports). A southern English source is suggested for all the wares classed here as local, with the majority probably made in or close to Hamwic. Miscellaneous Saxon coarsewares, comprising twenty sherds weighing 19 g, is a group composed of sherds which are too small to ascribe to a specific fabric group with any certainty.

Local coarsewares are most numerous, and account for 72% of the assemblage by weight. Imported wares account for 28% of the assemblage by weight.

Local coarsewares

These have been divided into seven ware groups. The total quantities of each group are shown in Table 2. Sandy wares are shown to be the most common group, comprising 36% of the assemblage weight. Organic-tempered wares amount to 15% of the total weight. Chalk-tempered and mixed-grit fabrics are less well represented while other types are present in only very small quantities.

Organic-tempered wares (Group I)

All types except fabric 4 are present at Cook Street. The most commonly occurring is fabric 11 (81% by weight) and this is true also for other Middle Saxon assemblages.

Chalk-tempered wares (Group II)

Chalk-tempered fabrics 40 and 41 are present in the assemblage and occur in similar proportions by weight (54% and 46% respectively).

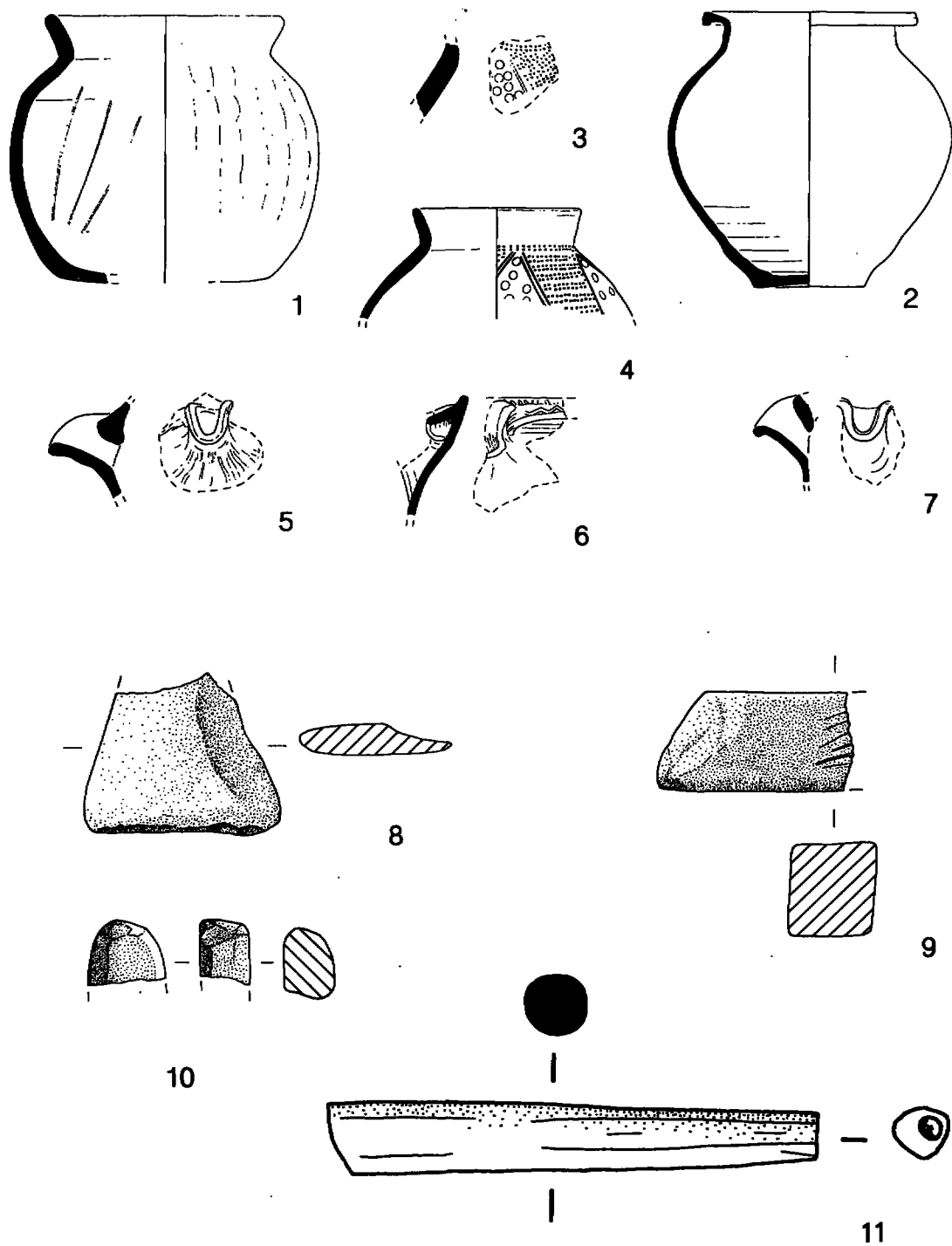


Fig 10. Pottery: 1-7 (scale 1:4). Worked stone objects: 8-10 (scale 1:2). Antler pot die: 11 (scale 1:1). See text for descriptions.

Sandy wares (Group III)

Eight of the ten known fabrics occur in this assemblage and one new fabric has been identified: fabric 74. Fabric 10 (Fig 10, 3) is the most common (67% by weight) and the two other fabrics which occur in any quantity are 12 (10% by weight) and 13 (9% by weight). Also present are fabrics 8, 15, 17, 57, 58, and 74.

Fabric 17 (4.5% by weight) is of particular interest as all eight sherds are decorated with the distinctive 'hot-cross-bun' motif and impressed circles arranged alternately in triangular pennants around the body of the vessel especially on the shoulder (Fig 10, 4). This form of decoration was noted by Timby (1988, 106).

Mixed-grit-tempered wares (Group IV)

The full range of fabrics is represented with the exception of fabric 14. Most common are fabrics 56 (29% by weight) and 62 (26% by weight).

Shell-tempered wares (Group V)

There are two body sherds of fabric 33, less than 1% of all the local types by weight.

Flint-tempered wares (Group VI)

Fabric 65 is the most abundant (77% by weight). Fabrics 25 and 26 both account for 10% by weight and fabric 24 just 3%.

Igneous-rock-tempered wares (Group VIII)

Two sherds of this type occur in this assemblage, less than 1% by weight.

Imported wares (Group IX)

A total of 23 fabrics have been identified as Continental imports, totalling 2,538 g and 250 sherds. Despite this wide range from a moderately small assemblage several of the more renowned wares such as Tating Ware, Bardorf Ware, Beauvais Ware, and Relief Band Amphora are absent. Whitewares comprise 35% by weight, blackwares 31%, greywares 23% and oxidised wares 7%. Two sherds of Mayen ware (fabric 126, Timby 1988, 91) weighing 66 g (3%) have been identified.

Whiteware imports

These total 86 sherds weighing 893 g. Fabrics 127, 201, and 206 are present. Fabric 127 is the most common type (99% by weight), most of which is attributable to a single vessel. This is a plain jar (Fig 10, 2) with a rim diameter of 14 cm. A similar vessel was recovered from excavations in Hamwic at Six Dials, SOU 169 (Timby 1988, Fig 202).

Greyware imports (Fig 10, 5 and 6)

These total 41 sherds weighing 596 g. Fabrics 129, 151, 152, 153, and 156 all occur at Cook Street. Fabric 152 is the most common (73% by weight) with fabric 151 (12% by weight).

Blackware imports (Fig 10, 7)

These total 108 sherds weighing 798 g. The fabrics present are 130, 131, 133, 134, 135, 137, 138 and 139. The most abundant fabric is 131 (61% by weight). Fabrics 130, 133, 134 and 138 occur in similar quantities (9%, 8.5%, 7% and 7.5% by weight respectively), with the remaining types together accounting for 7% by weight.

Oxidised imports

These total 13 sherds weighing 185 g. Fabrics 178, 185, 187, 189, 198, and 203 are present. Fabric 178 comprises 60% by weight, fabric 189 19.5%, and the remaining fabrics 20.5% together.

The Archaeological Features

Table 2 shows the distribution of pottery types among the principal pottery-producing features. Pits were the most productive feature type, together with ditch 1355. Other feature types produced very small quantities of pottery. The following discussion will be limited to either those features which are important to the site, such as the penannular ditches, or those with sizeable deposits of pottery, mainly pits.

Ceramic Dating

Pottery is the main dating indicator for many of the features at Cook Street. However, Timby has shown the problems of using pottery as a chronological tool (1988, 111–16). As an aid to dating the Cook Street assemblage the 'ceramic sequence of fabric trends' proposed by Timby (*idem*) will be referred to extensively.

*Early Middle Saxon I**Ditch 1355*

In this feature, the percentage weight of local coarsewares is the same as that for imported wares. The remaining 8% is attributable to either very small unidentifiable Saxon fabrics or non-Saxon fabrics. Organic-tempered and sandy pottery groups are each represented by a single sherd. Imported pottery includes two sherds of blackware and one sherd of Mayen ware. Six sherds of miscellaneous pottery include pre-Roman, Roman, unidentifiable Saxon fabrics, and post-Conquest scratch-marked ware.

Given the small quantity of Middle Saxon pottery it is difficult to ascribe a date for the ditch. However the range of fabrics present would appear to be early in the 'ceramic sequence of fabric trends' and an early 8th-century date for the ditch could be proposed.

Penannular Ditch 1898

The majority of the sherds recovered from this feature are from imported wares. The largest group, the blackwares, is made up of five sherds in fabrics 131 and 138. The whiteware group is represented by a single sherd. The other identifiable Saxon fabric recovered is a single sherd of organic-tempered ware fabric 11. Other pottery recovered from the ditch includes one sherd of pre-Roman grog-tempered pottery, two very small sherds of Saxon pottery which cannot be ascribed to any specific fabric type and one medieval sherd.

A ceramic assemblage of this small size and nature is difficult to date. The whiteware and blackware fabrics are not particularly diagnostic chronologically. Fabric 11, a sandy organic-tempered ware thought to be transitional between the organic-tempered and sandy ware traditions, is perhaps more closely datable. It appears that organic-tempered wares had given way to sandy wares by the mid 8th century (Timby 1988, 111). Nevertheless, although an 8th century date for this feature may be likely, the ceramic evidence cannot confirm this.

Penannular Ditch 1899 and Grave 2962

The pottery recovered from the grave is all pre-Saxon in date, includes mainly pre-Roman flint-tempered pottery, and is considered to be residual. The pottery recovered from the ditch is very different in character. Middle Saxon imports account for most of this material and these are principally blackwares. The most common blackware fabric is fabric 131. Greywares are represented by a single sherd of fabric 152, and whitewares by a single sherd of fabric 127.

Local coarsewares are very poorly represented. There is a single sherd of sandy ware and two sherds of organic-tempered pottery.

There is also a moderately large quantity of non-Saxon pottery from this feature, including two sherds of medieval pottery and two pre-Roman grog-tempered sherds.

The absence of fabrics thought to be late in the middle Saxon 'ceramic sequence of fabric trends' could indicate an early 8th-century date for the feature.

Penannular Ditch 2443

No pottery was recovered from the associated grave (2423). Only two small sherds from the feature are thought to be Middle Saxon in date. One sherd is an oxidised import, the other sherd is an unidentifiable local coarseware. The majority of the pottery from this ditch includes pre-Roman, Roman, and medieval sherds.

Early Middle Saxon 2

Pit 260

The large quantity of imports shown in Table 2 is accounted for by a whiteware jar (Fig 10, 2). All the sherds from this vessel (fabric 127) were recovered from context 278 near the base of the pit and it seems likely that this pot was deposited in one episode.

Most of the organic-tempered group is made up of the transitional fabric 11 with a few fragments of fabric 5. Two sherds of chalk-tempered pottery were also recovered.

Sandy wares are the most common local product in this pit group. Fabric 10 is the most abundant followed by fabric 74, other types, present in much smaller quantities include fabrics 12 and 17. Of particular interest is the presence of stamped decoration on several sherds in fabrics 17 and 74. In both instances the stamped motif is composed of rings and the four part 'hot-cross-bun' motif (Timby 1988, 106).

The local coarseware fabrics are well mixed throughout the contexts within the pit. The stamped sherds are associated with two of the more substantial contexts (266 and 267) located midway down the pit fill sequence.

Also of particular note is a cross-fit between context 267 in this pit and context 371 in pit 370 of a vessel in sandy ware fabric 10.

The range of fabrics present and the occurrence of stamped decoration on a few of the sherds indicates an 8th-century date for this pit.

Pit 370

A limited range of fabric types was recovered from the pit. Sandy ware fabrics are by far the most abundant, with fabric 10 accounting for 80% of the pit assemblage. Sandy ware fabrics 12 and 17 are also present. The latter is represented by two sherds, both stamped with a ring and four-part 'hot-cross-bun' motif. These sherds were recovered from context 371, situated near the top of the pit. The other local coarseware group, the organic-tempered wares is composed of two sherds of fabric 11.

Though the fabric range from the pit may be limited it appears that those present are well mixed throughout the pit. There is a cross-fit, in sandy ware fabric 10, between context 371 in this pit and context 267 in pit 260.

The absence of pottery fabrics considered to be later in the middle Saxon sequence, such as chalk-tempered, mixed-grit tempered and flint-tempered fabrics, (ibid, 114) suggests an 8th-century date for the pit.

Pit 3377

The most common fabrics are sandy wares, with fabric 10 the most abundant. There are seventeen sherds of organic-tempered ware fabric 11 and one sherd of chalk-tempered ware. Imported wares are barely represented in this feature, comprising a single fragment of oxidised ware and two blackware sherds.

The remaining sherd total is made up of miscellaneous wares,

including two small Saxon coarseware sherds and one sherd of pre-Roman grog-tempered pottery.

The presence of sand-tempered and organic-tempered fabrics, with a small quantity of chalk-tempered wares suggests an early-8th-century date for the pit (*ibid.*, 111–16).

Pit 4086

The majority of the sherds recovered are local coarsewares, which account for 76% of the pit group by weight. Mixed-grit-tempered wares are most common and are represented by fabrics 56 and 59. Generally, mixed-grit-tempered wares occur later in the ceramic sequence of fabric trends. However, evidence from Six Dials, SOU 169, suggests that fabric 56 is an early type (Timby 1988, 112). Sand-tempered fabrics are also abundant. Other early types include organic-tempered wares. A single very small flint-tempered sherd was also recovered.

There is a wide range of imported fabrics. The largest group are the blackwares, with greywares and oxidised wares present in smaller amounts. Whitewares are the least common imported type.

There are three sherds of pre-Roman pottery, one sherd of samian ware and one medieval sherd.

The various fabrics are well mixed throughout the pit and the range of Middle Saxon types indicates an 8th-century date for this feature.

Pit 4400

Sandy wares are the most common local coarsewares present, with fabric 13 most abundant. All but one of the sherds of this fabric fit together to form the profile of a hand-made round-bottomed cooking pot (Fig 10, 1). Organic-tempered ware is represented by five sherds. There is a single sherd of flint-tempered pottery and a single mixed-grit-tempered sherd.

Imported wares account for 48% by weight of the Middle Saxon pottery from this feature and a wide range of types is represented. There are four blackware group fabrics present. Oxidised wares, rare in the Cook Street assemblage as a whole, are represented by three fabric types. There are three greyware sherds and five of whiteware.

The miscellaneous group includes two sherds of pre-Roman flint-tempered pottery and seven sherds of locally made medieval wares, thought to be intrusive.

An 8th-century date for this feature is suggested by the range of local fabrics and the quantity of imports.

Mid Middle Saxon

Pit 272

The pottery from this feature accounts for 17.2% by weight of all pottery recovered from pits. There is a wide range of both local and imported fabrics. Table 2 shows that chalk-tempered and mixed-grit-tempered wares are the most common local types. There are five sherds of sand-tempered fabric 17, all stamped

with a ring and four-part 'hot-cross-bun' motif. Organic-tempered and flint-tempered wares occur in relatively small quantities. All the fabric 17 sherds came from two contexts, 286 and 293, both located towards the bottom of the pit.

Greywares comprise the largest import group, totalling 82 g. Blackwares are represented by sherds in three fabric types. There are three whiteware sherds.

There are also sixteen post-Conquest medieval sherds, distributed among the upper fills of the feature, it is likely that these are intrusive. The presence of later material in the upper fills of Saxon features has been noted before for Hamwic sites (Morton 1992, 149).

Middle Saxon pottery occurs throughout the pit. The significant presence of later local coarsewares, chalk-tempered, mixed-grit-tempered and flint-tempered fabrics, together with later stamped sandy wares could indicate a mid 8th- to mid 9th-century date for this feature.

Pit 3039

Local coarsewares account for 79% of the material from this pit. Chalk-tempered wares are best represented. Four sandy ware fabrics occur in roughly similar quantities. The mixed-grit-tempered group is represented by three fabric types. A single sherd of organic-tempered ware fabric 11 was also recovered.

The imported wares are represented by two blackware fabric types and a single greyware sherd.

There are also two sherds of pre-Roman pottery.

The presence of chalk-tempered and mixed-grit-tempered sherds suggests a date of mid 8th to mid 9th century for this pit.

Conclusion

The Cook Street pottery is the first large group to be examined since Timby's work and few new fabrics were encountered. Timby's sequence of dated fabrics was not challenged by the Cook Street stratigraphic sequence.

The pottery dating method used here follows the established fabric trend method (Timby 1988, 111–16) which examines the relative proportions of the broad fabric groups in an assemblage of a reasonable size. At Cook Street this has meant treating all the pottery from one feature as a single group. However, many features produced groups which are too small to be used with certainty. Following this method almost all of the Middle Saxon features have been dated to the 8th century, and most of these are probably early 8th century, thus early Middle Saxon.

The three main fabric groups in the Cook Street assemblage are Group III (sandy wares) with 38% by weight, Group IX (imported wares)

Table 2. Pottery from pre-Conquest contexts quantified by Fabric Group and principal feature.

			I	II	III	IV	V	VI	VIII	IX		TOT	NO	%
			ORGA	CHAL	SAND	GRIT	SHEL	FLIN	IGNE	IMPO	MISC	WGHT	SHRD	WT
D	1355	wt	84	—	2	—	—	—	—	86	16	188	11	2
		%wt	45	—	1	—	—	—	—	46	8	—	—	—
PD	1898	wt	8	—	—	—	—	—	—	38	15	61	11	1
		%wt	13	—	—	—	—	—	—	62	25	—	—	—
PD	1899	wt	2	—	1	—	—	—	—	116	16	135	25	1
		%wt	1	—	0	—	—	—	—	86	12	—	—	—
PD	2443	wt	—	—	—	—	—	—	—	1	27	28	13	0
		%wt	—	—	—	—	—	—	—	4	96	—	—	—
PIT	3377	wt	259	8	356	—	—	—	—	5	4	632	45	6
		%wt	41	1	56	—	—	—	—	1	1	—	—	—
PIT	260	wt	244	15	463	—	—	—	—	641	—	1363	115	14
		%wt	18	1	34	—	—	—	—	47	—	—	—	—
PIT	370	wt	123	—	1183	—	—	—	—	12	3	1321	87	14
		%wt	9	—	90	—	—	—	—	1	0	—	—	—
PIT	4400	wt	48	—	313	3	—	5	—	425	74	868	60	9
		%wt	6	—	36	0	—	0	—	48	9	—	—	—
PIT	4086	wt	78	—	127	161	—	3	—	105	13	487	69	5
		%wt	16	—	26	33	—	0	—	21	3	—	—	—
PIT	272	wt	34	446	275	294	—	49	—	126	50	1274	148	13
		%wt	3	35	22	23	—	4	—	9	4	—	—	—
PIT	3039	wt	28	120	105	28	—	—	—	74	—	357	31	4
		%wt	8	34	29	8	—	—	—	20	—	—	—	—
SUB TOTAL		wt	908	589	2825	486	—	57	—	1629	220	6714	—	69
		%wt	14	9	42	7	—	1	—	24	3	—	—	—
OTHER		wt	526	102	629	232	5	90	8	909	485	2986	—	31
		%wt	18	3	21	8	0	3	0	30	16	—	—	—
TOTAL		wt	1434	691	3454	718	5	147	8	2538	705	9700	—	—
		%wt	15	7	36	7	0	2	0	26	7	—	—	—
		sherd	98	69	298	59	2	21	2	250	167	—	966	—
EXCL MISC		%wt	16	8	38	7	0	2	0	28	—	8995	—	—

MISC combines unidentifiable Middle Saxon coarsewares and non Middle Saxon pottery. OTHER accounts for all the pottery excluding that from the principal features.

with 28% and Group I (organic-tempered wares) with 16% making a total of 82%. This is a typical early Middle Saxon assemblage. The pottery assemblage from the early boundary ditch at Six Dials, used as an example of an early group, is dominated by these three groups (*ibid*, 112). Timby suggests that sandy wares, which dominate the Cook Street assemblage, were principally produced in the middle of the 8th century, when

the production of organic-tempered wares declined (1988, 114). The two groups that are particularly under-represented at Cook Street are chalk-tempered and mixed-grit wares, both of which were produced from around the middle of the 8th century onwards. Together they account for 15% of the Middle Saxon pottery at Cook Street. This is considerably less than the 41% total for these groups at Six Dials, SOU 169, and

39% at Stoner Motors, SOU 88, about 100 m north of Cook Street.

Although the Cook Street pottery is comparable to that from the rest of the Hamwic there do seem to be differences between the Cook Street assemblage and that from Six Dials, until now the most closely studied material. Whether these differences have cultural or chronological explanations is not clear.

Worked Stone Objects by Duncan H Brown

Nine stone artefacts were recovered. These are classified as follows.

Querns

Fragments of lava from the Eifel region are a common find in Hamwic, usually in the form of querns (Parkhouse 1976). It is likely that the pieces of lava found at Cook Street derived from querns. Single pieces of lava were recovered from pits 2916, 3039, and 4086, and from penannular ditch 1899.

A fragment of a hard sedimentary rock, possibly a quartzite, also has a flat surface and may be a piece of a quern. It was recovered from fill 114 in ditch 885.

Whetstones

There are two fragments of whetstones. One object was probably deliberately shaped, the other may be the product of casual use.

Item 520, T3, context 1353, layer (Fig 10, 8). A flat piece, triangular in shape, of a dark grey, fine-grained sedimentary rock worn on both sides. There is no evidence that the original object was deliberately shaped.

Item 1394, T5, context 3055, layer (Fig 10, 9). The object is of dark grey, fine-grained sedimentary rock, perhaps a shale or mudstone. It is broken at one end and is square in section. All five original surfaces have been worn smooth.

Unidentified object

Item 3059, T5, context 3059, pit 3601 (Fig 10, 10). This piece of haematite is broken at one end but has smooth surfaces and is rounded at the other in the manner of a crayon. This substance will mark surfaces and it is possible that it was used for that purpose.

Coin by D M Metcalf

One coin was recovered – a sceat (item 1590) of Series X from fill 4409 of pit 4086.

Obv Facing head with hair standing out to left and right, moustaches represented by two shallow curves. Cross pommee to left and right of the face. Linear border. Outer border of numerous pellets.

Rev Monster left with head reverted, gaping jaws, biting its tail. Foreleg with toes upwards, hind leg with toe downwards. Sexual member terminating in a large pellet. Secret mark: large pellet beneath the head. Outer border of numerous pellets.

It weighs 1.01 g and is of very base copper-based alloy (maximum 10% silver?). Its date is after 710, and probably before 750. The region of origin cannot be ascertained.

Series X originates in Jutland, at the mint of Ribe (Metcalf 1984, 159–64). It dominates the currency there, and is found in smaller quantities in the Rhine-mouths area and in southern and eastern England. It is more plentiful at Hamwic than elsewhere in England, for instance in Kent even though that region is nearer to Denmark. There may, therefore, be a Jutish connection, that is Danes trading with their 'cousins'.

The style of this specimen is acceptable, but its alloy is very different from the Danish coinage, which is mostly of good silver. Its correct interpretation is puzzling. There are other debased specimens from Hamwic, but their style is far different (Metcalf 1988, 50–1). They are probably insular imitations. There is no way of determining the region of origin of a counterfeit unless a distribution pattern can be constructed from several stylistically identical specimens. The best guess is that it is from Ribe (reflecting aspects of mint activity there which are not yet understood) or from the Rhine-mouths area. In any case, it adds to the evidence for an unusual concentration of Series X at Hamwic.

Non-Ferrous Metal Objects by David A Hinton

Discussion

The gold, silver, copper-alloy, and lead-alloy objects found in Hamwic before 1990 are to be published in a monograph in which some of the

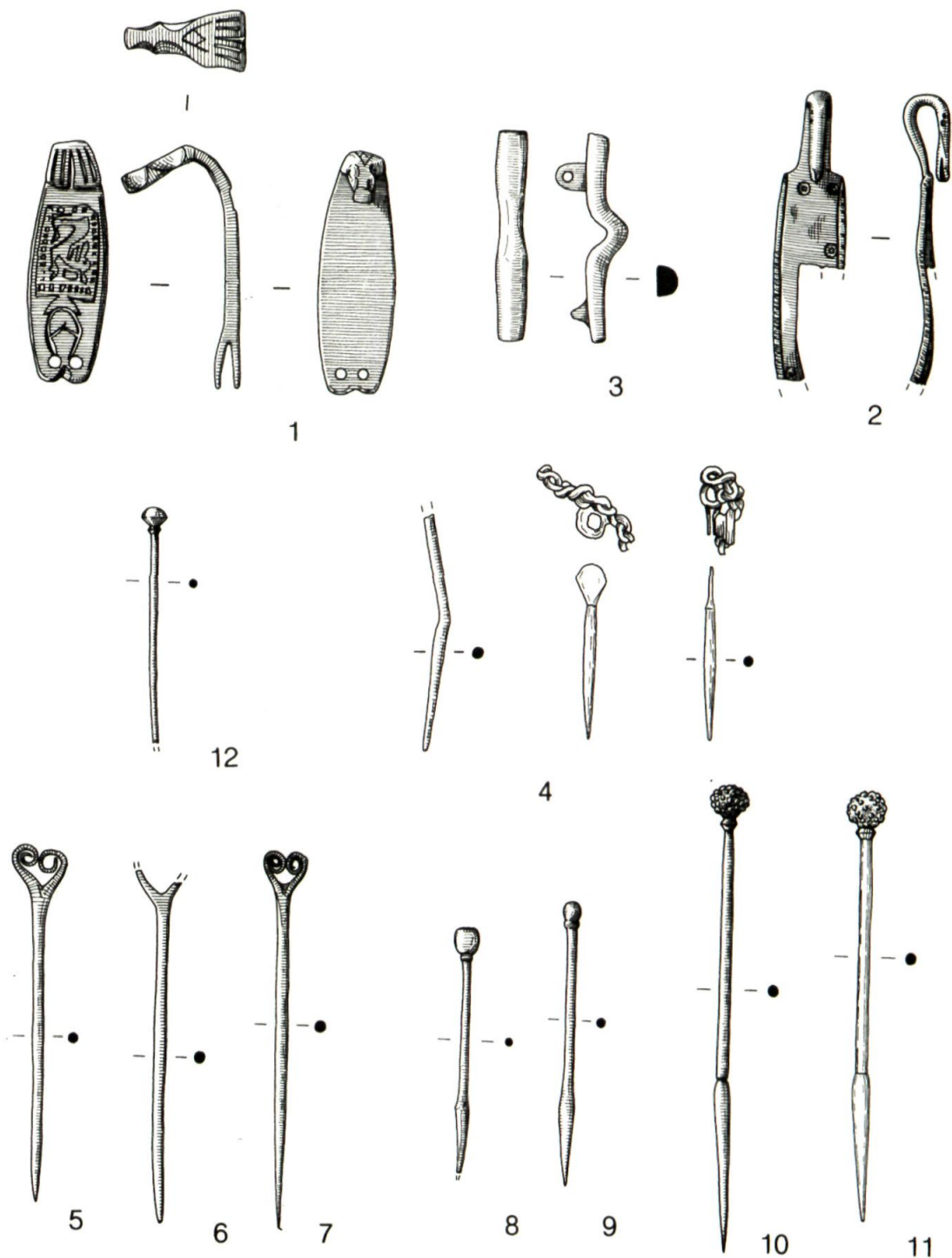


Fig 11. Non-ferrous metal objects. Scale 1:1. See text for descriptions.

classifications used in the present report will be explained. The Cook Street assemblage is somewhat unlike those from many of the other individual Hamwic sites; although only a little group of pin, chain, and pin shafts was found in a grave, it is quite possible that some other objects were scattered from disturbed burials. No detailed metallurgical analyses have been done on the Cook Street objects, but four have at least enough silver in their alloys to be recognisably different in their compositions from the copper-alloy majority, and two of the pins look as though they have a very high silver content; in comparison, from the rest of Hamwic have come only seven silver pins from a total of some 150 pins – one of the seven is of the same type as the two from Cook Street, so that it appears that the ‘pineapple’ decoration of pin-heads had particular appeal or status. Although from different parts of the site, those from Cook Street may well have been worn as a pair as they are very similar in size as well as type. That is true also of two of the spiral-headed pins.

Other contrasts are perhaps less obvious than that between the metals, but the assemblage does contain another equal-arm bow-brooch to add to a previous total from Hamwic of only two, and the strap-end makes an eighth of its particular type, which is one that is relatively common elsewhere. The three spiral-headed pins add to the five already recognised (Fig 11).

Catalogue

Objects numbered 1 to 12 are illustrated (Fig 11).

1. Strap-end. Layer 3301, T5, item 1149. Double-riveted, with flat, convex-sided shaft, animal-mask terminal and plain reverse. Copper-alloy. L. 55 mm. Stylised leaf ornament at the split end, contorted animal in a notched frame, grooved neck and narrow, three-dimensional animal mask. Bent over at the neck. Traces of red enamel in the frame.

The animal on the shaft is in the ‘Trewiddle’ style, dated by discoveries of objects bearing it in hoards which contain 9th-century coins and increasingly now at Middle Saxon sites such as Flixborough, South Humberside (Leahy 1991, 98). It is likely therefore to be one of the later objects from Hamwic.

2. Hook. Layer 3145, T5, item 1595. Slightly tapering, nearly closed loop with stylised animal-head terminal, attached to a flat plate with ring-and-dot ornament and a grooved-line

border, with a piece deliberately cut from it, and broken at the end. Copper alloy. Extant L. 43 mm.

Because it is broken it is not clear what purpose this object might have served, and it has no obvious Anglo-Saxon parallels. The decoration is simple but quite neat, the animal mask having recognisable jaws, for instance.

3. Equal-arm bow-brooch. Layer 2580, T4, item 811. Plain with straight, unexpanding arms. Hinge lugs and catch-plate on the back. Copper alloy. L. 32 mm.

This brooch is very much shorter than the other two of its form in Hamwic, but is similar to one found at the Westgate site within the walls of the later medieval Southampton (Holdsworth 1984, 340). It is unusually plain, for this type usually has transverse mouldings (Evison 1966, fig 60).

A good deal of work has been done on bow-brooches (eg Hübener 1972) and many more have been found in England, including others in Hübener’s Group 9 from various urban sites; one from Norwich has casting flashes showing that it was unfinished (Webster 1988), which suggests that these brooches were being made in England as well as on the Continent. The date range has also widened, so that the Cook Street example is as likely to be 8th as 9th century, and could be 10th.

4. Suite of pins and chain. Grave 2962, T4, item 1370.

a) Pin. Rhomboid, flat undecorated head, without collar, straight shaft (Hamwic type Fa 1i). Base silver. L. 28 mm.

b) Glass. Flat, circular. Surrounded by a black substance that could be textile (Conservation Lab Report) and a beaded silver collar. Diam. of glass c 2 mm.

c) Chain. Short length of twisted figure-of-eight links. Copper alloy. Extant L. c 16 mm, links L. c 4 mm.

d) Chain. Disconnected section and broken links as c.

e) Pin shaft. Two lengths, corroded together when found. Copper alloy. Extant L. c 35 mm.

The suite of pins and chains was recovered from near the left shoulder of a skeleton of mature age but unknown sex in grave 2962, in Trench 4. An iron knife lay near-by.

The complete pin (A) had chain length C corroded to its head, with the glass (B) attached to that. Another piece of chain (D) was corroded to the broken pin shaft (E) where its two lengths separated.

Linked pin sets were normally worn with one pin set at a distance from the other, to hold a head-dress on either side of the wearer’s brow for instance (eg Queen Arnegunde – Todd 1992, 202). As the two pins in the Cook Street grave are of different alloys, however, they may not have been either made or used as a pair, their association being fortuitous; or it may be that they were placed as grave goods and were not worn.

Linked pins are normally found in female graves, as locally in Winnall Grave 8 (Meaney and Hawkes 1970, Fig 9), where two pins were found close together by the left shoulder of the skeleton, with other objects including a knife near-by. This suggests that, as at Cook Street, the objects were placed in the

grave, and were not being worn. The Cook Street and Winnall cemeteries hint at a common rite, of object deposition by or above the left shoulder.

The Winnall pins are attributed to the second half of the 7th century (Meaney and Hawkes 1970, 36–7). Higher-status parallels include the Roundway Down, Wiltshire, suite (Younis 1989, 53–6), in which the pins have garnets set in the heads.

Chain. Grave 2962, T4, item 1369. Corroded, but X-ray plate shows a short length of wire-loop chain. Possibly part of item 1370.

5. Spiral-headed pin. Pit 272, T2, item 144. Bifurcated head with double spiral, one broken off but extant. No collar, straight shaft (Hamwic type Da 1i). Copper alloy. L. 54 mm.

Spiral-headed pins have now been found in sufficient numbers at Middle Saxon sites to negate an earlier view that they date to the 5th and 6th centuries. Several have been found in pairs in 7th-century graves (Detsicas and Hawkes 1973, 283–84), and as Cook Street has produced two of very similar length (item 107 below), the possibility that they were originally joined together by a thread (or conceivably by a chain, see item 1370 above) may be entertained although they were found in different parts of the site. They could therefore have been scattered from a grave, as the accidental loss of a pair of pins is less likely than that of two single ones, and that would suggest that the two from Cook Street date to the 7th or early 8th century, since furnished graves are so few in number thereafter. This is consistent with other spiral-headed pins from Hamwic, which are generally from the town's early contexts. Although there have been a number of recent finds (eg Leahy 1991, 97–8), none seems to come from a context that precludes an end-date for the fashion during the first part of the 8th century.

6. Spiral-headed pin. Pit 4400, T5, item 1679. Bifurcated head, both sides broken. No collar, straight shaft (Hamwic type Da 1i). Copper alloy. Extant L. 52 mm.

Although more corroded than item 144, this pin may be a pair to it, the differential in corrosion being caused by post-depositional circumstances.

7. Spiral-headed pin. Medieval feature 299, T2, item 107. As items 144 and 1679. L. 57 mm.

8. Pin. Pit 370, T2, item 114. Spherical-headed, undecorated with ring collar and swelling shaft (Hamwic type Aa 2ii). Copper alloy. L. 36 mm. Eight of this specific type have come from other parts of Hamwic.

9. Pin. Layer 3847, T5, item 1523. Corroded, but apparently another of type Aa 2ii. Copper alloy. L. 43 mm.

10. Pin. Pit 370, T2, item 115. Spherical-headed with 'pineapple' decoration, ring collar and swelling shaft (Hamwic

type Ad 2ii). Silver. L. 69 mm. The possibility that this pin may have been worn as one of a pair with Item 1613 below has already been discussed in the introduction. A similar 'pineapple'-headed silver pin was found on SOU 31 in the north of Hamwic. The use of silver for all three seems to indicate that the 'pineapple' type of head was especially favoured, and presumably more likely to be solely for personal wear, which is less certain with base-metal run-of-the-mill pins.

11. Pin. Feature 4175, T5, item 1613. As item 115. L. 64 mm.

12. Pin. Pit 2916, T4, item 1308. Biconical, undecorated head, with ring collar. Shaft broken. (Hamwic type Ca 2[?]). Copper alloy. Extant L. 35 mm. There are at least sixteen other Hamwic pins with plain biconical heads and ring collars.

Other pins. Four pins which appear to be of the later medieval or post-medieval type with wound wire heads (items 263, 1100, 1348, and 1148) have been excluded from discussion here.

Pin shafts. As on all Hamwic sites, broken bits of pin shaft abound. Any which lack a point or other recognisable feature may simply be rivets, bits of wire etc, but all are listed for the sake of completeness. Copper alloy examples were recovered from: ditch 1355; penannular ditch 1899; and pits 2916, 3054, 3601, and 4400. A silver shaft came from penannular ditch 1899.

Nail. Feature 3976, T5, item 1494. Flat-topped head. Copper alloy. L. 19 mm. The shaft is rather stubby, which suggests a nail eg for a casket rather than a pin with an abnormal head.

Tack. Pit 2916, T4, item 1305. Hollow domed head, rectangular shaft. Copper alloy. Diam. 11 mm. The sheet metal and coppery colour of this object make it look post-medieval.

Strip. Pit 2916, T4, item 1304. Slightly tapering, straight-sided, with broken rivet hole at narrower end. Copper alloy. L. 27 mm.

Ring? Post-hole 969, T3, item 264. Narrow strip now bent into an irregular penannular shape, with slightly expanded ends. Copper alloy. Diam. c 13 mm. Uncertain use, but too small to wear and too frail to take any strain.

Rod. Layer 3848, T5, item 1599. Sub-rectangular section, broken at both ends. Copper alloy. Extant L. 32 mm. Scrap?

Fragments. There are numerous copper-alloy featureless fragments, as on all Hamwic sites. There are also four lead-alloy scraps from pits 2916 and 4086, and from layer 4426. A piece of shot came from ditch 885.

Iron Objects by P Andrews

Objects are grouped broadly according to function and numbered consecutively; a, b and c after a number indicates that an object has not been illustrated (Fig 12).

All objects included in the catalogue are from Middle Saxon contexts with the exception of No 11 (a knife) which is from a Late Saxon context. Probably all of the remainder are from early Middle Saxon contexts except for Nos 6, 11a, 14, 15 and 18 which are from mid Middle Saxon contexts.

In addition to the objects catalogued, there are approximately twelve strip fragments (up to 250 mm in length and generally about 12 mm wide), seven sheet fragments (including one perforated, one triangular and one disc shaped piece), eleven rod fragments (of square or circular section and up to 4 mm across), a rivet (possibly from a comb) and more than sixty unidentified fragments.

Metalworking Tools

1. ?Chisel, head missing, possibly used to cut hot iron. Pit 2916; item 1467.
2. ?Chisel, with possible remains of a tang. Feature 2772; item 1312.
3. ?Punch, tip missing, burred head. Pit 370; item 109.

Textile Manufacturing and Clothworking Tools

One complete and two possible fragments of wool comb teeth were recognised. Some of the items identified as nail shanks may be incomplete comb teeth.

4. Ditch 1355; item 2626.

Leatherworking Tools

Awls, rectangular section, tapering from a central expansion.

5. Penannular ditch 2443; item 976.
6. Pit 272; item 41.

Agricultural Tools

7. ?Weedhook, straight edged blade with curved back tapering evenly to tip (which has been damaged and bent), open socket. Layer 4404; item 2305.

Knives

Nos 8–11c all have whittle tangs. All but No 11 appear to have parallel backs and cutting edges which both taper to the tip. No 11 has a straight cutting edge and a back which tapers evenly down to the tip. Although only three of the knives are complete, they all had or appear to have had tangs shorter in length than

their blades. No 8 was found in grave 2962. No 11 comes from a Late Saxon context. No traces of hafts survived.

8. Grave 2962; item 1391.
9. Penannular ditch 2443; item 422.
10. Penannular ditch 1898; item 1322.
11. Layer 1707; item 478.
- 11a. Blade and tang incomplete; 100 mm long. Pit 272; item 151.
- 11b. Blade incomplete; 90 mm long. Pit 260; item 81.
- 11c. Blade incomplete; 70 mm long. Pit 4400; item 2320.

Shears

12. Bow is wider than the arms, round arm section; blades have angled tips and plain tops. Penannular ditch 2443; item 927/928.

Household Ironwork

Rings. Both examples are fully welded.

13. Layer 4404; item 2524.
14. Pit 272; item 42.

Bucket handles. Both examples are rectangular in section and have open, looped terminals.

15. Feature 4175; item 1612.
- 15a. Virtually identical to No 15. Pit 4086; item 1701.

Miscellaneous Fittings

The identification of Nos 16 and 17 is uncertain.

16. Pit 4400; item 1680.
17. Layer 4404; item 2303.

Dress Fittings and Personal Items

18. Buckle. D-shaped with a buckle plate perforated by two rivet holes. Linear feature 333; item 125.

19. Bracelet; irregularly-twisted bar with looped terminals, one missing. Pit 2916; item 1309.

Building Ironwork and Fittings

Staples used to secure fittings to wood and bind timbers. No 20a is rectangular, No 20b is U-shaped.

- 20a. Pit 4086; item 1669.
- 20b. Pit 4400; item 2343.

Nails. Nine complete examples and approximately thirty fragments including shanks were recognised. The complete examples ranged from 20 mm to 80 mm in length. All appear to have flat, rounded heads, and circular shanks.

Hinges and strap fragments. No 21a comprises two, linked loops with flattened terminals; one terminal has two perforations retaining small nails or tacks 8 mm in length. No 21b is a fragment with a looped terminal.

- 21a. Penannular ditch 1899; item 2598.
- 21b. Pit 3154; item 2849.

Stapled hasp. 22a. Pit 3054; item 1587.

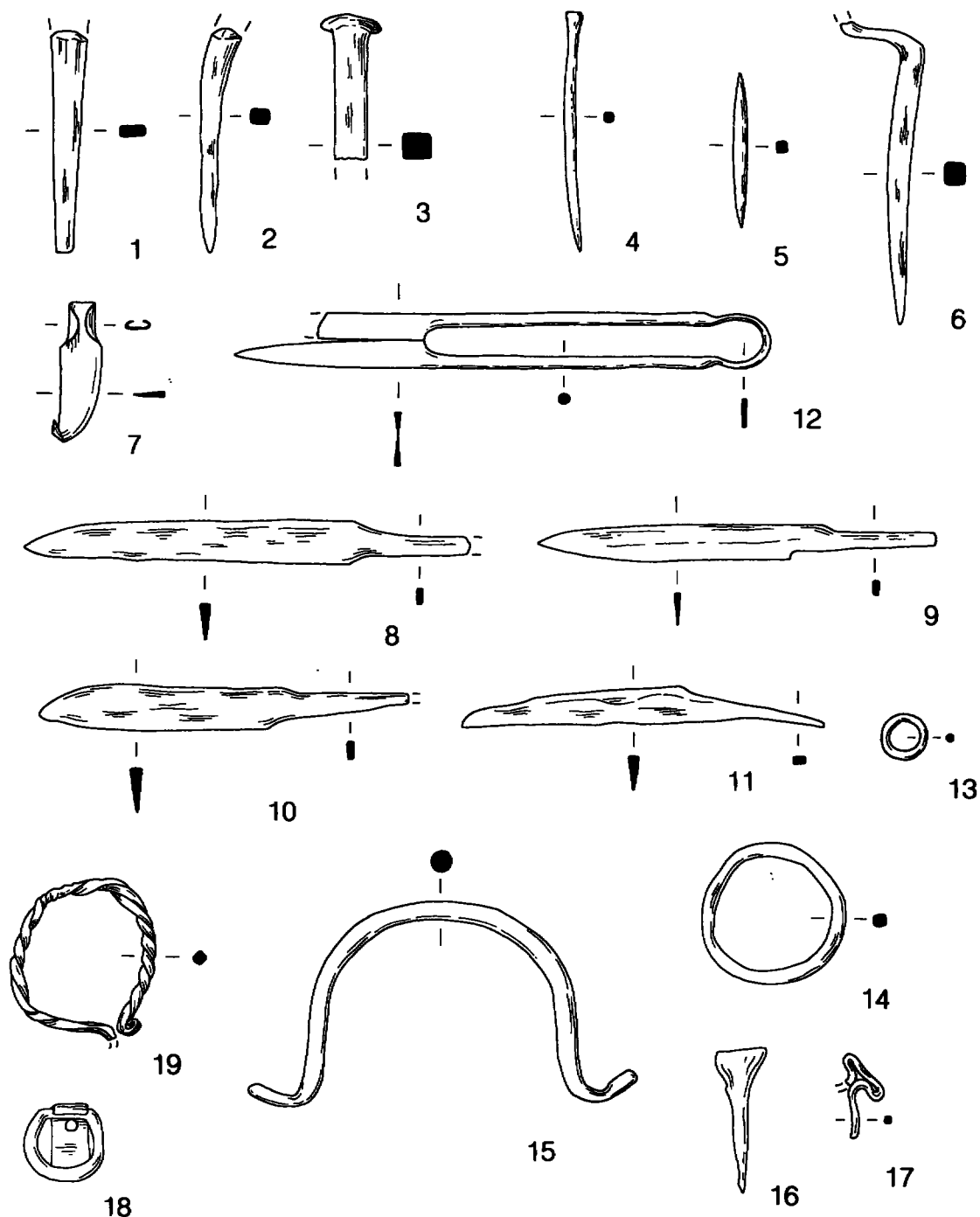


Fig 12. Iron objects. Scale 1:2. See text for descriptions.

Metalworking Evidence

Non-Ferrous Metalworking: Crucibles and Moulds by Justine Bayley

Sherds from crucibles or clay piece moulds or both were recovered from 24, mostly Middle Saxon, contexts. The fragments from post-Conquest contexts are indistinguishable from the earlier finds and are most likely to be residual. Many of the crucible fragments were very small (under 5 mm, marked * in Table 3) and were collected from samples that were wet-sieved; their coloured and vitrified surfaces were easily recognised by those sorting the residues. There are no corresponding small mould fragments, probably because small lumps of fired clay were not picked out. The relative quantities of crucibles and moulds in Table 3 thus represent those finds identified and collected rather than those that were present on the site.

Crucibles (Fig 13)

All the crucible sherds showed some vitrification and in some cases the overheating had led to bloating of the ceramic. About half the sherds showed areas of red coloration in the vitrified surface, indicating the presence of copper as a component in the metal being melted. The only crucible where a form could be determined was item 1303 which was a globular thumb pot with a maximum diameter of 60–70 mm, c 60 mm high, with walls 6–8 mm thick. One non-joining rim fragment suggests it had a pinched-out pouring lip. This form is similar to that of previous finds of crucibles from Hamwic (for instance, Addyman and Hill 1969, Fig 25). Some of the other rim sherds (for example item 1873), which are probably also from thumb pots, suggest crucibles with walls up to 15 mm thick.

X-ray fluorescence (XRF) analysis was carried out mainly on those crucibles where corroded metal droplets could be seen. This gives a better estimate of the composition of the metal being melted than the crucible slag where zinc and lead levels are always enhanced. The results are given in Table 3 where elements are listed in order of XRF-signal strength; those written within brackets gave only weak signals. Item 1303 had

been used to melt silver while the other analysed crucibles had been used to melt copper alloys. Those where the XRF signals were strong enough to be diagnostic were all bronzes.

Moulds (Fig 13)

The moulds are in many ways more interesting than the crucibles as they are the first clay piece moulds that have been recognised from Middle Saxon Southampton and are one of only a small number of groups of clay moulds of this period known from England (Bayley 1991). Some of the fragments definitely come from the lower valve of a two-piece mould while others which are less massive and have a convex rather than flat outer surface come from the upper valve. Several pieces are from the in-gate (sprue cup), one of which (in item 2321) is definitely part of a mould valve; the others may also be parts of valves or may have been added to the two-piece mould assembly together with the luting clay which sealed the valves together. Massive traces of the metal poured into the mould survive on the in-gate fragment item 2350.

As is normal with piece moulds, the pattern in the lower valve is deep, with a less substantial impression in the upper valve. No complete impression of the object being cast survived, all that could be seen with any certainty were impressions of perforated circular discs on nos 1, 2, and 9 (Fig 13). All the mould fragments are reduced fired all through.

XRF analysis of clay moulds is usually uninformative. The slight traces of zinc and lead detected on the modelled area of the lower valve in item 2293 show that it had been used, but provide no information on the composition of the metal being cast. The metal-rich deposit on in-gate 2350 indicates a copper alloy, though the presence of zinc and absence of tin in detectable quantities is probably not significant.

Iron-working Residues by P Andrews

The excavations recovered 22.54 kg of iron-working debris (excluding hammerscale and slag from soil samples) from contexts assigned to the Middle Saxon period. Another 11.52 kg was recovered from later contexts and much may have been residual Middle Saxon material.

Table 3. Crucibles and moulds.

<i>Feature</i>	<i>Context</i>	<i>Item</i>	<i>Number of Fragments</i>	<i>Comments</i>
Middle Saxon				
2779	2780	1303	13 (7 join)	Half a vessel. XRF: Ag Cu Zn Pb
2996	1874	2378	1 *	XRF: Cu Sn (Pb Zn)
2238	2846	3057	1 *	
3072	3073	1290	2 *	XRF: Zn (Cu Pb)
		2389	2	
	3451	1870	1 rim/lip	XRF: Zn (Cu Pb)
3054	3535	2548	1 *	
	3547	1873	1 rim	XRF: (Cu Zn Pb)
		2145	1 rim/lip?	XRF: Cu Zn Sn Pb
		2484	12 (1 rim)	
	3865	2390	1 rim	XRF: Zn Cu Pb Sn
		2465	2	
		2485	4 *	
4086	4107	2963	1 *	
	4110	2191	3 (join)	XRF: Cu Sn Zn Pb
4400	4401	2293	3 (1 rim)	
			3M	edge of 1 lower and 2 upper valves
				XRF: (Zn Pb) on lower valve, modelled area only
		2698	2 *	
	4403	2294	1M	fragment from upper valve
	4432	2315	2 (1 rim)	
			4M	2 edges and 2 corners of lower valves
	4442	2321	1M	corner of lower valve with ?in-gate
	4443	2322	3M (2 join)	in-gate and fragment, both from upper valve
3154	4444	2699	12 *	
	4451	2964	1	
Post Conquest				
283	361	2962	4 *	
1909	1910	2388	1 *	
1935	1936	2777	1 *	
2204	2205	2464	1 *	
2509	2519	2778	1 *	
3119	3120	2697	1	XRF: Cu Pb Sn
Layer	4174	2350	1M	in-gate XRF: (Zn Pb Cu)

Key:

* = very small fragments, M = mould fragment(s)

Ag = silver, Cu = copper, Pb = lead, Sn = tin, Zn = zinc.

All of the debris from Middle Saxon contexts derives from smithing and comprises almost entirely smithing slag. This includes seventeen complete or near-complete hearth bottoms – bun-shaped slags which formed in the bottom of smithing hearths. Together these weighed a total

of 13.49 kg, with the smallest complete example weighing 0.25 kg and the largest 1.73 kg. Dimensions ranged from 10 × 8 × 5 cm up to 15 × 12 × 9 cm. In addition to smithing slag, there was a very small amount of hearth lining and fuel-ash slag, the latter not necessarily associated

with iron working as it can be produced in other high temperature processes. Hammerscale, recovered from 5 dm³ bulk soil samples, occurred in virtually all sampled contexts. However, this was generally in small quantities with only eight out of 193 samples producing more than 150 fragments, and the most prolific producing approximately 800 fragments.

Approximately half of the samples contained spheroidal hammerscale as well as platey hammerscale.

The majority of the Middle Saxon slag came from Trench 5 (18.00 kg) although comparatively few of the available features and surface layers were excavated. Much smaller amounts came from Trench 2 (3.03 kg) which adjoined Trench 5, Trench 4 (1.24 kg) and Trench 3 (0.27 kg), with none from Trench 1. Hammerscale occurred in virtually all features in all the trenches, but seven of the eight most productive contexts were from Trench 5 and were generally those which also produced the largest quantities of slag.

The concentration of debris in Trench 5 from the relatively few excavated features and surface layers, and Trench 2 which adjoined it, suggest that smithing was carried out nearby if not actually on the site. Sixteen of the seventeen hearth bottoms came from these trenches, with layer 4404 producing six weighing a total of 5.11 kg. A further 3.55 kg of slag came from this layer, and together this represents more than one third of the total from Middle Saxon contexts. A small amount of slag (1.51 kg) was recovered from ditch 1355, penannular ditches 1898 and 1899, pit 2916, and two surface layers. It is likely that the slag in the ditches derives from iron working in the earlier part of the 8th century. The larger quantities of debris from Trenches 2 and 5 may perhaps derive from a later phase of iron working.

Although the amount of iron-working debris recovered from Middle Saxon contexts on Cook Street is small, and is in part explained by the peripheral nature of some of the trenches and the incomplete excavation of Trench 5, it is in keeping with excavations elsewhere in Hamwic. Smithing slag is a common find on most sites (Morton 1992, 56), occurring in varying though usually small quantities in many pits. Some of this

may have derived from small-scale smithing in the vicinity which has left no other trace; the slag subsequently becoming dispersed and because of its resistant nature surviving as a residual find in later features. Only two smithies have so far been identified in Hamwic, both at Six Dials (Andrews forthcoming).

Worked Bone by I D Riddler

Worked Bone and Antler Waste

Introduction

Thirteen offcuts of antler and bone were retrieved from Cook Street, as well as 69 g of antler shavings. This is a small total in comparison both with material from northern Hamwic – particularly from the Six Dials area – and with the deposit of 1500 offcuts from SOU 14, to the east of Cook Street (Riddler forthcoming A; Holdsworth 1976, 45; Driver 1984; MacGregor 1985, 46 and Fig 30). The quantity of waste falls within a pattern which has become established for central and southern Hamwic (Riddler forthcoming B). Outside of the major concentration of material at SOU 14 there is comparatively little waste from any site south of SOU 32, which lies just south of Six Dials in the north-western part of the settlement (Riddler 1992, 182–4). The waste which has been retrieved in the southern part of the settlement generally consists of red deer antler (Riddler forthcoming C).

Totals of worked-bone and antler waste from Cook Street are summarised in Table 4. The majority of the waste, assessed either by weight or number, consists of red-deer antler. No concentrations of waste are seen, although it is argued below that evidence for the working of antler is present at Cook Street.

Antler

The eleven pieces of red-deer antler waste retrieved by hand recovery from Cook Street come, with one exception, from Trench 5, and stem from a total of seven contexts in the pit complex. All of the waste could stem from a single antler.

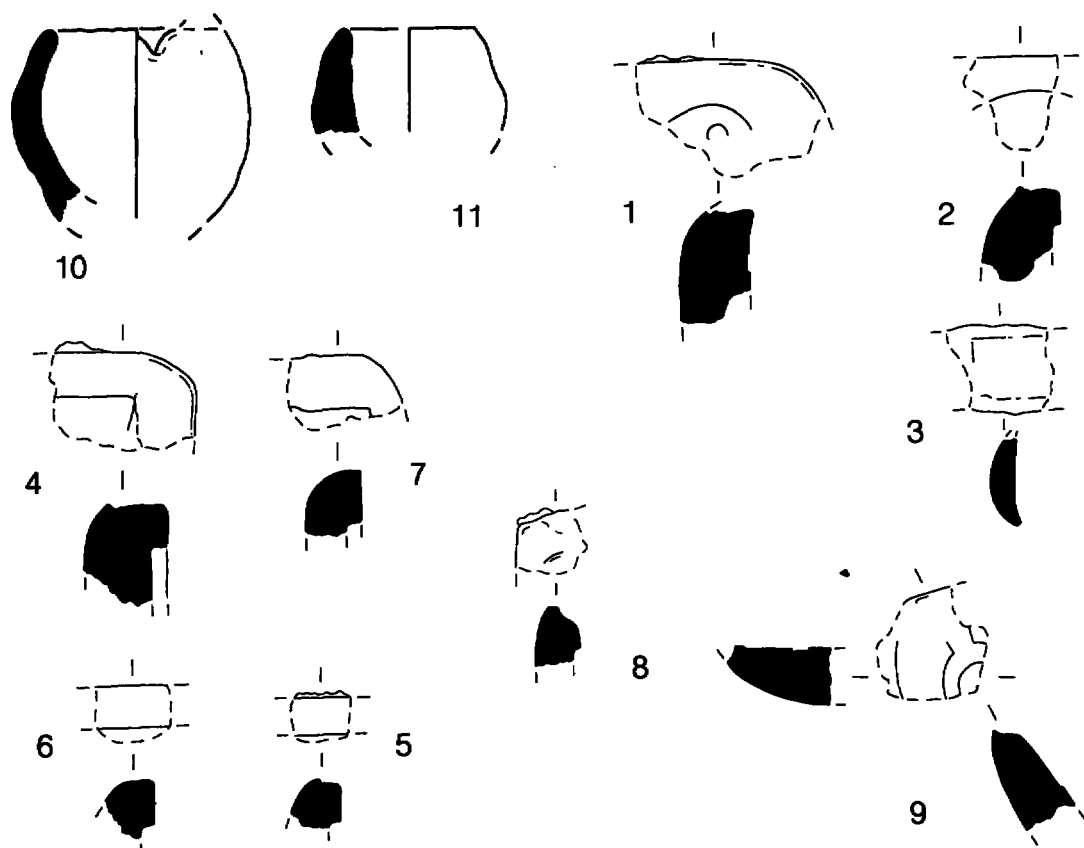


Fig 13. Moulds and crucibles. Scale 1:2. Moulds: items 2293 (1-3); 2315 (4-7); 2321 (8); 2322 (9). Crucibles: items 1303 (10); 1873 (11).

Table 4. A Summary of Primary Worked Bone and Antler Waste

	<i>Antler Number</i>	<i>Weight</i>	<i>Cattle Number</i>	<i>Weight</i>
Excavated	11	175	2	83
Sampled	427	69	—	—

Bone

Bone offcuts from Cook Street are limited to single examples of cattle distal metatarsus and metacarpus. Both have been sawn laterally above the foramen from the posterior face to the anterior.

Processing Waste, Shavings and the Location of Antler Working

Five pieces of antler from Trench 5 illustrate later processes of antler working. They represent offcuts stemming from the manufacture of flat, rectangular sections of antler, suitable for use as tooth segments for combs. The presence of waste indicating the later stages of working is itself rare in central and southern Hamwic. The quantity of this processed waste from Cook Street is small and it would be unwise to draw many firm conclusions from it. None the less, it can be viewed in association with evidence produced from samples taken on site. Eight contexts produced shavings of antler. This material clusters in fills within the pit complex in Trench 5.

Samples from worked-bone and antler assemblages produce quantities of shavings which generally illustrate the trimming of the raw material by knife. This working is undertaken after the material has been sawn into its appropriate elements, and it relates to the removal of surface tissue and to the shaping of antler and bone to size. As such, its distribution is an important indication of the presence of antler and bone working and it should theoretically correlate with that of the primary and the processed waste. This is indeed the case at Cook Street, where all of the shavings are antler.

At Cook Street there is a spread of small quantities of waste across a number of contexts. In addition to this, primary and processed waste and shavings cluster in two contexts of the pit complex. The overall quantities are very small, particularly in comparison with assemblages from Six Dials and SOU 14, but the evidence from the shavings clearly confirms that antler working took place in a property fronting on to St Mary Street in the earlier part of the Middle Saxon period.

It is clear that both bone and antler were worked at Cook Street, although evidence for the former activity is slight (Table 4). A bone pinbeater from context 4399, described below, is an important object in this respect because it was discarded before it had been completed. For Cook Street it cannot be confirmed that bone and antler were worked together, although this was the case elsewhere in Hamwic, throughout the life of the settlement. The small assemblages from the pit fills consist of antler alone. The processed waste from these contexts indicates that the production of composite combs was undertaken at this site. No unfinished antler objects survive, however, and the type of comb which was manufactured cannot be identified.

Objects of Bone and Antler

Pot Die

This die (item 1491) is a welcome addition to the Hamwic corpus, representing the eighth example to have been recovered from the Middle Saxon settlement (Fig 10, 11). It was recovered from fill 3817 of pit 3039. The seven other dies from Hamwic have been described elsewhere (Riddler 1986; 1988). The new example conforms with those from Six Dials, Melbourne Street and east of St Mary's Church (SOU 33) in being produced from an antler tine; and antler is undoubtedly the preferred material in

surviving Anglo-Saxon versions of such implements (Riddler 1986, 17 and Table 1). This die differs from the other Hamwic examples, however, for the precise trimming of the tine to a cylindrical, peg-like form.

Modified Pig Fibulae

Six modified pig fibulae were retrieved from Trench 5. They exemplify a part of the range of forms distinguishable within this common object type. All six are shaped to a point at the proximal end of the bone. This is the most common method of modification. In two cases the object is not further worked and it retains the unfused distal epiphysis as its head. In contrast, four of the six are perforated at this end, invariably with relatively crude sub-circular holes 4–5 mm in diameter. Their precise function (or functions) is not known but their limitation of form undoubtedly reflects their function as utilitarian tools and they are described here as modified pig fibulae.

Spindle-Whorls

Two characteristic forms of bone and antler spindle-whorl are represented by the two spindle-whorls.

With the cattle femur whorl the natural shape of the articular condyle was ideal for adaptation to this purpose. The Cook Street example (item 1611) presents some difficulties of interpretation, however. The loss of a part of the base would have been a distinct disadvantage if the object was ever used as a spindle-whorl and it is likely that it was never used but was abandoned when it severed along the line of fusion, before it had been correctly perforated and finished.

Spindle-whorls produced from the burrs of deer antlers have been defined as Group 2 in the Hamwic classification. The decoration of three concentric circles on this example (item 1670) can be compared with others from Hamwic.

Pinbeaters

Three pinbeaters were recovered. Double-pointed pinbeaters, sometimes described as threadpickers or as 'pickers-cum-beaters', occur throughout the Anglo-Saxon period, effectively for as long as the warp-weighted loom was in use. Item 2471 is of particular interest – it is a length of cattle midshaft roughly faceted to a point at either end and it appears to be an unfinished pinbeater or spindle.

Combs

Fragments of eight Middle Saxon combs were retrieved. No handled or asymmetric combs are present and the assemblage is confined to double-sided composite combs and to a single, fragmentary tooth segment from a single-sided comb. The double-sided combs fall into three principal forms on the basis of their tooth sizes. Two fragments of combs from Trenches 2 and 3 are undecorated with short, stubby teeth.

A fragment from a connecting plate represents a further aspect of comb design at Hamwic. The connecting plate (item 1548) is noticeably narrow and is undecorated but for tooth marks which

indicate that there were originally six teeth per centimetre on either side. This is an undecorated double-sided composite comb.

A larger variant with similar tooth values came from Trench 4 (item 1300). This comb is well made with the connecting plates expanding in width towards the centre. On one side there is the vestige of vertical line decoration.

Fragments of three double-sided composite combs from Trench 5 include twelve or more teeth per centimetre. The tooth segments of these combs are correspondingly thickened in order to strengthen the teeth, which can be less than a millimetre in width.

The double-sided composite combs from Hamwic show little variety in form but considerable variation in the fineness of their teeth. At Cook Street the domain extends from 2.5 to 12 teeth per centimetre and it is difficult to believe that combs at either end of this spectrum were used for the same purpose. Middle Saxon combs include teeth of similar values on either side of the comb, in contrast to Roman and medieval practice.

Single-sided composite combs are represented by a single fragmentary antler tooth segment. This originally possessed seven teeth per centimetre and a lightly curved back.

MIDDLE SAXON ENVIRONMENTAL

Animal Bones by Jennifer Bourdillon

The animal bone report appears in full in microfiche; this present summary covers only the salient points.

The phasing showed an unusual concentration at Cook Street of material from early occupation, rare on other Hamwic sites, and the study of these earlier bones was given priority. Comparisons in the present report are made mainly with data from the Six Dials sites in the north west corner of Hamwic (Bourdillon 1984), where a substantial corpus of phased bones was available.

The Material Overall

Table 5 lists the identified fragments from normal excavated recovery, and Table 6 lists the fish from soil samples.

The picture from normal excavated recovery, as on other Hamwic sites, was overwhelmingly of cattle, sheep/goat and pig, supplemented by notable quantities of domestic fowl, with goose abundant in a single pit (early Middle Saxon pit 4086) but no more than sporadic elsewhere, with little deer and few wild birds. The ditch (885/1355) assemblages were weighted to the larger fragments and the larger species: they included an articulated vertebral column of cattle and a partial skeleton of an old diseased horse. The pit assemblages contained more general wastage from food.

Table 5. Identified animal bone fragments from excavated recovery

	+CTL	SHE	S/G	SAR	GT	PIG	*H	D	C	R	RO	FW	GS	B	A	FS	ALL
DITCH 885	62		3		1	3											69
DITCH 1355	707	35	82	36	5	278	8	2		1		1	4				1159
PIT 370	698	35	122	85	1	194	1	1	6		2	27	1	1			1174
PIT 2996	65	1	11	10		37	2					3	2				131
PIT 4086	437	34	160	211	5	297	1		1	1		28	46	1		3	1225
ALL EARLY	1969	105	378	342	12	809	12	3	7	2	2	59	53	2		3	3758
MAIN F272	869	60	210	287	3	244	1	1	2	1	3	40	6	3	7	27	1764
LATE F4073	31		7	9		5										1	53
TOTAL	2869	165	595	638	15	1058	13	4	9	3	5	99	59	5	7	31	5575

+CTL: these figures do not include an articulated spine-with-ribs from ditch 885, which is discussed in the text.

*H: nor do they include 84 fragments from a single skeleton of horse from ditch 1355 which are discussed in the text.

Key:

CaTiLe; SHEep; Sheep/Goat; Small ARTiodactyl; GoAT;

Horse; Dog; Cat; Red deer; ROe deer; domestic FoWl; GooSe; other Bird; Amphibian; FiSh.

Cattle bones were frequent in the ditch and also in most of the pits, and for the relation of the three prime food mammals (Table 7) the main differences lie in the relative incidence of sheep/goat and pig. Pig bones were relatively more common at Cook Street than they had been at Six Dials, even from the earlier phase; by the mid Middle Saxon period at Cook Street they were scarcer and the proportion of sheep/goat bones had increased. At Six Dials sheep/goat were better represented from the start (33% of the total of cattle, sheep/goat and pig), and the results at Cook Street therefore came as a surprise.

The Material by Species

Cattle

The plentiful cattle bones were generally well distributed across the body.

The main interest for ageing by mandibles lay in several young cattle from the early phase – a total of four very young mandibles from calves of perhaps a few weeks old, though three of these were from pit 370 and may represent a single activity, with two further mandibles where the first molar was in wear but not the second and the calf may have reached a few months. These are not typical of the Hamwic cattle where signs of young casualties are rare, and the Cook Street material may show some closer links with the hazards of young husbandry than has been common on other Hamwic sites.

Some of the cattle measurements from the early phase convert to notably good withers heights, in particular a tibia from ditch 1355 which converts to a height of 1.259 m – and this on Matolcsi's factors for the longbones, which von den Driesch and Boessneck (1974) accept as the best that may be used but which were based on the conformation of Hungarian steppe cattle and often give very low results. Other heights were lower.

Withers heights are based on the length measurements of whole bones and these in butchered material are untypical, and a system of Size Factors was devised to augment the chances of comparisons for Southampton over time. These are made on the basis of the Hamwic mean measurements for the articular breadths of fused bones (Bourdillon 1980). For the cattle from the early phase at Cook Street the measurements of bone breadth reached 100.7% of the respective Hamwic means ($n = 93$, Table 8). This fits with the general picture of good-sized animals being around in the area of the settlement in its early years. Indeed, and of the greatest interest, the highest result comes from the ditch, which is possibly the earliest feature, and it may be that the lower result from the pits may mark the start of a decline.

There were six cases of quite serious pathology in cattle: one metatarsal with heavy exostosis, two radii and a thoracic vertebra

with deep cavities as from infection, and a pelvis and femur (perhaps from the same individual) with massive growths or tumours. All came from pit 370 in the early phase.

Sheep and sheep/goat

As the incidence of sheep and sheep/goat increased markedly between the early phase and the main one, so the pattern of ageing changed. Very young animals were rare, but from the early phase there were mandibles from the prime age-groups which give tender meat and only two from individuals where the third molar was fully in wear. Proportionately there were more old mandibles of sheep/goat from mid Middle Saxon pit 272. The overall increase in sheep and sheep/goat may have been linked with exploitation for wool.

The sheep were small by modern standards but where withers heights could be calculated these mostly came in the upper half of the Hamwic range (which is usually from 0.50 to 0.70 m).

Goat

Postcranial goat is rare from Hamwic, though horn cores are found from time to time. The incidence of postcranial goat bones from several early Middle Saxon features is therefore of great interest, the more so since the phase gave only one horn core (from the ditch). The tally from mid Middle Saxon pit 272, with three fragments of horn core and no other bones, is more like that from elsewhere in the settlement.

One assumes that the horn cores had been worked, though none showed cuts and the basal fragment in the ditch was attached to a fragment of skull. All were from males and each was from a different individual. The sizes of the postcranial bones, on the other hand, suggest three bones of males and three from females. The pattern from the early phase at Cook Street may perhaps be seen as of a mixed herd of goats living and breeding nearby, whereas the three fragments from pit 272 were like the usual Hamwic pattern of a bias of male cores (or here, the totality) brought into the settlement for working.

Pig

Though they are useful scavengers, pigs are not productive animals for industry. Their relative decline against sheep may mark some intensification of industrial activity at Cook Street between the early and mid Middle Saxon occupation.

There were a few cases of pathology in pig. Of greatest interest was a tibia from the main phase which showed distal lateral exostosis at the point on the shaft where any tie would press, which gives support to the suggestion made in the report for Hamwic Melbourne Street (Bourdillon and Coy 1980, 96) and based on the evidence from Manching (Boessneck et al 1964) that pigs perhaps were tethered when kept in the settlement.

Horse

Nearly all the bones from the skeleton came from context 1452 in ditch 1355. As well as many broken ribs there was an intact

vertebral column from the upper thoracics to the final lumbar vertebrae; and from the lower legs there was a whole left metacarpal and its articulating carpals, a right calcaneum, and left and right phalanges. The excavation plans suggest that the tendons may have been broken in the small of the back so that the trunk could be twisted, presumably for more convenient burial.

The animal was quite small. A withers height from the metacarpal gave a height of 1.28 m, rather smaller than a modern New Forest pony and below that of the usual Hamwic material. All the bones were fully fused, and many of them – vertebrae, metacarpal, and both front and back phalanges – showed signs of serious disease. There was much puffy exostosis on the feet, and the wrist joint had been much rubbed. Several thoracic vertebrae were fused rigid with accretions which spread left, right, and ventrally from one vertebral body to the next. Several of the vertical processes were missing and may have been cut away: no knife marks could be seen there, but there was a small clear cutmark on the ventral side of the final lumbar vertebra.

Also in the ditch were two bones of very young individuals. On a proximal side metapodial (context 1109) the proximal joint surface was still unfused and the bone would have been neonatal or more likely still foetal; and a deciduous upper incisor (context 1393) was in very light wear, from an animal of perhaps a few weeks old. Immature horsebones are very rare indeed from Hamwic; the metapodial may mark the untoward death of a pregnant mare which had chanced to be brought to the settlement, but the deciduous incisor must suggest a foal at heel.

Dog and cat

There were marks of canid chewing on 6% of the identified fragments in the study, but only four bones of dog were found. Cat bones were more numerous, but from normal excavated recovery they came in only three occurrences.

Red deer (*Cervus elaphus*)

Postcranial red deer was represented only by a left ilium, heavily butchered, from ditch 1355 (context 1430). Other red deer finds were of antler.

Roe deer (*Capreolus capreolus*)

Roe deer, on the other hand, gave no antler in the present material but there were postcranial bones in both the early and mid Middle Saxon phases.

Domestic fowl and goose

A total of 83 probable domestic fowl bones were recovered. Others, too, are most likely of fowl in size and in general morphology, but are very immature and so their identification retains a small element of doubt. Such immature bones were most common in the mid Middle Saxon phase; several of them were similar in size to the hard bones of adult Saxon fowls, and there is a likelihood that they may have come from castrated birds. For

goose all bones, both positive identifications and probable ones, were mature.

The relative representation of domestic poultry in the food waste from Cook Street was double that of Six Dials and this may mark a wider interest of the diet; in one early pit in particular (pit 4086) the bones of goose, which are richer in meat, were far more common than the much smaller bones of fowl.

Wild bird

There were only five fragments of wild bird, and all were wing bones. From the early phase there was a left humerus of mallard (*Anas platyrhynchos*) in context 4110 of pit 4086, and a right one in pit 370 (context 371): for Early Saxon West Stow Crabbtree (1990) takes such duck bones as from domesticated stock, but at Hamwic they occur only sporadically and are always of a good size to have come from the wild.

The other fragments of wild bird came from pit 272. Two were of oystercatcher (*Haematopus ostralegus*) – a right distal humerus in context 286 and a left ulna in context 297. This species has so far been found only once from Hamwic, from SOU 15. In a good population of waders, oystercatchers are not common in the River Itchen today, which is surely muddier than they like; – but the excavator points out that any shingle spit on the edge of the presumed lagoon (see discussion in Morton 1992, 22) would not have been far from the present site. One final fragment of wild bird was a carpometacarpus of woodcock (*Scolopax rusticola*), and this species had been found on several Hamwic sites.

Small mammals and amphibians

A few small mammals, mouse or vole, were found from the soil-samples in various context-types.

A few amphibian fragments were found from normal trench recovery, all from pit 272. There were also some from the samples – a total of four from the early phase and ten from pit 272. Some were certainly of frog (*Rana* sp.); the rest were either frog or toad (*Bufo bufo*). The relative incidence of these amphibians may suggest some increase in damp conditions over time.

Fish

The incidence of fish remains was not high in ditch 885/1355, but a total of 28 samples showed several identifications of eel (*Anguilla anguilla*), of flatfish, plaice (*Pleuronectes platessa*) and perhaps also flounder (*P. flesus*), and of herring (*Clupea harengus*). There was a bone of ray (*Raja* sp) and three other elasmobranch bones most probably from ray but just possibly from a shark. These same species were repeated in the early pits, with many small herring vertebrae and three herring prootics in pit 4086 and with a concentration of flatfish in pit 2996. Eels and flatfish are estuarine and have been found regularly from Hamwic. Herrings come from deeper waters and

Table 6. Fish identified from the soil samples.

FEATURE		<i>n</i> samples	EEL	FLAT	GAD	HRNG	?RAY	WRS
DITCH	885	3	2			1		
DITCH	1355	25	16	8		14	4	
PIT	370	5	10	2		5	1	
PIT	2996	10	17	31		17		
PIT	4086	15	9	1		90		
ALL	EARLY	58	54	42		127	5	
MAIN	272	3	8	4	1	4		1
LATE	4073	3	3	3		1		

Key: FLATfish (plaice or flounder)
 GADoid (here probably whiting)
 HeRriNG; ?RAY: ray or perhaps small shark; WRaSse.

would have required at least an expedition in a boat. They were recognised by Colley (1984) from the sampled material at Six Dials and have been found elsewhere from Middle Saxon times or from comparable periods – by O'Connor (1991), for example, from Anglian levels on the Fishergate site at York. It should therefore be no surprise to find them at Cook Street, but it is satisfactory that they have been established in a wide range of contexts from the early phase: they seem to have been caught and eaten regularly. They were far more than casual finds.

No ray was found in the four samples from mid Middle Saxon pit 272, but again there was herring, eel and flatfish. There was also the intertidal Ballan wrasse (*Labrus bergylta*) and a bone of a gadoid, most probably whiting (*Merlangius merlangus*), which would have come from deeper water.

Summary and Discussion

The animal bones from Hamwic are evidence allowed by Morton (1992, 70) in his authoritative review of the status of the settlement. So far these bones have shown a basic diet in meat, drawn in the main from older and less tender animals which had served a useful purpose in their life – cattle most likely for traction, sheep for wool, with pig some way behind as third. There was little contact with the wild, or with the immediate repercussions of husbandry, which would tally with a formal creation of the settlement rather than with a slow organic growth. The provisioning showed a broad homogeneity across the various sites: only one area (Six Dials) had given phasing for the bones, and here there were some hints of change over time, with a little more choice in the early years and with rather smaller and rather older animals at the end.

As elsewhere among the Hamwic bone assemblages, the bones from Cook Street showed few links with the wild: bones of wild bird were scarce, and apart from the antler used in working, red deer was minimal. Yet both the early and mid Middle Saxon periods gave bones of roe deer, a much smaller animal than red and one which could perhaps have been caught more easily on forays in the countryside.

The ages at death of the cattle may indicate more selectivity in the food. At Six Dials the early phase had been noted for the fewer older cattle in comparison with those of the prime eating ages, with rather more choice in eating and perhaps less pressure on the land. The early phase at Cook Street again showed more prime cattle, and there were several calves and juveniles which may suggest more contact with the natural patterns of husbandry. The evidence of postcranial goat (again only from the early phase) was very unusual for Hamwic and this too may reflect some link with rural ways – elsewhere the bones of goat have been overwhelmingly of horn core and they have been taken as material brought in from the country for industrial use within the settlement. Of significance, though, was the evidence of two foals – one neonatal or even foetal, the other of perhaps a few weeks old. Such ages in horse are unique for Hamwic, and they show some contact with the breeding and nurture of horses which has not been suggested for the settlement itself.

The animal sizes may also be indicative.

Table 7. Relative representation of the domestic food species (by fragment count).

		CATTLE:SHEEP/GOAT:PIG			POULTRY %
DITCH	885	89.9	5.8	4.3	—
DITCH	1355	62.1	13.4	24.5	0.4
PIT	370	61.6	21.3	17.6	2.4
PIT	2996	52.4	17.8	29.8	3.8
PIT	4086	38.2	35.9	25.9	6.0
ALL	EARLY	53.3	24.8	21.9	3.0
MAIN	272	52.0	33.4	14.6	2.6
LATE	4073	59.6	30.8	9.6	—
OVERALL		53.9	26.2	19.9	2.8
cf.					
SIX DIALS	EARLY	48.8	33.0	18.2	1.7
SIX DIALS	MAIN	49.8	34.7	15.5	1.8

Table 8. Size factors for cattle, sheep, and pig

	DITCH	EARLY PITS	ALL EARLY	MAIN 272
CATTLE	102.2%(n=41)	99.6%(52)	100.7%(93)	98.9%(14)
SHEEP	97.9%(n=12)	100.6%(30)	99.8%(42)	102.3%(18)
PIG	101.7%(n=26)	99.6%(40)	100.4%(66)	(n=3)

for explanation see text

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Overall, larger cattle were best represented in possibly the earliest feature – ditch 885/1355 – and such evidence as there is suggests that there may have been some decline in cattle size quite early on. Such a trend could perhaps reflect a growing pressure on the land after the establishment of the settlement. For sheep, the trend for more animals and for older ones could mark the intensification of an industrial base.

The mid Middle Saxon phase at Cook Street is evidenced in this study by the bones of a single pit (272), but this is a pit with a bone assemblage that was both abundant and extremely well preserved. The results fit well with those from elsewhere in the settlement.

It is not clear whether the differences seen for the early Middle Saxon bones come from factors that are incidental – in a corner of the settlement marked out by burials and without the direct route outwards that is shown by the street at Six Dials – or whether this material from Cook Street

may mark some positive distinction in that area and at that time. At the very least these bones cheer the general monotony of the Hamwic bone assemblages; and if they are accepted as a hint of a more rural involvement in Hamwic's early years, that would be news for the settlement as a whole.

Plant Macrofossils by P R Cottrell

The majority of the charred seed occurred in very small quantities in a wide range of contexts and amounted to little more than “background noise” probably derived from domestic food processing. These assemblages were dominated by cereal grains, mainly wheat (*Triticum* sp) and barley (*Hordeum* sp). Legumes, both peas and beans (*Vicia* sp), were also present and fragments of hazel nut shell were common. Larger assemblages of charred grain occurred in two contexts (285 and 286) in pit 272 and in one (654) in pit 260. Only

that in 286 was truly substantial however, containing approximately 200 grains.

The preservation of plant macrofossils by mineralisation, the replacement of their organic structure by a mineral compound (usually Calcium Phosphate) derived from ground water, is widespread in Hamwic, and typically identifies cess pits and other deposits of faecal matter, where the conditions for the process occur (Green 1979, Cottrell forthcoming). In these contexts mineralised plant remains typically occur together with fragments of faecal matter (cess) and insect remains, mainly fly pupae, preserved by the same process.

Few of the pre-Conquest contexts at Cook Street produced mineralised plant remains, but all but two of these also produced cess fragments and four contained mineralised fly pupae. The seeds recovered were predominantly leguminous but fruit pips, other seeds, and probable fragments of the soft parts of fruit were also noted. This material was found in pits 370, 260, 1128, 3039, and 2996.

Seeds preserved by means other than charring or mineralisation were also noted. There were no waterlogged contexts on the site, and the species which occurred were predominantly those which have woody seeds which survive for long periods in the ground. Elder (*Sambucus nigra*) seeds occurred as background noise throughout the site but were most common in Trench 5. The distribution suggests that these were probably derived from trees growing in the vicinity, both directly and via bird droppings, although human use is also possible. Seeds of *Rubus* sp, probably blackberry, occurred rarely except in pit 1128 in which fill 1178 contained a concentration, and they also occurred in fill 1611.

The Cook Street site contained no major deposits of charred kitchen or grain-processing waste, and no substantial cess/faecal deposits such as occur elsewhere in Hamwic (Andrews forthcoming).

DISCUSSION

The Ditch (885/1355)

Ditch 885/1355 was the furthest west of all the definitely Middle Saxon features (Figs 2 and 3).

The ditch marked the western limit of at least the bulk of Middle Saxon activity but a few small features to the west could possibly have been Middle Saxon. There are no Middle Saxon features definitely earlier than the ditch and the pottery assemblage, although small, is probably the earliest assemblage from the site.

The ditch was probably dug to mark a boundary early in the 8th century before there was intensive Middle Saxon use of the area. The next phase of activity at the site is represented by the cemetery and possibly some pits (for instance pits 1128, 1888, and 3377). There are two theories to account for the ditch, either it was a boundary to the cemetery or it was a boundary to the town of Hamwic.

If the ditch was a boundary to the cemetery one can ask where the other boundaries were. The other boundaries were not necessarily marked by ditches. The northern and southern limits of the cemetery were possibly not revealed by the excavations unless they were marked by the penannular ditches. So, the only edge to the cemetery revealed by the excavations, apart from the ditch, was on Trench 5. Here a single grave (4610) was observed. No other burial was found in the 22 m of trench excavated to the east of 4610, and no Middle Saxon ditch was found in this area during the excavations or watching brief.

If the ditch was not a boundary to the cemetery it probably extended further than the cemetery and could have been a boundary to the Middle Saxon settlement. Excavation at the Deanery (SOU 184), to the south-east of Cook Street, revealed part of a ditch aligned approximately south-east to north-west. It was shallow with a U-shaped profile. The distance between this ditch and the Cook Street ditch is about 75 m, and it is possible that they are the same feature (Garner 1988, 20). A ditch marking the western limit of dense occupation has been found at SOU 89, 300 m to the north of Cook Street, and at Six Dials (SOU 169), 250 m further north again (Fig 1). At SOU 89 the ditch had a U-shaped profile, and was 3.35 m wide and 0.95 m deep (Morton 1992, 30–1). At SOU 169 it was V-shaped, and was 3.0 m wide and 1.5 m deep (Andrews forthcoming).

Despite the differences in dimensions of the different sections of excavated ditch it is possible

that they were the same feature. The line of this feature approximately coincides with the western limit of Middle Saxon activity. If the Cook Street ditch is the same as the ditch at SOU 184 then it is likely that it was not designed as a boundary to the Cook Street cemetery.

The Cemetery

The burials are stratigraphically early and the small quantity of pottery recovered from them indicates an early Middle Saxon date. The positioning of graves within penannular ditches and under mounds is a type of burial used in the 7th and 8th centuries in southern England. Only one such burial has previously been discovered in Hamwic – at SOU 32. About fifteen other graves, without penannular ditches, were found at this site. They are considered to be part of a short-lived cemetery of the first half of the 8th century (Morton 1992, 179). Morton (1992, 49) has suggested that the cemetery at SOU 13 was filled at a rate of ten corpses a year. If a similar rate had occurred at Cook Street and the full extent of the cemetery was exposed, it would have been complete in about five years.

Very few Middle Saxon features were found in the cemetery and there was little damage to the burials in the Middle Saxon period. This is a marked contrast to the other cemeteries known in Hamwic which show considerable disturbance during the life of the town (Morton 1992, 53). The evidence points to the continued visibility of the burial positions, due to mounds in the case of the penannular ditches or by a marker in the case of grave 2597. In addition, it is likely that later occupants were under no great pressure to reuse this piece of land.

The Cook Street cemetery is very close to St Mary's Church and churchyard. It may be that the main Middle Saxon burial ground was located there (Davies 1883, 329). This in turn could explain the small number of burials discovered elsewhere in Hamwic (Morton 1992, 48–51). If there was a cemetery here and it was in existence in the early Middle Saxon period it was remarkably close to the cemetery at Cook Street. This suggests that the St Mary's cemetery postdated the Cook Street cemetery. It is unlikely

that they were two parts of one very large cemetery as no burials were discovered at the east end of Trench 5.

Domestic Structures and Activities

Most of the evidence for structures was at the east end of Trench 5 but no complete building plan could be constructed. The most convincing evidence for a building was the line of structural features, including feature 4160, but there were near-by pits on both the south and north sides. The date of the structural features is not known so they were not necessarily contemporary with the use of the pits. The possible floor levels above the fills of the pit complex could have been within the building. If this was the case the building was at least 6.5 m long and was probably approximately parallel to the Middle Saxon predecessor to St Mary Street. The average size of house-type buildings at Six Dials was about 11 m by 4.5 m, and where they were close to streets they were normally parallel to them.

Daub was recovered from all trenches except Trench 1. The largest quantities came from the three penannular ditches, ditch 1355, the four pits at the east end of Trench 4, all three pits in Trench 2, and the pit complex and pits 3377 and 4086 in Trench 5. This distribution shows no clustering. The daub may have been moved some distance from the structures of which it was once a part before being discarded.

Negative features in all five trenches were used for the disposal of domestic rubbish. Particularly large quantities of rubbish were deposited in the three pits in Trench 2, and pits 3039, 4086, and 4400 in Trench 5. Apart from pits 4086 and 4400 it is probable that they were all originally cess pits. The only other pit with evidence that it might have been used as a cess pit was pit 1128 in Trench 3. Excluding pit 1128 and 4086, the pits mentioned above are all located in a zone between 20 m and 40 m away from modern St Mary Street. Little is known of the position and alignment of the Middle Saxon street under the southern end of St Mary Street but this zone of pits may have been located at the rear of properties fronting the street.

Little rubbish was deposited in the zone

including the ditch and the strip, about 20 m wide, to the east. For instance, pit 1128, the largest pit excavated at Cook Street, had only 182 pieces of animal bone and 39 other finds recovered from it by excavation. This contrasts with the quantities of finds recovered by excavation from the pits in the main rubbish disposal zone which from an average pit included about 2000 animal bone fragments, 80 pottery sherds, and 60 pieces of burnt daub. The quantities of finds from the four pits at the east of Trench 4 were somewhere between these two extremes.

The evidence for pottery making consists of an antler pot die. The evidence for textile manufacture comprises a possible loomweight of fired clay, two possible fragments of wool comb teeth, and a few bone objects – two spindle-whorls and two pin beaters. The spindle-whorls were both found in pit 4086 in Trench 5, one of the pin beaters was from the nearby pit complex and the other was from pit 272 in Trench 2. Two awls for leather-working were found in Trenches 2 and 4.

The evidence indicates that domestic activities mainly took place close to the street frontage, where there were probably houses and yards, and the rubbish disposal zone. This coincides with the areas of industrial activity. This pattern was the same in both the early and the mid Middle Saxon periods. Little is known of the late Middle Saxon period, as only one feature was found, other than that activity had dramatically declined.

Industries

There is evidence at Cook Street for metal working and antler working on or very close to the site. There is little evidence for other industrial activities.

Iron-working waste is discussed above. Almost all of this material was found in Trenches 2 and 5, and most of this was in the pit complex. The burnt bricklayers' layers in the pit complex are discussed above. It is possible that the burning was associated with iron smithing. Only three other features produced over 1 kg of slag. They are pits 370, 4086, and 4400. A chisel, possibly used to cut hot iron, was found in pit 2916, Trench 4.

The evidence for silver working comprises a single crucible from feature 2779 on Trench 4. The context is possibly pre-Middle-Saxon but is more likely to be early Middle Saxon. The only other evidence of silver working at Hamwic is crucibles from Six Dials and litharge from Brinton's Road (SOU 249).

The evidence for copper-alloy working consists of crucibles and clay piece moulds. The mould fragments were concentrated in pit 4400 in Trench 5. Almost all of the crucible fragments were found in pit 4400 and the pit complex. The other crucible fragments were recovered from pit 4086 and post-hole 3072 in Trench 5, and from pits 2238 and 2996 in Trench 4. No clay piece moulds and only a few moulds in tile or stone have previously been found in Hamwic.

Almost all of the antler-working waste was found in or close to the pit complex in Trench 5. Only five pieces of waste were recovered from other areas – in Trenches 2, 4, and 5.

Industrial evidence at Cook Street was concentrated in Trench 5 and particularly at the east end. The pit complex contained waste from the three main industries at Cook Street – antler working, copper-alloy working, and iron working. There was also a concentration of metal-working waste in pit 4400. Cook Street is the only site in the southern part of Hamwic to have evidence of all three of these industries.

The Layout

The part of Hamwic now covered by the Cook Street area was bounded on the west initially by a ditch and on the east probably by a north-south street. The approximate position of a Middle Saxon street is represented by St Mary's Road and St Mary Street. The existence of the southern end of this street has not been confirmed by archaeological investigation (Morton 1992, 35). No remains of a street were found at the east end of Trench 5, but the street is probably directly below the modern road. Morton suggests that Chapel Road (Fig 1) is on the line of a Middle Saxon street, apart from the west end which was later diverted around St Mary's churchyard.

If this Middle Saxon street had continued on the same alignment to the west of the north-south street it might have been exposed by Trench 2. The only gravel deposit of possible Middle Saxon date was a layer (264) in the top of pit 260. This could have been part of a more extensive layer destroyed by later activities but it is hardly convincing evidence of a street. The best candidate for the remains of a street on the site was the series of gravel layers in the penannular ditches on Trench 4. They did not survive beyond the limits of these features but they could have been destroyed by later activity. Pit 2916 was dug through at least some of these layers. It is possible that these layers were part of a street or yard, and they are early Middle Saxon.

The area immediately to the east of the ditch was used as a cemetery and for very little else.

To the east of the cemetery was the main area of pits and rubbish disposal. This area probably comprised the rears of properties facing St Mary Street. There was also a well in this area. No property boundaries were identified.

At the east end of Trench 5, close to the north-south street, was possibly a house. Antler working and textile manufacture were probably taking place here. The burnt brickearth layers in the top of the pit complex were probably parts of domestic floors. There was probably iron-smithing and copper-alloy working in this area and in the rubbish disposal zone.

Conclusion

Early Middle Saxon 1

The earliest phase of activity included the digging and back-filling of the ditch and the use of the cemetery, and perhaps dates to the early 8th century.

Early Middle Saxon 2

The second phase, which probably overlapped with the first, included the digging and back-filling of the pit complex in Trench 5 and most of the pits in Trenches 2, 4, and 5. This phase finished some time in the 8th century, and the end of the phase is represented by the filling of pit 4086 and the burnt brickearth layers in the pit complex.

Mid Middle Saxon

The third phase lasted until sometime in the 9th century and equates with the mid Middle Saxon period. Few features have been assigned to this phase, they include pits 272, 3037, and 3039, and the upper layers in the pit complex.

Late Middle Saxon

The fourth phase is represented by only pit 4073.

A small cemetery used in only the first half of the 8th century fits the pattern identified by Morton at SOUs 7/14, 20, 32, and 34: "Around the middle of the 8th century, open areas and places first used as cemeteries had been given over to streets and the properties that fronted them" (Morton 1992, 54). He also argues that these areas lay beyond the original nucleus of Hamwic in the Six Dials area (*ibid*, 38-40). It is argued above that the ditch at Cook Street was a boundary to occupation and not to the cemetery, and that there was early Middle Saxon activity other than disposal of the dead. So, perhaps there was more than one place of early settlement within the area that became the large settlement of Hamwic. Bourdillon's study of the animal bones from Cook Street does not contradict the early date and also suggests a more rural connection than is usually found in Hamwic.

There is little occupation evidence at Cook Street especially for the mid and late Middle Saxon periods. This is particularly surprising at what would have been thought of as a prime site opposite St Mary's Church. The picture at Cook Street could be biased by an accident of trench placement and the areas chosen for excavation. Numerous mid and late Middle Saxon features may have remained undiscovered in unexcavated parts of Trenches 4 and 5. It is not within the scope of this work to pursue this question further but it is hoped that future development in the area will be preceded by thorough investigations and some of these questions be resolved. It is also hoped that further work on the pottery and other artefacts from Hamwic will enable more accurate dating of the development of the settlement.

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Author: M.F. Garner, Archaeology Operations Unit, City Heritage, Southampton City Council, Civic Centre, Southampton.

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