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Prehistoric, Roman, and Early Saxon Settlement at Prospect Park, London Borough of Hillingdon

D.E. Farwell, Phil Andrews, and Rod Brook

Wessex Archaeology
for British Airways
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Prehistoric, Roman, and Early Saxon Settlement at Prospect Park, London Borough of Hillingdon

The archaeology and geology of a site in the lower Colne valley: evaluation, excavation and watching brief work 1993–5

D.E. Farwell, Phil Andrews and Rod Brook

with contributions from

M. Laidlaw, Lorraine Mepham, James Rose

Rowena Gale, S. Hamilton-Dyer, P.A. Harding, Pat Hinton, Natasha Hutcheson, Jacqueline I. McKinley, N.H. Wells, and D.F. Williams

illustrations by
K.M. Nichols

Wessex Archaeology
for British Airways

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The evaluation and excavation were managed by Kit Watson, and the watching brief by Dave Farwell who also managed the post-excavation programme. Dave Farwell directed the evaluation and excavations in the field, and also prepared the evaluation and assessment reports with the assistance of Kit Watson, Emma Loader, and Jez Fry. Site assistance was provided by Steve Campbell-Curtis, Helen Cook, Jez Fry, Kevin Hicks, Emma Loader, Phil McMahon, Madeline Sarley, Maria Schroder, Greig Watson, Joe Whelan, and James Woodhouse, and the environmental processing carried out by Jezz Taylor. The watching brief was supervised in the field by Rod Brook and Chris Ellis and undertaken by Lee Willment, Martin Gillard, Jane Liddle and John Hart. Environmental processing was done by Lee Willment. The assessment for the watching brief phase of the work was compiled by Dave Farwell and Rod Brook.

Lorraine Mepham carried out the finds assessment as well as managing, coorinating and editing the finds reports. The environmental assessments were undertaken by Sarah F. Wyles and Michael J. Allen, and the subsequent environmental analyses were managed by Michael J. Allen.

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The illustrations are by Karen Nichols, except for Figure 3 (Julian Cross), Figure 19 (S.E. James). Figures 27–32 are based on originals by Jim Rose. The plates were prepared by Elaine L. Wakefield. The archive is currently held at the offices of Wessex Archaeology, and will be deposited at the Museum of London in due course (Site Code PPK93).

Summary

This volume presents the findings from three phases of archaeological work carried out in 1993–95 at Prospeck Park, near Harmondsworth, London Borough of Hillingdon. The site, subsequently developed by British Airways for a new business centre, lies on the east side of the River Colne, less than 10 km north of its confluence with the River Thames. Much archaeological work has been undertaken in this area, which is particularly rich in prehistoric sites, but comparatively few of these excavations have been fully published.

The evaluation and excavation which comprised the first two phases of work at Prospect Park were published as part of a monograph in 1996 (Andrews 1996a). However, the opportunity has been taken here to incorporate the results of these earlier stages into an expanded report which also includes the watching brief, essentially a 'strip and record' exercise, which comprised the third stage of work. The watching brief has added significantly to the information obtained from the evaluation but has not necessitated any major revisions to the earlier conclusions. The three stages of work have also afforded a useful opportunity to assess the methods and results of the evaluation, excavation, and watching brief.

The site lies on 'brickearth', a drift deposit of aeolian origin approximately 4 m thick at Prospect Park. A section was excavated through this in an attempt both to discover the potential for Palaeolithic remains within the deposit and to investigate the nature and origins of the 'brickearth' itself. No archaeological remains were encountered but the recording, sampling, and subsequent analytical programme revealed an important sequence of periglacial features and provided much data pertinent to the depositional history of the 'brickearth', including climatic conditions, depositional regimes, and the sequence of soil development within the deposit. It has also identified the horizon in which Palaeolithic material might be expected to occur.

A small collection of Mesolithic flint comprised the earliest finds from the site and there were features containing Late Neolithic Grooved Ware. Middle Bronze Age activity was indicated by the presence of a ring-ditch, two cremation burials, and a small pit containing a bucket urn. However, the earliest large-scale activity was represented by an extensive unenclosed Late Bronze Age agricultural settlement broadly dated to the 10th–9th centuries BC which included ditches forming part of a field system, pits, and structures including a possible round-house and two four-post structures.

Romano-British settlement nearby was indicated by part of a cemetery which included six cremation and two inhumation burials of probable 3rd–4th century date. Probably the most important discovery was part of an Early Saxon settlement assigned to the 5th–6th centuries, a well, and several pits which apparently belonged to a shifting settlement 'strung-out' on the high ground along the edge of the Colne valley. Of particular interest was a small but significant group of non-local vessels amongst the pottery assemblage, some of which may have a continental source, perhaps imported by some of the earliest settlers along the Thames Valley.

Prehistoric, Roman, and Early Saxon Settlement at Prospect Park, London Borough of Hillingdon

The archaeology and geology of a site in the lower Colne valley: evaluation, excavation and watching brief work 1993–5

Introduction

Project Background

In 1990 an application in outline for development on an area in excess of 100 ha called 'Prospect Park' was submitted to the London Borough of Hillingdon by British Airways. The land, centred at TQ 050 775, is crossed to the north by the M4, with the M25 to the west, the A4 Colnbrook Bypass to the south, and Harmondsworth to the south-east (Fig. 1).

In 1993 a desk-based archaeological assessment was undertaken, the results of which suggested that extensive areas of Prospect Park had no archaeological potential having been subject to gravel extraction since 1945 (Chadwick 1993). Elsewhere, although no direct evidence was available, discoveries from the immediate vicinity of Fields 4, 7, and 13 (see Fig. 1) along the northern edge of the land suggested that these areas had significant archaeological potential. Discoveries included features and finds of Middle Bronze Age, Late Bronze Age, and early to middle Saxon date, as well as evidence for exploitation of the Thames and Colne valleys from at least *c.* 300,000 BP. Accordingly, British Airways, through their main agents and consultants, MACE and Lawson-Price Environmental respectively, commissioned the Trust for Wessex Archaeology to carry out a field evaluation programme approved by English Heritage and the London Borough of Hillingdon.

A number of areas containing archaeological features and finds of Neolithic and later prehistoric date were recorded in the evaluation (Wessex Archaeology 1993) and these warranted further investigation. A large-scale excavation was therefore proposed (Chadwick 1994), and this was subsequently carried out by Wessex Archaeology between 14th March and 13th May 1994, with the results being published shortly after (Andrews 1996a). The 1994 excavation focused on Field 13 (see Fig. 1), with a small amount of additional work in Field 7, and produced a range of features demonstrating settlement and burial on the site at various times from the Late Neolithic up to the early Saxon period.

The project design included a requirement that a watching brief should be undertaken immediately prior to development work on any part of the site where further archaeological remains might be anticipated. However, in 1994, it was not clear when this development would take place and the decision was taken to undertake post-excavation analysis and publication of the 1994 excavation. The watching brief eventually began in June 1995 and was completed in December, by which time virtually the entire area of Field 13 had been stripped and all visible archaeological features recorded and excavated. The publication of the 1994 excavation (Andrews 1996a) came too soon for anything other than a summary of the watching brief results to be included, though these have not affected the overall interpretation and discussion of the site. The results of the watching brief are published here, and discussed alongside the results from the 1994 excavation, in particular the Late Bronze Age, Romano-British, and early Saxon phases which constituted most of the evidence for occupation.

Situation

Most of the site occupies the floodplain of the River Colne with its associated watercourses (Colne Brook, Wraysbury River, and Duke of Northumberland's River) (Fig. 1). The floodplain is at *c.* 23 m OD with the land rising, in places in a scarp and elsewhere in a gentle gradient, to a terrace at *c.* 26 m to the north and *c.* 29 m to the east. The site is underlain by sands and gravels which, within the floodplain, are covered by various depths of alluvium (from 0.4 m to in excess of 1.4 m are recorded locally). On the terrace, topsoil rests either directly on gravel, in the north, or on depths of brickearth, in the east. The gravel across much of the site forms part of the Taplow Terrace, with those towards the north-east belonging to the Boyn Hill Terrace.

Land on the gravel terraces has been ploughed since the mid 18th century (Rocque's map 1754) and probably much earlier, which has undoubtedly caused some truncation and damage to the archaeological deposits. The floodplain, however, remained as uncultivated 'moor' and is likely to have been subject to seasonal flooding. Alluvium deposited by various river channels crossing the floodplain may seal archaeological deposits. Land worked for sand and gravel over the past 30 years has been restored variously to lakes or pasture, a process which is continuing and often involves landfilling.

Archaeological Background

The intact floodplain areas of the site are covered with alluvium and their archaeological potential remains largely unknown. Furthermore, the origins of many of the current watercourses are confused, although it is clear that from earliest Post-glacial times hunter-gatherers exploited the rich and varied water-side habitats of the lower Colne Valley. A number of

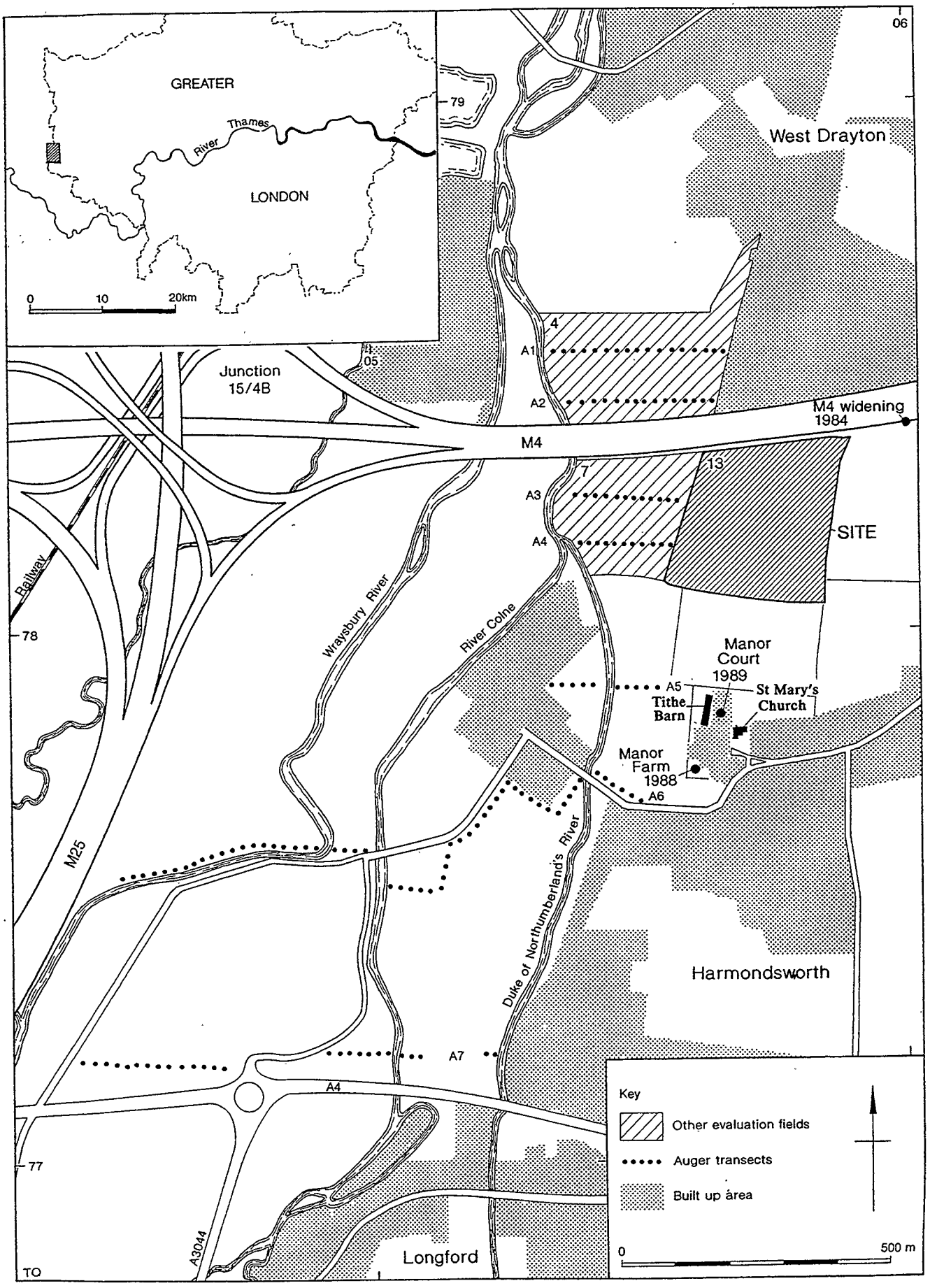

Figure 1 Location plan showing evaluation fields 4, 7, and 13, and auger transects A1–A7

Mesolithic and later flint tools have been recovered from the floodplain area as stray finds (Greater London Sites and Monuments Record Number 050426, hereafter SMR No.), and a single flint axe and other lithics were found in the 1980s in Field 7 within the Prospect Park site (SMR No. 050185). During the Neolithic period, areas of the floodplain and adjacent terrace were cleared of woodland to enable the construction of major ritual monuments; the Heathrow/Stanwell Cursus crosses the Prospect Park site (in areas now quarried away) to terminate immediately to the west in an area now under the M25 (O'Connell 1990). Unexpected evidence of Roman activity representing a riverside settlement has recently been discovered on the west bank of the Colne Brook between Colnebrook and Horton (Butterworth 1990). No Saxon or medieval finds have come from the floodplain in this area, but as yet unidentified riverside settlements may exist.

The post-medieval development of the floodplain is better understood primarily with information from cartographic sources. Rocque (1754) indicates the area crossed by five channels in the 1750s, of which four fall within the Prospect Park site. The easterly channel, the Duke of Northumberland's River is of uncertain origin; Canham (1978) suggests that this river is an entirely artificial channel built in or about 1543; the Victoria County History (1911, Vol. 2, 310) suggests that it dates to the time of Henry V (1413–1422), and a possibility remains that the river represents a canalised version of an earlier watercourse of natural origin. The possible channels in Field 7 identified on various aerial photographs may be the result of similar drainage and improvement works on the floodplain; equally, a natural origin may be sought.

Evidence for later prehistoric, Roman, and Saxon settlement of the terraces of the Thames and Colne Valleys is more widespread and better understood as a result of a series of watching briefs and excavations (Cotton *et al.* 1986; Cotton 1991; Merriman 1990). At Holloway Lane, Harmondsworth (TQ 079 779), a small Middle Bronze Age pit, an early Saxon sunken-featured building, and a series of 12th–13th-century pits and post-holes were found. Nearer to Prospect Park, excavations at Manor Farm (TQ 056 778; see Fig. 1) uncovered several probably prehistoric pits and scoops, part of a possible early Saxon sunken-featured building, and evidence for medieval occupation. At Manor Court (TQ 055 777), Mesolithic and Neolithic features and finds were recorded, along with Romano-British pits and pottery, and Saxon and medieval features. Roman *tesserae* were recorded 70 m south-west of Harmondsworth Church (SMR No. 050263). Finally, during the widening of the M4 (TQ 060 783), groundworks revealed a series of Late Bronze Age scoops and a Saxon sunken-featured building.

The Evaluation

Introduction

Archaeological evaluation was carried out in 1993 to establish the date, nature, and extent of any archaeological activity on the site and to assess the nature of the alluvial deposits on the floodplain. The methods employed included auger transects, fieldwalking, test pits, and machine trenching (Fuller details and results of these are published in Andrews 1996a).

Methods

Auger transects

The augering was undertaken for two reasons: in Fields 4 and 7 to define the amount and nature of any alluvial deposits present, and elsewhere (within areas known to have been subjected to mineral extraction) to confirm or deny the presence of any intact deposits of archaeological potential at the margins of extracted areas. Seven auger transects with points at 20 m intervals were carried out using a 40 mm Dutch hand auger (see Fig. 1). A total of 150 auger points was recorded but, taken overall, the results did not suggest that significant quantities of alluvium existed in the areas examined and no intact deposits of archaeological potential were revealed.

Machine trenching

Twenty-eight trenches were excavated in Field 4. The general depth of overburden was slight and, on average, gravel was reached at 0.77 m. The average thickness of alluvial deposits was 0.31 m. Positive evidence for old river channels or other significant deposits was not forthcoming and no finds or features of archaeological significance were encountered in any of the trenches. Field 4 was not, ultimately, extracted for gravel during development of the site.

Twenty-one trenches were excavated in Field 7. The general depth of overburden was slight; on average gravel was reached at 0.91 m and the average thickness of alluvial deposits was 0.42 m. There was no positive evidence for old river channels and finds or features of archaeological significance were limited to three sherds of Romano-British pottery recovered from the topsoil and two parallel ditches of probable natural origin.

Test-pits in Field 13

A pattern of 114 test-pits at 25 m intervals in Field 13 was hand dug through the ploughsoil down into the subsoil. They were 0.5 m square and 20% of each was sieved through a 10 mm mesh.

The test pits in the northern half of the field were excavated under optimum weather conditions. By the time the southern half of the field was reached, the weather had deteriorated and the visibility of finds in the wet soil was poor. However, the final distribution of finds (Fig. 2) suggested that the retrieval of material was not adversely affected. The size of the pits made inspection of the nature of the subsoil and meaningful comparisons across the field difficult. It was noted that the agricultural regime at the time of the survey was ploughing down into the top of the brickearth in many areas.

Considerable quantities of modern and late post-medieval pottery were recovered. Most sherds were small and abraded, suggesting both introduction as part of manuring deposits and intensive agricultural disturbance to at least the top 0.45 m of soil. Quantities of

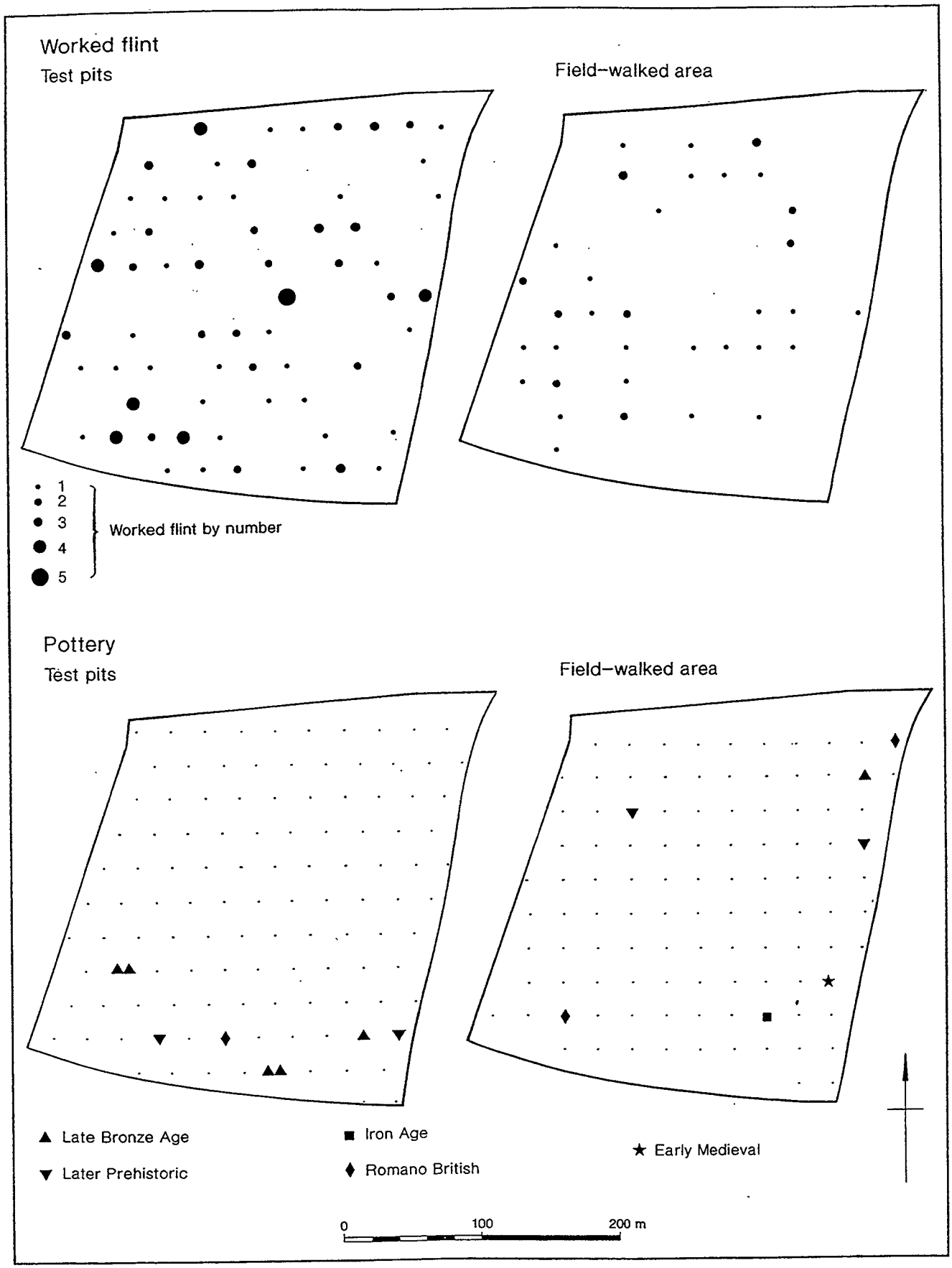

Figure 2 Distribution of worked flint and pottery recovered from fieldwalking and test-pits in Field 13

earlier material of archaeological interest were more modest: in total 112 pieces of worked flint, 1993 g of burnt flint, five sherds of Late Bronze Age pottery, two sherds of undiagnostic late prehistoric pottery, and one Romano-British sherd. The pottery showed a localised distribution within a strip 100 m wide along the southern edge of the field but there were no other significant distributions.

Fieldwalking and machine trenching of Field 13

The field had been harrowed but not ploughed. By the time the fieldwalking started, weed growth, added to stubble left lying on the surface, obscured part of the field. However, recent rain had scoured the surface of the soil improving the visibility of artefacts.

In total, 45 pieces of worked flint, 4758 g of burnt flint, and 7 sherds of pottery were recovered. The pottery comprised one Late Bronze Age, one Iron Age, two probable late prehistoric, two Romano-British, and one medieval sherd.

Averages and standard deviations of the amounts of worked and burnt flint were calculated and plotted, but there were no significant distributions. However, the pottery showed a localised distribution along the southern and eastern margins of the field (see Fig. 2).

Thirty machine trenches were excavated in Field 13 (Fig. 3). A regular pattern of trenching was adopted in view of the equivocal results of test pitting and fieldwalking. The first and most obvious piece of information gained from the machine trenches related to the presence of a possible prehistoric agricultural soil. This lay directly beneath the ploughsoil, and above the natural brickearth, and comprised a fine, generally clean, silty loam which contained a number of abraded sherds of Late Bronze Age date.

Six trenches were found to contain features of archaeological significance comprising a small number of Late Neolithic features and several Late Bronze Age ditches, pits, and post-holes. Five of these trenches were subsequently subsumed into the excavation area.

The Excavation and Watching Brief

The Excavation

On the basis of the results from the evaluation, a large-scale excavation was commissioned in Spring 1994 and four themes of investigation were identified. These were:

1. To re-identify and attempt to retrieve artefactual material from the two ditches in Field 7.
2. To investigate the remains of the prehistoric agricultural system in the north-east corner of Field 13.
3. To clarify the extent and character of the Late Neolithic occupation in the southern central area in Field 13
4. To excavate a sample of the natural brickearth in an attempt to both discover the potential for prehistoric remains within the Pleistocene deposits and to investigate the nature and origins of the brickearth deposit itself. It was anticipated that a buried soil containing Palaeolithic material might survive on the surface of the gravel sealed by the brickearth, and that Mesolithic remains might be present within the brickearth.

The areas excavated in Field 13 are shown in Figure 3. Initially, three separate areas were stripped; these areas were subsequently linked by excavating narrow trenches between them. After excavation had been completed, a deep, stepped trench was dug by machine towards the north-east corner of Field 13, within the previously excavated area, in order to expose and record a section through the natural brickearth.

The 1994 excavation revealed evidence for settlement and burial from the Late Neolithic to the early Saxon periods on the terrace above the Thames floodplain. Neolithic use was represented by several features containing Grooved Ware, and what was tentatively interpreted as a side ditch to a possible long barrow. The Middle Bronze Age and Romano-British use of the site was on a small-scale: a possible Middle Bronze Age ring-ditch along with two cremation vessels and a single Roman cremation burial comprised the entire evidence from these two periods. The major use of the area was in the Late Bronze Age and early Saxon periods. Part of an extensive, unenclosed Late Bronze Age settlement of 10th–9th century BC date was revealed, comprising several possible structures, field ditches, and pits. The early Saxon period was represented by four sunken-featured buildings, two timber halls, several pits, and a well, all of 5th–6th century date. The early Saxon finds included a small but important group of non-local pottery possibly imported from the Continent.

The 1994 excavation revealed no evidence of prehistoric remains within the brickearth deposits, but an important sequence of periglacial features was recorded and much data pertinent to the depositional history of the brickearth obtained. (The analytical work, still ongoing, was not available for publication in 1996, and so the results of this are presented in some detail in this report).

The Watching Brief

Methods

Field 13 was stripped east to west using a 360° mechanical excavator equipped with a toothless bucket, with all topsoil and subsoil as required being removed from the site (Fig. 3). The work was under the direct supervision of an archaeologist and was to a high standard commensurate with the preliminary operations for a standard archaeological excavation. A grid was established at 20 m intervals across the field as stripping continued, and pre-excavation plans made at a scale of 1:50. Excavation of features then proceeded after a period of weathering across the surface of the exposed brickearth. This weathering enhanced the surface visibility of features which, in some cases, were extremely difficult to detect, particularly those of prehistoric date filled largely with redeposited brickearth. This difficulty was exacerbated by the dry conditions prevailing throughout much of the watching brief. It is likely, therefore, that some small features were overlooked though it is considered unlikely that any major features were missed.

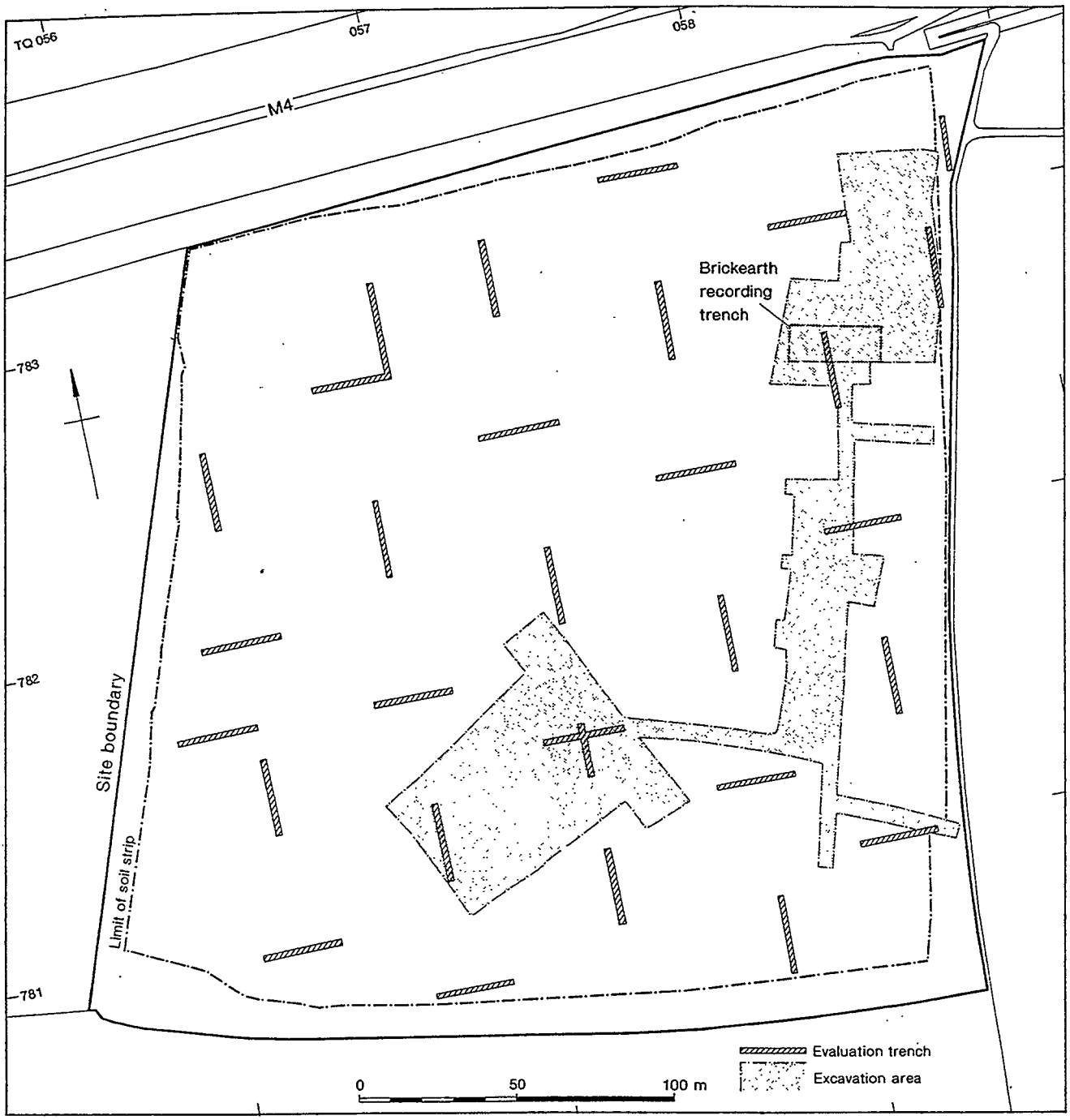

Figure 3 Field 13 showing positions of evaluation trenches, excavation trenches, and extent of soil strip / watching brief area

An appropriate sampling strategy for economic, environmental and artefactual information had been devised by Wessex Archaeology's Environmental and Finds Managers. High priority was given to the sampling of a selection of well-dated features and those thought to be of early date.

Most discrete features were half or quarter sectioned, their sections recorded, then completely excavated. Where features appeared to be very shallow and amorphous only limited work was undertaken. The work on site was concentrated on those features thought likely to produce diagnostic finds. Linear features were sectioned at intervals, and some were further excavated to maximise the retrieval of artefacts. Some small features thought likely to be cremation-related were 100% sampled for the same reason and to gain environmental data.

The watching brief revealed the field ditches of Late Bronze Age date to extend across the eastern two-thirds of the site. A four-post structure and two groups of shallow pits were apparently associated with these ditches. Traces of a small Romano-British cremation cemetery were found in the south-west corner of the field and two inhumations were also recovered nearby. A further seven sunken-featured buildings of Saxon date were uncovered and fully excavated.

Dating

There was an overall lack of stratified deposits. Not only were there very few physical relationships between features but even substantial features generally lacked internal deposition sequences. The majority of the recorded features were found to be small with single fills and no direct dating evidence.

Many of the features were small and badly eroded and, in many cases, it was difficult to interpret their original function (eg, whether some represent the bases of small pits or substantial post-holes). Structural associations and the finds recovered from them have allowed some features to be interpreted with a degree of confidence. For the rest, the interpretation relies on a crude index of size and shape: features greater than 0.5 m in diameter have been interpreted as pits, except where an obvious structural interpretation has been apparent.

Statements of date and function (eg, Saxon post-hole) are based on direct evidence in only a limited number of cases. Although almost 40% of the excavated features contained pottery, only *c.* 25% contained more than two sherds. Much of the interpretation, therefore, relies on small numbers of badly preserved pottery sherds and/or association with nearby better-dated features. Where features contained reasonable numbers of sherds of pottery, their dates were often mixed as a result of varying degrees of intrusion and residual deposition.

Other than the pottery, only the worked flint among the limited range and quantity of finds recovered assisted in dating the sequence of activity on the site. The period divisions adopted are therefore almost entirely dependent on the pottery.

- Mesolithic (8500–4000 BC)
- Neolithic (4000–2400 BC)
- Middle Bronze Age (1500–1100 BC)
- Late Bronze Age (1100–700 BC)
- Romano-British (AD 43–410)
- Early Saxon (AD 410–650)

A Consideration of the Evaluation, Excavation, and Watching Brief Methods and Results, by D.E. Farwell

Introduction

This opportunity to follow a complex sequence of evaluation, excavation and watching brief over a reasonably-sized area with a reappraisal of initial interpretations comes at an apposite moment. The preliminary stages of any project will dictate the nature, and sometimes very existence, of the following stages. Archaeological evaluation, as a predictive tool used for the benefit of Local Planning Authorities forward planning and for academic research, has come to the fore in the last few years. Many far-reaching decisions are now based on the results of minimal sampling strategies.

While it would have been interesting to reconsider the interpretations, both preliminary and final, in the light of presently-held archaeological expectations, local and regional interests, and the relevant education and experiences of the authors, at this point the more pressing need is to focus on the relative value and general validity of the techniques presently in use. This project presents some expected and some very unexpected outcomes.

Sequence

In retrospect, the desk-based assessment and preliminary fieldwork, the auger survey, correctly identified the general areas of low and high surviving archaeological potential. Other non-intrusive techniques such as geophysical survey and targeted study of rectified aerial photography have been used successfully on other sites to further refine the general picture at this stage. However, the variations in surface geology and land-use militated against their successful use in this instance.

In Field 13 the techniques of fieldwalking and test-pitting by hand were tried next. In both cases evidence for increased levels of archaeological activity were indicated at the edges of the field. The test-pits were of small size and not designed to recover information concerning features. They were, however, to provide information concerning the survival of subsoil deposits below the recent agricultural level and above brickearth.

Machine trenching was used across three fields. This succeeded in demonstrating the limitations of deposits which might have provided environmental evidence. No physical relationship survived between the alluvial deposits and the brickearth, and the overall quantity of alluvial material was disappointing. The machine trenches were of a single bucket width and positioned to give an extensive rather than intensive coverage. Again, more information was gained concerning soil deposits and overall levels of finds within the soils than about specific features; with the notable exception of material of Neolithic date which was discovered *in situ*. At this point a negative result tended to lead to no further work while a positive result led to another stage of work; eg, Field 4 dropped out at this stage because of a combined dearth of finds and limited depths of soils of any type over gravel.

The results of these stages of work led to the adoption of a targeted excavation strategy. This strategy succeeded in covering the focal areas of Field 13, although, it should be admitted, the periods represented by the material recovered were not entirely those expected. The shape of the excavation area was not fixed beforehand, although starting points had been laid down. Contingency areas were also allowed for. In this way the unexpected results were partially accommodated at that stage.

The preliminary excavation of parts of unenclosed settlements of Saxon date (unexpected) and Late Bronze Age date (expected) together with the discovery of Middle Bronze Age cremation burials meant that the excavation areas could not be expected to have coincided with all possible features within the field. The watching brief was then brought into play.

The watching brief was a more rigorous undertaking than is often allowed. It was, in effect, a large-scale strip and record operation in design rather than a salvage effort. The pre-design by the consultant, financial under-

taking by the client, and the forbearance of the main and sub-contractors ensured that the archaeological team could make the most of the opportunity. In some ways this stage of the whole process proved most cost-effective; in as much as a larger area was covered with little, if any, loss of data recovery.

Overview

The relative proportions of material types and datable objects recovered in Field 13 were dependent on the techniques used. The discovery of pottery, albeit only in limited quantity, during the fieldwalking and test-pitting was significant. Eleven of the 15 sherds recovered at this time were datable to the later prehistoric period. Both techniques resulted in the collection of reasonable quantities of worked and burnt flint. In neither case were concentrations discoverable and the information served only to highlight the general potential of the area. Comparable units of fieldwalking stints (107) and test-pits (114) were undertaken and the results showed some systematic trends. The test-pits produced over twice the number of worked flints and half the weight of burnt flint; both techniques produced similar numbers of pot sherds. The test-pits took seven times as long to complete, but allowed some hypotheses to be made concerning the likely degree of erosion to be encountered on site.

The machine trenches revealed features in only 6 out of 30 open in the field. However, almost 400 sherds of pottery were recovered. It was assumed that, with a sample of this size, the periods represented would be reflected in the overall composition of material recovered from the subsequent excavation. This did not happen. The evaluation over-represented the earlier prehistoric component and failed to reveal any Saxon material.

This problem was reflected throughout the subsequent excavation and watching brief. Seventy per cent of the datable pottery from the excavation was of Late Bronze Age date compared to only 26% of the watching brief assemblage. We can be reasonably sure, therefore, that the excavation accurately targeted the section of the field which contained the most surviving material of that period. Of the Saxon material, the reverse is true. During the excavation Saxon finds were unexpectedly discovered, and while the flexibility of the excavation programme allowed certain areas to be expanded at that time, almost three times as many sherds of Saxon pottery were recovered from the watching brief as during the excavation. The evaluation was found to have exposed almost all of the surviving features of earlier prehistoric date.

The problems of interpretation at each stage were compounded by two underlying constants. The condition of the subsoil and brickearth made the recognition of features difficult, especially during the evaluation. During most periods the area had been used for farming and dispersed settlement, with no focal, intensive, and/or enclosed areas of activity. In spite of this, the evaluation stages had successfully identified the area most likely to have been a preferred location for human activity. However, it is apparent that the machine trenching exercise was intrinsically unlikely to encounter features from dispersed or badly-eroded settlements and that some features, even linear ones, could not be recognised within the confines of a 1.8 m wide trench. The survival of pottery in quantity in the ploughsoil was the most reliable indicator of past activity. Relying on as wide a suite of techniques as possible is the key to success. Intensive fieldwalking to recover pottery, as an additional stage, might prove a cost-effective way of resolving some interim interpretations.

Excavation and dating

The occurrence of shallow features in concert with a light subsoil and an active agricultural regime ensure a high incidence of residual and intrusive material. It became important to maximise the finds collection from features to ensure the validity of feature dating. Many features were dated by reference to the largest proportion of dated material rather than the latest. Bulk samples for artefact retrieval were taken as often as possible and additional sections of shallow linears were excavated. Conversely natural and/or very badly eroded features were minimally excavated as the lack of datable or secure material meant that little further interpretation was likely. During the watching brief a roughly comparable duration of hand-cleaning and excavation was expended as was undertaken during the excavation. However, because it was more selective almost four times the area was covered, from which an almost identical total of pottery was recovered.

The Site

All the features recorded during the evaluation, excavation, and watching brief stages of work are shown in Figure 4.

Mesolithic

The earliest worked flint from the site is of Mesolithic date and includes 10 cores accompanied by bladelets and other diagnostic waste, 5 microliths, and a tranchet axe sharpening flake. The microliths include two 'rods' which suggest Late Mesolithic activity. This material was concentrated towards the north-east corner of the site, often in later features which may have cut a flint concentration of Mesolithic date, but no contemporaneous features were identified.

Neolithic–Early Bronze Age

The earliest datable features on the site were Late Neolithic and all were found in the 1994 evaluation and excavation (Fig. 5). Although these were limited in number, the survival of features in the central southern part of the site, despite plough damage, and the lack of evidence in the north-east where there was a greater depth of subsoil, suggests a concentration of activity in the south.

Hollow 1494

This comprised a shallow, sub-circular hollow up to 2.7 m across and 0.15 m deep (Fig. 6). In the bottom, close

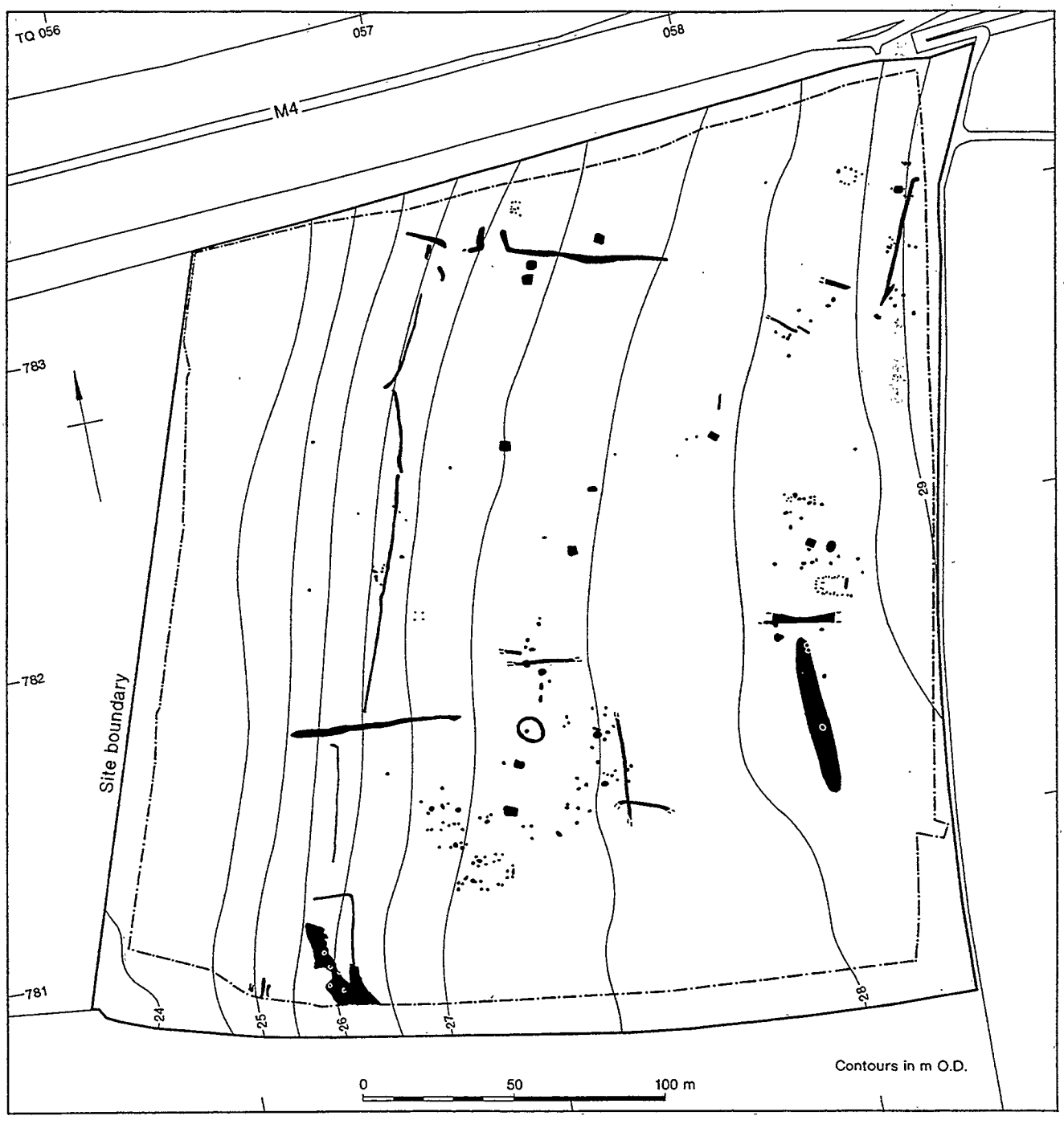

Figure 4 Field 13: all excavated features

to the north edge, was a shallow post-hole, 1497, and two insubstantial features which may also have been the remains of post-holes lay to the west of this. Towards the centre was the *in situ* base of a Grooved Ware vessel (1469), the top of which had been removed by ploughing. The fill of the hollow, 1472, was an undifferentiated silty loam very similar to the overlying subsoil. This contained a further 45 sherds of Grooved Ware, probably from two vessels, and a rim of what may be Peterborough Ware (Pl. 1).

Two other features may have been part of, or associated with, hollow 1494. Post-hole 504 lay just within the southern edge of the hollow, 2 m from post-hole 1497. It was of similar dimensions to the latter, with which it may have formed a pair, but contained only a single sherd of Late Bronze Age pottery, and it is possible that post-holes 504 and 1497 were later prehistoric features and unrelated to hollow 1494.

Immediately to the north of hollow 1494 was slot 319, 1.7 m long, 0.6 m wide, and 0.3 m deep. This contained five sherds of Neolithic pottery.

Other features

Post-hole 1496 lay 4 m to the north of hollow 1494 and was 0.4 m in diameter and 0.2 m deep (Fig. 5). It contained 20 sherds of Grooved Ware from a single

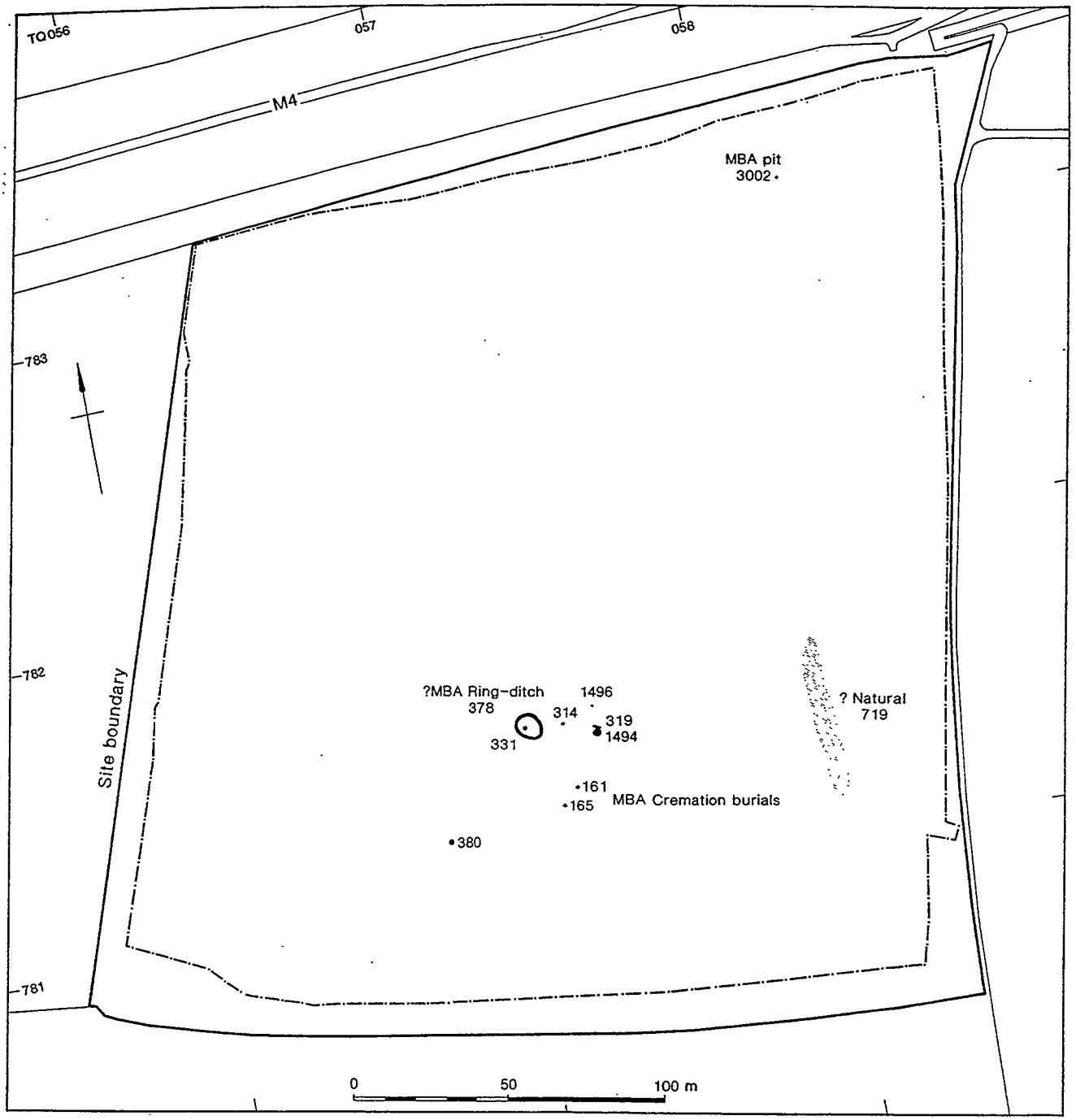

Figure 5 Plan of Neolithic and Middle Bronze Age features

vessel, probably burnt after breakage, and perhaps part of one of the vessels found in 1472, the fill of hollow 1494.

Pit 380 lay to the south-west, some 50 m from hollow 1494 (Fig. 5). This was oval, measured approximately 1.8 by 1.3 m and was 0.7 m deep. It had two fills, 381 and 382, both of which were dark yellowish–brown clayey silts. The bottom fill, 382, was slightly more sandy, with a prominent charcoal lens and contained the majority of artefacts. These include five sherds of Neolithic pottery and the largest assemblage of worked flint from any feature on site. This comprises 39 pieces, including 5 scrapers, a possible triangular arrowhead, and 18 flakes.

Feature 719, previously interpreted as a ditch (Andrews 1996a), cannot be ascribed with certainty to the Neolithic period (Fig. 5). However, it was cut by a small pit, 713, which contained seven sherds of Late Bronze Age pottery. The full extent of feature 719 was not determined with certainty, but it is estimated to have been *c.* 50 m long and up to 7 m wide. It was aligned north–south and was very slightly curvilinear in plan with a rounded terminal at the north end; the location of the southern terminal was not precisely established in the 1995 watching brief because of the difficulty in differentiating between the fill of the feature and the natural brickearth. When ditch 719 was initially

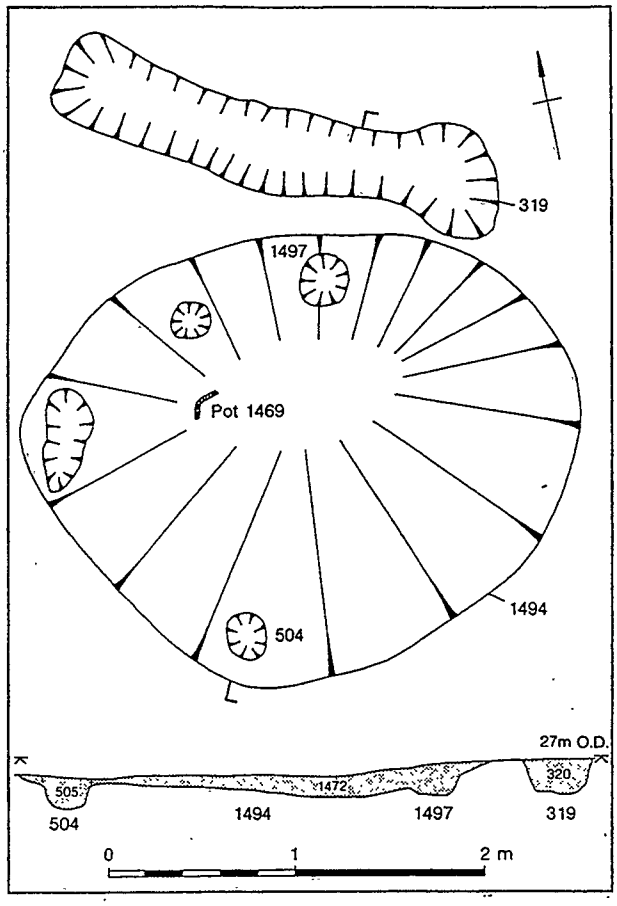

Figure 6 Plan and section of Neolithic hollow 1494

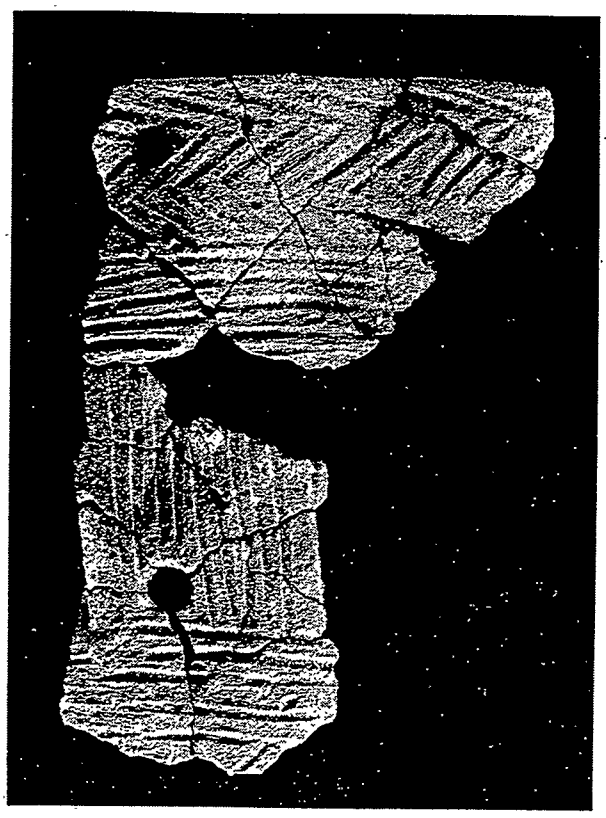

Plate 1 Part of Grooved Ware vessel from hollow 1494

exposed in the 1994 excavation, it was thought possibly to have been a natural feature. However, the profile and clearly defined terminal rendered this interpretation unlikely.

A single section was excavated across the central part of the ditch and two smaller sections at the north end. These revealed it to survive to a depth of *c.* 1 m, with the sides sloping at approximately 20° and a slightly rounded bottom. The fill, 720, was fairly homogeneous and heavily disturbed by root action. It graded imperceptibly from a dark yellowish–brown silty clay loam at the top to a light yellowish–brown sandy clay loam at the bottom. Two soil monoliths were taken from the fill; these showed localised gleying and leaching with no laminations or inwashes of coarser material. The deposits were not heavily weathered, nor was there any evidence of pedogenic features which would indicate geological antiquity. A gradual silting of the ditch is probable but the degree of root disturbance was too great to enable the nature of infilling to be ascertained. The only finds from the ditch were small quantities of burnt and worked flint, the latter including a large, broken, ?unfinished flake tool. Although difficult to date, the worked flint is possibly Late Neolithic.

The concentration of Late Neolithic features in the southern half of the site is further highlighted by the distribution of worked flint and Late Neolithic pottery residual in later features. The quantities of flint are low but tools are well represented and, though difficult to assign chronologically, the principal concentration does coincide with the area of Late Neolithic activity. More than 30 sherds of Late Neolithic pottery have also come from later features in this area, compared with fewer than 10 sherds from the remainder of the site.

No Early Bronze Age features were found, but there are seven sherds of pottery attributed to this period, six of which came from Late Bronze Age pit 3335 (see Fig. 9) and are probably from a single flat-bottomed vessel.

Middle Bronze Age

Two cremation burials and a possible ring-ditch found in the 1994 excavation have been ascribed to this period, and all of these lay close together in the central southern part of the site in the same area as the Neolithic features (Fig. 5). In addition to these, a single pit was found in the 1995 watching brief towards the north-east corner of the site.

Ring-ditch 378

This lay on a slight knoll which had been reduced by ploughing such that only the deeper features survived over an area *c.* 50 m in diameter (Fig. 5). The ditch was oval in plan and measured *c.* 8.4 m by 6.7 m internally, but survived only as a soil stain up to 0.8 m in width (Pl. 2). There was no surviving cut in the brickearth and the ditch had evidently been entirely removed by ploughing, leaving only a stain created by darker soil from the ditch

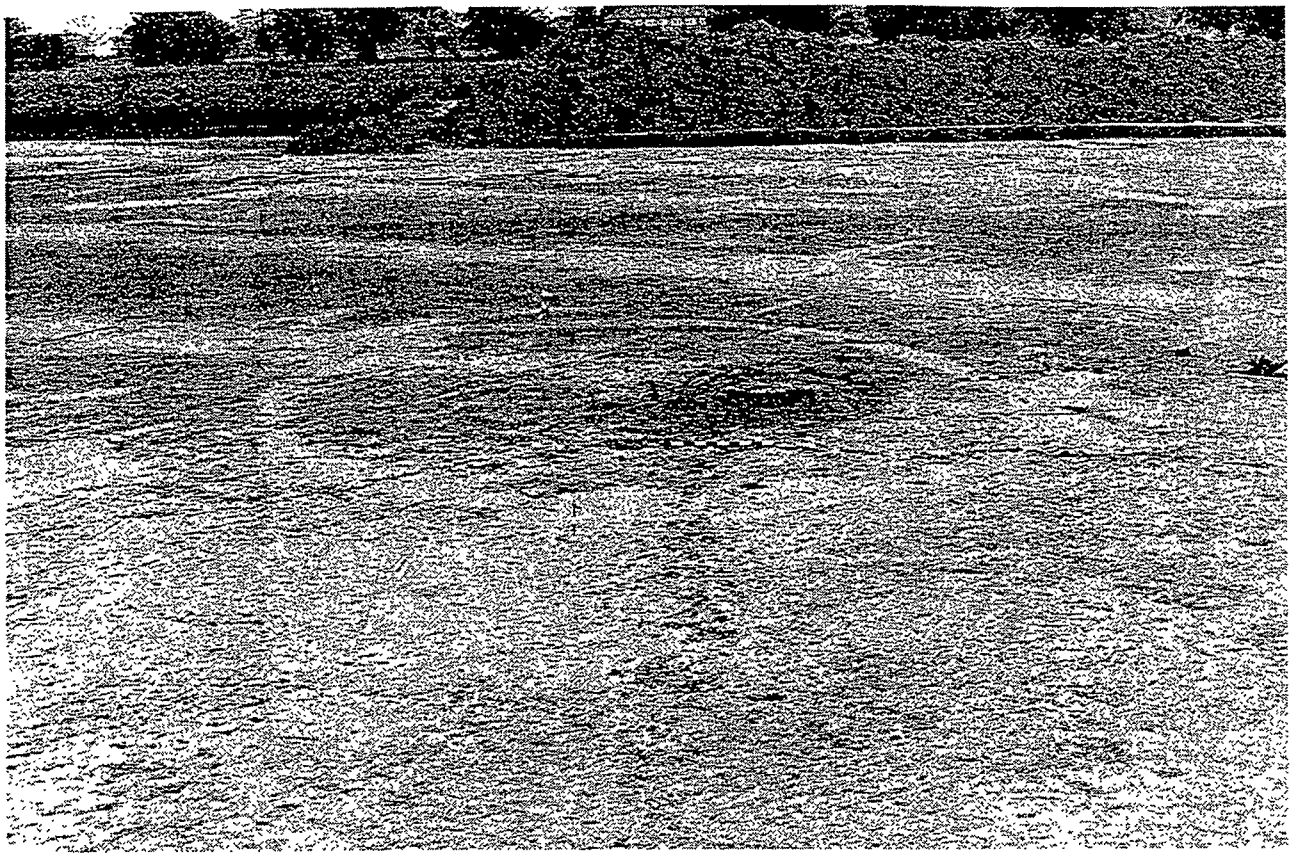

Plate 2 Ring-ditch 378 from the north-west, surviving only as a soil stain (1 m and 0.5 m scales)

filtering down through root holes. Within the ring-ditch, and slightly off-centre to the west, was a small pit, 331. This was 0.6 m in diameter and survived to a depth of 0.2 m. Four sherds of Late Bronze Age pottery were recovered from its fill, but no cremated bone and no further evidence was forthcoming from the soil sample taken from this feature.

Less than 10 m to the east of the ring-ditch lay 314 (Fig. 5), a shallow feature 0.55 m in diameter and only 0.11 m deep, though it had been heavily truncated. The fill, 315, comprised a mixture of charcoal and burnt human bone fragments with some small pieces of burnt clay. The bone, possibly representing two adults, was heavily stained by the charcoal and perhaps was a dump of pyre debris rather than an unurned burial. No dating evidence was recovered from this feature, though its proximity to ring-ditch 378 suggests the possibility that the two were related.

Cremation burials 161 and 165

Two Middle Bronze Age cremation burials, 161 and 165 lay approximately 6.5 m apart, and some 25 m south of ring-ditch 378 (Fig. 5). Both were possibly females, 161 a mature adult and 165 a young adult. Both were in urns placed in shallow pits which had been heavily truncated (Pl. 3). The surviving pits were sub-circular, up to 0.4 m in diameter and 0.26 m deep. Although fragmentary, both vessels appear to be of similar bucket-shaped form with a single finger-impressed cordon around the body.

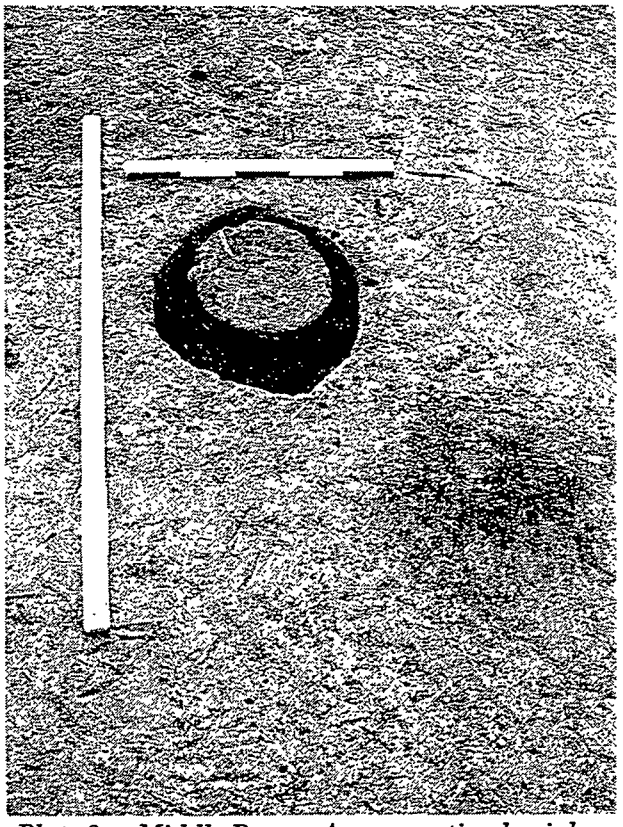

Plate 3 Middle Bronze Age cremation burial 165 from the north-east (1 m and 0.5 m scales)

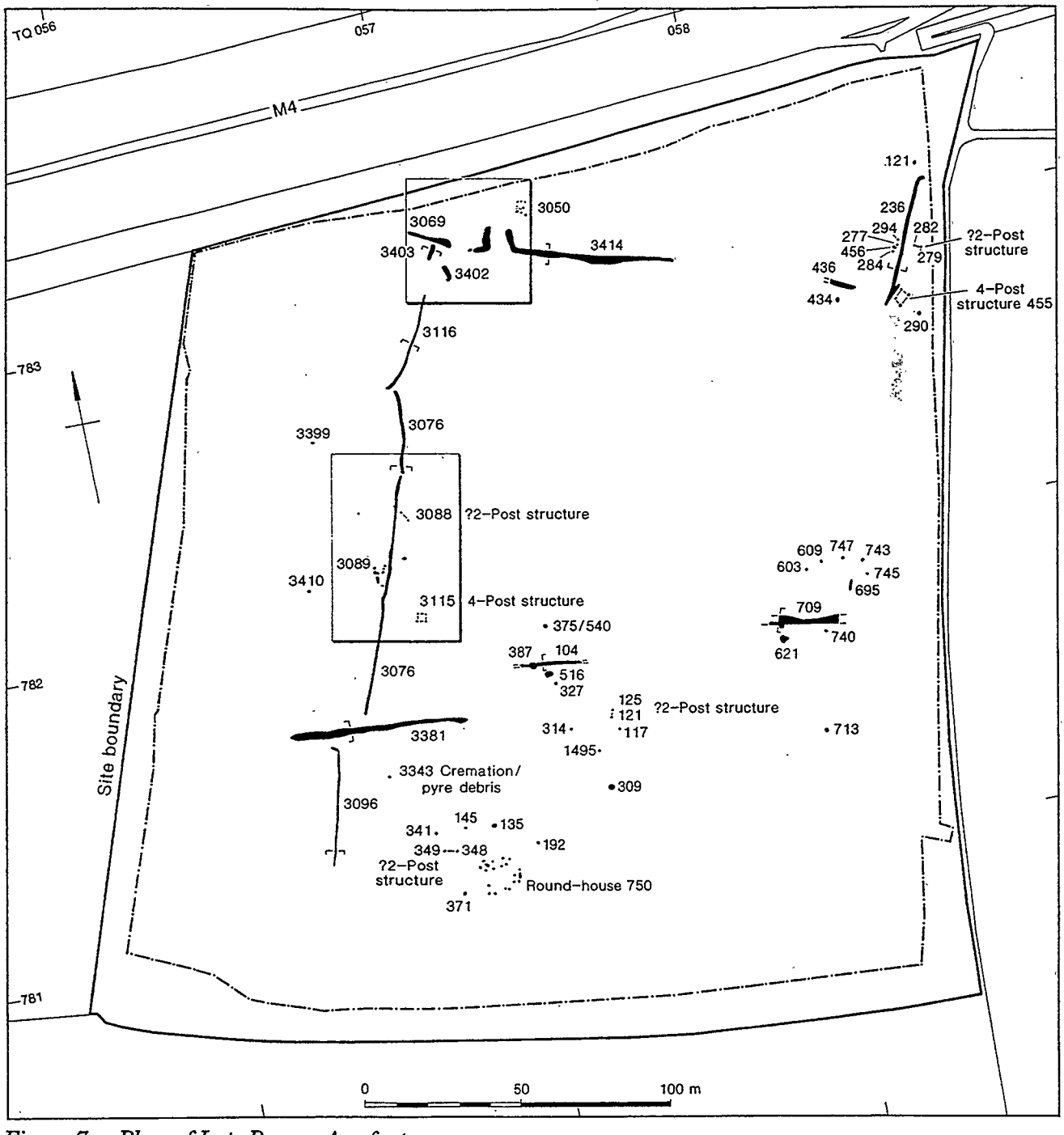

Figure 7 Plan of Late Bronze Age features

Pit 3002

This apparently isolated, oval pit measured approximately 0.6 m by 0.55 m and was up to 0.15 m deep (Fig. 5). It contained an incomplete, possibly truncated Deverel-Rimbury type bucket urn (Fig. 20). No other finds came from this feature, and no human bone which would indicate a funerary function.

Late Bronze Age

In contrast to the restricted distribution of the earlier features, Late Bronze Age features occurred over almost the entire excavated area (Fig. 7). Furthermore, these features were clearly associated with occupation.

Structures

Two four-post structures are the only structures which can certainly be ascribed to this phase. Various groups of post-holes have been assigned to the late prehistoric period but it has proved difficult to identify any coherent plans. Several pairs of post-holes may represent two-post structures, and another group could be interpreted as a round-house (structure 750). The dating of rectangular, post-built structure 721 (see Fig. 17), is equivocal; although several of the post-holes contained sherds of Late Bronze Age pottery, the overall plan is considered more likely to represent a Saxon hall and this is discussed more fully below.

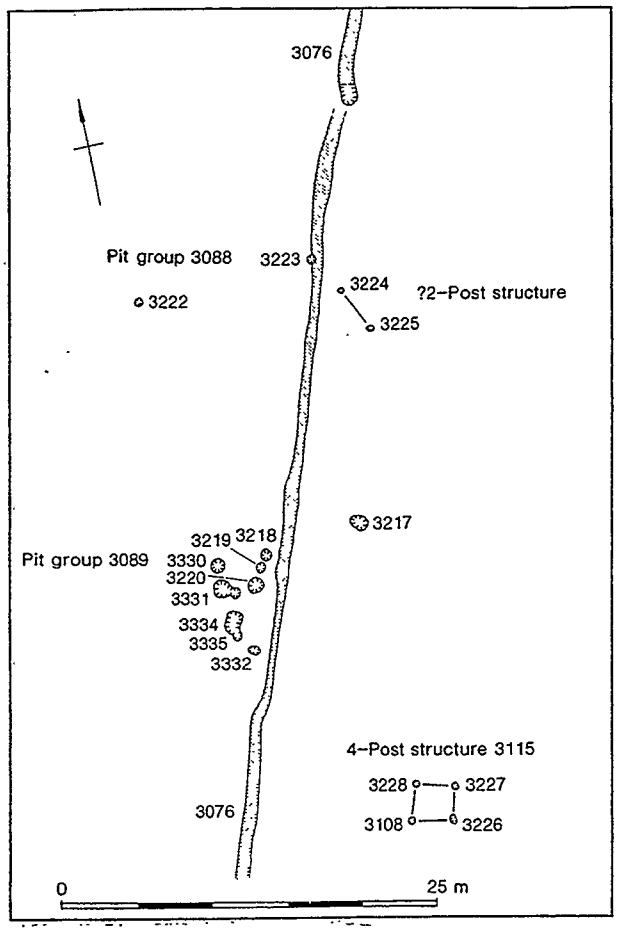

Figure 8 Detailed plan of Late Bronze Age features

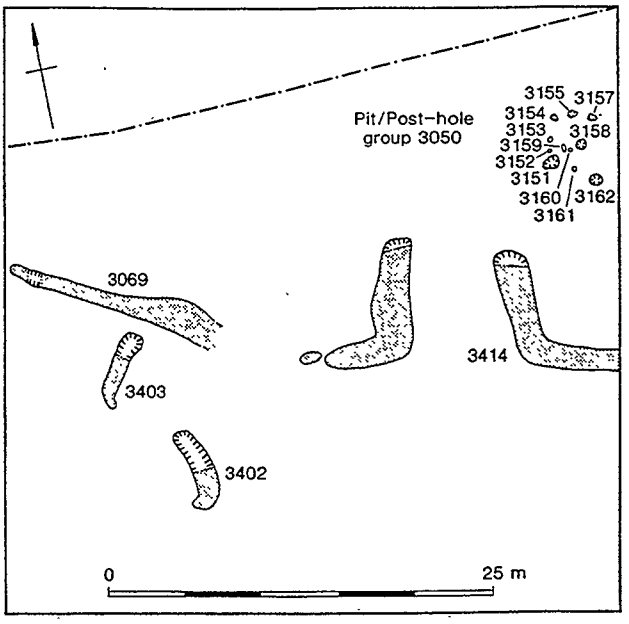

Figure 9 Detailed plan of Late Bronze Age features

Structure 455
Structure 455 lay close to the southern end of ditch 236 and comprised four post-holes (226, 228, 230, and 275) up to 4.5 m apart set in a trapezoidal arrangement (Fig. 7). The post-holes were oval in plan, up to 0.6 m across and 0.45 m deep. All but post-hole 226, contained sherds of Late Bronze Age pottery and there seems little doubt that structure 455 was a four-post structure belonging to this period.

Structure 3115
Structure lay approximately 10 m to the east of ditch 3076 and comprised four post-holes (3108, 3226, 3227 and 3228) *c.* 3 m apart and arranged in a square (Fig. 8). All four post-holes were of similar size, oval in plan, and up to 0.5 m across and 0.25m deep. A total of six sherds of Late Bronze Age pottery was recovered from the fills, and structure 3115 has also been interpreted as a Late Bronze Age four-post structure.

Paired post-holes
A considerable number of smaller post-holes were found scattered across the site, many of them undated, but some containing one or more sherds of Late Bronze Age pottery. The pottery may be residual in some but in others probably not; a single post-hole, 740, to the south of feature 709 contained 16 sherds. Groups of post-holes containing pottery included 284 and 294, midway along the west side of ditch 236; 603 and 747 to the north of ditch 709; 145, 341, and 349 in the south-west of the site; and several post-holes in pit/post-hole group 3050 immediately to the north of the possible entrance between ditches 3069 and 3414 (Figs 7 and 9). Some undated post-holes in the vicinity of these groups may have been contemporary with them and others are likely to have been completely removed by ploughing. No patterns could be discerned within these groups but several possible pairs of post-holes were noted elsewhere, perhaps representing two-post structures. The paired post-holes were approximately 2 m apart and four examples produced Late Bronze Age pottery from one of the pair: 279 and 282, 121 and 125, 348 and 349, and 3224 and 3225 (Figs 7 and 8).

Structure 750
The greatest concentration of undated post-holes lay towards the south-west corner of the site (Fig. 7). Most were less than 0.2 m in diameter and between 0.03 and 0.12 m deep, though there were several deeper examples up to a maximum depth of 0.33 m. One group in this area may represent a circular structure, possibly a round-house or enclosure (structure 750). No pottery was recovered from any of the post-holes but there were three pits (135, 192, and 371) in the vicinity which contained Late Bronze Age pottery. The postulated structure 750, comprising up to 13 surviving post-holes, was sub-circular, with a diameter of between 11 and 12 m and a possible north-west facing entrance. If so, this would represent an unusual arrangement facing in the opposite direction to that commonly found.

Ditches
Four Late Bronze Age ditches excavated in 1994 (ditches 104, 236/254, 436, and 709), aligned both at right angles and parallel to the slope, were shown in the 1995 watching brief to belong to a more extensive system of

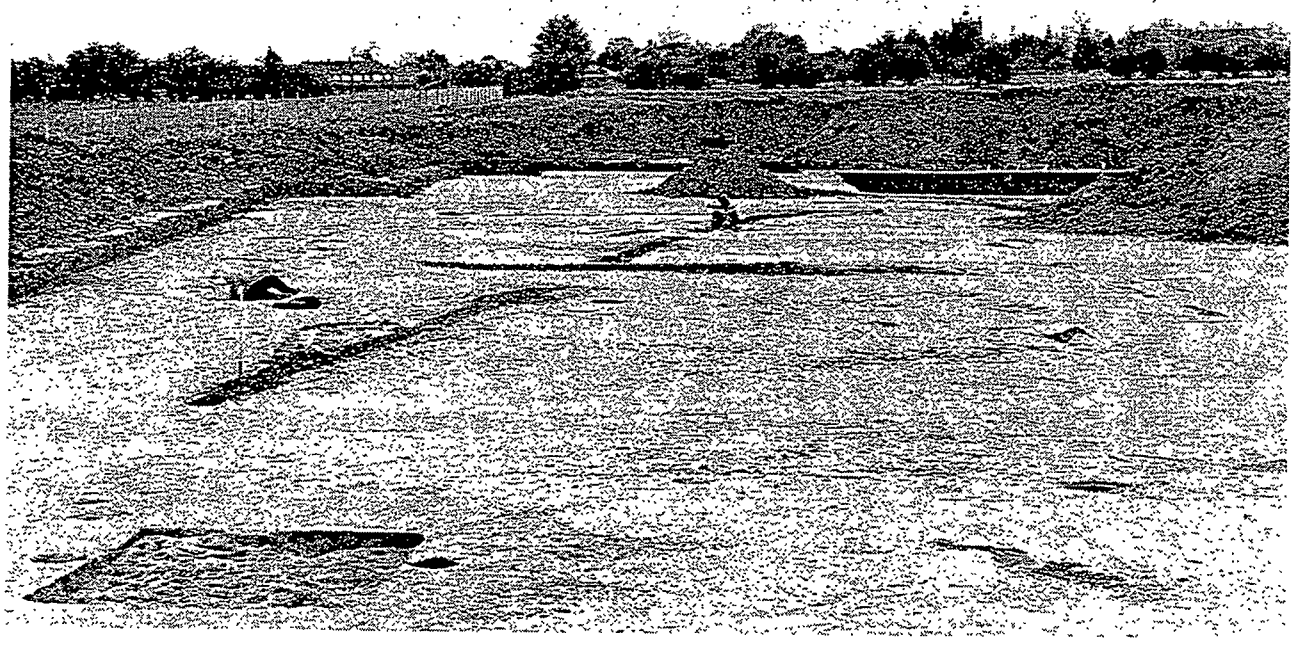

Plate 4 Late Bronze Age ditch 236 from the north with sunken-featured building 439 in the foreground

ditched fields or enclosures laid out along the edge of the river terrace, above the 26 m contour (Fig. 7).

Ditch 236 produced the greatest quantity of pottery of any of the ditches (Pl. 4). More than 400 sherds of Late Bronze Age pottery, many of them large and unabraded, came from the entire length (of about 40 m) which was fully excavated. Ditch 236 was of fairly regular profile, up to 0.8 m across and 0.4 m deep with steeply sloping sides and a fairly flat bottom (Fig. 10). It turned sharply to the east at the north end but terminated within 2 m of this corner. The fill throughout was a broadly undifferentiated yellowish–brown silty clay.

Ditches 104 and 709 differed considerably in size but appeared to have been part of the same feature running east–west across the centre of the site for a distance of more than 100 m. However, this link was not established in the 1995 watching brief, possibly because this part had been truncated or because the feature was not detected in the prevailing dry conditions. Ditch 104 was the smaller, with an average width of 0.9 m and a depth of 0.4 m, whereas ditch 709 was up to 3.2 m wide and 1.1 m deep (Fig. 10). The fill was yellowish–brown in colour, ranging from a silty loam in 104 to a silty clay in 709. However, in ditch 709 there was a clear primary fill of dark greyish–brown clay containing a considerable quantity of charcoal. Towards the west end of ditch 104 was pit 387 which appeared to cut the ditch, though the fills were virtually indistinguishable. Pit 387, possibly a sump, was oval in plan, measuring 2.35 m by 2 m, and 0.95 m deep. It contained 14 Late Bronze Age sherds (and seven residual early prehistoric sherds), in addition to the four from ditch 104 and 28 from ditch 709.

Ditch 3381, investigated in 1995, also ran east–west across the site, on the same general alignment as ditches 104/709, but offset *c.* 15 m to the south. Ditch 3381 was 55 m long, up to 1.6 m wide and 0.85 m deep (Fig. 10). It was filled with a yellowish–brown silty loam and the excavated section produced 39 sherds of Late Bronze Age pottery.

A short length of ditch, 436, investigated in 1994 towards the north-east corner of the site, was subsequently shown to be part of a much longer feature running approximately east-west for more than 120 m up to the edge of the river terrace to the west. At the east end ditch 436 faded out, possibly truncated, 10 m to the west of ditch 236, but it continued to the west as ditch sections 3414 and 3069 respectively. A gap *c.* 6 m wide between 3414 and 3069, marked by two out-turned ditch terminals, probably marked an entrance to an enclosed area to the south (Fig. 9). The ditch had been quite heavily truncated towards the west end, and the largest surviving section was *c.* 1.5 m wide and 0.7 m deep (Fig. 10). A total of 68 sherds of Late Bronze Age pottery was recovered from the various excavated sections of ditch.

The 1995 watching brief exposed a discontinuous series of ditches running north–south close to the 26 m contour which marked the extent of the fields/enclosures to the west. They extended over a distance of at least 200 m and comprised ditches 3076 and 3116 (Fig. 7). Ditches 3402 and 3403 probably also belonged to this group, and appeared to form a corner with east–west ditch 3069/3414. The gaps between the various lengths of ditches may have been entrances, with that between 3076 and 3116 being slightly out-turned, similar to that between ditches 3069 and 3414 to the north. The line of ditches became progressively shallower and less well-defined in the southern half of the site, and in this area the ditches were less than 1 m wide and 0.4 m deep. Only

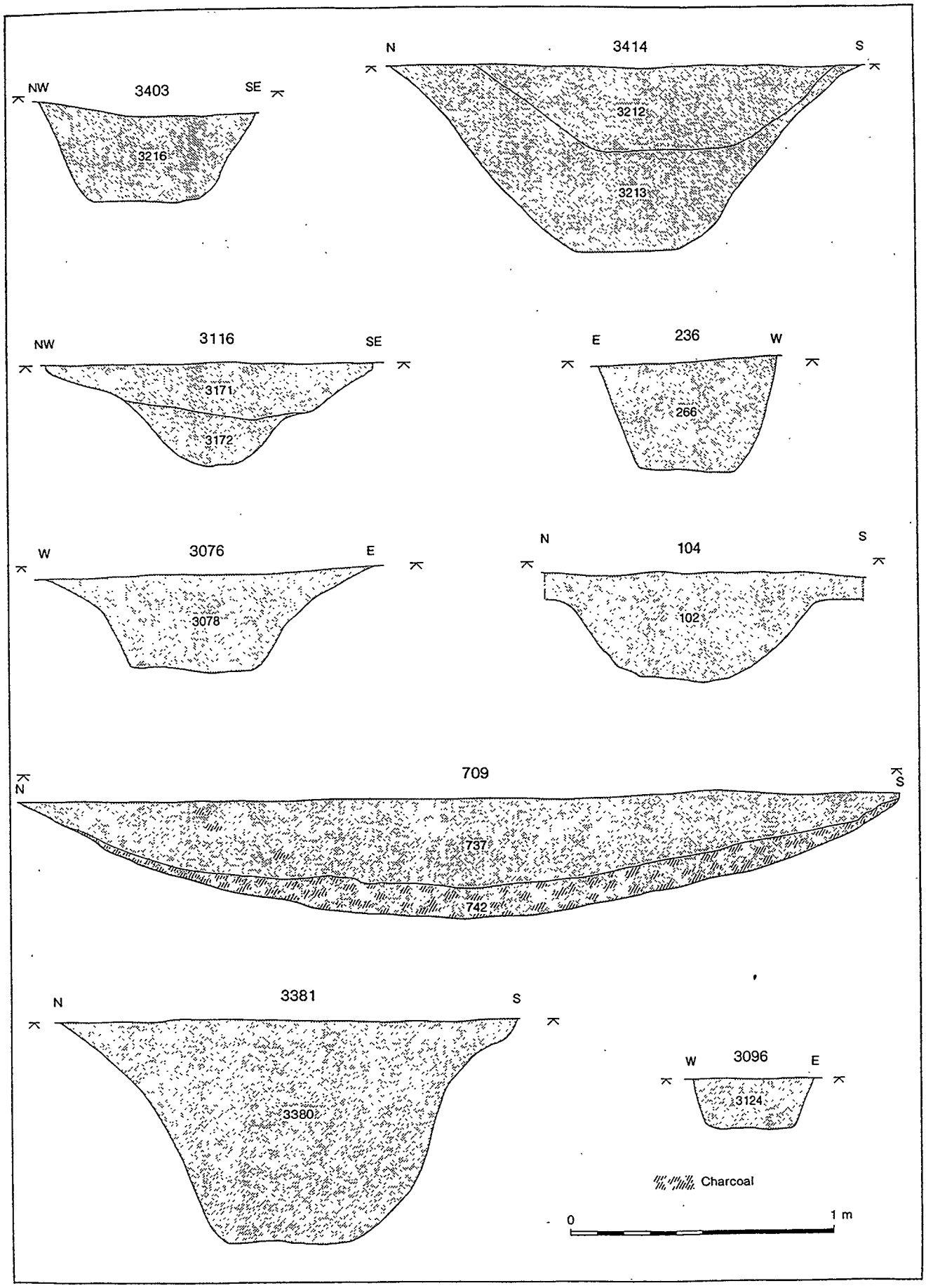

Figure 10 Sections across Late Bronze Age ditches and pits

15 sherds of Late Bronze Age pottery were recovered from the various excavated sections of ditches.

Pits

Fifteen features interpreted as pits were found on the 1994 excavations (see Fig. 7). No concentrations were clearly apparent, though there were some marked variations in the quantities of pottery present. Nine of the pits were circular or sub-circular, less than 1 m in diameter and less than 0.3 m deep; it is possible that some of these may have been post-hole bases, but others (eg, 456) contained such large quantities of pottery as to be certain that they were the bases of truncated pits. Six of the pits were larger, up to 2.5 m across, and included examples that were circular, sub-rectangular, and pear-shaped in plan. These larger pits were generally deeper, up to 0.95 m deep, but one example was only 0.04 m deep. The fills were generally homogeneous brown clayey silts, with only pit 516 containing more than a single fill. Variable amounts of gravel were present, along with small quantities of burnt flint and charcoal. Fragments of very degraded bone were occasionally noted.

The most prolific pits in terms of pottery were 456 and 621, with many of the sherds from these pits being comparatively large and unabraded. Pit 456, which was no more than a shallow scoop, produced 72 sherds; it lay towards the north end of the site, midway along the west side of ditch 236 which produced the largest assemblage of Late Bronze Age pottery from the site. Pit 621 in the centre of the site, south of ditch 709, produced 78 sherds. Of the remainder, only pits 135 (17 sherds) and 387 (14 sherds) produced more than a dozen sherds and both lay towards the south end of the site. It may be significant that three of these four pits lay close to ditches.

In 1995, three groups of small pits and/or large post-holes (Groups 3050, 3088 and 3089) as well as several isolated pits were found. These all lay in fairly close proximity to the various ditches, and it is possible that other isolated pits were not detected due to the dry conditions prevailing at the time.

Group 3050

This group was located close to the north of the site (Fig. 9), just outside the postulated entrance between ditches 3069 and 3144. It included post-holes 3152, 3153, 3154, 3155, 3157, 3159, 3160, and 3161, as well as three larger features, 3151, 3158, and 3162, interpreted as pits. The possible pits were circular or oval in plan, between 0.6 m and 0.8 m across, but none survived to a depth of more than 0.15m. The fills of light grey silty clay loam contained some charcoal flecking and burnt flint, and produced 37 sherds of Late Bronze Age pottery.

Group 3088

This lay approximately 20 m to the north of pit group 3089 (Fig. 8), adjacent to ditch 3076, and comprised two possible pits, 3222 and 3223, and two post-holes, 3224 and 3225, interpreted as a two-post structure. The pits were up to 0.5 m in diameter, 0.3 m deep, and were filled with greyish–brown sandy loam containing some charcoal and burnt flint. Pit 3222 produced two sherds of Late Bronze Age pottery.

Group 3089

This comprised a concentration of small, truncated pit bases including 3217, 3218, 3219, 3220, 3330, 3331, 3332, 3334 and 3335 (Fig. 7). They lay about 20 m to the south of group 3088, and all but pit 3217 lay to the east of ditch 3076. They varied in shape, and were between 0.65 m and 1.83 m across and up to 0.4 m deep. The fills, mostly greyish–brown silty loams with occasional charcoal and burnt flint inclusions, produced three sherds of Late Bronze Age pottery along with a six sherds of residual early Bronze Age pottery and two sherds attributed to the Late Iron Age (both from pit 3331).

Of the more isolated examples of pits, one – 3343 – is of particular interest. This lay approximately 40 m north-west of ?round-house 750, in the angle between ditches 3096 and 3381 (Fig. 7). It was sub-circular, *c.* 1.25 m in diameter but only 0.2 m deep, and contained abundant charcoal and burnt flint (>10,000 g) along with a very small quantity (2.5 g) of cremated human bone. A relatively large quantity of Late Bronze Age pottery was also recovered including two forms not previously identified in the Prospect Park assemblage which may be of comparatively late (8th–7th century BC) date (see below). One interpretation of the material from this pit is that it represents redeposited pyre debris.

Romano-British

Two small pits found in the 1994 excavation were assigned a Romano-British date, both of which lay towards the south-west corner of the site (Fig. 11). One pit, 311, contained cremated human bone along with sherds of a greyware vessel and was almost certainly the truncated remains of a Romano-British cremation burial. The other pit, 307, was larger, contained four sherds of Late Bronze Age pottery as well as a single sherd of Romano-British pottery, and may conceivably have been an earlier feature containing intrusive material.

The 1995 watching brief revealed a small group of Romano-British burials, both inhumation and cremation, in the south-west corner of the site (Fig. 11). Several other, possibly related features were found in the immediate vicinity, and it is likely that other burials lay outside the excavated area to the south.

The surface of the natural brickearth in the area of 'cremation burial group' 3417 was covered by soil spread 3048 (see Fig. 11), a grey to greyish–brown slightly loamy silt. This spread was clearly cut by the cremation burials and probably also by ditch 3397, though this was less clear. The limited area excavated produced small quantities of burnt flint and worked flint, one sherd of Romano-British pottery and one sherd of Saxon pottery, both the latter perhaps intrusive in a layer of what may have been reworked or disturbed natural brickearth.

Cremation burials

Five cremation burials were identified in 'cremation burial group' 3417; these comprised graves 3047, 3352, 3353, 3354, and 3387 (Fig. 11). The cremated human bone, along with some charcoal and occasional burnt flint, had been placed in shallow, circular pits *c.* 0.5 m in diameter and up to *c.* 0.2 m deep, though it is probable

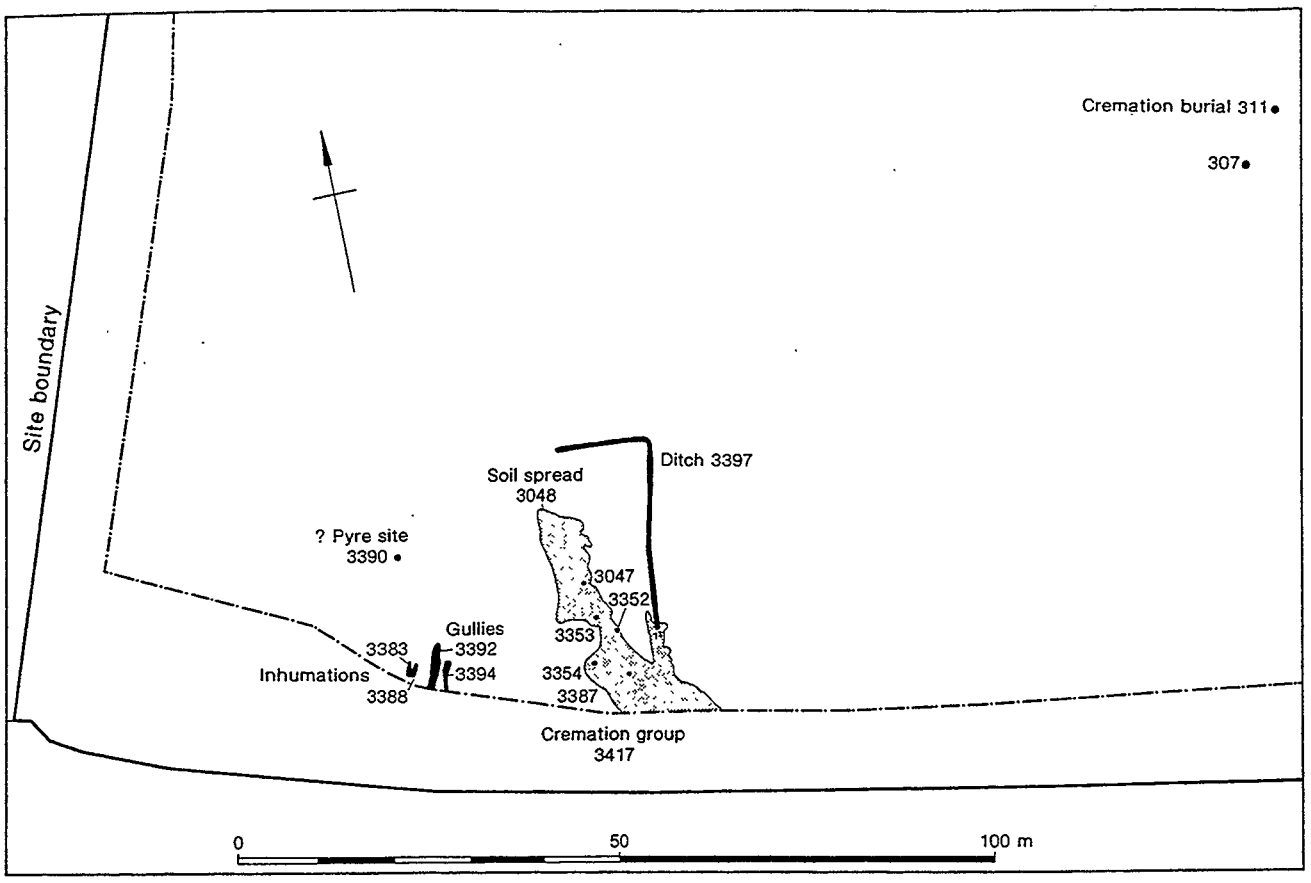

Figure 11 Plan of Romano-British features

that all of the pits had been truncated to some extent. In three examples (3047, 3352, and 3354) the burials had either been placed in, or were accompanied by, pottery jars dating to the later Romano-British period (though none survived complete), and three deposits also included nails or hobnails (3352, 3353, and 3387). Analysis of the bone (see below) indicates that all of the cremation burials were young adults and all were certainly or possibly female.

Inhumation burials

Two inhumation burials were also present (in graves 3383 and 3388), aligned approximately north-east to south-west, adjacent to each other, and lying some 25 m to the west of 'cremation burial group' 3417 (Fig. 11). Both graves were approximately sub-rectangular in plan and were less than 0.25 m deep, though they had clearly been truncated. Skeleton 3382 in grave 3383 had its head to the south, while skeleton 3385 in grave 3388 had its head to the north (Pl. 5); both were supine, extended, and had the arms crossed. Both inhumations were of older adults, one male and one female. The only finds were three sherds of residual Late Bronze Age pottery and a small number of hobnails from burial 3388

Other features

Approximately 30 m to the north-west of 'cremation burial group' 3417 was a small, undated pit, 3390, containing cremated human bone in the upper half of the fill with charcoal and burnt flint below (Fig. 11). This feature is interpreted as a possible uncleared pyre site though it may have been a further, disturbed cremation burial (see below).

Ditch 3397 was L-shaped in plan, at least 36 m in length, and appeared to partly enclose 'cremation burial group' 3417 (Fig. 11). It extended beyond the limit of excavation to the south, but the east–west arm appeared to terminate within the excavated area rather than having been truncated. Ditch 3397 was up to 0.8 m across, 0.45 m deep, and had fairly steeply sloping sides and a flat bottom. It was filled with a greyish–brown silty loam (3142) which could not be clearly differentiated from soil spread 3048 which was probably an earlier deposit covering part of this area. The small volume of ditch fill excavated produced three sherds of Romano-British pottery along with two residual sherds of Late Bronze Age pottery.

Two shallow, irregular gullies, 3392 and 3394, lay adjacent to each other, immediately to the east of and parallel with inhumation burials 3392 and 3394 (Fig. 11). They were at least 5 m long, extending beyond the limit of excavation to the south, and were up to 1.1 m wide and 0.15 m deep. The only finds were one sherd of Romano-British pottery and three sherds of Late Bronze Age pottery from gully 3394.

Early Saxon

Four sunken-featured buildings, possibly two post-built halls, and a small number of pits and other features of early Saxon date were found on the 1994 excavation.

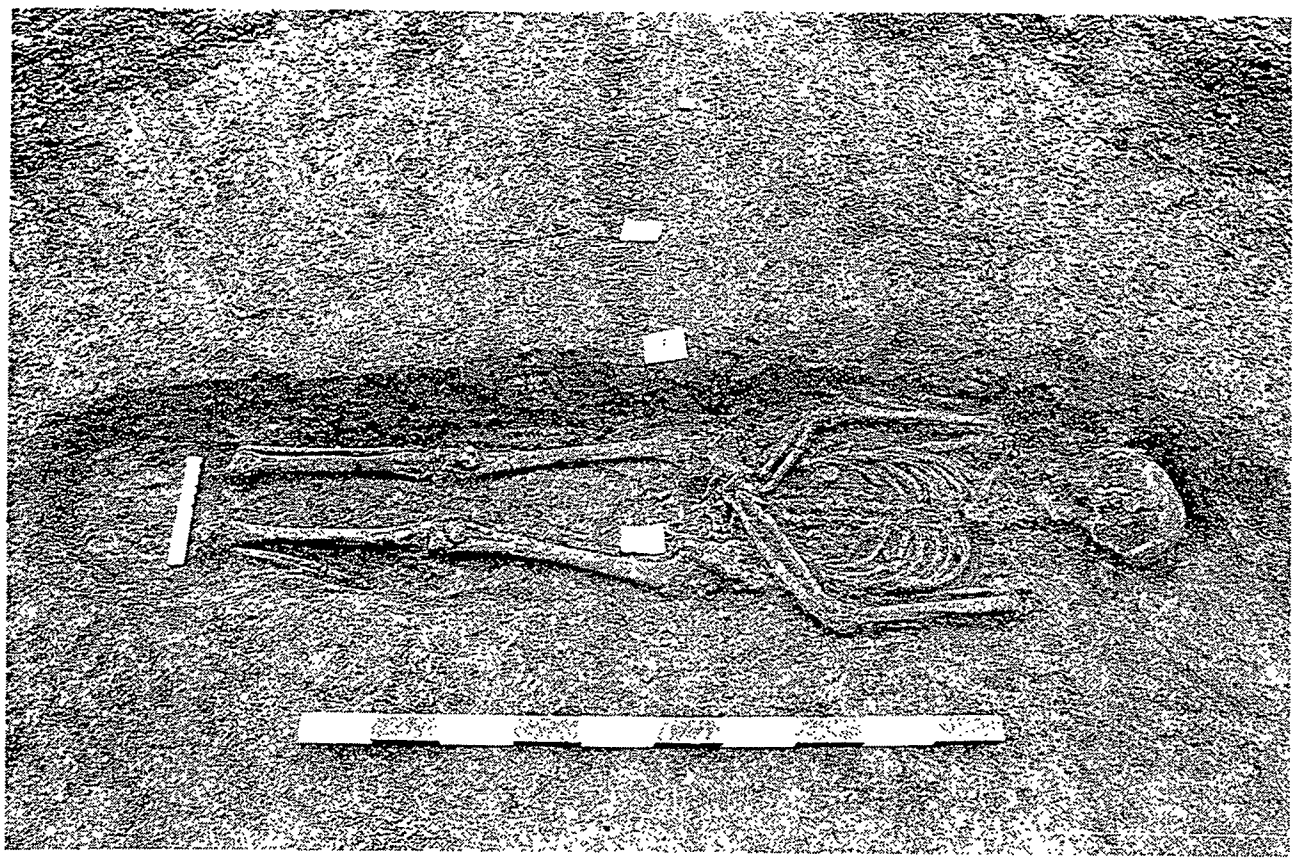

Plate 5 Romano-British inhumation burial 3388 (1 m and 0.2 m scales) looking north-west

The 1995 watching brief added substantially to this evidence in revealing a further seven sunken-featured buildings and at least three additional pits. These features were dispersed across the entire excavated area, but there is some indication of groupings (Fig. 12).

Sunken-featured Buildings (SFBs)

SFB 103
This lay towards the south-west corner of the site. It was one of the largest examples, measuring 3.4 m by 2.6 m, and survived to a depth of 0.43 m (Fig. 13). It was sub-rectangular in plan, with gently sloping sides and an uneven bottom. There were two post-holes, 384 and 512, dug centrally at either end against the edge of the pit. Both post-holes were 0.5–0.6 m deep, with 384 much larger and more irregular in plan. There were two slightly less substantial post-holes, 107 and 524, in the south-west and south-east corners respectively. These were *c.* 0.3 m in diameter, similar to post-hole 512, and 0.4 and 0.26 m deep respectively. No post-pipes were apparent, nor any variation between the fills of the post-holes and the pit, all of which contained an undifferentiated dark yellowish–brown clayey silt. This produced 145 sherds of Saxon pottery, along with some residual prehistoric and Roman material.

SFB 127
This lay 15 m to the north of SFB 103. It measured 3.2 m by 2.4 m, but was heavily truncated and survived to a depth of only 0.04 m (Fig. 13). It was approximately rectangular, had an irregular bottom, and two post-holes, 129 and 131, centrally placed at either end. Although these post-holes lay partly outside the existing edge of the pit, this is likely to have been an effect of truncation; they would have probably been dug just within the edge. Post-holes 129 and 131 were both *c.* 0.3 m in diameter and 0.5 m deep. SFB 127 was filled with layer 128, a homogeneous dark yellowish–brown silty clay. This produced 12 sherds of Saxon pottery, along with seven late prehistoric sherds and one Roman sherd.

SFB 439
This lay in the north-east corner of the site. It was approximately 2.4 m square, 0.15 m deep, with vertical sides and an irregular bottom (Fig. 14). Post-holes 299 and 401 lay midway along the east and west sides but outside the pit. They were approximately 0.4 m in diameter and between 0.5 and 0.65 m deep. Two fills were distinguishable within the pit. The lower, 438, was a thin spread of dark yellowish–brown silty clay, sealed by 420, a similar but lighter layer; these contained 20 and 42 sherds of Saxon pottery respectively. A single sherd came from each of the post-holes.

SFB 605
This lay towards the east edge of the site. It measured 2.4 by 2.1 m and was 0.15 m deep (Fig. 15). The sides were near vertical and the bottom flat but uneven. Post-holes 617 and 619, which lay midway along either

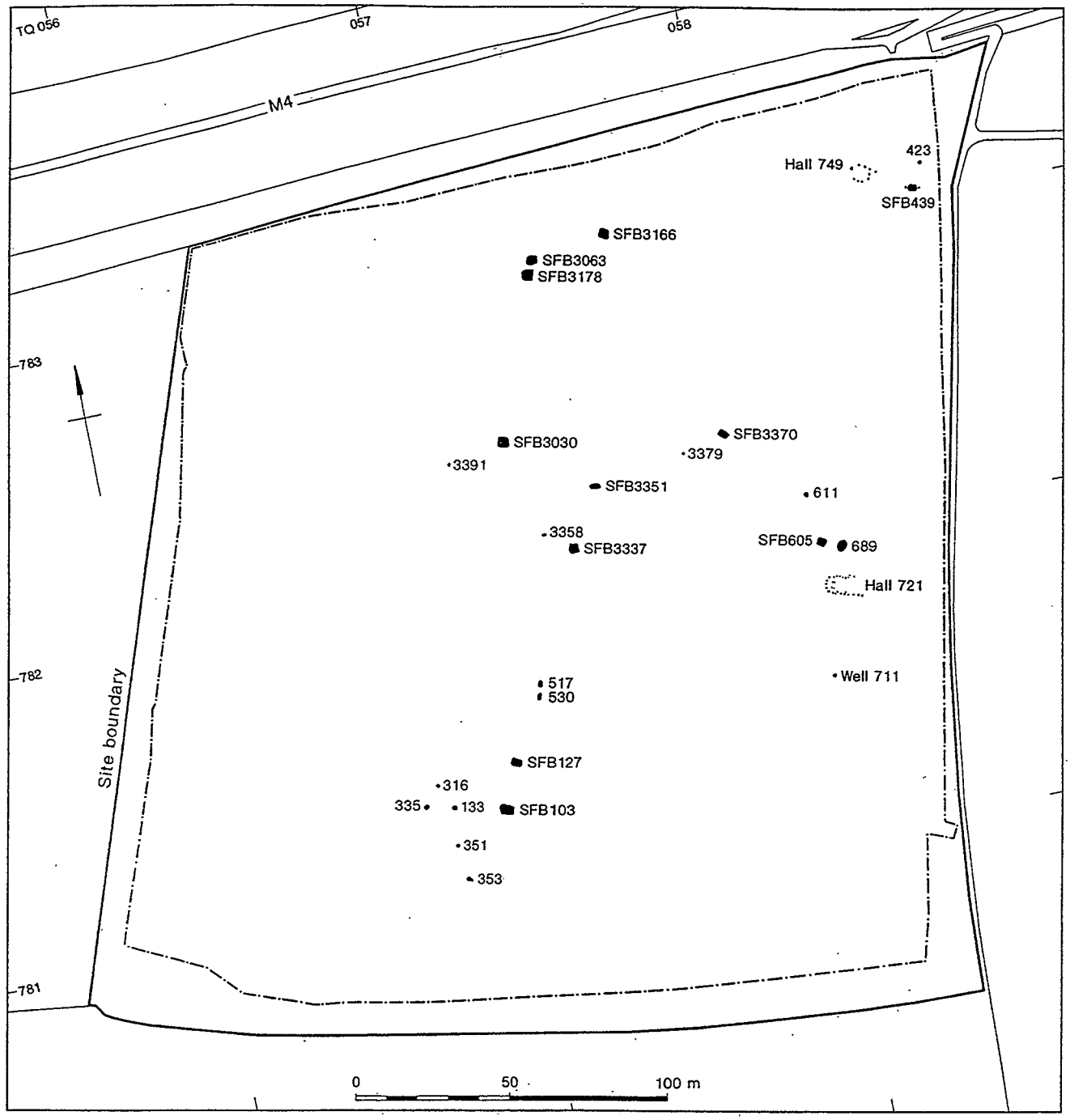

Figure 12 Plan of Saxon features

side, were 0.3 m in diameter and between 0.35 and 0.4 m deep. No post-pipes were apparent and the fill of the post-holes and the pit was a homogeneous dark yellowish–brown clayey silt. This produced 30 sherds of Saxon pottery.

SFB 3030

This lay towards the centre of the site. It measured 4 m by 3 m and survived to a maximum depth of 0.3 m (Fig. 16). Post-holes 3208 and 3210 were centrally located along the east and west sides, and were 0.35 m and 0.25 m in diameter respectively; both were 0.40 m deep. The pit sides sloped gently to a flat bottom on which lay approximately 31 clay loomweights, many of them complete, with the majority concentrated in the southern half of the pit (Pl. 6). The fill, an undifferentiated brown sandy silt loam, also contained 82 sherds of Saxon pottery and several sherds of residual Late Bronze Age and Roman material.

SFB 3063

This lay towards the north edge of the site, only 2 m from SFB 3178. It was approximately square in plan, measured 3 m by 3 m, and survived to a depth of 0.15 m (Fig. 14; Pl. 7). A single post-hole lay at either end, 3183 just within the pit and 3180 just outside; the maximum diameters and depths of both post-holes were 0.4 m. Three less substantial post- or stake-holes, 3185, 3188,

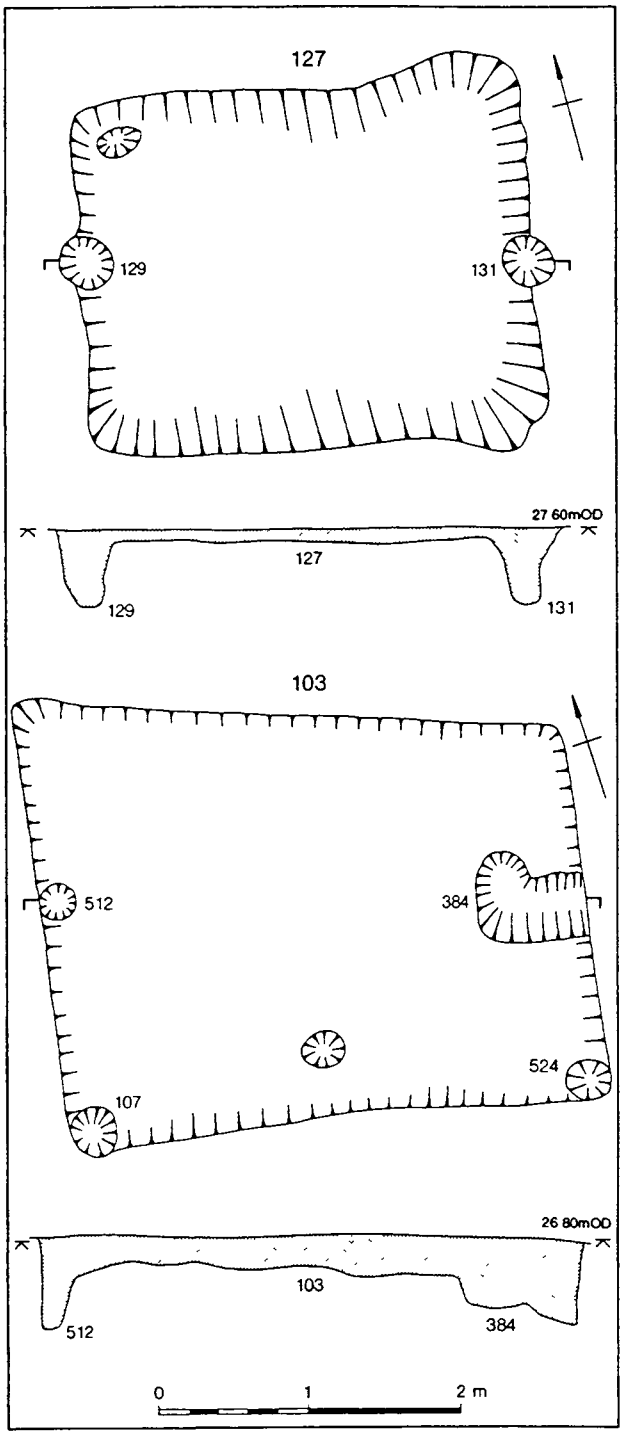

Figure 13 Plans and sections of SFBs 127 and 103

and 3190, lay around the inside of the northern edge of the pit. All were less than 0.2 m in diameter and a maximum of 0.2 m deep. No clear distinction between the greyish–brown silty loam fills of these internal features and the fill of the pit could be recognised. However, the fill of the pit was noticeably darker towards the centre and contained a greater concentration of charcoal, burnt flint, and unfired clay inclusions. Finds were also concentrated in this area and comprised 266 sherds of Saxon pottery as well as a small quantity of residual Late Bronze Age material.

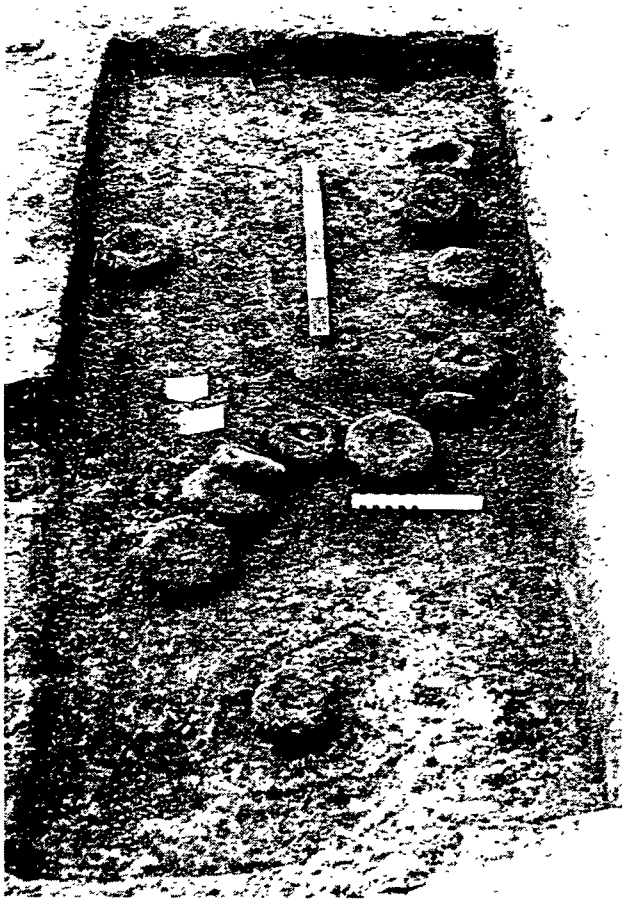

Plate 6 SFB 3030 from the north-west, half excavated, showing loomweights in situ (0.2 m and 0.5 m scales)

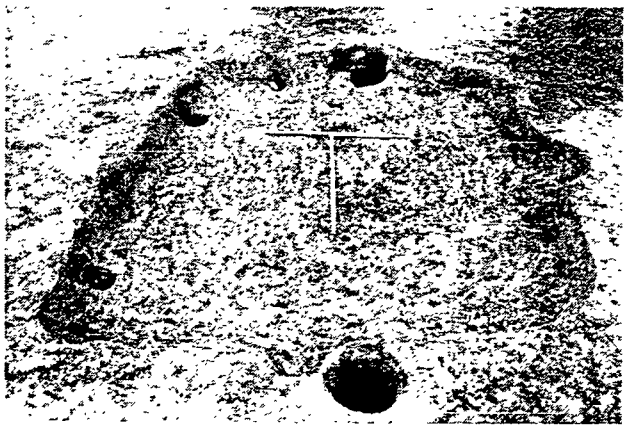

Plate 7 SFB 3063 looking north-west (1 m scales)

SFB 3166

This lay close to the north edge of the site, approximately 20 m to the north-east of SFB 3063. It measured 3 m by 2.6 m with an irregular bulge towards the south-east corner, and was a maximum of 0.18 m deep (Fig. 14). There were two substantial post-holes, 3196 and 3200, centrally placed along the west and east sides respectively, up to 0.5 m in diameter and 0.35 m deep. In the north-west and south-west corners were two smaller post-holes, 3195 and 3198, only 0.1 m deep and with

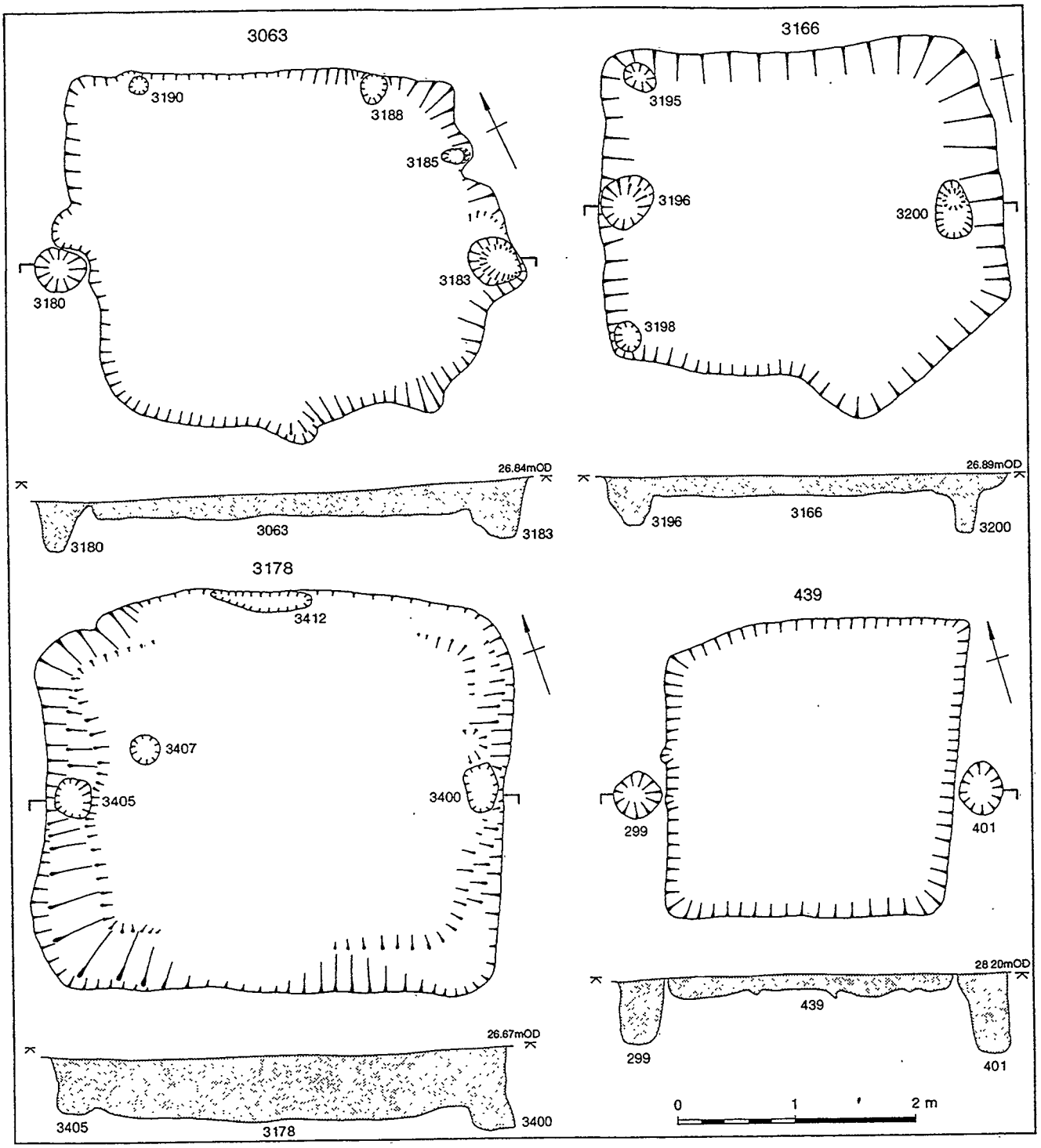

Figure 14 Plans and sections of SFBs 3063, 3166, 3178, and 439

diameters of less than 0.2 m. The fill of both pit and post-holes was a homogeneous greyish–brown silty clay loam which produced 155 sherds of Saxon pottery and several sherds of residual prehistoric and Roman material.

SFB 3178

This was the largest SFB encountered on the site. It was sub-rectangular in plan, flat bottomed, measured 3.9 m by 3.3 m, and had a maximum depth of 0.6 m (Fig. 14; Pl. 8). The edges on the north and south sides were near-vertical, with those on the east and west sides sloping gently down to a vertical cut. Post-holes 3400 and 3405 lay midway along the east and west sides respectively, both with diameters of almost 0.4 m, but 3405 was shallower with a depth of only 0.1 m as opposed to 0.2 m for post-hole 3400. Another post-hole, 3407, lay 0.6 m to the north-east of post-hole 3405 and was 0.2 m in diameter and 0.3 m deep. Centrally placed against the inner edge of the north side of the pit was a slot, 3412,

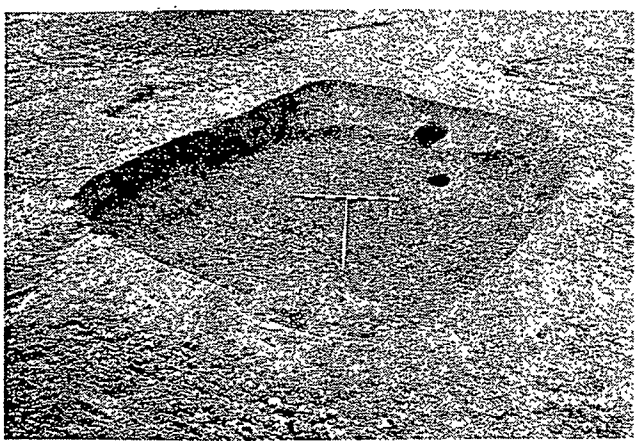

Plate 8 SFB 3178 looking west (1 m scales)

c. 0.8 m long, 0.15 m wide and up to 0.15 m deep. None of the fills of these various internal features could be differentiated from the fill of the pit which was broadly divided into two successive layers of light greyish–brown and greyish–brown silty clay loam, although these could not be clearly distinguished from each other. The upper and lower fills produced 122 and 386 sherds of Saxon pottery respectively, along with several residual sherds of Late Bronze Age pottery.

SFB 3337

This lay towards the centre of the site, 23 m south of SFB 3351. Unusually, this SFB was slightly wider than it was long, and measured 3 m by 3.2 m with a depth of up to 0.15 m (Fig. 15). Two post-holes, 3372 and 3373, were centrally placed along west and east sides, and in both cases extended slightly beyond the edges of the pit. The post-holes had diameters of 0.4 m and 0.15 m respectively and both were 0.2 m deep. Three other features lay within the western half of the pit. These comprised two post-holes, 3374 and 3376, both *c.* 0.3 m in diameter and of similar depth, and a more substantial feature, 3377, which lay in the north-west corner of the pit. Feature 3377 was sub-rectangular with vertical sides and a flat base, and measured 0.7 m by 0.5 m and had a maximum depth of 0.25 m. As in the other SFBs, it was not possible to differentiate between the fill of the pit and fills of the various internal features which together produced a total of 53 sherds of Saxon pottery and a small quantity of residual Late Bronze Age and Roman material.

SFB 3351

SFB 3351, 23 m to the north of SFB 3337, was comparatively small and measured 2.8 m by 2 m with a depth of only 0.12 m (Fig. 15). The edges sloped gently to a fairly flat bottom, and two post-holes, 3361 and 3363, lay midway along the east and west sides respectively. Both were comparatively small, 3361 being 0.2 m in diameter and 0.2 m deep, and 3363 being 0.15 m in diameter and 0.15 m deep. The fill of greyish–brown silty loam produced only two sherds of Saxon pottery and a single sherd of residual Late Bronze Age pottery.

SFB 3370

This also lay towards the centre of the site, measured 3 m by 2.2 m and survived to a depth of 0.15 m (Fig. 16).

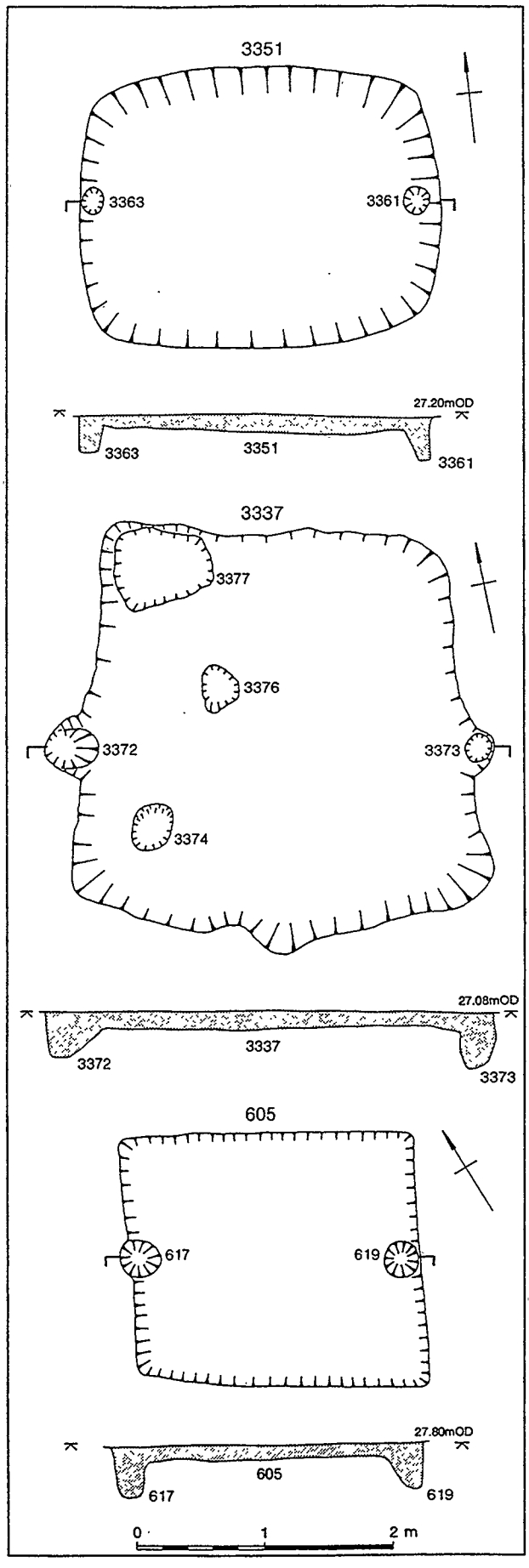

Figure 15 Plans and sections of SFBs 3351, 3337, and 605

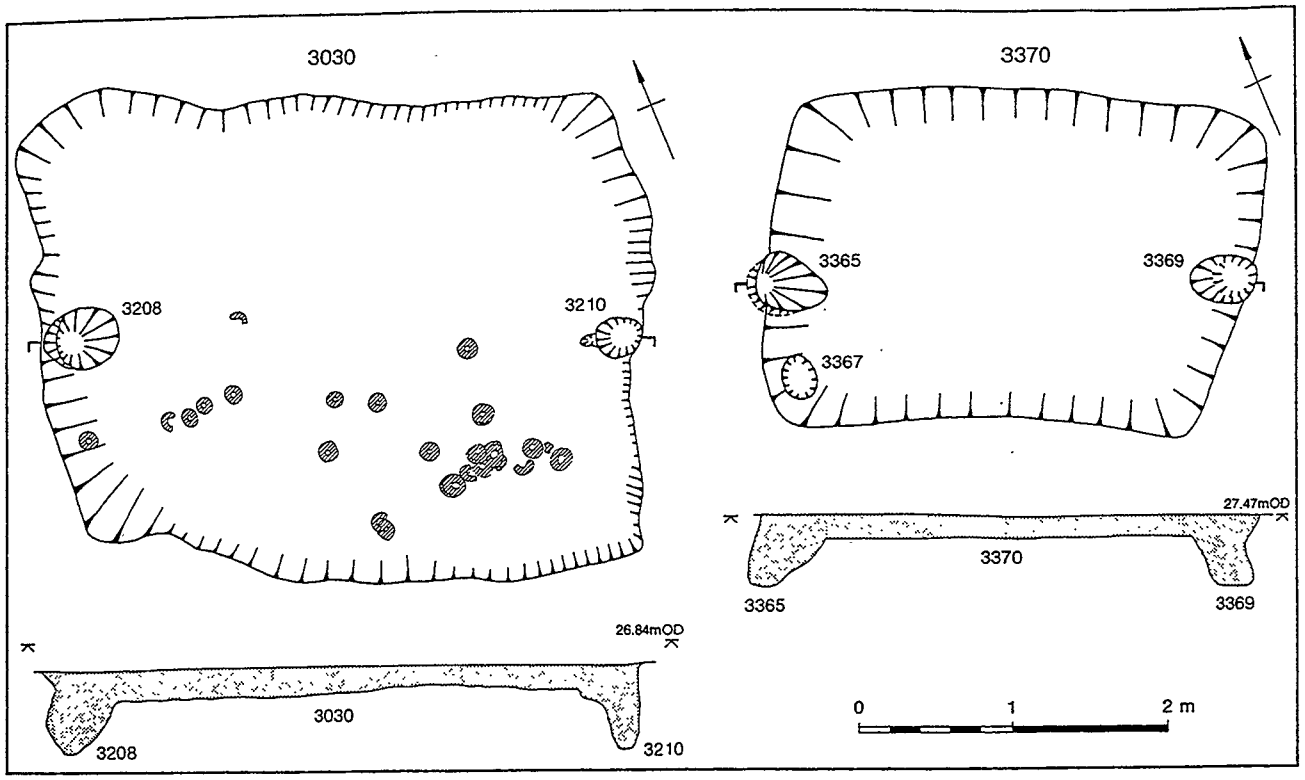

Figure 16 Plans and sections of SFBs 3030 and 3370

Two substantial, oval post-holes, 3365 and 3369, lay midway along the west and east sides respectively, and were inclined towards the centre of the pit. Both were *c.* 0.45 m long by 0.3 m wide, 0.45 m deep, and contained single fills with no evidence for any post-ghosts. The fill of the pit, a greyish–brown silty loam which could not be differentiated from the fills of the post-holes, produced 46 sherds of Saxon pottery.

Post-built halls

Two post-built halls were identified during the 1994 excavation, one certainly and the other probably of early Saxon date. No further examples were recorded during the 1995 watching brief though there is a possibility that some small features such as post-holes may have gone unrecognised in the dry conditions prevailing at the time.

Hall 749

The plan of this was not entirely clear but it appears that the east end of an east–west aligned post-built structure was revealed in the north-east corner of the excavated area (Figs 12 and 17). Eight post-holes can be ascribed to this structure, with 444 and 446 marking the north wall; 409, 411, and 418 the east wall; and 413, 415, and 432 the south wall. In addition to these, post-hole 407 lay immediately to the east, and 448, which may have been an internal post-hole, to the west. The post-holes varied in shape, were between 0.2 and 0.4 m across, and up to 0.3 m deep. If the arrangement of post-holes has been interpreted correctly (shown by a dashed line on Fig. 17), then this represents a structure more than 4 m long and 5 m wide. No post-holes marked the north-east and south-east corners, but there is a hint of regularity in the surviving post-holes which were spaced at intervals of approximately 1.4 m. The fills of most were yellowish–brown silty clay, with no post-pipes apparent. Post-hole 411 contained two sherds, and 446 one sherd of Saxon pottery.

Hall 721

This lay towards the centre along the east edge of the site (Fig. 12). It comprised possibly as many as 28 post-holes, though several survived only as shallow depressions. These post-holes appeared to mark a rectangular structure perhaps 10 m long and 5 m wide (Fig. 17; Pl. 9). There were no post-holes marking the east end but, at the west end, there was a semi-circular arrangement of post-holes comprising 613, 615, 623, 679, 683, and 685. The post-holes along the north and south sides were irregularly spaced at intervals of 1–2 m but there was some indication of pairings between post-holes in opposing walls. Most of the post-holes were sub-circular or oval in plan, 0.15–0.35 m across, and up to 0.17 m deep. However, the post-holes making-up the semi-circular arrangement at the west end were markedly more elongated than the others, with maximum dimensions of 0.3–0.5 m and an average depth of 0.12 m. Post-holes 679 and 685 lay in the south-west and north-west corners respectively of the rectangular part of the structure, with double post-holes 722/724 and 726/728 either marking the west end of this, or more probably an internal division; this group comprised the smallest post-holes assigned to hall 721. The fills of the post-holes were invariably dark yellowish–brown clayey silts with occasional charcoal flecking and there was no evidence of any post-ghosts. Three sherds of Late Bronze Age pottery were recovered

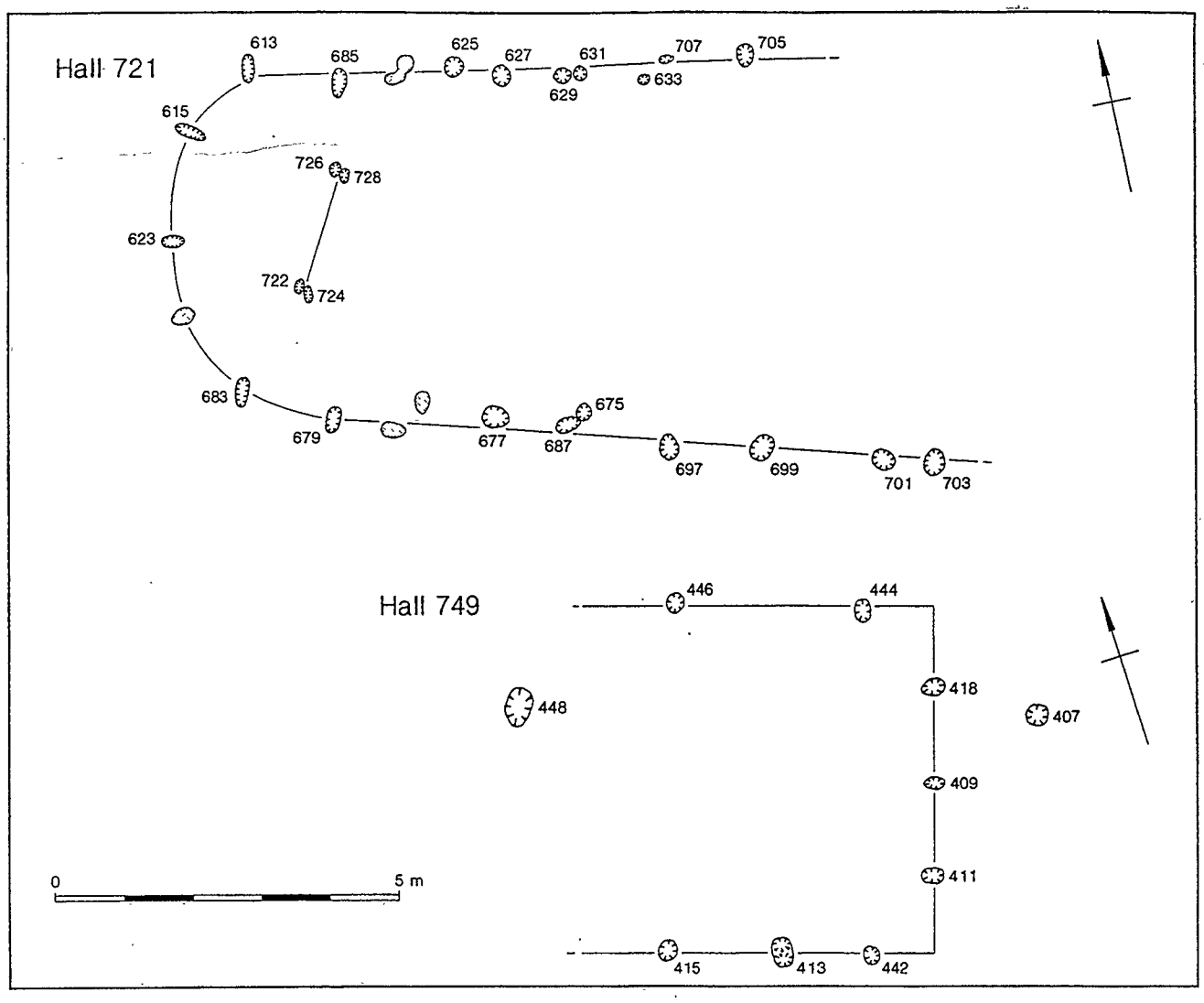

Figure 17 Plans of Halls 721 and 749

from the post-holes but no Saxon material. Slot 695, which lay within the area occupied by hall 721, produced 35 sherds of Late Bronze Age pottery, and it is suggested that this was an earlier and unrelated feature.

Ditches and pits

Linear features 517 and 530, approximately midway between SFBs 127 and 3337, may have been the truncated remains of a shallow ditch (Fig. 12). They were aligned approximately north–south, and were up to 0.8 m wide and 0.25 m deep but together extended over a distance of only 6 m. Two sherds of Saxon pottery were recovered from these features.

Nine possible pits were excavated in 1994, with a further three examples being identified during the 1995 watching brief (Figs 12 and 18). These comprised 423, just to the north of SFB 439; 611, 689, and 711 in the vicinity of SFB 605; 133, 316, 335, 351, and 353 to the south-west of SFBs 103 and 127; and 3358, 3379, and 3391 towards the centre of the site around SFBs 3030, 3337, 3351, and 3379. Several survived as little more than shallow sub-circular or sub-rectangular scoops, with seven less than 1 m in diameter and nine less than 0.25 m deep. Virtually all of these smaller pits contained fewer than a dozen sherds of Saxon pottery, along with some residual Late Bronze Age material. Pit 316 was exceptional in that it was only 0.35 m in diameter and 0.04 m deep, but contained 87 sherds of Saxon pottery. Pit 423 was notable for the large number and range of charred plant remains present.

The pits in the vicinity of SFB 605 showed the greatest degree of variation in shape and size. Pit 611 measured 1.3 by 0.85 m and was almost 0.7 m deep, but both 689 and 711 were substantially larger (Fig. 18). Feature 689 was a shallow, oval hollow which lay 3 m to the south of SFB 605. It was 3.2 m long, 3 m wide, 0.16 m deep, and filled with a dark yellowish–brown sandy silt containing 12 sherds of Saxon pottery and four residual Late Bronze Age sherds; it is suggested that this may have been some form of 'working hollow'. Pit 711, which lay some 40 m to the south of SFB 605, was quite different to any of the others and on balance has been interpreted as a well. This was circular, *c.* 0.7 m in diameter at the top, 1.85 m deep, and widening to 0.9 m at the flat bottom. The sides above this were near vertical. There were no clear layer boundaries in the fill which graded imperceptibly from a dark yellowish–

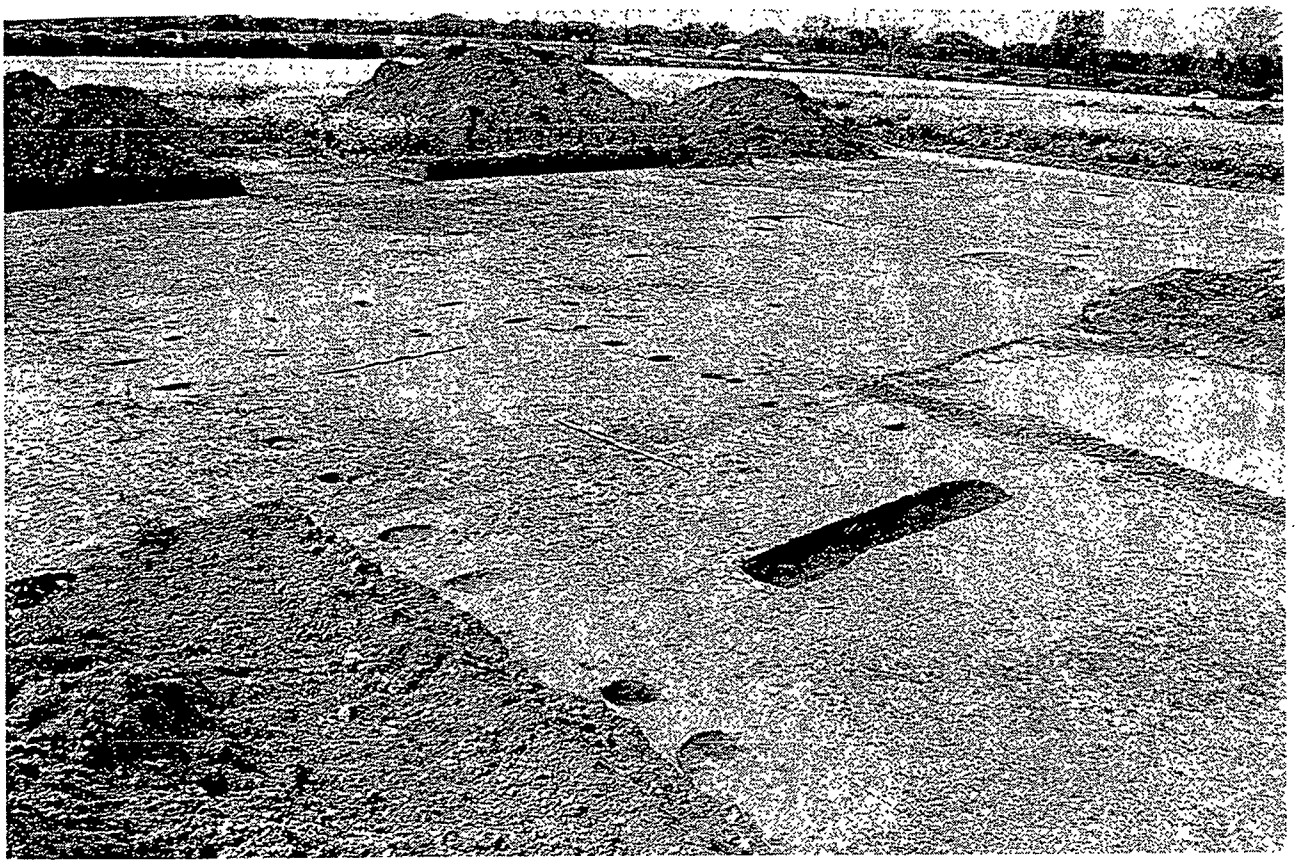

Plate 9 Post-built Hall 721 looking north-west with slot 695 in foreground (2 m and 0.5 m scales)

brown sandy silt (layer 712) at the top, to a slightly lighter clayey silt (716), to a greyish–brown clay (732) at the bottom, the latter likely to have accumulated in standing water. There was a considerable amount of charcoal flecking in the upper part of layer 732 and this layer also showed considerable red, probably iron, staining. The primary fill, 732, contained five sherds of Late Bronze Age pottery, but layers 716 and 712 above contained 17 and 11 sherds of Saxon pottery respectively, along with a few Late Bronze Age sherds.

Finds

Introduction, by Lorraine Mepham

The following section considers the various categories of artefact recovered from the site. The most significant categories here are worked flint, pottery and fired clay. The worked flint and pottery serve both to complement and augment existing assemblages from the site (Harding 1996; Laidlaw and Mepham 1996), while the collection of ceramic loomweights from one Saxon SFB supplements functional evidence for the site; no such objects were recovered from previous evaluation or excavation.

It has not been considered necessary here to describe in detail the artefacts from the evaluation and excavation stages, since these have already been published (Andrews 1996a). Since it is appropriate, however, to look at the assemblages from all three stages of work together, in order to gain an overall picture of the material culture of the site, artefacts from evaluation and excavation stages are referred to and discussed within the relevant categories. Type series are repeated where it is felt that this information is helpful.

Metalwork, by Natasha Hutcheson, with contributions by Nicholas A. Wells and Phil Andrews

No metalwork was recovered from either the evaluation or excavation stages of work. The metalwork recovered during the watching brief (122 fragments) originated from eight contexts, four of which are of Romano-British date, and four Saxon.

Romano-British burials

A total of 116 objects and fragments was recovered from one inhumation (3388) and three cremation burials (3352, 3353, 3387). Most appear to be nails of varying sizes, although many are highly corroded and fragmentary and identification, even from X-radiograph,

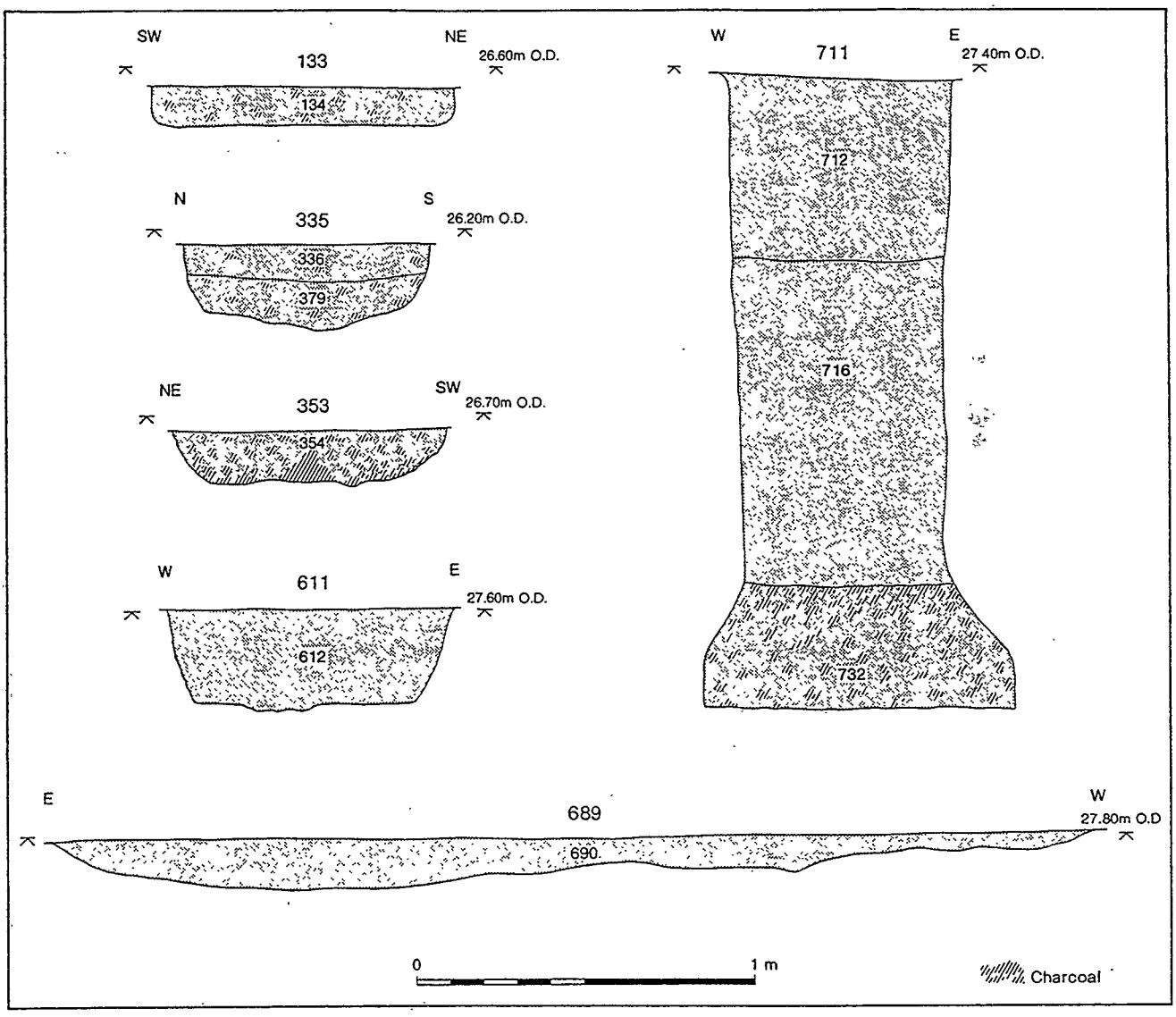

Figure 18 Sections across Saxon pits

has proved difficult. Nails from cremation burials 3352, 3353, and 3387 have small fragments of bone and charcoal adhering, suggesting that they may have been burnt on the pyre. Five of the nails from cremation burial 3387 are in very good condition. All these have square-sectioned shanks and circular or slightly oval heads and are typical of Manning's type 1b (1985). A small number of highly corroded hobnails (ten) were also recovered from inhumation burial 3388.

Saxon features

Four iron objects, one copper alloy coin, and a lead spearhead, came from Saxon contexts, all within sunken-featured buildings. The iron objects comprise two nails (SFB 3178) and two small unidentified fragments (SFBs 3063, 3178).

Romano-British coin, by Nicholas A. Wells

One copper alloy coin came from SFB 3063. This is a Romano-British issue which has been pierced for suspension. It may be described as follows:

Maximinus II
Obverse: GALVALMAXIMINVSNOBC
Bust r. [?] and cuir.
Reverse: GENIO/POPROM
Genius loci holding cornucopua. Exergue unclear.
Date: AD 305–308
Mint: probably Treveri (Trier)
Obj. No. 6051, context 3179, SFB 3063

Romano-British coins are by no means uncommon finds on Saxon sites, and deliberate collection is attested from many settlement and cemetery excavations. Piercing and other evidence for reuse of Roman issues in the Saxon period is well known, both from from grave contexts (eg, Going 1993, 73; Cook and Dacre 1985, 94 and table 18), and settlement sites (eg, Curnow 1985, 77).

Lead spearhead

A socketed lead spearhead, 90 mm in length (Fig. 19), came from a Saxon feature (Obj. No. 6052, context 3179, from the bottom of SFB 3063). However, it is unclear as

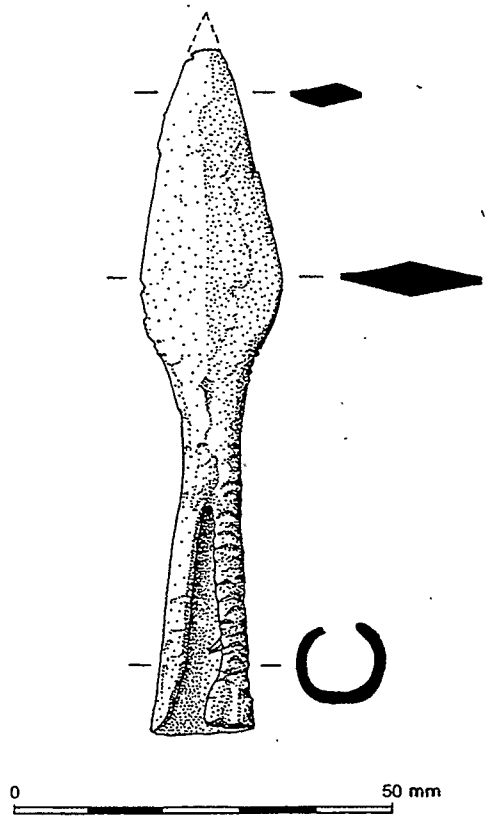

Figure 19 Lead spearhead. Scale 1:1

to whether it is Romano-British or Anglo-Saxon in date. It finds Romano-British parallels with spearheads of Manning's group II (1985), dated to the mid 1st century BC, although these mainly come from major military sites of the early Empire in Britain and Germany.

If it is Saxon object then it may be paralled with Swanton's type F1 (Swanton 1973, 91–2, fig. 31) which comprises a small group of straight-sided, angular blades (leaf-shaped) with fairly long sockets and junction pieces. The Prospect Park example is somewhat smaller than is normal for this type which generally range between 180 mm and 250 mm in length. If its attribution to type F1 is correct then it is likely to be of 5th or early 6th century date as it is considered unlikely, with a very few notable exceptions, that any of this type lasted into the second half of the 6th century.

The object looks functional, but the fact that it is made of lead renders this extremely improbable. It may have been a Romano-British votive object similar to the lead axe recovered from Fishbourne (Cunliffe 1971, fig. 66), although these are generally miniature (Green 1976, 42 and pl. xxviii, h). Alternatively, it could have formed part of a figurative work of art, such as a figure of a deity, though this seems less likely. Lead models of weapons have occasionally been recorded from Anglo-Saxon graves, with spears being extremely rare, but these are miniatures only a few centimetres in length and are complete with the spearhead and shaft modelled as one (Meaney 1981). Anglo-Saxon brooches and finger rings also occur in lead, but rarely, and it is presumed that they were patterns for casting. However, both Anglo-Saxon and Romano-British spearheads were made of wrought iron rather than cast in copper alloy, and a pattern therefore seems an extremely unlikely explanation for the Prospect Park lead spearhead.

Metalworking debris, by Phil Andrews
A small quantity of ironworking debris (303 g) was recovered, all from the fill of Saxon sunken-featured building 3178. There are no diagnostic pieces present but it most probably derives from smithing, perhaps from a single operation.

Worked Flint, by P.A. Harding

A total of 532 pieces of worked flint was collected from 38 excavated contexts and 5 unstratified surface contexts during the watching brief, bringing the total flint assemblage recovered from the site to 851 pieces. Most of the material is derived, being associated with Late Bronze Age, Romano-British, or Saxon pottery. The largest single group in a primary context comprises 39 pieces, including five scrapers, from pit 380, associated with Late Neolithic pottery. An additional 12 pieces were found in Late Bronze Age pit 309.

Raw material and condition

Flint is readily available in the local gravels and the condition of the surviving cortex suggests that this source was exploited. The flint is of good quality, although nodules are not large. A large, broken, retouched flake from ?Neolithic feature 719 may have been brought to the site from further afield. Most of the material is in mint condition, although a few pieces show signs of heavy edge damage which is likely to be the result of agriculture. The flint is unpatinated but some pieces are lightly stained.

Technology

Only four of the 32 cores from the site were found during the excavation. Ten of those from the watching brief were prepared for the production of bladelets and occurred in the north-east corner of the site. These pieces, accompanied by bladelets and other diagnostic waste, suggest that the Bronze Age and later features in this area were cut through a flint concentration of Mesolithic date. The remaining cores are undiagnostic flake cores and probably relate to the Late Neolithic and Bronze Age activity on the site.

The non-core material from the site comprises bladelets and flakes. The former include pieces with narrow, abraded butts, crested bladelets, pieces with faceted butts, and rejuvenation tablets, which are probably contemporaraneous. Most of the remainder are undiagnostic flakes, some of which have well prepared butts. Hard hammer percussion predominates across the site although some pieces, particularly the bladelets, show evidence of soft hammer percussion.

Tools

Four microliths, comprising two rods, an obliquely blunted point, and a backed bladelet were found during the excavation with an additional backed bladelet from the watching brief. Additional diagnostic indicators of Mesolithic date include a tranchet axe sharpening flake from SFB 3030.

The most common tool type is the scraper of which 26 were found. Five of these were recovered from the Late Neolithic pit 380. This group consists mainly of end scrapers made on non-cortical, hard hammer struck flakes which were retouched into well made implements. Retouch is direct, continuous, semi-abrupt, and regular/irregular which often extends around to one or both edges. Most of the remaining scrapers are undiagnostic.

Additional pieces include three fabricators, from subsoil context 267, SFB 3178, and an unstratified surface find respectively, a leaf-shaped arrowhead, and a triangular arrowhead, both of which were unstratified. There was also a possible triangular arrowhead from Late Neolithic pit 380, a piercer from Saxon well 711, and two flakes with marginal/microdenticulate retouch.

Discussion

Most of the flintwork cannot be dated precisely; it occurs with later pottery and is residual. The earliest activity at the site is dated by the flintwork to Mesolithic hunter communities, producing bladelets, microliths, and tranchet axes. The results of the watching brief suggest that this activity was concentrated towards the north-east corner of the site and was disturbed by Late Bronze Age and Anglo-Saxon settlement. It is unclear whether additional material was contained within the topsoil or within the upper part of the brickearth. This small collection of material constitutes the largest Mesolithic assemblage from the Colne valley other than that from the Upper Palaeolithic–Early Mesolithic site at Three Ways Wharf, Uxbridge (Lewis 1991). Wymer (1977) lists a number of tranchet axes from Harmondsworth but very few other products. The collection includes only limited datable material but the presence of rods suggests a Late Mesolithic date.

Most of the remaining flintwork is difficult to assign chronologically. The presence of a single leaf arrowhead is insufficient to argue for Early Neolithic occupation and is better seen as a casual loss. The principal activity for which evidence is available coincides with the Late Neolithic features and concentration of Grooved Ware pottery towards the southern end of the site. These quantities of flintwork are low but tools are proportionally well represented. Such occurrences are likely to denote domestic activity where tools were used and abandoned in rubbish pits. It is possible that the original tool manufacture took place where the gravels were more readily exposed.

Despite the presence of Late Bronze Age pottery there is an apparent lack of flintwork of this period. The exception relates to the material recovered from the subsoil in the north-east area of the excavation which broadly corresponds with the greatest concentration of, and least abraded, Late Bronze Age pottery on the site (from ditch 236).

Pottery, by M. Laidlaw and Lorraine Mepham

The ceramic assemblage recovered from the watching brief phase of work at Prospect Park consists of 1880 sherds (22,101 g). This brings the total assemblage from the site (excluding medieval and later material) to 3917 sherds (38,642 g). The assemblage includes components of Late Neolithic, Middle Bronze Age, Late Bronze Age, Late Iron Age, Romano-British, and early Saxon date.

The methods employed in the analysis follow the standard Wessex Archaeology pottery recording system (Morris 1992), as outlined in the previous report. The assemblage was divided into three broad fabric groups depending on the dominant inclusion type: flint-gritted (Group F), grog-tempered (Group G), and sandy (Group Q). Within these groups the sherds were assigned to fabric types depending on the frequency and size of inclusions, using a binocular microscope (x20 magnification). Altogether, 40 fabric types were defined within the six chronological periods. The fabric series for the whole assemblage is reproduced in full here as Appendix 1, and it may be noted here that five new fabric types were identified amongst the watching brief assemblage (two Late Bronze Age, two Late Iron Age and one Romano-British). Fabric totals for each chronological period are listed in Table 1.

A type series was constructed for all diagnostic rim sherds, although a significant number were too small to be related to specific vessel forms, particularly those with less than 5% of the total diameter surviving. This type series was supplemented by other diagnostic sherds (eg. decorated body sherds). The full form type series is repeated here for reference, as Appendix 2.

Pottery was quantified by fabric type, both by number and by weight, within each context. Details of sherd type, vessel form where known, manufacture, surface treatment, decoration, and use-wear were also recorded. Pottery records have been computerised (dBase IV), and full details are available in archive. Percentages throughout this report have been calculated by weight unless otherwise noted. Terms used in the fabric descriptions below to define the frequency of inclusions follow Terry and Chilingar (1955): rare (1–3%); sparse (3–10%); moderate (10–20%); common (20–30%).

Late Neolithic

Late Neolithic pottery comprising 190 sherds, derives mainly from a minimum of four Grooved Ware vessels (Laidlaw and Mepham 1996, fig. 22; Pl. 1). These vessels occur in a grog-tempered fabric (G1), but three other fabrics (F1, G2, G3) were identified in small quantities. The single sherd in fabric G3 was identified as a rim from a Fengate Ware vessel (*ibid.*, fig. 22, 10). The other two fabrics are represented by plain body sherds only, and their attribution to this period is more tentative.

Only eight further sherds were recovered during the watching brief which can be added to this total, namely one plain body sherd in fabric F1 and seven plain body sherds in fabric G1. The latter, in a non-distinctive grog-tempered fabric, could be of Early Bronze Age date, but are included here in the absence of any evidence to the contrary. All sherds were found redeposited in Late Bronze Age features (pit 3335 and ditch 3116).

The significance of the group of Grooved Ware vessels, which were found mainly within hollow 1494, and which appear to be *in situ* in this context, has already been discussed (Laidlaw and Mepham 1996, 29–30).

Table 1. Pottery fabric totals (whole assemblage)

	Evaluation / excavation		*Watching brief*		*Total*			
Fabric	*No.*	*Wt (g)*	*No.*	*Wt (g)*	*No.*	*Wt (g)*	*% of phase*	*% of total*
Late Neolithic								
F1	8	34	1	2	9	36	3.5	
G1	179	926	7	49	186	975	94.6	
G2	2	16	–	–	2	16	1.5	
G3	1	4	–	–	1	4	0.4	
Sub-total	190	980	8	51	198	1031	–	2.6
Middle Bronze Age								
F2	87	3608	24	657	111	4265	92.9	
F3	3	49	3	39	6	88	1.9	
F4	5	50	9	91	14	141	3.1	
F11	6	33	11	65	17	98	2.1	
Sub-total	101	3740	47	852	148	4592	–	11.9
Late Bronze Age								
C1	1	2	–	–	1	2	–	
F5	192	1065	4	21	196	1086	9.1	
F6	89	664	65	552	154	1216	10.2	
F7	160	1226	305	3250	465	4476	37.5	
F8	77	451	63	297	140	748	6.3	
F9	502	2599	14	59	516	2658	22.3	
F10	54	334	5	82	59	416	3.5	
F12	–	–	4	10	4	10	0.1	
Q1	118	717	–	–	118	717	6.0	
Q2	73	450	11	101	84	551	4.6	
Q3	–	–	10	47	10	47	0.4	
Sub-total	1266	7508	481	4419	1747	11927	–	30.9
Iron Age								
F20	–	–	1	1	1	1	16.7	
G21	–	–	2	5	2	5	83.3	
Sub-total	–	–	3	6	3	6	–	–
Romano-British								
General	39	291	–	–	39	291	23.8	
E170	–	–	10	204	10	204	16.7	
Q100	–	–	20	110	20	110	89.0	
Q101	–	–	130	618	130	618	50.5	
Sub-total	39	291	160	932	199	1223	–	3.2
Saxon								
F400	4	88	–	–	4	88	0.4	
Q401	3	74	15	223	18	297	1.5	
Q402	143	1089	5	166	148	1255	6.3	
Q403	56	264	71	1024	127	1288	6.5	
Q404	32	519	13	225	45	744	3.8	
Q405	90	711	242	2305	332	3016	15.2	
Q406	4	79	10	82	14	161	0.8	
Q407	27	321	505	7053	532	7374	37.2	
Q408	15	155	94	1341	109	1496	7.5	
R400	1	68	–	–	1	68	0.3	
R401	4	90	6	114	10	204	1.0	
V400	1	22	–	–	1	22	0.1	
V401	2	16	1	41	3	57	0.3	
V402	59	526	219	3267	278	3793	19.1	
Total	441	4022	1181	15841	1622	19863	–	51.4
Overall total	2037	16541	1880	22101	3917	38642		

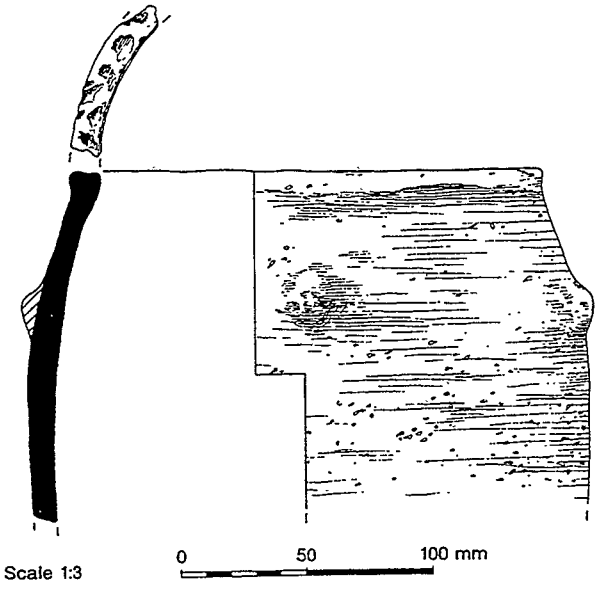

Figure 20 Middle Bronze Age pottery: bucket urn

Middle Bronze Age

The small quantity of sherds (47) found during the watching brief augments the 101 sherds from the excavation. Four fabric types were identified (F2, F3, F4, and F11). All are flint-tempered with slight variations in the frequency and coarseness of the flint; three moderately coarse and one noticeably finer (F11). Distinguishing between Middle and Late Bronze Age flint-tempered fabrics (see below) presents some difficulties, as the fabrics tend to cover a wide variation of inclusion size and frequency and there is a general lack of diagnostic forms. Plain body sherds have been assigned to the Middle Bronze Age largely on the basis of vessel wall thickness.

Two partial cremation urns, both in fabric F2, were found during the excavation, and just under half of the sherds from the watching brief represent a third vessel, also in fabric F2 (Fig. 20). These were recovered from an isolated pit (3002) in the north-east corner of the site, about 200 m from the other two vessels, although in this instance not associated with any human remains. All three are Deverel-Rimbury type bucket urns. Two have finger-impressed cordons and the third, from the watching brief, has at least two remaining (of probably four original) bosses just below the finger-impressed rim. All are common decorative techniques found on such urns in the Lower Thames region, for example, at other cemeteries in Middlesex (Barrett 1973).

The three urns between them account for 107 of the Middle Bronze Age sherds from the whole site. The remaining 45 sherds are all small body and base sherds, which were found dispersed in Late Bronze Age features across the site: gully 3042, cremation-related feature 3343, pits 387 and 3162, post-hole 3226 (of four-post structure 3115), and ditches 104, 709, 3116, and 3414. All are likely to be redeposited in these contexts. Sherds in fabrics F2, F3, and F4 may derive from further bucket urns, but sherds in F11, a noticeably finer flint-tempered fabric than the other three, may represent another class of vessel, possibly globular urns, which occur less commonly within Deverel-Rimbury assemblages in the lower Thames valley.

Table 2. Late Bronze Age pottery: vessel form by fabric type (whole assemblage)

Vessel Type	*Barrett class*	*F5*	*F6*	*F7*	*F9*	*Q2*	*Q3*	*Total*
1	I	–	–	1	–	–	–	1
2	I	–	–	3	–	–	–	3
3	I	–	2	1	1	2	–	6
4	I	1	–	–	1	–	–	2
5	I/II	1	–	–	–	–	–	1
6	IV	–	–	–	1	–	–	1
7	IV	–	–	–	1	–	–	1
8	IV	–	–	–	1	–	–	1
9	IV	–	–	–	1	–	–	1
10	II	–	–	–	–	–	–	1
11	IV	–	–	–	–	–	1	1
	Total	2	2	6	6	2	1	19

Illustrated pottery

(Fig. 20)

1. Bucket urn, finger-impressed rim, four applied bosses. Fabric F2. Context 3001, pit 3002.

Late Bronze Age

Just under one-third of the total assemblage was assigned to the Late Bronze Age. The condition of the assemblage is fair to poor, sherds being generally small and abraded (mean sherd size 6.9 g); diagnostic material is scarce and there are no reconstructable profiles. While the majority of the assemblage may be characterised as a typical 'plainware' assemblage, a large group of sherds from one feature contained decorated sherds which could have either chronological or functional significance.

The Late Bronze Age assemblage was subdivided into 11 fabric types: six flint-tempered, one flint-gritted, three sandy, and one calcareous, although it should be noted that the distinctions between the various flint-tempered fabrics are not always clear-cut. The terms 'flint-tempered' and 'flint-gritted' are used to describe, respectively, fabrics to which flint has been added deliberately, usually in a crushed, calcined form and fabrics in which the flint inclusions are likely to be naturally occurring in the clay matrix. This distinction between deliberate and accidental inclusions is not always obvious.

The Late Bronze Age fabric types range from those with coarse, poorly-sorted flint temper to finer fabrics with well-sorted flint, with a small quantity of sherds in the fine sandy fabrics Q2 and Q3. This broad division of the assemblage can be equated with Barrett's (1980) classification of 'coarsewares' (all flint-tempered fabrics except F9, the calcareous fabric C1, and the coarse sandy fabric Q1) and 'finewares' (sandy fabrics Q2 and Q3). The flint-gritted fabric F9 could fall into either group. The correlation of coarse and fine fabrics to particular vessel forms is discussed below, although it should be noted

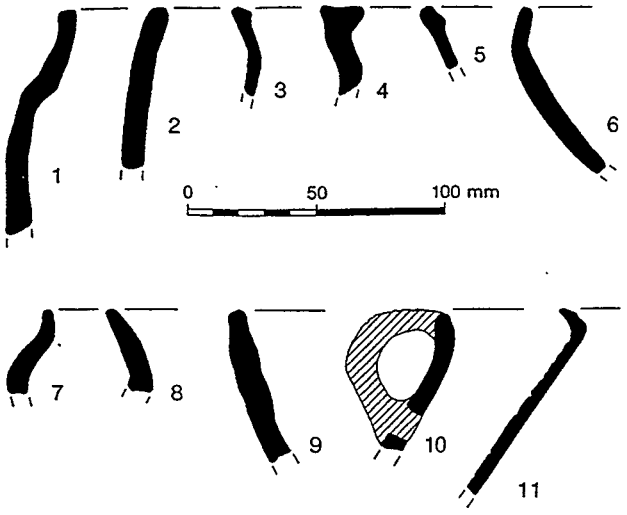

Figure 21 Late Bronze Age pottery: form / type series

that such correlation is limited by the scarcity of vessel forms, and the coarseware/fineware distinction thus relies almost exclusively on the fabric types. This distinction is difficult to sustain, however, given the occurrence of a small but significant group of decorated 'fineware' vessels in the coarse flint-tempered fabrics F6 and F7 (see below).

The similarities of the clay matrix and inclusion types for the fabrics suggests a relatively restricted area for the raw materials, all of which would have been easily accessible within the local area. Deposits of London Clay and Bagshot Sands occur within 1 km of the site and abundant flint nodules are present within the gravel which forms part of the Taplow Terrace (Dewey and Bromehead 1915, 72–6; and see Harding, above).

Vessel forms

The bulk of the sherds are small with an almost complete lack of diagnostic forms. Only 37 rim sherds were recovered, most of which have rim diameters with less than 5% surviving. These rims, with the addition of some decorated sherds, have been used to create a type series of 11 vessel forms (see Fig. 21 and Appendix 2): six jars, both 'coarseware' and 'fineware' (Barrett's (1980) classes I and II), including one handled form, and four 'fineware' bowls (class IV).

The correlation of fabric and form is presented in Table 2, which clearly shows the emphasis on the coarseware jars (Barrett's class I), generally plain apart from occasional fingertipping on the rims, and with limited surface treatment. The watching brief assemblage produced two new forms: the type 10 handled jar, and the type 11 fineware bowl (both from cremation-related feature 3343). The handled jar (Fig. 22, 1) is in fabric F7 and is decorated with impressed diagonal lines or chevrons on the rim and neck, and impressed circle motifs on the loop handle. The fineware bowl (Fig. 22, 8) is in fabric Q3, well made and finished with a burnished exterior, and horizontal incised lines on the shoulder.

Surface treatments and decoration

Surface treatment and decoration are both scarce within the Late Bronze Age assemblage, with only 67 sherds showing signs of surface treatment (3.8% of the assemblage by number of sherds) and 36 sherds (2.1%) decorated (Table 3).

Sherds in the coarse fabrics F5, F6, and F7 are wiped, probably with vegetable matter, or smoothed, while sherds in the finer fabrics F9 and F2 are burnished. Sherds in fabric F9 which are not obviously burnished often have a surface finish resulting from careful smoothing over a thin applied slip or slurry 'skin'. There is no trace, however, of the 'red-finishing' observed on the 'finewares' within some Late Bronze Age and Early Iron Age assemblages (Middleton 1987).

Decorative techniques employed include impression and incision, with a single example of an applied, pinched boss (Laidlaw and Mepham 1996, fig. 24, 17). Jar rims and/or shoulders in both flint-tempered and sandy fabrics carry finger-impressions (*ibid.*, 3, 5, 8) or diagonal slashes (*ibid.*, 4, 6; Fig. 22, 4). One fineware bowl in fabric Q3 has incised horizontal lines on the shoulder (Fig. 22, 8). A small group of sherds have more elaborate decoration, consisting of impressed repeated motifs elsewhere on the vessel. Two sherds in fabric F9, possibly from the same vessel, have impressed wedges (Laidlaw and Mepham, fig. 24, 16), while a jar in fabric F6 has impressed dots on the neck (Fig. 22, 4). The handled jar, in fabric F7, has a combination of impressed rings on the handle and body, and impressed diagonal lines or chevrons over the rim (Fig. 22, 1); four other sherds in the same fabric with similar motifs, all from the same feature (cremation-related feature 3343), may derive from the same vessel (three illustrated: Fig. 22, 5–7).

Chronology and affinities

The chronology and affinities of the excavation assemblage have already been discussed (Laidlaw and Mepham 1996, 32), and most of the pottery from the watching brief has confirmed rather than changed those conclusions, ie, that the Prospect Park assemblage falls within the 'plainware' phase of Barrett's (1980) post-Deverel-Rimbury tradition, which he dates to the 11th–9th centuries BC. The emphasis is firmly on the coarseware jars of Barrett's class I, in coarse, flint-tempered fabrics, with some finer class II jars, and a smaller proportion of 'finewares' in the form of class IV bowls, in finer flint-gritted and sandy fabrics. Evidence for surface treatment and decoration is scarce, and much of the decoration that is present occurs on the coarseware jars, mainly on the rims. There is, however, one anomalous group, discussed further below.

Parallels for the range of fabrics and forms identified at Prospect Park may be found elsewhere in the lower Thames area at Heathrow (Grimes and Close-Brooks 1993), Stanwell (O'Connell 1990), Carshalton (Adkins and Needham 1985), Runnymede Bridge (Longley 1980; 1991), Petters Sports Field, Egham (O'Connell 1986), Kingston Hill (Field and Needham 1986), and Hurst Park, East Molesey (Laidlaw 1996). Of these, the assemblages from Runnymede and Petters Sports Field are radiocarbon dated to the 9th–8th centuries and 7th–6th centuries BC respectively. Both these assemblages have

Table 3. Late Bronze Age pottery: decoration and surface treatment by fabric type (whole assemblage)

	F5	*F6*	*F7*	*F9*	*Q2*	*Q3*	*Total*
Surface treatment							
Burnished	–	–	–	26	5	–	31
Wiped	10	19	4	–	–	–	33
Smoothed	–	–	–	3	–	–	3
Sub-total	10	19	4	29	5	–	67
Decoration							
Impressed							
Finger-imp rim	–	1	1	–	1	–	3
Finger-imp. shoulder	–	–	–	2	–	–	2
Triangles	–	–	–	2	–	–	2
Circles	–	–	6	–	–	–	6
Dots	–	1	–	–	–	–	1
Chevrons	–	–	6	–	–	–	6
Incised							
Linear	–	–	–	2	2	10	14
Slashed rim	–	1	–	–	–	–	1
Applied							
Boss	–	–	1	–	–	–	–
Sub-total	–	3	14	6	3	10	36

a higher proportion of finewares and decoration than Prospect Park, and illustrate the progression towards the 'decorated' phase of Barrett's post-Deverel-Rimbury tradition, which he dates from the 8th century BC (Barrett 1980, 308).

Stanwell has yielded one radiocarbon date indicating a date range comparable to Petters Sports Field (O'Connell 1990, 53); the frequency of decoration is comparatively low, but there is a much higher proportion of fineware bowls than Prospect Park. The assemblage from Heathrow also contains a higher proportion of bowls and decorated vessels, although the latter site does show an emphasis, similar to Prospect Park, on rim decoration on unburnished jars. Heathrow is thought to be more or less contemporary with Runnymede, and is dated within the 9th or 8th centuries BC (Grimes and Close-Brooks 1993, 354–6). Of possibly earlier date than Heathrow (11th–9th centuries BC, although metalwork suggests a later range of 9th–7th centuries; Field and Needham 1986, 149), Kingston Hill has produced a plainware assemblage, almost entirely in flint-tempered fabrics, with very little decoration. Here, however, the range of forms is biased towards smaller jars and bowls.

Close similarities may be observed with the assemblage from Carshalton, which is dated to the 10th–8th centuries BC (Adkins and Needham 1985). This site produced a range of large jar forms with a more restricted range of bowls. Again, decoration on the rim rather than on the shoulder of the vessel is most common, and apart from the use of this technique there are only five other instances of decoration.

It appears from the above comparisons that the closest parallels for the Prospect Park assemblage are with Heathrow and Carshalton, and a potential date range centred on the 10th–9th centuries BC may be proposed. There is, however, one somewhat anomalous group of pottery which warrants further comment and which could have some chronological implications. This is the group from the cremation-related feature 3343 (160 sherds), which includes 19 of the total of 36 decorated sherds; ten sherds comprising a fineware bowl rim with incised decoration (Fig. 22, 8), three sherds comprising one handled jar rim (Type 10) with impressed circles and chevrons (Fig. 22, 1), four other body sherds with similar motifs, possibly from the same vessel (three illustrated: Fig. 22, 5–7), one Type 3 jar rim with diagonal slashing on the rim and impressed dots on the neck (Fig. 22, 4), and one other impressed jar rim (not illustrated). Other identifiable vessels from this feature include two Type 2 jars (Fig. 22, 2, 3), one with a post-firing perforation below the rim.

The handled jar is a form which occurs relatively frequently at Carshalton (Adkins and Needham 1985, figs 7–11) and at Weston Wood, Albury (Russell 1989, fig. 25), although rare in other Late Bronze Age assemblages; there are a few examples from Runnymede (Longley 1980, fig. 37, no. 405; 1991, P68, P315), two from Heathrow (Grimes and Close-Brooks 1993, fig. 26, no. 22; fig. 28, no. 66), two from Stanwell (O'Connell 1990, nos 43 and 110), and one or possibly two from Kingston Hill (Field and Needham 1986, fig. 4, 25a and 25b). Further afield, two examples were noted within the plainware assemblage from Aldermaston Wharf,

Table 4. Late Bronze Age pottery by feature type

Feature type	*Calc.*	*Flint-t*	*Sandy*	*Total*
Post-hole	1/2	40/132	1/6	42/140
Post-hole structure	–	74/642	–	56/567
Pit	–	123/1848	31/106	154/1954
Pit group	–	1/2	1/4	2/6
Ditch	–	520/2837	15/135	535/2972
Other features				
Cut 3042	–	3/18	–	3/18
Crem.-related feature 3343	–	167/2267	10/47	177/2314
Scoop 3399	–	55/552	–	55/552
Total	1/2	983/8298	58/298	1042/8598

Berkshire (Bradley *et al.* 1980, 234 and fig. 12, 21D). None of these sites, however, provides a direct parallel for the Prospect Park vessel. The examples cited generally have a rod or narrow strap section, or are lug forms, rather than the wider strap seen here. On none of the vessels does the handle spring directly from the rim, as on the example from Prospect Park, and only one handle, from Stanwell, is decorated, with fingertipping (O'Connell 1990, fig. 29, no. 43). Moreover, the decorative motifs on the Prospect Park vessel do not find ready parallels within the immediate area. Two vessels with impressed circle motifs are illustrated from Runnymede (Longley 1991, nos 191, 588a), but these motifs, and the wedge-shaped impressions on two other body sherds (Laidlaw and Mepham 1996, fig. 24, 16) are more reminiscent of decorative schemes used in the highly-decorated assemblages of Wessex, such as the early phases of All Cannings Cross, and later phases at Potterne (Cunnington 1923, pl. 32; Morris forthcoming, motifs 9.1, 11.2). These examples of the 'Early All Cannings Cross group' (see Cunliffe 1991, fig. A:2) are dated to the 8th–7th centuries BC.

The fineware bowl (Fig. 22, 8) also provides a possible link with Wessex ceramic traditions. This vessel is completely anomalous within the Prospect Park assemblage in terms of both fabric and surface finish; it is by far the best finished vessel from the site, and the rim is particularly well formed. The form itself is again paralleled amongst the furrowed bowls of the All Cannings Cross group (Cunliffe 1991, fig. A:2), although the shoulder is longer than normal; another example from Sussex is also illustrated by Cunliffe (*ibid.*, fig. A:3, 11).

There are two possibilities here, reflecting a chronological versus a functional implication for the group from the cremation-related feature 3343. Either the pottery from 3343, with its anomalous form and decorative motifs, represents a slightly later element within the overall Late Bronze Age assemblage; or the remainder of the assemblage is of a later date than previously thought, and the restriction of anomalous forms to a single feature has some other significance, perhaps

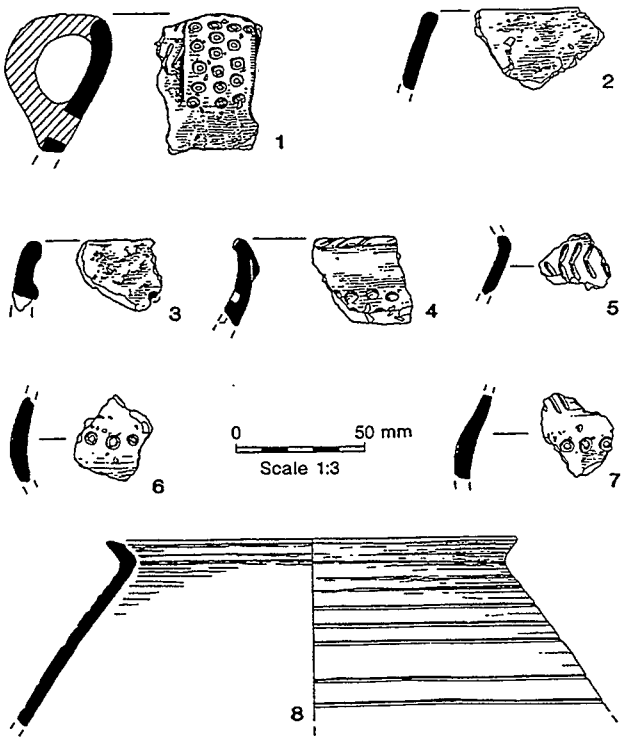

Figure 22 Late Bronze Age pottery

related to its apparent function as a cremation-related deposit. Certainly there is no apparent difference in the fabric types between the main assemblage and that from feature 3343, which would tends to support the second possibility but, in the absence of any independent dating, this must remain conjectural.

Distribution

The Late Bronze pottery was recovered dispersed in a number of isolated features across the site with a slight emphasis within and around the ditches running along the north and west edges of the excavated area (Table 4). Ditch 236, towards the north-east corner of the site, is particularly noteworthy as it produced more than 400 sherds, many of them large and unabraded. The second largest concentration of sherds (160) was recovered from the isolated cremation-related feature 3343, situated towards the south-west of the site. A further 39 sherds were recovered from ditch 3381 just to the north of it. Another moderate quantity of sherds (55) was found within the isolated hollow 3399 on the western edge of the site and others within ditch 3414 and post-hole/pit group 3050 situated just north of a gap, possibly an entrance, in this ditch (37 and 41 sherds respectively).

Table 4 demonstrates that, with the exception of cremation-related feature 3343, most of the pottery from the site derived from ditches, with a smaller proportion from pits. Post-holes, including post-hole structures, produced very little pottery. There appears to be no differentiation in the distribution by feature type of flint-tempered/flint-gritted fabrics and sandy fabrics; most feature types produced both. The concentration of decorated finewares in cremation-related feature 3343 is discussed above.

Illustrated pottery
(Fig. 22)

1. Handled jar, upright, thickened rim (Type 10); fabric F7; impressed chevron motifs over rim; impressed circle motifs over handle. PRN 579, context 3045, cremation-related feature 3343.
2. Ovoid jar, plain, rounded rim (Type 2); fabric F7. PRN 573, context 3045, cremation-related feature 3343.
3. Ovoid jar, plain, rounded rim (Type 2), perforated (pre-firing) just below rim; fabric F7. PRN 576, context 3045, cremation-related feature 3343.
4. Jar, upright, internally thickened rim (Type 3); fabric F6; incised diagonally over rim, and impressed dots on neck. PRN 587, context 3045, cremation-related feature 3343.
5. Angled neck sherd, possibly from same vessel as no. 1; fabric F7; impressed chevron motifs. PRN 577, context 3045, cremation-related feature 3343.
6. Body sherd, probably from shoulder; fabric F7; horizontal row of impressed circle motifs; possibly from same vessel as No. 1. PRN 577, context 3045, cremation-related feature 3343.
7. Body sherd, probably from shoulder; fabric F7; horizontal row of impressed circle motifs below impressed diagonal lines; possibly from same vessel as No. 1. PRN 578, context 3045, cremation-related feature 3343.
8. Fineware bowl (Type 11), well-finished rim, burnished externally, incised lines on shoulder; fabric Q3. PRNs 589/90, context 3045, cremation-related feature 3343.

Late Iron Age

Only three small body sherds were attributed to the Late Iron Age on the basis of fabric type. One, from pit 3331 (pit group 3089), was assigned to fabric type F20. Also in this pit was a small grog-tempered body sherd, fabric type G21. The third sherd, also grog-tempered, is from an unstratified context.

Romano-British

Romano-British material constitutes only a small proportion of the overall assemblage (=5% by weight), and most (127 sherds) consists of four vessels in coarse sandy fabrics associated with cremation burials. Other fabrics recognised include South Gaulish samian, Oxfordshire finewares, and grog-tempered coarsewares.

Two incomplete jars, both containing cremated bone, were recovered from burials 3352 and 3354 respectively in the south-west corner of the site. Both are in an oxidised, moderately fine sandy fabric (Q101). The first has an everted, hooked rim (Fig. 23, 1), while the second has a rim completely folded over (Fig. 23, 2). Both forms are 3rd–4th century AD in date. Also, within the same area, 45 body sherds in a coarse grey sandy fabric (Q100) were found associated with a third cremation burial (3047), and are likely to represent a third jar of unknown form. Approximately 100 m to the north-east, ten body sherds of greyware (Q100) were found in pit 311, associated with a small amount of cremated human bone. A further sherd of greyware which came from pit 307, together with three prehistoric sherds, may be intrusive in this context.

The remaining 72 sherds were all found redeposited in small quantities in Saxon features across the site. Nine sherds, all abraded, were identified as Oxfordshire colour-coated ware (E170; Young 1977). These include one flanged rim sherd from an imitation Drag 38 bowl and one mortarium base of uncertain form. Other fine-

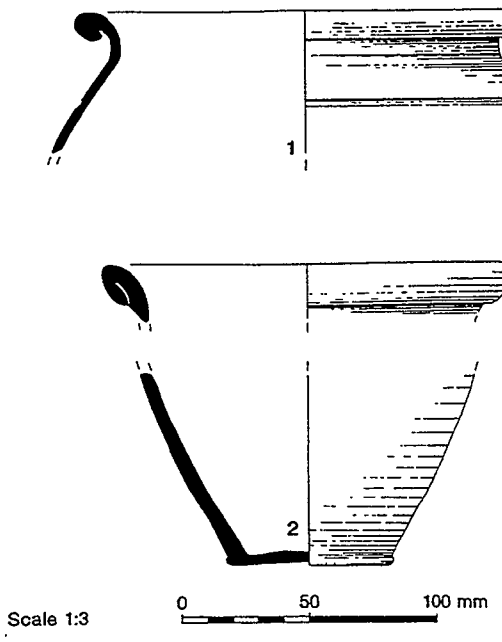

Figure 23 Romano-British pottery

wares are represented by two sherds of South Gaulish samian. The remaining sherds, all coarsewares, comprise greywares, oxidised sandy wares, and grog-tempered wares; none are sufficiently distinctive to ascribe to a particular source.

Illustrated pottery
(Fig. 23)

1. Ovoid jar, everted, hooked rim; fabric Q101; wheelthrown. Context 3136, cremation 3352.
2. Jar of uncertain form, everted, folded rim; fabric Q101; wheelthrown. Context 3137, cremation 3354.

Saxon

The Saxon pottery comprises just over half of the total pottery assemblage. Sherds are generally in a good condition (mean sherd size 12.2 g), and derive largely from a number of SFBs, as well as other discrete features: pits, post-holes (including one post-hole structure), linear features, and hollows. The interest in this relatively small assemblage lies in its potentially early date range (5th–6th century AD), and the high proportion of apparently non-local fabrics, including possible Continental imports.

Fabrics

Fourteen fabric types were identified, consisting of one flint-tempered, eight sandy, two containing rock fragments as the dominant inclusion, and three containing organic material (see Appendix 1). Samples of eight fabrics were submitted for petrological examination by D F Williams, in order to characterise the range of inclusions and to attempt to attribute fabrics to source or source area. The results of part of this analysis have been published (Williams 1996), but are repeated here within Appendix 3, and are discussed below.

The markedly diverse range of fabric types represented here has already been discussed (Laidlaw and Mepham 1996, 35), including as it does potential continental (or certainly regional) imports containing non-

Table 5. Saxon Pottery: vessel form by fabric type (whole assemblage)

Vessel type	*F400*	*Q402*	*Q403*	*Q404*	*Q405*	*Q407*	*Q408*	*V402*	*Total*
1	–	–	2	–	–	–	2	–	4
2	–	1	1	1	–	–	1	–	4
3	–	1	–	–	–	1	–	1	3
4	–	1	2	–	1	2	1	1	8
5	1	–	–	–	–	–	1	–	2
6	–	1	5	–	2	–	1	–	9
7	–	–	1	–	–	–	–	–	1
8	–	1	1	1	2	2	–	–	7
9	–	–	1	–	–	–	–	1	2
10	–	–	1	–	1	1	–	1	4
11	–	–	–	–	2	4	1	1	8
12	–	1	–	–	2	2	–	1	6
13	–	–	–	–	–	1	–	–	1
14	–	–	1	–	1	–	–	–	2
15	–	–	–	–	–	1	–	–	1
Total	1	6	15	2	11	14	7	6	62

Table 6. Saxon pottery: decoration and surface treatments (whole assemblage)

	F100	*Q401*	*Q402*	*Q403*	*Q404*	*Q405*	*Q406*	*Q407*	*Q408*	*V402*	*Total*
Surface treatment											
Burnished	–	–	2	1	–	13	–	31	8	22	77
Wiped	–	1	–	2	–	1	–	13	10	12	39
Sub-total	–	1	2	3	–	14	–	44	18	34	116
Decoration											
Impressed											
Boss	–	–	–	13	–	–	1	–	–	–	14
Rusticated	–	1	–	4	2	3	–	50	2	2	64
Faceted	–	–	–	1	–	–	–	–	–	2	3
Dec. cordon	–	–	–	–	–	2	–	–	–	–	2
Incised											
Linear	–	–	2	28	–	2	–	–	–	2	34
Chevrons	–	–	–	13	–	–	–	–	–	–	13
Arcs/circles	–	–	–	–	–	–	1	–	–	–	1
Combing	–	–	–	–	–	–	–	4	–	–	4
Dec. cordon	–	–	–	–	–	1	1	–	–	–	2
Tooled											
Linear	–	–	–	2	–	1	–	2	–	2	7
Hatched	–	–	–	–	–	–	–	–	–	1	1
Arcs	–	–	–	–	–	1	–	–	–	–	1
Applied											
'Cabling'	1	–	–	–	–	–	–	–	–	–	1
Stamped (all)	–	–	–	1	–	2	–	2	1	–	6
Sub-total	1	1	2	62	2	12	3	58	3	9	153

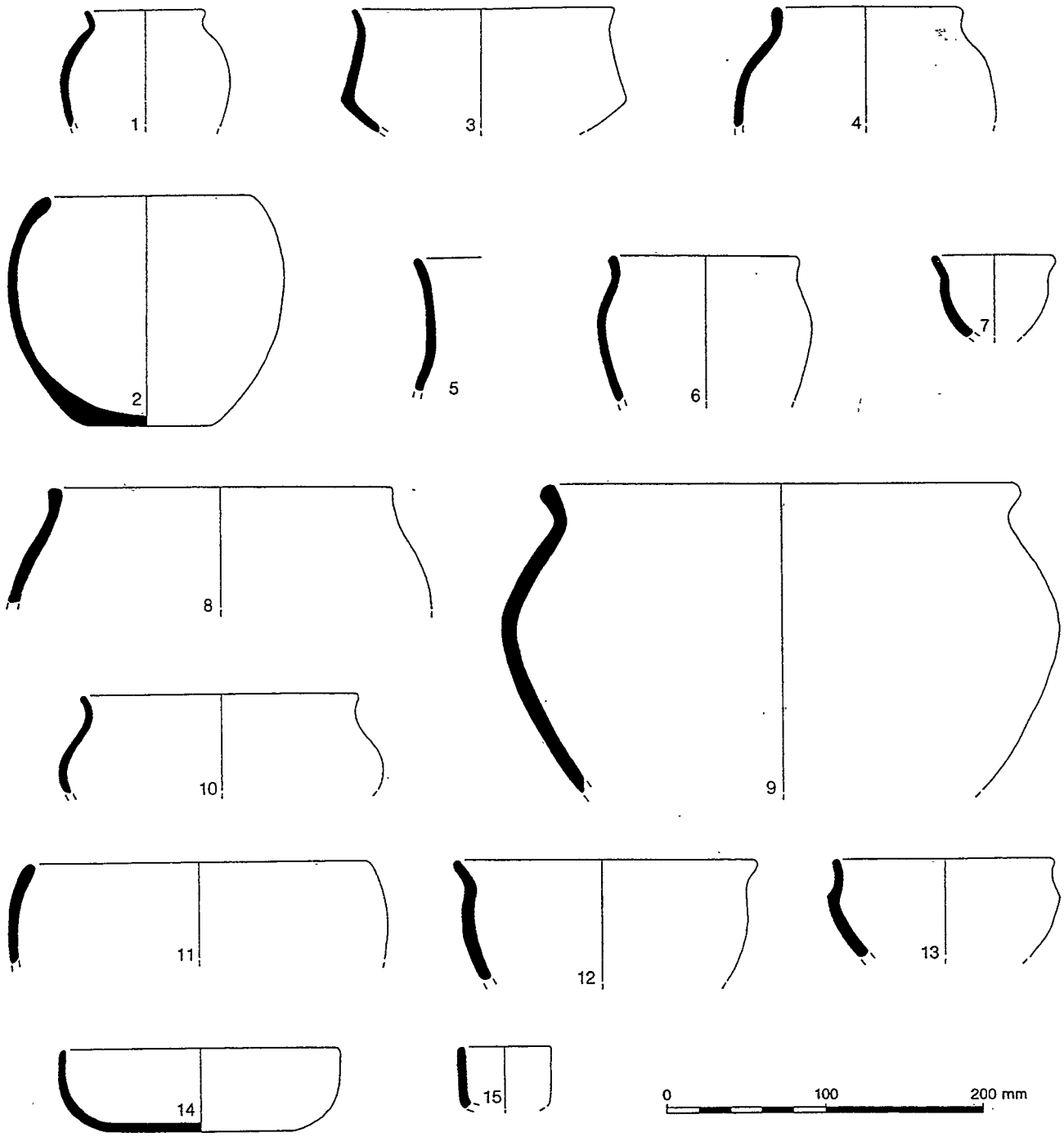

Figure 24 Saxon pottery: form / type series

local rock fragments (R400, R401, Q404, and Q408), sandy fabrics containing angular quartz or quartzite quite distinct from the characteristic iron-stained quartz of the local Reading Beds (Q402, Q403, Q404, Q405, Q407), and very unusual bone-tempered fabrics (V400 and V401), as well as a range of sandy, flint-tempered, and organic-tempered fabrics which might be considered more characteristic of an early Saxon assemblage. The latter group, of potentially locally-made fabrics, make up less than one-third of the overall Saxon assemblage.

Forms

The difficulties of creating a viable classification of early Saxon pottery forms from a fragmentary assemblage are discussed by Hamerow (1993, 37). The main problem lies in the construction of a type series which can combine the information from reconstructable profiles with the rims, bases, and other diagnostic sherds for which whole profiles are unknown. Even the distinction between 'open' (bowl) and 'closed' (jar) forms is not always clear-cut, since the height: rim diameter ratio, and/or the rim:base diameter ratio, is rarely known.

Here the distinction is made on the basis of a combination of height:rim diameter ratio, rim:base diameter ratio and perceived rim constriction, ie 'closed' or 'jar' forms have a height equal to or greater than the rim diameter, a rim diameter equal to or less than the base, with a noticeable rim constriction; 'open' or 'bowl' forms

have a height equal to or less than the rim diameter, a rim diameter equal to or greater than the base, with a neglible or no rim constriction.

Open and closed forms are classified by basic vessel profile (convex, rounded, etc), following the recommended classificatory scheme for Saxon and medieval pottery forms (MPRG 1998), and subdivided on the basis of modifications to that basic profile in terms of rim, neck and/or shoulder profile. Further subdivision on the basis of size (small, medium, large) has been largely subjective. Following the recommended MPRG nomenclature, small bowls here are classed as 'beakers' rather than 'cups', while 'dishes' are defined as open forms with a height of one-third or less of the rim diameter (*ibid.*, forms 6.1 and 5.3 respectively). Using this system of classification, 15 vessel forms have been defined (Fig. 24). The classification takes no account of decoration or surface finish.

Rims are described in terms of orientation in relation to the body wall (everted, upright, inturned); some have been thickened. Recognisable bases occur rarely, and from this it may be concluded that the majority of vessels had rounded bases with no discernible basal angle, although some flat bases are present. There are no more elaborate base forms such as pedestals or footrings. Lugs or handles of any form are completely absent.

A total of 85 rim sherds was identified amongst the early Saxon assemblage, of which 62 could be attributed with varying degrees of confidence to vessel form (Figs 25 and 26); the remaining 23 were too small to assign to any particular form. The total includes only six complete or almost complete profiles. The correlation between vessel forms and fabrics is presented in Table 5. More than half the identifiable vessels forms occurred in fabrics Q403, Q405, and Q407; only five other fabrics included identifiable forms. Of these eight fabrics, most occur in a range of forms; there appears to be no restriction of forms to particular fabrics, nor to either 'local' or 'non-local' fabrics.

Surface treatment and decoration

A small proportion of the sherds are burnished, particularly in fabrics Q405, Q407 and V402 (Table 6). The burnishing mainly occurs on the external surfaces but a small number were also burnished internally, particularly on open forms. Wipe marks were visible on 39 sherds, again more frequently on fabrics Q407 and V402, but also on fabric Q408.

Decoration was noted as scarce within the excavation assemblage (Laidlaw and Mepham 1996, table 5); interestingly, the watching brief has significantly augmented the decorated proportion, although that proportion is still relatively low (153 sherds altogether). Decorative techniques are either impressed (including raised bosses), incised, tooled, stamped or applied, and a number of motif types can be defined:

Impressed motifs
1. Raised bosses (Fig. 26, 22, 23)
2. Rustication (pinched or impressed), or other finger impressions (Fig. 26, 26–8)
3. Facets on the carination of biconical vessels (Fig. 26, 21)
4. Decorated cordon (Fig. 26, 29)

Incised motifs
5. Linear motifs, either horizontal or vertical (Laidlaw and Mepham 1996, fig. 25, 8; Fig. 26, 19–22, 29)
6. Chevrons (Fig. 26, 22)
7. Concentric arcs or circles (Laidlaw and Mepham 1996, fig. 25, 8; Fig. 26, 20, 21, 23)
8. Combing (Fig. 26, 24, 25)
9. Decorated cordon (Fig. 26, 23, 32)

Tooled motifs
10. Linear motifs, generally horizontal (Fig. 26, 21)
11. Diagonal hatching (Fig. 26, 30)
12. Arcs (Fig. 26, 21)

Stamped motifs
13. Stamp type 1: ring-and-dot in centre of segmented rectangle (Fig. 26, 19)
14. Stamp type 2: plain negative S-shape (Briscoe H 1a) (Fig. 26, 20)
15. Stamp type 3: barred triangle (Briscoe E 2e) (Fig. 26, 24)
16. Stamp type 4: ?triangle (Fig. 26, 25)
17. Stamp type 5: multiple concentric circles (Briscoe A 2b) (Fig. 26, 29)
18. Stamp type 6: 'hot cross bun' (Fig. 26, 31)

Table 7. Saxon pottery: distribution by feature — SFBs (whole assemblages)

Fabric group	*R*	*Q (non-local)*	*V (bone)*	*Q (local)*	*F*	*V (grass)*	*Total*
SFB 103	58/782 (53)	62/506 (35)	3/38 (3)	3/132 (9)	–	–	126/1458
SFB 127	6/79 (68)	1/12 (10)	–	5/26 (22)	–	–	12/117
SFB 439	27/387 (48)	11/172 (23)	–	1/2 (–)	–	20/240 (30)	59/801
SFB 605	4/18 (8)	11/114 (51)	–	7/23 (11)	–	8/67 (30)	30/222
SFB 3030	–	60/674 (80)	–	11/102 (12)	–	17/68 (8)	88/844
SFB 3063	13/192 (6)	171/2463 (74)	–	45/307 (9)	–	37/386 (11)	266/3348
SFB 3166	–	92/1964 (56)	–	51/1225 (35)	–	12/317 (9)	155/3506
SFB 3178	20/384 (7)	344/3321 (57)	–	37/565 (10)	–	107/1530 (26)	508/5800
SFB 3337	–	42/601 (83)	–	5/22 (3)	1/2 (–)	10/103 (14)	58/728
SFB 3351	1/2 (2)	–	–	–	–	2/113 (98)	3/115
SFB 3370	6/235 (28)	7/252 (31)	–	1/58 (7)	–	22/279 (34)	36/824

Quantities are no/weight (g) with percentage of feature total by weight in brackets

Table 8. Saxon pottery: distribution by features, other than SFBs (whole assemblage)

Feature / Fabric group	*R*	*Q (local)*	*Q (non-local)*	*V (grass)*	*F*	*Total*
Post-hole	4/64	1/9	22/84	3/39	3/58	33/254
Pit	9/93	5/112	17/108	11/129	–	42/442
Linear	1/5	1/10	2/9	–	–	4/24
Hollow	88/452	1/24	15/191	1/5	–	105/672
Structure 749	1/4	–	1/4	1/3	–	3/11
Misc. layers	2/15	1/18	13/211	8/79	–	24/323
Total	105/633	9/173	70/607	24/255	3/58	210/1721

Applied motifs

19. Curvilinear or 'cabled' motifs (Laidlaw and Mepham 1996, fig. 25, 12)

Two or more of these motifs may be combined on one vessel. The correlation of decorative motif and fabric is given in Table 6. Where vessel form is known, decoration tends to occur on the smaller, better finished forms (types 1, 3, 10), although 'rustication' is generally restricted to coarser fabrics such as Q407, probably on larger closed forms, and often appears to occur on the lower part of the vessel.

Distribution

The Saxon pottery is almost exclusively derived from the sunken-featured buildings; these features account for approximately 90% of the total Saxon assemblage. Quantities within the SFBs ranged from three to 508 sherds. Three SFBs in particular produced large quantities of pottery: 3063 (266 sherds), 3166 (155 sherds) and 3178 (508 sherds); all three clustered towards the northern edge of the site. In the southern part of the site, SFB 103 produced 126 sherds.

Table 7 presents the quantities of pottery recovered from SFBs, with a breakdown of the fabric groups represented. This demonstrates the overwhelming dominance of 'non-local' fabric types within these features. Only one SFB (3351) produced less than 50% by weight of non-local fabrics, and this feature only contained three sherds.

The rest of the pottery occurred in much smaller quantities in features across the site (Table 8). The only feature to yield more than 20 sherds was hollow 316 (88 sherds). Only three sherds were found in post-holes assigned to Hall 749, and Hall 721 produced no Saxon pottery at all.

Illustrated pottery

(Fig. 25)

1. Large rounded jar (Type 11), everted, thickened rim; fabric V402. PRN 559, context 3044
2. Convex vessel (Type 2), inturned rim; fabric Q407. PRN 602, context 3164, SFB 3063.
3. Convex vessel (Type 2), inturned rim; burnished externally; fabric V402. PRN 739, context 3182, SFB 3178.
4. Rounded jar (Type 12), tooled horizontal lines on shoulder; fabric V402. PRN 746, Context 3182.
5. Rounded vessel (Type 4), upright rim; fabric V402. PRN 705, context 3169, SFB 3166.
6. Shouldered vessel (Type 4), bead rim; burnished internally; fabric Q407. PRN 660, context 3164, SFB 3063.
7. Shouldered vessel (Type 13), bead rim; fabric Q402. PRN 769, context 3193, SFB 3030.
8. Shouldered jar (Type 4), upright rim; fabric Q408. PRN 789, Context 3201.
9. Rounded vessel (Type 4), upright rim, burnished external surface; fabric V402. PRN 550, context 3038, SFB 3351.
10. Slack-shouldered vessel (Type 6); fabric Q402. PRN 883, context 3347, SFB 3370.
11. Slack-shouldered vessel (Type 6); fabric Q402. PRN 810, context 3203, SFB 3178.
12. Rounded bowl (Type 14), everted rim; fabric V402. PRN 894, context 3357.

(Fig. 26)

13. Slack-shouldered jar or bowl (Type 13); fabric Q407. PRN 653, Context 3163
14. Vessel with pronounced shoulder (Type 15), burnished exterior surface; fabric Q407. PRN 687, context 3167, SFB 3166.
15. Bowl/dish (Type 9), plain rim; fabric Q403. PRN 808, context 3203, SFB 3178.
16. Bowl with upright sides (Type 9) and plain rounded rim; fabric Q405. PRN 520, Context 3022
17. Beaker (Type 10), plain rim; fabric Q407. PRN 734, context 3182, SFB 3178.
18. Rounded jar, upright rim (Type 4); fabric Q407. PRNs 724/725, context 3179
19. Small biconical jar (Type 12), everted rim. Impressed and incised on and around shoulder; fabric Q403. PRN 809, context 3203, SFB 3178.
20. Rounded jar (Type 1), everted rim. Stamped and incised decoration; fabric Q405. PRN 881, context 3347, SFB 3370.
21. Biconical vessel (Type 3). Impressed and incised; fabric V402. PRN 826, context 3204, SFB 3178.
22. Rounded jar, bossed and incised decoration (Type 9); fabric Q403. PRN 683/692, context 3167/3168
23. Body sherd, boss and incised decoration, fabric Q406. PRN 564, context 3044, SFB 3166.
24. Body sherd, stamped and incised/combed decoration; fabric Q407. PRN 517, Context 3020.
25. Body sherd, stamped and incised/combed decoration; fabric Q407. PRN 517, Context 3020.
26. Impressed body sherd, fabric Q403. PRN 561, context 3044, SFB 3166.
27. Body sherd, impressed decoration, fabric Q407. PRN 768, Context 3193, SFB 3030.
28. Body sherd, finger-pinched ('rusticated') decoration, fabric Q407. PRN 768, Context 3193, SFB 3030.
29. Body sherd, decorated cordon, fabric Q405. PRN 743, context 3182, SFB 3178

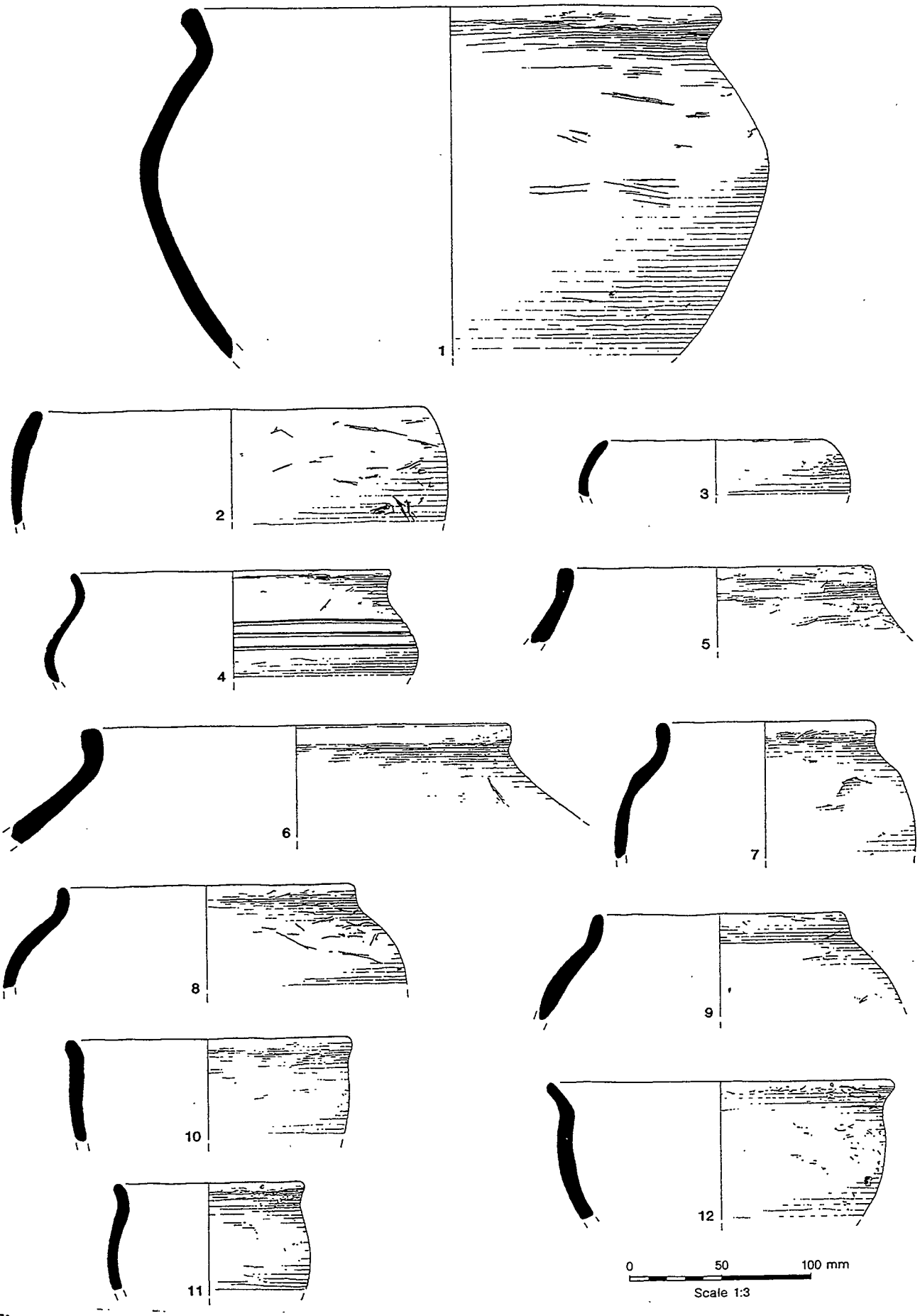

Figure 25 Saxon pottery 1–12

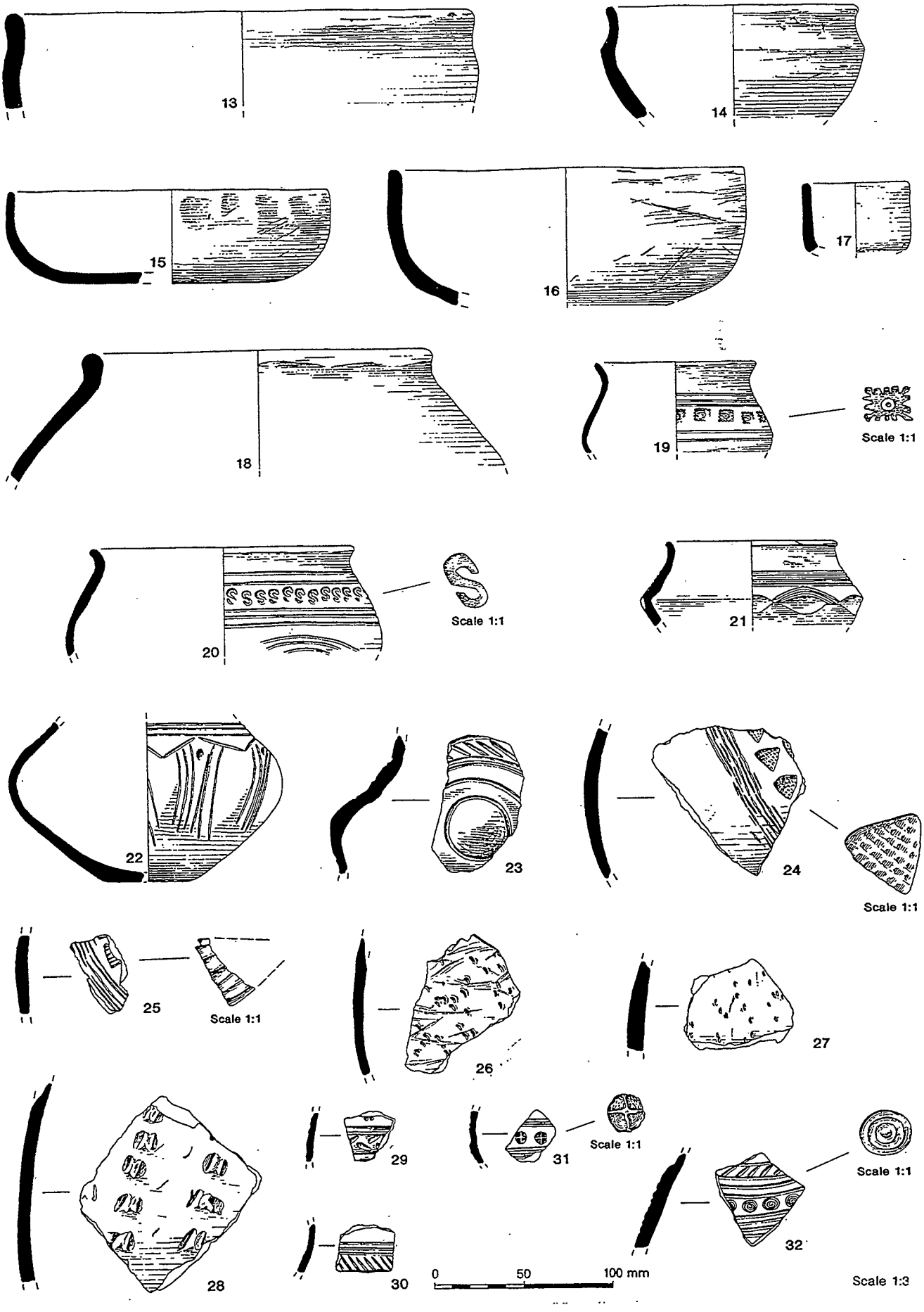

Figure 26 Saxon pottery 13–32

30. Body sherd, tooled decoration; fabric Q405. PRN 761, context 3187
31. Body sherd, stamped decoration; fabric Q408. PRN 791, context 3201
32. Body sherd, incised and stamped decoration, fabric Q405. PRN 693, Context 3168

Discussion

The watching brief at Prospect Park has augmented the early Saxon assemblage considerably and, perhaps more importantly, added significantly to the diagnostic material with a number of new vessel forms. Decorated vessels, which were almost entirely absent from the excavation assemblage, are now shown to represent a small but significant component, and make a valuable contribution towards the dating of the assemblage. The high proportion of non-local fabric types within the assemblage is confirmed.

The local and regional context for this important assemblage has already been outlined (Laidlaw and Mepham 1996, 36–8). Prospect Park falls at what is currently the western limit of the known distribution of early Saxon (5th–mid 7th century AD) ceramic assemblages along the Thames and its tributaries from central London westwards into Surrey and Middlesex (Blackmore 1993, fig. 1). This distribution derives from a number of cemeteries, largely confined to the Surrey side of the river, and several settlements, mostly in Middlesex, including Harmondsworth and West Drayton in the immediate vicinity of Prospect Park (and perhaps part of the same settlement), and further afield Shepperton, Hanwell, Brentford, Ham, and Hammersmith. To this may be added the recently excavated settlement site at Hurst Park, East Molesey (Andrews 1996b).

Blackmore has outlined the ceramic sequence which is emerging from this growing number of sites (1993); as yet, few sites are fully published. Despite the lack of published data, however, a broad overview suggests that the pottery of the 5th and early 6th centuries in the London area is relatively homogeneous. A sequence can be discerned in which assemblages of the 5th and early 6th centuries, containing carinated and biconical vessels in sandy fabrics, often decorated with linear or arced motifs (*stehende Bogen* and *hangende Bogen*), are gradually replaced during the 6th century by more globular vessels in a growing proportion of organic-tempered fabrics, less frequently decorated and with decorative schemes incorporating stamps and bosses. It should be noted, however, that in no certain instance in the London area are settlement and cemetery assemblages directly associated, and the relationship between the two are as yet not fully understood. Two possible exceptions are Shepperton and Hanwell; the large assemblage from Mucking, Essex, may also be mentioned, although it should be noted that, strictly, this falls outside the London area considered by Blackmore (*ibid.*, 144, note 1).

Three strands of information, then, may be examined in order to set the Prospect Park assemblage in its chronological context: form, fabric and decoration. Certain vessel forms observed at Prospect Park may be isolated as characteristic of the early period (5th–mid 6th century), such as the carinated forms, including one faceted carinated bowl (Laidlaw and Mepham 1996, fig. 25, 8 and 9; Fig. 27, 21). Faceted carinated bowls are regarded as particularly characteristic of this period, conventionally dated to the first half of the 5th century. At Mucking, the distribution and associations of the 40 faceted carinated bowls confirmed a 5th century date for the majority, although there is now growing evidence to suggest a continuation in use, if not production, beyond the 5th century, both in England and on the Continent (Hamerow 1993, 42).

On the other hand, other aspects of vessel form are less easy to tie down to an early date range. Myres has observed that 'hollow-necked' vessels, ie, those with a more pronounced rim curvature, occur most frequently in the 5th–mid 6th century, while shorter and more upright rims tend to be later (Myres 1977, 8) and this certainly seems to be borne out by the evidence from Mucking (Hamerow 1993, 44). Few of the Prospect Park vessels could be described as 'hollow-necked'; types 1, 9, and 10 are the only exceptions.

The relatively low proportion of organic-tempered fabrics at Prospect Park is suggestive of an early date. At Mucking, and also in the London area, the use of organic temper increases sharply after the 5th century, dominating assemblages in the 6th and 7th centuries (Blackmore 1993, 135; Hamerow 1993, 31). The overall percentage of these fabrics at Prospect Park (including both fabric V402 and the sandy/organic fabric Q408) is 27.1%, which broadly matches the percentage range for four well-dated 5th century sunken-featured buildings at Mucking (Hamerow 1993, fig. 17).

The decorative motifs employed again give a slightly contradictory picture. While there are elements which could be considered as 'early', such as the simple linear schemes and *stehende Bogen* motifs found on biconical and sub-biconical forms (Laidlaw and Mepham 1996, fig. 25, 8, 9; Fig. 23, 19–23), the appearance of stamps might suggest a slightly later component.

The conclusion seems to be that the potential date range of 5th–mid 6th century, as proposed for the previously published assemblage, is not contradicted by the watching brief assemblage, but neither has the latter assemblage provided any evidence on which to base a more refined dating.

The proportion of apparently non-local fabric types within the Saxon assemblage from Prospect Park forms one of the major points of interest in this assemblage. The petrological observations which have been made, albeit on a very small number of sample sherds, have confirmed the non-local nature of these fabrics, although the actual source, whether elsewhere in Britain or on the Continent, remains uncertain (Appendix 3). As yet a sustained programme of petrological analysis has not been undertaken on the early Saxon pottery assemblages of the London area, but initial visual observations suggest that comparable fabrics exist within the assemblages from Harmondsworth (Museum of London Site Code MFH88), Twickenham (UTH94), and Hammersmith (HAM90). Parallels with the Hammersmith assemblage are particularly close, for both fabric types and decorative techniques such as rustication. It should be noted, however, that no examples of the coarse-slipped surface treatment known as *Schlickung* were observed at Prospect Park.

This technique, of Germanic origin, is considered to be typical of early Saxon assemblages (Hamerow 1993, 37).

The presence of such a high proportion of non-local fabric types at Prospect Park remains intriguing. While granitic-tempered sherds found in the Midlands and eastern England have been linked petrologically to the Charnwood Forest area (see Appendix 3; Williams and Vince 1997), sherds with similar rock inclusions from the edges of the 'Charnwood ware' distribution, such as those from west London, are not so convincingly sourced, and an alternative continental origin remains a possibility, particularly in the light of recent chemical analyses (ibid., 219). The mechanism(s) by which continental or regional imports may have arrived at Prospect Park, however, is uncertain, although the position of the site close to the Thames may be noted.

If a chronological sequence can be assumed from non-local to local fabrics, this could give some indication of the sequence of activity at Prospect park. SFBs 103, 127, 3030, 3063 and 3337, all containing more than 75% of non-local fabrics (see Table 10), could be considered as the earliest features, followed by SFBs 439, 605, 3166, 3178 and 3370.

Ceramic Building Material and Fired Clay, by Natasha Hutcheson

Twenty pieces of ceramic building material were recovered during the watching brief, all in soft, coarse and poorly-wedged fabrics, and all of Romano-British date. This may be added to the seven pieces of similar date recovered from the excavation. Several diagnostic pieces are present, including one *imbrex* fragment and three *tegula* fragments. In addition to these there are some undiagnostic tile fragments and approximately eight fragments that are too small to identify. Apart from one *tegula* fragment, recovered from a cremation burial (3135), and one tile fragment from well 711, all the ceramic building material came from Saxon sunken-featured buildings (103, 3063, 3166, 3178, 3337, 3370). The coincidence with Saxon features suggests that this material may have been deliberately collected, possibly for reuse.

The fired clay recovered falls into three categories: featureless and undiagnostic fragments, structural fragments, and portable objects (spindle whorls, loomweights, etc). No objects were identified during the excavation, and the watching brief has yielded useful functional evidence in this respect, including one important group of loomweights *in situ* on the base of a Saxon sunken-featured building. The fired clay is discussed by chronological period below.

Prehistoric

Clay 'tablet'

One fragment of a ceramic object was found in association with Late Bronze Age pottery in an isolated feature (3410) 25 m to the west of ditch 3076. This is a fairly crudely-made, flattish fragment (max. thickness 21 mm) with a curved outer edge, in a fairly coarse, flint-tempered fabric (equivalent to pottery fabric F6/F7. This fragment is likely to represent part of a perforated clay 'tablet', although no perforations survive here. These objects are commonly found on Late Bronze Age sites in the Thames Valley, for example Runnymede Bridge (Longley 1980, fig. 17), Carshalton (Adkins and Needham 1985, figs. 12 and 13), Kingston Hill (Field and Needham 1986, fig. 5), and Hurst Park, East Molesey (Laidlaw 1996, fig. 50), although their precise function is as yet unknown. Suggestions of a connection with cooking, potting or possibly some kind of industrial process are not supported by any direct evidence, but the common occurrence of these tablets on apparently domestic sites tends to indicate an everyday domestic function.

Structural and undiagnostic fragments

A total of 90 fragments from later prehistoric features comprised small, featureless and generally abraded fragments. The largest quantity derived from ditch 236. These fragments are of uncertain, although probably structural origin, and a few pieces do have surviving surfaces and/or possible wattle impressions.

Saxon

Spindlewhorls

Two complete spindlewhorls and a fragment from a third were recovered, all from sunken-featured buildings (3166, 3178, and 3337 respectively), and both context and fabric type indicate that these are Saxon objects rather than residual (or reused) prehistoric or Romano-British items.

All three whorls are in fine sandy fabrics, equivalent to pottery fabric Q405 (see above). Both the complete whorls are of a similar size (50–52 mm diameter, central perforation 10–11 mm diameter; weight 53 g and 55 g respectively); one is of bun-shaped profile, and has a crudely incised pattern of concentric circles, while the second is plain and of biconical form. The third whorl is smaller (c.40 mm diameter), disc-shaped and well-finished with one burnished surface.

Differences in spindlewhorl size have been observed at Mucking, where it is suggested that heavier whorls with larger central perforations, equivalent to the two complete whorls here, were used with larger spindles to spin a finer fibre (Hamerow 1993, 65).

Loomweights

A total of 24 complete or near complete loomweights and 11 additional fragments have been identified. Apart from four small fragments, all the loomweights were found in the bottom of the southern half of sunken-featured building 3030 (Fig. 16; Pl. 6). These weights appeared on excavation to be largely *in situ* in a roughly linear arrangement suggesting that an upright or warp-weighted loom may have been in use in this area.

The loomweights are all relatively crudely made in a coarse sandy fabric with occasional inclusions of flint pebbles (3–30 mm); the uniformity of fabric type suggests that these weights were all manufactured together. One loomweight has two small linear impressions although in general surface impressions are sparse.

All the loomweights are annular. Diameters range from 110 mm to 144 mm; the majority (18) 127–140 mm, and the thickness between 34 mm and 47 mm. The diameter of the perforation varies between 39 mm and 57 mm and the weight between 326g and 778 g. This variation is quite common, though the large collection from Mucking shows far more uniformity (Hamerow 1993, 66). Annular loomweights were the most commonly used form on the earliest Saxon settlements in this country, although *in situ* finds are rare.

Structural and undiagnostic fragments
The rest of the fired clay from Saxon features comprises featureless and non-diagnostic fragments. A few have a visible surface suggesting they were structural, possibly originating from wattle and daub structures or hearth or oven linings.

Other finds, by Natasha Hutcheson

Three definitely identifiable stone objects were recovered: three whetstone fragments from Saxon sunken-featured buildings (3166, 3178, and 3351). All are of similar dimensions and in similar fine-grained sandstones.

One monochrome glass bead of annular form, 8 mm in diameter and opaque yellow in colour, was recovered from SFB 3178. This may be added to the two glass (one monochrome and one polychrome) and one ceramic bead found during the excavation in SFB 103 (Laidlaw 1996, fig. 26). All, with the possible exception of the ceramic bead, are well-known Saxon types.

Environmental Evidence

Human Bone, by Jacqueline I. McKinley

All possible cremation-related features identified in excavation were subject to whole-earth recovery. Relatively large quantities of cremated bone from six contexts (Romano-British cremation burial group 3417 and undated ?pyre site 3390) were received for examination and a few fragments were recovered from two other contexts (one Bronze Age, one Saxon) during scanning of the 1 mm and 2 mm sieve residues. Unburnt human bone from two Romano-British inhumation burials was also examined. All the features were in a relatively closely spaced (*c.* 30 x 25 m) group in the south-west corner of the excavated area (Fig. 11). Earlier excavations here revealed two urned Bronze Age cremation burials and one Romano-British cremation burial *c.* 100 m north-east of the group (McKinley 1996). The results from all phases of work are summarised in Table 9.

Methods

Cremated bone
The whole-earth 'samples' from the cremation-related contexts were wet sieved to 1 mm fraction size and cremated bone, together with other archaeological inclusions, were separated from the 10 mm and 5 mm residues in post-excavation. The bone was not separated out from the 2 mm and 1 mm residues since this would have been a very time-consuming procedure in this instance. These residues were scanned during osteological analysis and any fragments of identifiable skeletal elements were removed for further examination. Consequently, the total bone weights presented in Table 9 are slightly below the actual weight of bone from each context. Analysis followed the writer's standard procedure for the examination of cremated bone (McKinley 1989; 1994a).

All bone
Age was assessed from the stage of tooth development and eruption (van Beek 1983); the stage of ossification and epiphyseal bone fusion (Gray 1977; McMinn and Hutchings 1985; Webb *et al.* 1985); tooth wear patterns (Brothwell 1972); and the general degree of cranial suture fusion and degenerative changes to the bone, including Iscan *et al.* (1984; 1985). Sex was assessed from the sexually dimorphic traits of the skeleton (Bass 1987) including, for the cremated bone, measurements of vault thickness according with Gejvall (1981). For the unburnt bone from the inhumation burials platymeric and platycnemic indices were calculated (Bass 1987), and stature was estimated using Trotter and Gleser's regression equations (1952; 1958). Pathological lesions and morphological variations/non-metric traits were recorded, and diagnoses suggested where appropriate. Full details are in archive.

Results

Condition of bone
All the contexts had been subject to an unknown level of truncation, the depth of features varying between 0.17 m and 0.25 m. The two inhumation graves (3383 and 3388) were very shallow, many of the foot bones having been removed, presumably by ploughing, together with most of the skull and the hand bones (the latter resting together over the abdomen) from grave 3388. The bone from both inhumation burials was abraded, that from grave 3388 being very friable. Vertebral bodies had not survived in either grave and much of the spongy bone of the articular surfaces had disintegrated, particularly in grave 3388. Many of the bones, particularly the skull from grave 3383, were fragmented, with both old and fresh breaks. The cremated bone was in good condition, only some of the bone from cremation grave 3390 appearing slightly abraded.

Iron staining was noted on the right temporal of the inhumation burial from grave 3383. No iron artefacts were recovered from this grave, and the staining suggests that any such artefacts had been removed by the plough. A fragment of maxilla from the probable cremation grave 3387 showed pale blue/green spot staining on the palate. In the absence of XRF analysis the origin of such staining is open to discussion; it appears similar to that noted on cremated bone elsewhere by the writer, which resulted from the proximity of copper alloy to the bone. Workers in Germany suggest such coloration is caused in cremation by the manganese in the apatite (mineral) of the bone (Herrmann pers. comm.).

The nature of the contexts
The interpretation of some of the cremation-related features is open to question. The Late Bronze Age feature, 3343, was larger, though no deeper, than the Romano-British features, and the fill (3045) largely comprised burnt flint (more than 10, 000 g), with small quantities of charcoal and cremated bone (Table 9). It

also produced a comparatively large assemblage of pottery, including decorated sherds (see above). The presence of the cremated bone suggests that this was some form of cremation-related context, but the precise nature of the feature is unknown. The very small quantity of charcoal in particular suggests that it does not comprise an ordinary dump of redeposited pyre debris (McKinley 1997; McKinley in prep.). Bronze Age urns with fills of burnt flint have been recovered deposited in the vicinity of cremation burials from several sites such as Twyford Down (Walker and Farwell forthcoming) and Langstone Harbour (Allen *et al.* in prep.) in Hampshire, and a very similar feature, though of Romano-British date, was excavated at Thames Valley Park, Reading, Berkshire (Barnes *et al.* 1996). Alternatively, the small quantity of cremated bone may have been redeposited in the fill and not be directly related to the feature or the other archaeological components (below).

Relative large quantities of charcoal and burnt flint (104 g) were recovered from undated feature 3390 (context 3389) which has been assigned to the Romano-British period, though it could be prehistoric. Here, the cremated bone was scattered across the upper half of the fill, most of the other pyre debris being in the lower half. The size of the feature and the distribution of archaeological components within it would suggest the possibility that this represented an uncleared pyre site (see McKinley 1997 for further discussion). There was, however, no indication of *in situ* burning. It is possible, were the feature to represent an under-pyre draught pit, that the upper levels in which the *in situ* burning would have been evident have been removed by ploughing. Certainly, the form of the fill did not indicate that the feature represented redeposited pyre debris, in which the archaeological components (charcoal, cremated bone, and burnt flint) would have been mixed. A further possibility is that it may have been a cremation burial in which the cremated bone, originally concentrated in the upper part of the fill, has been spread by extensive plough disturbance. It may be significant that some of the bone from this feature was not very well burnt, some fragments appearing just slightly scorched (see below). The possibility that feature 3390 was of prehistoric (Bronze Age) date cannot be ruled out, and two Middle Bronze Age cremation burials, 161 and 165 (see Fig. 6), both of which had pyre debris incorporated in the backfills of the graves suggesting the proximity of the pyre site, were excavated *c.*100 m to the north-east of these features in the course of previous investigations (Andrews 1996a). Although duplication of skeletal elements between feature 3390 and the two burials exclude any direct relationship between them, they may still be contemporaneous: one indicative of the location of the pyre site(s), the others of the place of burial.

The remaining five Romano-British cremation-related features, of similar dimensions and form, appeared to comprise a group ('cremation burial group' 3417) within an area covering *c.* 12 x 6 m on the southern edge of the site (other cremation burials may lie further to the south, outside the limit of excavation). Two of the features certainly represented cremation graves, although both contained some pyre debris in the form of small quantities of charcoal (Table 9), fired clay, and fuel ash slag. However, the bone was noted, in excavation, as being concentrated in a particular area of the features, largely separate from the pyre debris. Two other features, 3354 and 3387 (fills 3137 and 3386 respectively), were probably graves; the position of the bone relative to the rest of the fill, an important factor in interpretation, was not recorded in sufficient detail to be positive, but one (3354) contained very little pyre debris and the pyre debris in the other (3387) was in a concentration at the the top of the feature. In 3353, the records imply that the cremated bone was spread throughout the fill (3135), mixed with the other pyre debris. Such a distribution of archaeological components within the fill suggests a dump of redeposited pyre debris rather than a burial (McKinley 1997).

It is possible that the single Romano-British cremation-related feature (312) excavated in the previous investigations, *c.* 100 m to the north-east (Andrews 1996a, 21), may have formed an outlier to 'cremation burial group' 3417. However, the feature had been substantially truncated, surviving to only *c.* 0.11m depth, and it is possible that there were originally more Romano-British burials in the intervening area, all traces of which have been destroyed, particularly since some of the burials found were unurned (ie, leaving no scatters of pot sherds).

A very small quantity of cremated bone was redeposited in the grave fill of Romano-British inhumation burial 3383, and a similarly small quantity in the lower fill of Saxon SFB 3187. This SFB lay a considerable distance to the north of any of the excavated cremation-related features, and the presence of cremated bone within its fill may be indicative of cremation-related features in the vicinity which have either been removed by weathering/disturbance, or which lay outside the area of excavation.

Demography

A minimum of six Romano-British individuals was identified, two from the inhumation burials and four from the cremation burials. Two other individuals may be represented (Romano-British features 3353 and 3390), but their interpretation is open to question (see above). The bone from feature 3353 would not be incompatible with that from Romano-British burials 3046 or 3136 should the fill represent a dump of redeposited pyre debris. The small size of the group, even when combined with the two Middle Bronze Age and one Romano-British individual identified from the earlier excavations (McKinley 1996) precludes further, detailed demographic comment except to say that all were probably adults and all but one may have been females (Table 9).

Skeletal Indices

The stature of the older adult male from grave 3383 was estimated using the ulna as 175.19 m (5 ft 8 in). The skeletal material from both inhumation graves had similar platymeric indices (anterior–posterior flattening of proximal femur shaft) within the platymeric range. The platycnemic index (medio–lateral flatness of the tibia) for 3382 is 74.1 in the eurycnemic range.

Pathology

Pathological lesions and/or morphological variations were noted in the remains of five individuals from

Table 9. Human bone: summary results

Feature	*Context*	*Type*	*Period*	*Total wt (crem.)*	*% rec. (u/b)*	*No. ind.*	*Age*	*Sex*	*Pathology*	*Wt charcoal*
159	160	pd	MBA	127.5			adult	?		?
159	161	u	MBA	660.8		1	older mature adult	??f	nb - r. malar	?
163	164	pd	MBA	114.1			mature adult	?		?
163	165	u	MBA	841.2		1	young adult	?f	o.p. - auricular surface; m.v. - ?retention deciduous molar	?
311	312	cb?/pd	RB	51.8		1?	older mature/older adult	?	exo - femur shaft	?
314	315	?pd	?MBA	135.5			1) adult ?2) adult			?
3047	3046	cb	RB	440.7		1	young/younger mature adult	?f		9
3178	3207	red	S	0.1			?			
3343	3045	?pd	LBA	2.5			?			12
3352	3136	cb	RB	900.2		1	young adult	??f	endocranial n.b. - vault; exo - distal humerus shaft	23
3353	3135	?cb/pd	RB	363.4		?1	young adult	?f	m.v. - wormian	48
3354	3137	cb	RB	462.7		1	young subadult	?	p.n.b. - tibia & fibula	5
3383	3382	ib+red	RB	1.0	c.68	1	older mature adult	m	p.d.; calculus; hypo; hyper; abscess; caries; sinusitis; o.a. - r. hip, 1r. rib; o.p. - atlas, r. auricular surface, 3r ribs, r prox. ulna; exo - 1r & 1l rib, l femur shaft; m.v. - vastus notch	
3387	3386	prob. cb	RB	763.4		1	young/mature adult	?f		37
3388	3385	ib	RB		c.35	1	older adult	f	o.a. - acetabulum, r patella, sacro-iliac; exo - iliac crest	
3390	3389	?c-rel	RB	427.3		?1	mature/older adult	?		60

Key:

pd	pyre debris	MBA	Middle Bronze Age
cb	cremation burial	LBA	Late Bronze Age
r	redeosited cremated bone	RB	Romano-British
ib	inhumation burial	S	Saxon
c-rel	cremation-related context	?/??	probable/possible
m.v.	morphological variation	n.b.	new bone
p.n.b.	periosteal new bone	p.d.	periodontal disease
hypo	hypoplasia	hyper	hypercementosis
o.a.	osteoarthritis	o.p.	osteophytes
exo	exostoses	prox.	proximal

Age:

young subadult	13–15 yr	l.	left
young adult	18–25 yr	r.	right
younger mature adult	26–30 yr	all weights in g	
older mature adult	31–45 yr		
older adult	46 yr+		

Romano-British graves, including three cremation burials and both inhumation burials. A summary of the lesions and the affected skeletal elements is presented in Table 9.

Dental disease: Dental lesions were noted only in the inhumation burial from grave 3383. Two small occlusal caries were noted in the right maxillary and mandibular M3 (2/32 teeth; inhumation burials only). An abscess which may have resulted in the *ante mortem* loss of the tooth (1/33 teeth) was present in the mandibular right M2 socket (1/21 sockets). This individual also had mild–medium periodontal disease, medium calculus deposits covering a minimum of one-quarter of all tooth crowns, a minimum of two central lines of hypoplasia in the canines and maxillary P2, and slight hypercementosis around the apices of the maxillary M3 roots.

Degenerative joint disease: Lesions indicative of osteoarthritis were noted in both individuals from the inhumation burials. The right patella from grave 3388 has an extensive area of eburnation in the lateral surface with slight pitting and osteophytes on the surface margins. Less severe lesions were noted in the right acetabulum. Gross pitting in the right auricular surface of the sacrum, with marginal osteophytes indicates sacroileitis. Slight lesions were also noted in the right acetabulum from grave 3383 and a right rib tuberosity.

Infectious disease: Lesions indicative of infection were noted in three individuals. Nine fragments of frontal and parietal vault from cremation grave 3352 (that of a young adult female) showed a thin, intermittent cover of grainy new bone over the endocranial surface. These fragments included medial parietal with new bone *c.* 5 mm to one side and butting the sagittal suture; inferior-medial frontal with a minimum 8 mm of new bone either side of the medial line; other fragments were too small to place accurately but the maximum measurable continuous cover was over 19 mm^2. Such lesions are indicative of an infection in the meningeal membrane, and may have contributed to the cause of death of this individual.

The young subadult from cremation grave 3354 has areas of periosteal new bone over one side of a tibia shaft fragment and one side of several fragments of fibula shaft with a maximum continuous measurable depth of 5 mm and length of 22 mm. The extent of the lesions suggest this is not the result of direct infection of the bone as a consequence of trauma, but rather the result of a non-specific infection.

Extensive new bone was noted in the medial portion of the supra-orbital sinus cavities and across at least the floor of the right antrum in the inhumation burial from grave 3388. Damage to the bone and incomplete skeletal recovery precluded the full extent of the condition being observed. The new bone in the supra-orbital cavities is relatively exuberant and disorganised, that in the antrum being fine grained and relatively smooth. The lesions are indicative of primary sinusitis, the possible contributory causes of which have been outlined by Wells (1977) and include cold damp climate, poor domestic ventilation and occupational hazards.

Miscellaneous lesions: Mild osteophytes (new bone) were noted on the margins of several articular surfaces in skeletal elements from grave 3383. Such lesions, indicative of wear-and-tear may have numerous predisposing factors to their development but in this instance were most likely age-related and may be indicative of the early stages of degenerative joint diseases (Rogers *et al.* 1987). Exostoses, new bone formed at tendon and ligament insertions, have a similar aetiology to osteophytes and as seen here probably result from age-related wear-and-tear. Incomplete skeletal recovery precludes more detailed discussion.

Pyre technology and ritual

Efficiency of cremation

The overall level of cremation efficiency, that is in terms of oxidation of the bone, is fairly poor. In some extreme instances a few bone fragments, for example the innominate and proximal femur from cremation-related feature 3390 and the right proximal femur from cremation grave 3352, showed a combination of unburnt (brown) and charred (black) areas. In 3136 a small area of charred soft tissue (seen as a brittle, black 'slag-like' residue; see McKinley 1994a) was noted along the anterior and superior margins of the capsule attachment around the neck of the right femur. The degree of oxidation as reflected in the colour of the bone varied between contexts, some showing only a few fragments of vault or hand bones with blue/grey coloration, others showing extensive colour variation from brown, through black, blue, grey, to the buff-white of full oxidation. All the contexts had some bone which was not fully cremated. There is no specific pattern in the distribution of differential cremation, other than that expected as a result of different soft tissue deposition and the time taken to cremate different body parts (McKinley 1989; 1994a). The indication is for an overall lack of efficiency due to insufficient fuel being used to provide sufficient heat for a sufficient length of time to fully cremate the bone. This persistent fairly poor level of oxidation has been noted by the writer in other cremation burials, particularly those of Romano-British date, and it is not improbable that complete oxidation of the bone was not considered a prerequisite for 'full cremation' at some periods in which the rite was practised. It is interesting to note, in this instance, that the bone from both prehistoric and Roman-British features was poorly cremated and this contrasts with the apparently well cremated bone recovered from burials of both periods in the earlier excavations (McKinley 1996).

Collection

The weight of cremated bone recovered from the burials ranged from 440.7 g (grave 3047) to 900.2 g (grave 3352), with an average of 586.1 g from the Romano-British burials. The highest weight represents a maximum of 90% of the weight of bone expected from an adult cremation, whereas the lowest is probably more in the region of 56% (McKinley 1993). However, since an unknown quantity of bone is likely to have been lost from most of the burials as a result of disturbance, further comment is not possible.

The maximum bone fragment sizes noted in the osteological analysis ranged from 28 mm to 75 mm. The majority of the bone weight from the Romano-British burial contexts was recovered from the 5 mm sieve fraction (49.4%), though an almost equal quantity was recovered from the 10 mm fraction (42.4%). Numerous factors may affect the size of cremated bone fragments (McKinley 1994b), and given the unurned nature of the burial and level of disturbance to the site, it is not felt that any deliberate fragmentation of bone prior to burial occurred.

All areas of the skeleton were represented in the graves and there does not appear to have been any deliberate selection of particular skeletal elements for burial.

Animal Bones, by Sheila Hamilton-Dyer

One hundred and thirty-six fragments of animal bone were recovered from 38 contexts during the watching brief, of which 76 (56%) could be identified to species. This compares with 93 fragments from 27 contexts from the excavation, of which 34 (32%) were identified to species. The condition of the bone is similar to that from the excavation; the preservation is fair with surviving bones having clear surface details, but unfortunately the bones are fragile, many having been broken on retrieval. There is a noticeable paucity of smaller species and young animals, and it is therefore highly likely that this assemblage does not accurately reflect the composition of the original deposits. In addition to the above material there are 53 bones of a partial dog skeleton from an undated feature. A summary of the species distribution excluding this burial is given in Table 10.

Identifications were made using the modern comparative collections of S. Hamilton-Dyer. Many of the bones show recent fractures; where possible they have been joined and counted as single bones. Undiagnostic fragments have been divided into cattle/horse sized (LAR) and sheep/pig sized (SAR) with a further group identified only as mammalian. No bones were positively identified as goat and it is assumed all ovi-caprid bones are of sheep. The few measurements are in millimetres and follow the methods of von den Driesch (1976).

Bronze Age

Bones from Bronze Age features were mainly of cattle and of cattle-sized limb shaft fragments. Several anatomical elements are represented from all areas of the body. Teeth and tibiae of sheep are present and a pig acetabulum was also recovered. Canid gnawing was observed on a cattle radius and a shaft fragment.

Saxon

Bone from the sunken-featured buildings is primarily of cattle. Remains of jaws and teeth are common but in poor condition; even the usually robust teeth are prone to exfoliation. Other elements include foot and limb bones. Sheep remains are entirely of teeth, and no pig bones were recovered. Two other species are represented: SFB 3178 contained a pair of dog jaws from a large animal (the length of the lower 4th premolar is 24 mm), and a portion of red deer skull which comprised most of the left frontal with the base of a substantial antler. This animal was therefore male and carrying antler at the time of death, sometime in the autumn or winter. A failed attempt to chop off the antler at the pedicle was later successful using a saw on the burr.

The occasional burnt bone was present and one small fragment had been gnawed. Butchery marks were absent but a chopped cattle horn core in addition to the chopped and sawn deer skull was present. This provides evidence for both antler and horn working. The presence of large, and often low meat value, bone elements suggests that these are not the remains of *in situ* occupation debris. They are more likely to result from periods of disuse.

Conclusion

In comparison with previous material, no horse was identified but red deer can be added to the species list. The predominance of cattle bone in both Bronze Age and Saxon features, especially the high quantity of jaws and teeth could be partly due to taphonomic bias, but cattle is usually the most frequent species identified.

Charred Plant Remains, by Pat Hinton

Samples were processed by Wessex Archaeology using their standard procedures. Flots were retained on 0.5 mm mesh and residues on 1 mm mesh, and the residues searched for charred plant remains. The unsorted flots and any material extracted from the residues were then examined by the writer with a stereo-microscope at 7–40x magnification.

Nomenclature is that of Stace (1991) and all plants are represented by seeds (which term includes nutlets, caryopses etc.) unless otherwise indicated.

The species identified are summarised in Table 11. All samples contain a small number of fragments, some dull and fragile which are probably distorted remnants of cereal grains, and others which are hard, shiny and almost metallic in appearance, and all with cavities of varying size. Occasionally on a flatter surface of the hard, shiny fragments it is possible to see an impression of part of a stem or, in one case, the veins of a leaf of a monocotyledon, and these fragments have the appearance of being parts of a fused mass of burned starchy material. Similar amorphous material is frequently found with charred cereals (as in some samples from this site) and is often taken to have the same origin, and indeed fragments of burned cereals are a constant feature of almost all sites, However, when these fragments appear in contexts which contain no recognisable cereals but only fragments of charred tubers and other roots (as in the Roman cremation burial contexts) it is possible that other plant parts are involved.

Romano-British

Two samples from cremation burials (3047 and 3352) include charred root and stem fragments, including the swollen lower stem internodes of *Arrhenatherum elatius* ('tubers' of onion couch) and parts of other true tubers. One of the latter, from cremation deposit 3352, is hemispherical in form, apparently being the upper half of a more or less spherical tuber, and is 7.6 mm in diameter.

Table 10. Animal bone: species destribution

Feature	*Context*	*Cattle*	*Sheep/ goat*	*Pig*	*Cattle size*	*Red deer*	*Sheep size*	*Mammal*	*Dog*	*Total*
Late Bronze Age										
3076	3078	–	1	–	–	–	–	–	–	1
3116	3174	1	–	–	–	–	–	–	–	1
3151	3054	1	–	–	–	–	–	–	–	1
3223	3082	–	–	–	1	–	–	–	–	1
3343	3045	2	–	–	–	–	–	–	–	2
3381	3380	2	–	–	–	–	–	2	–	4
3399	3398	3	3	1	–	1	1	–	–	9
3410	3411	–	–	–	–	–	–	1	–	1
3414	3150	3	–	–	1	–	1	7	–	12
3414	3213	–	1	–	–	–	–	2	–	3
–	3138	3	–	–	6	–	–	–	–	9
–	3212	–	1	–	–	–	–	–	–	1
Total		15	6	1	8	1	2	12	0	45
%		33.3	13.3	2.2	17.8	2.2	4.4	26.7	0	
Romano-British										
3397	3142	1	–	–	–	–	–	–	–	1
Saxon										
3030	3193	2	–	–	–	–	–	1	–	3
3030	3205	2	–	–	–	–	–	–	–	2
3063	–	–	–	–	–	–	–	1	–	1
3063	3163	5	–	–	1	–	–	–	–	6
3063	3164	3	3	–	–	–	–	–	–	6
3063	3165	2	–	–	–	–	–	–	–	2
3063	3179	1	1	–	1	–	–	1	–	4
3063	3181	–	–	–	–	–	–	1	–	1
3063	3184	–	–	–	–	–	–	1	–	1
3166	3044	1	–	–	–	–	–	–	–	1
3166	3169	4	–	–	1	–	–	–	–	5
3178	3182	6	3	–	9	–	1	–	2	21
3178	3201	1	–	–	1	–	–	–	–	2
3178	3202	1	–	–	–	–	–	–	–	1
3178	3203	8	2	–	2	1	–	–	–	13
3178	3204	–	–	–	6	–	–	–	–	6
3178	3207	–	–	–	–	–	–	1	–	1
3337	3022	–	–	–	–	–	–	1	–	1
3337	3023	–	–	–	–	–	–	6	–	6
3337	3375	–	–	–	2	–	–	–	–	2
3370	3041	1	–	–	–	–	–	–	–	1
3370	3346	2	–	–	–	–	–	–	–	2
3370	3347	1	–	–	–	–	–	–	–	1
3391	3020	1	–	–	–	–	–	–	–	1
Total		41	9	0	23	1	1	13	2	90
%		45.5	10.0	0	25.5	1.1	1.1	14.4	2.2	
Overall total		57	15	1	31	2	3	25	2	136
%		42.0	11.0	0.7	22.8	1.4	2.1	18.4	1.4	

Table 11. Charred plant remains

		Period	*RB*	*RB*	*RB*	*S*	*S*	*S*
		Feature type	*crem.*	*crem.*	*crem.*	*SFB*	*SFB*	*SFB*
		Feature no.	*3047*	*3352*	*3390*	*3030*	*3063*	*3178*
		Context	*3046*	*3136*	*3389*	*3193*	*3163*	*3207*
		Sample no.	*5052*	*5057*	*5079*	*5054*	*5053*	*5055*
		Sample vol (lites)	*10*	*15*	*10*	*15*	*15*	*15*
Cultivated								
Triticum spelta, glume base	spelt wheat		–	–	–	–	–	1
Triticum cf spelta, grain	spelt wheat		–	–	–	–	–	1
Triticum cf aestivum s.l.	bread wheat		–	–	–	–	3	2
Triticum sp.	undiff. wheat		–	–	1	–	2	5
Hordeum vulgare L	hulled barley		–	–	–	–	2+?3	2+?1
Avena sp.	oats		–	–	–	–	11	1
cf Cerealia indet., grain frags					<0.25 ml	–	<0.25 ml	<0.25 ml
Arable/waste/grassland						–		
Chenopodium album L	fat hen		–	1	–	–	2	–
Stellaria medianegelecta	chickweed		–	–	1	–	1	–
Polygonum aviculare L	knotgrass		–	3	–	–	–	–
Fallopia convolvulus (L.)	black bindweed		–	1	–	–	–	–
Rumex cf crispus	curled dock		–	3	–	2	2	1
Vicia tetrasperma (L.) Scheber	smooth tare		–	–	–	–	1	–
Vicia cf stiva	common vetch		–	3	–	1	>2	–
Vicia lathyrus sp.	vetch/vetchling		–	>2	–	–	–	–
Trifolium medicago	clover/meddick		–	–	–	–	8	–
cf *Linum catharticum* L	fairy flax		–	–	1	–	–	–
Plantago lanceolata L	ribwort plantain		–	2	–	–	–	–
Asteraceae: *Senecio* type	daisy family		–	1	–	–	–	–
Euphrasia odontite sp.	eyebright/red bartsia		–	3	–	–	–	–
cf *Conopodium majus*, tuber	pig nut		–	1	–	–	–	–
Arrenatherum elatius (L.) Beauv., swollen stem bases, 'tubers'	false oat grass or onion couch		18	36	–	–	–	–
Bromus cf secalinus L.	rye brome		–	–	–	1+?1	–	–
Poaceae indet.	small grasses		–	3	2	–	–	–
Wood margins, scrub								
Corylus avellana L.; shell frags	hazel		–	–	–	1	–,	2
Unclassified								
Tubers and cf tuber frags.			>1	>2	–	–	–	–
Rootlets and stem frags			c. 40	c. 50	–	–	–	–
Starchy material			2.25 ml	1.5 ml	<0.25 ml	<0.25 ml	–	<0.25 ml

On the presumed upper surface there is the possible site of a stem attachment and on its broken, flatter surface there is some evidence of vesicles, probably developed during charring, apparently radiating from the centre. This tuber has been compared to *Conopodium majus* (pignut). Of the other two tuber-like items from this context one, measuring 5.4 mm is similarly damaged but the vesicular spaces are less obvious. A third tuber appears to be more complete in that there is no broken surface. Its diameter is 6.3 mm but it has the appearance of a compressed and flattened more or less spherical object; the surface is smooth and there are no existing signs of stem or rootlet attachment. In cremation deposit 3047 the one measurable part of a tuber is *c.* 6.6 mm in diameter by *c.* 2.5 mm; the external surface has possible rootlet scars but the flatter broken surface shows no

specific detail. Unfortunately a possible identification of pignut is offered for only one of these root parts; the others might be the same but the identification would be too insecure. Cremation deposit 3136 also included seeds of plants which commonly occur in waste or grassland, or in fields.

The sample from the undated, possible cremation-related deposit (Feature 3390) yielded only one poorly preserved wheat grain, some of the fragments described above, and a few seeds of waste or grassland plants which are likely to have grown in the vicinity. With so few seeds it is not possible to say whether they are merely a reflection of the common background of charred material, or whether they are more closely associated with the feature.

Saxon

Two of the samples from the sunken-featured buildings include evidence of cereals, The wheat grains cannot be surely identified to species level without the presence of more diagnostic parts of the ear but the form of some grains is compatible with *Triticum aestivum* s.l. (free-threshing bread wheat or club wheat). However, one grain has the more characteristic form of *Triticum spelta* (spelt) and is accompanied by one glume base sufficiently intact to confirm the presence of this species. Spelt was the predominant wheat of the Roman period, and is occasionally found in later periods although on the whole it was increasingly replaced by free-threshing wheats. Other poorly preserved grains in these two samples, although recognisably wheat cannot be more closely identified. *Hordeum vulgare* (hulled barley) and *Avena* sp. (oats) are present in both samples which included cereal grains. The barley grains are poorly preserved and some are doubtfully identified. One grain in each of the two samples may possibly be slightly twisted and thus indicate 6-row barley, but this might well be distortion caused by the charring. The oats cannot be identified as cultivated or weed species in the absence of floret bases. It may be significant that the greater number are in the sample with slightly more wild plant seeds.

The seeds which accompany the cereals are mostly common plants of disturbed ground and of grassy areas of varying soil types. *Bromus cf secalinus* (rye brome) was once a common associate of autumn-sown crops, particularly originally of spelt, but was found only in the sample which includes no cereals.

Discussion

Together, the results from the watching brief and from the earlier excavation (Hinton 1996) provide evidence from a range of contexts through the Late Neolithic, Bronze Age, Romano-British, and Early Saxon periods.

Late Neolithic

The one sample from the earlier excavation (Pit 380) included a few fragments possibly of cereal grains, fruit stones of *Crataegus monogyna* (hawthorn) and fragments of *Corylus avellana* (hazel) nut shells. This is typical of many Neolithic sites which appear to indicate a certain amount of cereal cultivation with a continuance of wild plant food gathering.

Bronze Age

A Middle–Late Bronze Age pit containing pyre debris from the earlier excavation (Pit 414) produced only a very small amount of probable cereal fragments, a grass seed, an unidentified bud and fragments of *Corylus avellana* (hazel) shell, and a fruit stone of *Crataegus monogyna* (hawthorn). However, other samples from pits and post-holes of Late Bronze Age date included wheats, hulled barley and oats together with a range of seeds characteristic of disturbed ground or grassland.

Romano-British

The plant remains from the two Romano-British cremation deposits are alike in the absence of recognisable cereals and in the presence of stem, root, and tuber fragments, but strikingly different in that only one, admittedly the larger sample, included weeds of disturbed soil or grassland.

The interpretation of plant parts found in cremation deposits is difficult: many would be destroyed in the intense heat and, of the survivors, some might represent part of the fuel, probably initial tinder, some could have been growing *in situ*, and some could be part of the ever-present background of small charred particles found on most sites. (All samples from this site included small numbers of uncharred recent seeds – an indication of the movement of seeds through the soil). Alternatively they may represent items placed with the corpse. Even when a greater number of samples from the large Iron Age and Roman cremation cemeteries at Westhampnett, Sussex (Fitzpatrick 1997) were examined it was not found possible to conclude whether the occasional, usually indeterminate, cereal grains and fragments and occasional weed seeds represented fuel, funerary offerings or merely part of the background of charred plant fragments.

Onion couch tubers have frequently been found in Bronze Age cremation burials, and in other contexts where fuel is the logical explanation. Robinson (1988) has pointed out that much kindling would be required, and if dead stems of onion couch, which remain upstanding, were gathered, tubers could be uprooted. However, this explanation is less satisfactory for the probable pignuts because these tubers are found more deeply underground (up to 0.20 m) and the stems break easily so they cannot readily be pulled up. An alternative explanation is that the they were deliberately collected; pignuts are edible and there is a long tradition of the pleasantly tasting tubers being dug up (Grigson 1975; Dimbleby 1978). They are infrequently found in archaeological deposits, but when they have occurred deliberate gathering for use as a food resource has been suggested (Moffett 1991), particularly when in association with other edible plant foods such as large numbers of hazel nuts. As the leaves and stems of the pignuts die back in mid-summer the tubers presumably would need to be dug by this time, when they were developed but while the plants could still be seen, unless they were known to occur so densely that random digging would find them.

If the tubers and other tuberous root parts were present other than by chance inclusion then the possibility that the onion couch also was deliberately deposited should be considered. Godwin (1975) and

Jones (1978) suggested they may have been collected and Engelmark (1984) made a case for their connection with burial rituals when found in Iron Age (Swedish) cemetery sites in Sweden together with root tubers of *Filipendula vulgaris* (dropwort), for which there is some evidence for use as food; he also referred to the 'widespread inclusion of the tubers of the Asphodel (*Asphodelus* spp.) in Greek graves'.

It is unfortunate that the composition of the fragments of amorphous charred material is unknown. If it is all cereal in origin it would weight the argument for the tubers also to have been gathered as food and deliberately placed with the cremation burials. If it is the result of the burning of inadvertently gathered starch-rich root material then accidental inclusion is the most likely explanation, and the presence in both of these Roman cremation deposits, with the wood charcoal, of a number of very small and therefore nutritionally useless root fragments supports this. Onion couch and pignut tubers were found together, and with tuberous roots of cf *Ranunculus ficaria* (lesser celandine) and cf *Daucus carota* (wild carrot) and a wide range of grassland seeds (but none of cultivated plants) in a Late Bronze Age mound at Mile Oak, Sussex which probably represented the remains a pottery kiln structure (Hinton in Rudling forthcoming). In that case fortuitous inclusion with fuel seemed the appropriate explanation of their presence. Another explanation which might fit both the onion couch, the tubers, and the other seeds in these contexts is that whole turves were involved, whether for fuel, initial clearance or as part of the pyre construction.

Saxon

The samples from a Saxon sunken-featured building in this part of the site, although including fewer seeds than from the previously excavated Saxon samples (Hinton 1996, 47, table 8b), comprised a similar range. In both cases wheats included free-threshing species as well as a few glumed wheats (spelt, and in the earlier case *Triticum dicoccum* (emmer), hulled barley and oats. These results are in keeping with what is currently known of Saxon agriculture. Free-threshing wheats, occasional glumed wheats (spelt and/or emmer), 6-row hulled barley and oats are usual, but there is variation in the apparent importance of individual cereal species (Green 1994). Rye is less common, at least in the Early Saxon period.

Charcoal, by Rowena Gale

Samples of charcoal were selected for analysis from a variety of Late Neolithic, Middle and Late Bronze Age, Roman-British, and Saxon features. The previously unpublished material from the 1994 excavation is considered here along with that from the watching brief. Identification of the pyre fuels from the Roman cremation burials is of interest since documentary evidence (Tacitus: *The Germania*) suggests that particular types of wood were used in some parts of Europe. Evidence of fuel resources from Saxon buildings is also of interest as published evidence is relatively uncommon in Britain.

Materials and methods

In general the charcoal was relatively well preserved although some fragments were in poor condition and intrusive sediments obscured diagnostic cell wall detail. Fragments measuring 22 mm in transverse surface (TS) were fractured to expose a fresh TS. These were sorted into groups based on the anatomical features observed using an x20 hand lens. Representative fragments from each group were selected for further study and fractured to expose tangential and radial longitudinal surfaces. These were supported in sand and examined using an incident-light microscope at magnifications of up to x400. The cellular structure was matched to reference material. Where possible, the maturity of the wood (ie, sapwood or heartwood) was noted. Large samples were sub-sampled as follows: 5103, 25%; 5078, and 5079, 50%.

Results

The taxa identified are summarised in Table 12 and listed below:

Acer sp., maple
Alnus sp., alder
Betula sp., birch
Corylus sp., hazel
Fraxinus sp., ash
Pomoideae, subfamily of the Rosaceae, which includes *Crateagus,* hawthorn; *Malus* sp., apple, *Pyrus* sp., pear, *Sorbus* spp., rowan, whitebeam and wild service. These genera are anatomically similar.
Prunus spp., which include *P. avium,* wild cherry, *P. padus*, bird cherry and *P. spinosa*, blackthorn. The anatomical features of these genera are overlapping and it is often difficult or impossible to differentiate to species level.
Quercus sp., oak
Salicaceae which includes *Salix* sp., willow and *Populus* sp., poplar. These genera can not be distinguished with certainty using anatomical methods.
Sambucus sp., elder

Late Neolithic

Charcoal from the fill of pit 380 included oak and ?*Prunus*.

Middle Bronze Age

The contents of cremation urn 166 included alder and *Prunus* charcoal, and a sample from pit 313 close by included a member/s of the Pomoideae and ?alder as well as bark (unidentified) and a few charred fragments that showed gross structural distortion.

The fill of pit 331 within ring-ditch 378 included oak (sapwood) and Pomoideae charcoal, and a sample from pit 314, interpreted as pyre debris, included oak (sapwood), elder, *Prunus*, hazel, Pomoideae, and maple.

Late Bronze Age

Charcoal from the primary fill of ditch 709 included maple and *Prunus*. (A ?cherry stone with a circular gnawed opening was also present).

Table 12. Charcoal

Sample	*Feature*	*Context*	*Ac.*	*Al.*	*Bet.*	*Cor.*	*Frax.*	*Pom.*	*Prun.*	*Quer.*	*Salic.*	*Samb.*
Neolithic												
5022	Pit 380	382	–	–	–	–	–	–	?2	21	–	–
Middle Bronze Age												
5005	Pit 313	167	–	?2	–	–	–	12	–	–	–	–
5007	Pit 314	315	3	–	–	9	–	7	12	48s	–	21
5014	Pit 331	377	–	–	–	–	–	4	–	13s	–	–
5004	Urn 166	165	–	3	–	–	–	–	1	–	–	–
Late Bronze Age												
5056	?pd 3343	3345	3	12	–	3	–	4	38	26s	–	–
5039	Ditch 709	715	22	–	–	–	–	–	4	–	–	–
5020	Ph 277	278	–	–	–	–	–	–	–	22s	–	–
5010	4-post 228	229	5	–	–	4	4	2	–	8s	–	–
5012	4-post 275	276	2	–	–	?1	2	–	4	21	–	–
Romano-British												
5006	Crem. 311	312	–	–	–	–	15s	2	2	1	–	–
5057	Crem. 3352	3136	–	2	–	?1	–	–	–	101sh	4	–
5058	Crem. 3353	3135	57r	–	–	–	–	–	–	48sh	–	–
5079	Crem. 3390	3389	–	–	1	6	–	–	–	211s	3	–
Saxon												
5019	SFB 103	105	–	–	4	?1	–	1	4	4	2	1
5029	SFB 605	606	–	–	–	–	–	3	2	12	–	–
5054	SFB 3030	3193	–	–	–	1	–	4	–	7sh	–	–
5053	SFB 3063	3163	3	–	–	–	–	2	–	12sh	–	–
5055	SFB 3178	3207	1	–	1	?1	–	2	2	24	–	–
5015	Ph 439	400	?1	–	–	–	–	1	4	8s	–	–
5030	Ph 605	625	2	–	–	–	1	–	4	14	–	–
5043	Well 711	732	–	–	–	–	–	–	–	72sh	–	–
5013	Pit 353	354	–	–	–	–	–	–	?1	36sh	–	–

Key:
Ac. = *Acer*; *Al.* = *Alnus*; *Bet.* = *Betula*; *Cor.* = *Corylus*; *Frax.* = *Fraxinus*; *Pom.* = Pomoideae; *Prun.* = *Prunus*; *Quer* = *Quercus*; *Salic.* = Salicaceae; *Samb.* = *Sambucus*

pd = pyre debris; crem. = cremation; Ph = post-hole; 4-post = 4-post structure

r = roundwood (diam. <20mm); s = sapwood; h = heartwood

The fill of post-hole 277 included burnt flint, pottery and a large quantity of oak (sapwood) charcoal. The absence of other taxa suggests that the charcoal originated from the remains of the post. Samples from two post-holes from a four-post structure (455) nearby also included artefactual debris as well as charcoal. However, in these cases the charcoal was mixed and consisted of oak, maple, hazel, ash, Pomoideae, and *Prunus*.

Feature 3343 was a shallow pit containing debris possibly from the remains of a pyre clearance. The nature of the deposit, however, allows the possibility of contamination by other fuel debris. The charcoal consisted of oak sapwood, blackthorn, alder, hazel, maple, and hawthorn/apple/whitebeam etc.

Romano-British
The fill of pit 311, possibly also a cremation deposit, included Pomoideae, *Prunus* (*cf.* blackthorn), and oak charcoal. Two cremation burials, 3352 and 3353, included pottery, burnt human bone and charcoal. The charcoal from 3353 was more abundant and better preserved than from 3352 and included roughly similar proportions of maple roundwood and oak sapwood and heartwood. The widest fragment of maple measured about 50 mm in diameter (when charred) and included

12 fairly wide growth rings. Charcoal from cremation burial 3352 was mainly composed of oak sapwood and heartwood but also included alder, willow/poplar, and possibly hazel.

A roughly circular pit, 3390, included large quantities of charcoal mixed with burnt bone and sparse amounts of burnt flint and pottery (context 3389). The origin of the deposit was uncertain but it may have been from a cremation burial. The charcoal was mainly oak sapwood but also included hazel, birch and willow/ poplar.

Saxon

Seven samples were examined from sunken-featured buildings, five from the pits and two from associated post-holes. Samples from a probable well and a pit were also examined

Domestic debris from the bottoms of the SFB pits included varying quantities of charcoal. This was almost certainly from spent fuel, and more or less similar species were identified from the samples examined from all five of the SFBs (103, 605, 3030, 3063, and 3178); these most commonly comprised oak, hawthorn/apple/ whitebeam/ etc, blackthorn, hazel, birch, and maple. The widest range was from SFB 103 and also included willow/poplar and elder. The presence of willow/poplar as well as birch may indicate some association with the fabric of the building itself (eg thatch or wattle).

Charcoal from the fill of a post-hole in SFB 439 included oak (sapwood), *Prunus* and Pomoideae; and that from a post-hole in SFB 605 included oak, *Prunus*, ash, and maple. The primary fill of a deep pit, 711, probably a well, produced a large quantity of oak (sapwood and heartwood), mainly from the top of the fill but some from lower down. The sample from pit 354 contained a large quantity of burnt material including bone, pot, flint, daub and charcoal. The distribution of charcoal increased with depth, and a 25% subsample was identified as mainly oak (sapwood and heartwood) with a single fragment of ?*Prunus*. The remainder of the sample appeared superficially similar.

Discussion

The charcoal samples broadly represent two distinct categories of fuel: pyre fuel and domestic fuel. The pyre debris included sufficiently large quantities of charcoal from the Romano-British and prehistoric contexts to indicate a preference for oak and, although cremation burial pit 3353 contained a high proportion of maple, it is likely that the other two pyres (and possibly 3353) were constructed from oak poles wide enough to include heartwood. Oak provides an efficient and long-lasting wood fuel and although charcoal emits a more intense heat, the fragility of its fabric would be impractical for constructing the main framework of a pyre. A similar predominance of oak has been recorded from pyre debris from other prehistoric and Romano-British sites in Britain including Westhampnett, West Sussex (Gale 1997), Salford Priors, Warwick (Gale, in prep.), Eaglestone Flat, Derbyshire (Barnatt 1994) and Hurst Park, Surrey (Gale 1996). Since prehistoric times, oak has been associated with numerous mythical and religious beliefs in northern Europe (Davidson 1964), and a ritual element of its use in the funerary rites at Prospect Park should not be dismissed. One feature, 3390, was tentatively identified as a Romano-British cremation-related feature, possibly an uncleared pyre site and, for the reasons discussed above, the abundance of oak charcoal in its fill tends to support this interpretation. The charcoal from Late Bronze Age feature 3343, possibly representing pyre debris, suggests a more random use of fuel although contamination from other sources can not be ruled out.

The charcoal from the Saxon sunken-featured buildings indicates that a wide range of wood species was used for fuel including oak, maple, birch, hazel, ash, hawthorn/apple etc., blackthorn, willow, and elder. The charcoal was too fragmented to assess the maturity of the wood although it was evident that the oak included heartwood. The analysis suggests that most of the wood available from around the site was considered to have some potential as fuel, although willow and alder, which would probably have been common on the damp river banks, do not appear to have been greatly valued.

Environmental evidence

The site is close to the River Colne and its floodplain, and the surrounding area was low lying with soils composed of sands and gravels, and brickearth. The charcoal analysis identified a wide range of trees and shrubs growing in the region that probably remained fairly stable from the Neolithic until the Saxon period. Oak may have been the dominant woodland tree; its wood was identified more frequently than that of other taxa but this may reflect preferential selection rather than its frequency in the environment. In its earlier phases the oak woodland probably included hazel and, later, by the Late Neolithic or Bronze Age, ash and maple. Marginal woodland taxa represented by the charcoal included elder, hazel, blackthorn, and member/s of the Pomoideae. Alder and willow typically colonise river banks and damp floodplains, sometimes forming dense thickets, and it is probable that both grew in the riverine habitat at this site. The poor local soils and sandy acid gravels would have suited the growth of birch which may, in places, have formed open woodland with oak.

Woodland resources

In general, taxa from a fairly wide range of trees and shrubs was gathered from around the site. Oak occurred in most samples and was generally present in larger quantities than other taxa, indicating its preferred use as a fuel. The presence of oak heartwood suggests that trunk or cord (branch) was gathered from trees probably more than 30 years old. Heavy, dense woods such as oak, ash, blackthorn, cherry, maple, and the hawthorn group produce the most efficient fuel woods while the lightweight, sappy woods of willow, poplar and alder burn slowly giving off less heat. The charcoal was too fragmented to indicate the use of coppiced wood.

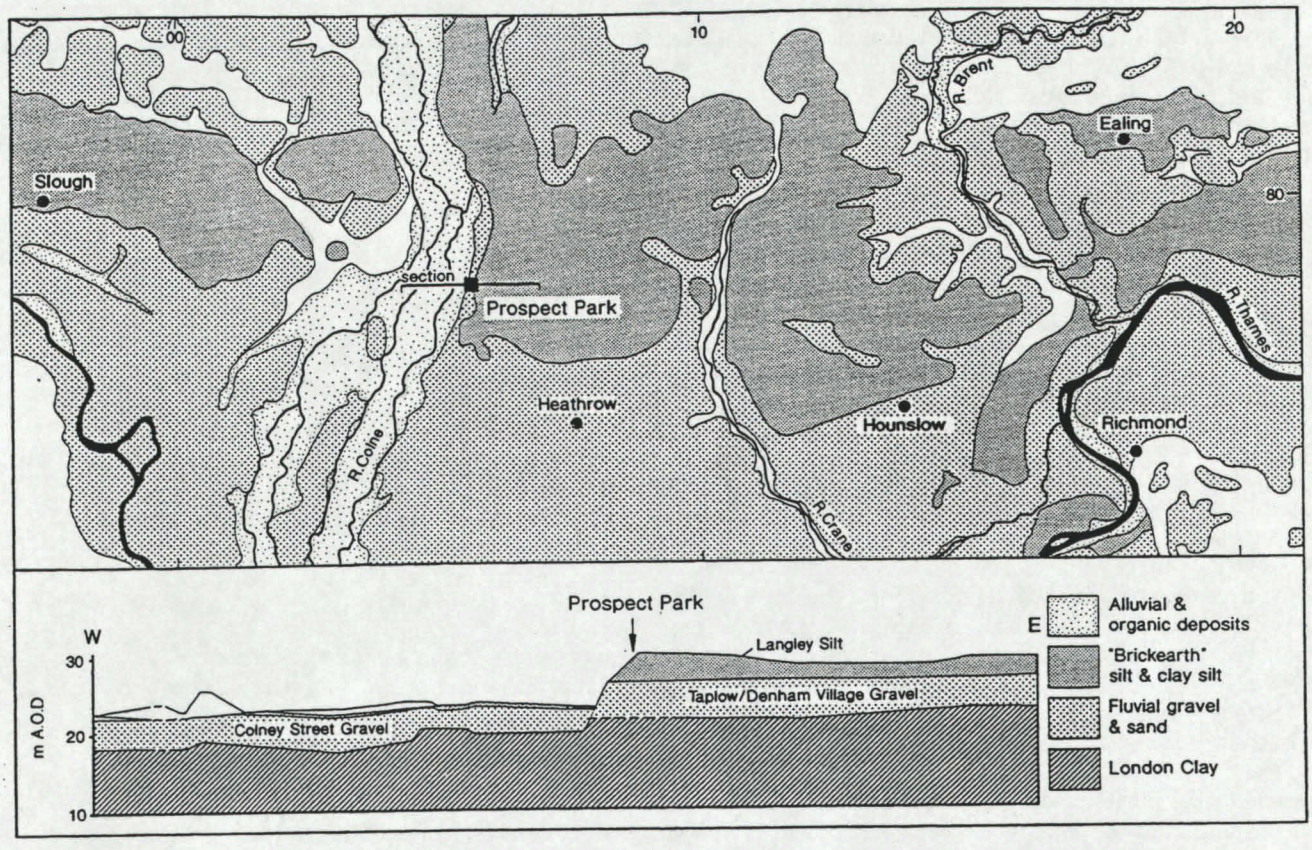

Figure 27 Top: Location of Prospect Park site with respect to surface lithologies (from Gibbard 1985, fig. 2); bottom: cross-section through the Taplow Gravels and Langley Silt Complex to show the relationship of the sedimentary units to each other and their characteristic thicknesses (from Gibbard 1985, fig. 17)

The Geological Context: The 'Brickearth' at Prospect Park, by James Rose

Introduction

All of the archaeological features recorded at Prospect Park were cut into 'brickearth' which is considered 'natural' in archaeological terms. However, elsewhere in the Colne valley the presence of late Upper Palaeolithic sites dating to *c.* 10,000 BP (eg Three Ways Wharf, Uxbridge; Lewis 1991) extends the archaeological timescale back into the Pleistocene, and understanding the nature of the sedimentology is important in any attempt to reconstruct the earlier prehistoric landscape of the area. Therefore, the opportunity was taken to record the lithology of the 'brickearth' and undertake an analytical programme to investigate its sedimentary and palaeo-environmental context. (A fuller report on this still on-going programme of work is held in archive, and it is intended that this be published in an appropriate geological journal at a later date).

The 'brickearth' at Prospect Park is described in terms of lithology, carbonate content, organic content, particle size characteristics, macrostructure, micromorphology, and stratigraphic position, and each property is related to the appropriate sedimentary, periglacial, and soil forming processes involved in the formation of the deposit. The 'brickearth' is a silty sediment that was deposited by wind or water in cold climate conditions. Periglacial macro- and micro-scale soil structures and temperate-climate soil horizonation and microstructures have modified the primary sediments, and represent phases of soil formation both during and following deposition. The position of the silts above gravel deposited during Oxygen Isotope Stage (OIS) 6, thermoluminescence (TL) ages, and the pedostratigraphy indicate that silt deposition and contemporary pedogenesis took place in a periglacial climate during the Last Glacial Stage (OIS 5d–2) and that temperate soil development took place during the Lateglacial and the Holocene, interrupted by cold climate soil development during the Younger Dryas climatic deterioration.

Geographical position and geological context

The Prospect Park site was located on the north side of the Thames valley just north-west of Heathrow Airport. The relief in the area is Thames terraces (Gibbard 1985) and the bedrock is London Clay, with Chalk to the north-west in the Chiltern Hills and Tertiary sands to the north and, most extensively, the south-west. The 'site' consisted of a trench cut through brickearth at the eastern side of the confluence zone of the rivers Thames and Colne, with a surface elevation of *c.* 27.65 m OD (Pl. 10). The trench was *c.* 4 m deep and 30 m long with an east–west trend. The southern face was stepped for recording, and to show horizontal as well as vertical structures.

The 'site' was located in 'brickearths' overlying river gravels (Fig. 27). The river gravels comprise sediments of the Taplow Gravels and Terrace of the River Thames (Dewey and Bromehead 1915; Gibbard 1985), but the surface slope and direction of palaeocurrent structures within the sands and gravels towards the south-east indicate that the terrace at this locality is a fan of the Colne and most probably represents sedimentation by both the Colne and Thames drainage systems (Gibbard 1985, 46–7). The 'brickearths' are predominately silts and are part of the sedimentary unit defined by Gibbard (1985, 57) as the Langley Silt Complex. As implied by the name, the silt unit was formed by a variety of processes. The processes suggested include wind-blown dust (loess), wind-blown dust redeposited on slopes (colluvium), and wind-blown dust redeposited on river floodplains (overbank sediments) (Gibbard *et al.* 1987). The origin of the sediments at the Prospect Park 'site' has been evaluated as part of this study.

The relationship of the gravels and silts is shown in a cross-section drawn by Gibbard (1985) from the boreholes used in the construction of the M4 (Fig. 27), and it can be seen that, on the Taplow Terrace, the silt is typically *c.* 3 m thick (*ibid.*, 59). By contrast, on the Colney Street Gravel, which is incised into the Taplow Gravels, the silt is absent.

On the basis of enclosed fauna and fauna, and geomorphological position within the Thames terrace system deposition of the Taplow Terrace is ascribed to the latter part of OIS 6 (*c.* 186,000–132,000 BP) during which time the River Thames operated within a periglacial climatic regime (Bridgland 1994). The overlying Langley Silt Complex is attributed to sedimentation during the Last Glaciation (*c.* 122,000–10,000 BP), and particularly the Late Devensian/Last Glacial Maximum (*c.* 25,000–14,000 BP) as indicated by TL ages of between 17,800±1500 and 14,300±1200 BP (Gibbard 1985, 57; Gibbard *et al.* 1987).

Methods of Analysis

The entire exposed 'brickearth' sequence, 3.84 m thick, was sampled in monolith boxes. The location of these boxes is given in Figure 28 which also shows the sedimentary and soil structures, the positions of the benches within the trench (see Pl. 10) and the location of bulk particle size sample points. Apart from the bulk particle size analyses, all laboratory analyses were carried out on materials taken from these monolith boxes. The site was subsequently visited on 19 April 1996 in the company of Phil Harding, when the gravels and silts were well exposed and the sediments and structures could be studied in the field.

Bulk particle size analysis was carried out on six samples by S.G. Lewis of the Geography and Geology Department at Cheltenham and Gloucester College of Higher Education, using sieving and pipette methods (British Standards Institutution 1985, 812) in order to determine the percentage gravel, sand and silt within the sediment. All other analyses were carried out in the Sediment, Chemical and Micromorphology Laboratory Suites of the Geography Department at Royal Holloway, University of London.

The silt and clay size fractions (SediGraph technique; Coakley and Syvitski 1991), percentage organic carbon (Walkley-Black method; Hesse 1971), and percentage $CaCO_3$ (Bascomb Calcimeter; Avery and Bascomb 1974) were determined on samples taken at 10 cm intervals throughout the section, with replicate samples taken at 1 m intervals. Micromorphology was carried out on 16 samples selected to represent the characteristic lithologies and structures, with a vertical interval that would characterise typical variations in the sediment and soil profile. These undisturbed samples were collected from the monolith trays and prepared according to the methods set out in Lee and Kemp (1994). With respect to micromorpholgy, problems were encountered with impregnation due to the fine nature of some of the materials, and it was necessary to impregnate some of the samples several times. Methods of describing the thin sections follow Kemp (1985a), Bullock *et al.* (1985) and van der Meer (1993).

Section description

(Figs 28 and 29)

The Taplow Terrace and Sands and Gravels

The silts rest on sands and gravels of the Taplow Terrace which have a surface elevation of *c.* 23.7 m OD. Throughout most of this unit the sands and gravels are reasonably well sorted with an absence of silt and clay. The structures show weak bedding which is dominated by thick, indeterminate horizontal beds, typical of river sedimentation at the surface of large horizontal bars. Occasionally small channel structures are cut into these massive beds indicating local river erosion, and small cross-sets indicate the position where sand and sand and gravel cascaded into deeper water at the front of bars. Measurements on these cross-set structures indicate a minimum water depth of 0.4 m and a current flow direction towards the south.

Unlike the main body of the sands and gravels unit the upper part is clay rich with an orange or yellowish brown colour (10YR 5/8). This unit is currently under study for micromorphology, but it has all the properties of the Bt horizon of a soil, indicating that the surface of the sands and gravels have been heavily modified by pedogenesis, and that the pedogenesis is of a type characteristic of temperate climate processes.

These results confirm that the sands and gravels at this site were deposited on a fan of the River Colne in its confluence zone with the River Thames, and that subsequently a temperate climate soil developed on the terrace surface.

The Langley Silt Complex

The Langley Silts consist of sandy silts and clayey silts which overlie the Taplow Sands and Gravels up to the present land surface at 27.65 m OD. Because of the complexity of this deposit, it is described in three separate sections (sedimentary Units i–iii) according to its sedimentary, structural, and pedological properties. Each property is described by a number of techniques which are appropriate to the analysis of the particular attribute. For instance, structure, particle size and micromorphology are appropriate to each of the processes, but colour is appropriate only to the sediment and soil, and organic content is appropriate only to

pedogenesis. All analytical results are shown in Figure 29.

Sediment Description and interpretation
(Table 13; Figs 28 and 29)

Sedimentary Unit i: 23.7 m (top of Taplow Terrace) – 24.4 m OD

The lower part of the silts is yellowish brown (10YR 6/8) with occasional flint pebbles. In this zone some 61–66% of the sediment falls in the silt size fraction with 21–25% sand and 13–14% clay (Table 13). The mode (36.5–38.9%) is in the coarse silt (32–64 μm) fraction. Micromorphological analysis shows a structureless massive matrix with a weak plasmic fabric. Terrestrial molluscs are visible along with rounded, isolated, fragments of red pedogenic clay (papules) and brown London Clay. Some quartz grains, flint grains and glauconite are surrounded with London Clay. Some glauconite and flint grains show weathered margins.

All these properties suggest mixing of silt with the weathered top of the underlying clayey gravels, and the incorporation of clasts, minerals and clay fragments into the silt unit. The skins of London Clay around some of the grains suggest that sand size grains were also rolled to the site over a 'sticky' surface, probably reflecting aeolian activity. The size range of the material is typical of western European loess but with slightly higher proportions of fine sand and clay (Gibbard *et al.* 1987), probably reflecting sand size material blown or rolled into the sediment from adjacent sand sources and the mixing with the underlying clayey gravels.

Sedimentary Unit ii: 24.4–25.4 m OD

Between 24.4 and 25.4 m OD the sediment becomes a dark yellowish–brown (10YR 4/6) with a laminated structure representing variations in the sand and silt content. These structures are visible in the field and can be seen clearly in thin section. The size distribution of individual laminae has not been determined, but the sediment within this unit as a whole contains 51.7% sand, 38.8% silt and 9.5% clay indicating a much coarser and less silty unit than the remainder of the deposit (Table 13). The modal class (22.5%) is in the coarse silt range (32–64 μm), but *c.* 50% of the sediment is in the very fine to medium sand size range (64–500μm). Laminated structures have been described at other localities in the Langley Silt Complex, although not in the same position within the section (Gibbard *et al.* 1987).

Micromorphology shows evidence of rounded 'pebbles'. Most of these consist of thin skins of London Clay around flint, quartz, fragments of pedogenic clay, fragments of London Clay and fragments of pedological calcium carbonate. However, others are much thicker and show a very well developed 'snowball' structure of oriented/birefringent London Clay around the core suggesting accretion due to rolling over a 'sticky' surface. The occurrence of 'pebbles' formed of pedogenic clay and pedogenic $CaCO_3$ suggests that the soil on the surface of the Taplow Terrace was subject to disturbance and erosion at this time and that $CaCO_3$ crusts were forming at the surface and were subsequently disrupted and deflated.

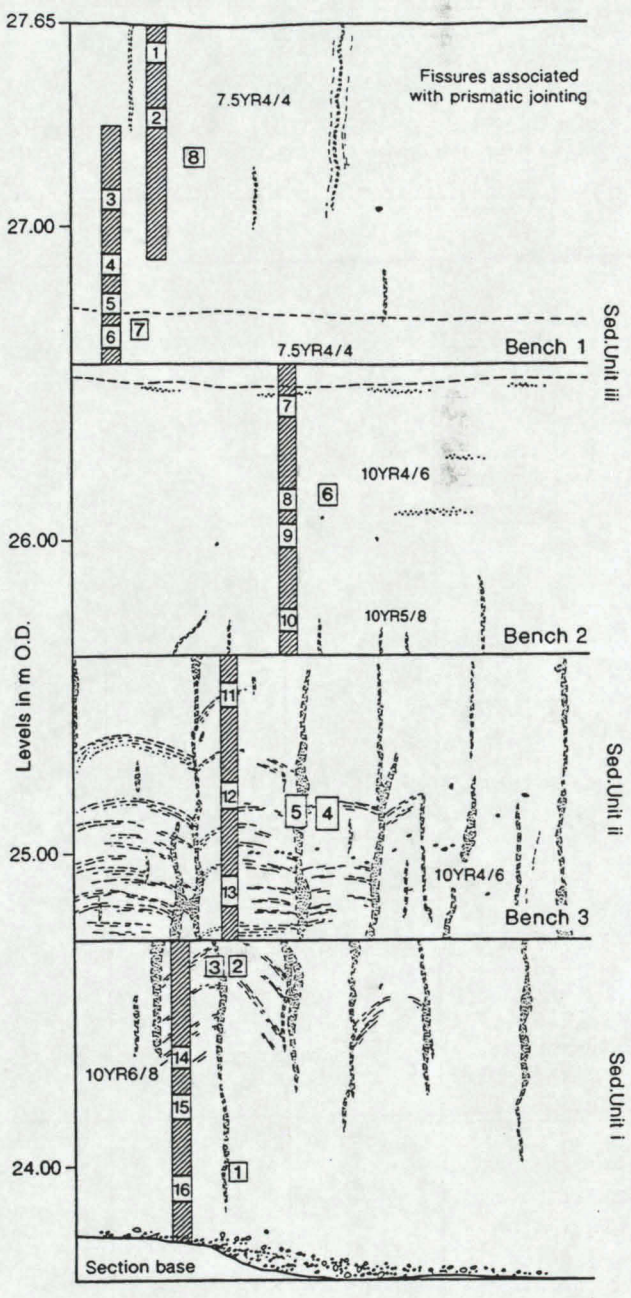

Figure 28 Measured field drawing of the section through the 'brickearth'. The scale is given by the levels above OD at the left side of the drawing and the position of the benches within the terrace is also indicated. The periglacial fissures are shown in a light stipple along with the sedimentary laminations. The black spots are the positions of calcrete nodules and the flint gravel at the base of the section / top of the Taplow Terrace is also indicated. Munsell Color values are shown for the various parts of the profile. The position of the monolith boxes is indicated by the heavy hatching and the position of the micromorphology samples taken from each monolith box is given by the smaller numbers. The larger numbers indicate the position of the bulk particle size samples

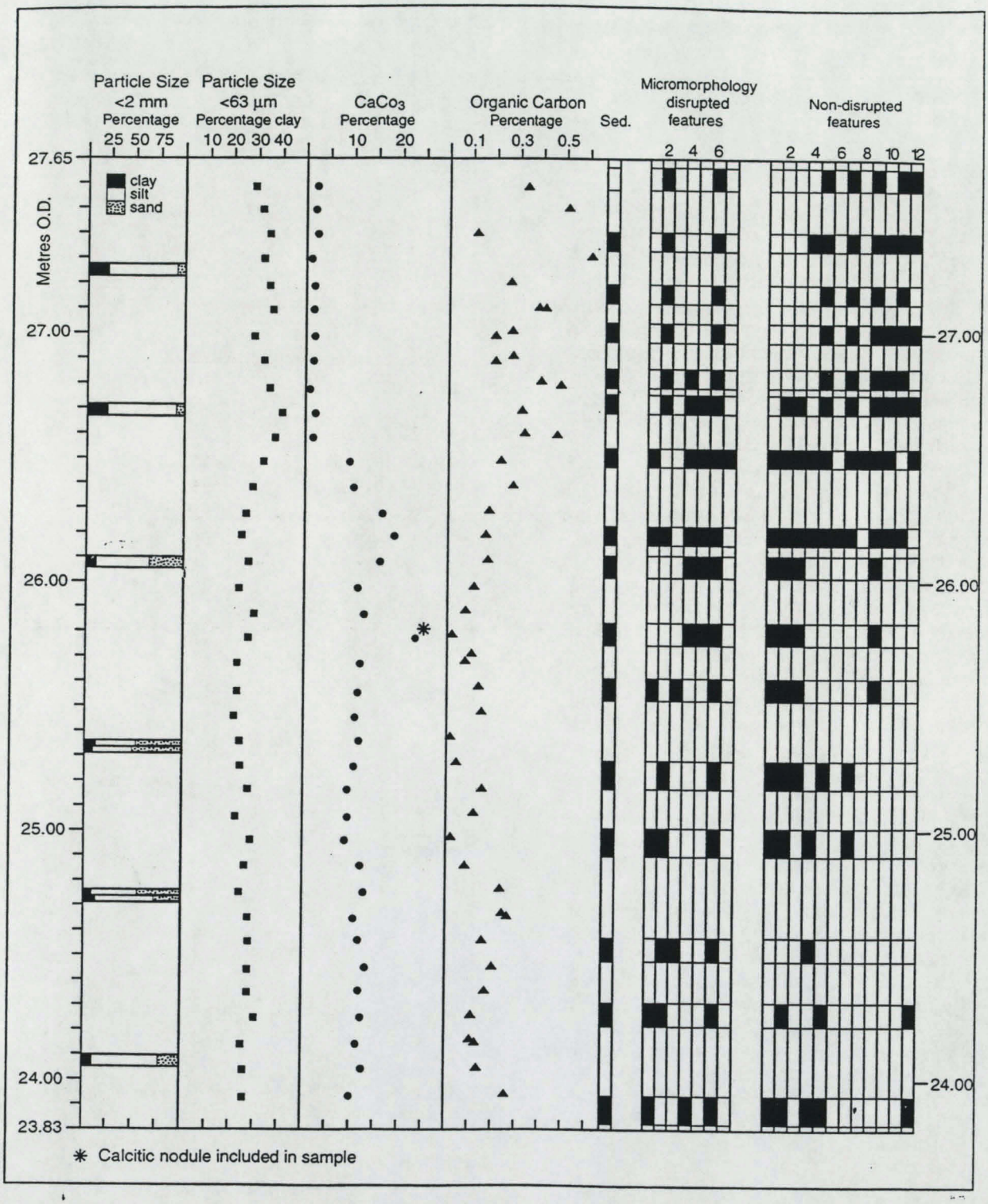

Figure 29 Lithological properties of the Prospect Park 'brickearth', including particle size, $CaCo_3$, organic carbon, and micromorphology. The results are given according to their position in the profile and the vertical scale is given in metres above OD. The micromorphological property is shown by absence (open block) or presence (black block). The micromorphological properties are divided into three groups: (Sed.) = sedimentary property in the form of 'pebbles' of sediment or rolled grains; (disrupted feaures) = properties representing cold climate soil processes: (1) silt coatings; (2) papules; (3) duplex textured lamellae features; (4) disrupted pedological clay; (5) disrupted pedological calcium carbonate; (6) stressed plasma; (7) fractured grains; (non-disrupted features) = properties representing temperate climate soil processes: (1) $CaCO_3$ concretions; (2) $CaCo_3$ void infills and growths; (3) $CaCo_3$ coatings; (4) iron concretions; (6) iron coatings; (7) pedological clay grain coatings – simple; (8) pedological clay grain coatings – complex; (9) pedological clay void coatings – simple; (10) pedological clay void coatings – complex; (11) pedological clay mixed with soil parent material matrix; (WG) = weathered grains

Table 13. Particle size distribution of the 'brickearth' and other loess deposits from western Europe

Size	*Sample number and location*									
	PP1	*PP2*	*PP3* §	*PP4*	*PP5* §	*PP6*	*PP7*	*PP8*	*Ford, Kent**	*Tongrinne, Belgium**
Sand (mm)	Unit i		Unit ii				Unit iii			
2–1	0.20	0.29	0.25	0.24	0.97	0.64	0.07	0.09	0.2	0.0
1–0.5	0.91	0.68	1.22	1.48	3.08	1.55	0.12	0.26	0.3	0.0
0.5–0.25	5.44	4.88	7.03	14.16	14.51	8.44	1.23	1.39	1.0	0.0
0.25–0.125	6.22	7.52	13.43	17.92	14.67	9.62	1.62	1.67	2.9	0.1
0.125–0.064	8.01	11.51	17.59	17.87	15.40	12.29	5.33	5.37	7.1	0.8
Total sand	20.78	24.88	39.52	51.67	48.63	32.54	8.37	8.78	11.5	0.9
Silt (μm)										
64–32	**36.52**	**38.90**	**34.70**	**25.53**	**27.71**	**33.52**	**42.19**	**41.59**	**26.5**	27.3
32–16	19.21	13.20	9.17	8.67	8.24	15.75	16.16	16.93	21.6	**30.9**
16–8	5.81	4.68	2.36	1.57	2.42	3.31	6.43	7.58	10.0	11.7
8–4	2.58	2.25	1.05	1.13	1.51	1.91	3.30	4.03	5.4	4.7
4–2	2.44	2.14	1.79	1.91	1.55	2.52	2.02	2.40	2.6	1.9
Total silt	66.56	61.17	49.07	38.81	41.43	57.01	70.01	72.53	66.1	76.4
Total clay <2μm	12.67	13.95	11.41	9.52	9.94	10.44	21.52	18.70	22.4	22.7

§ sample taken from fissure infill. * = taken from Catt *et al.* 1974
Modal class given in bold
These samples were analysed by Dr S.P. Lewis

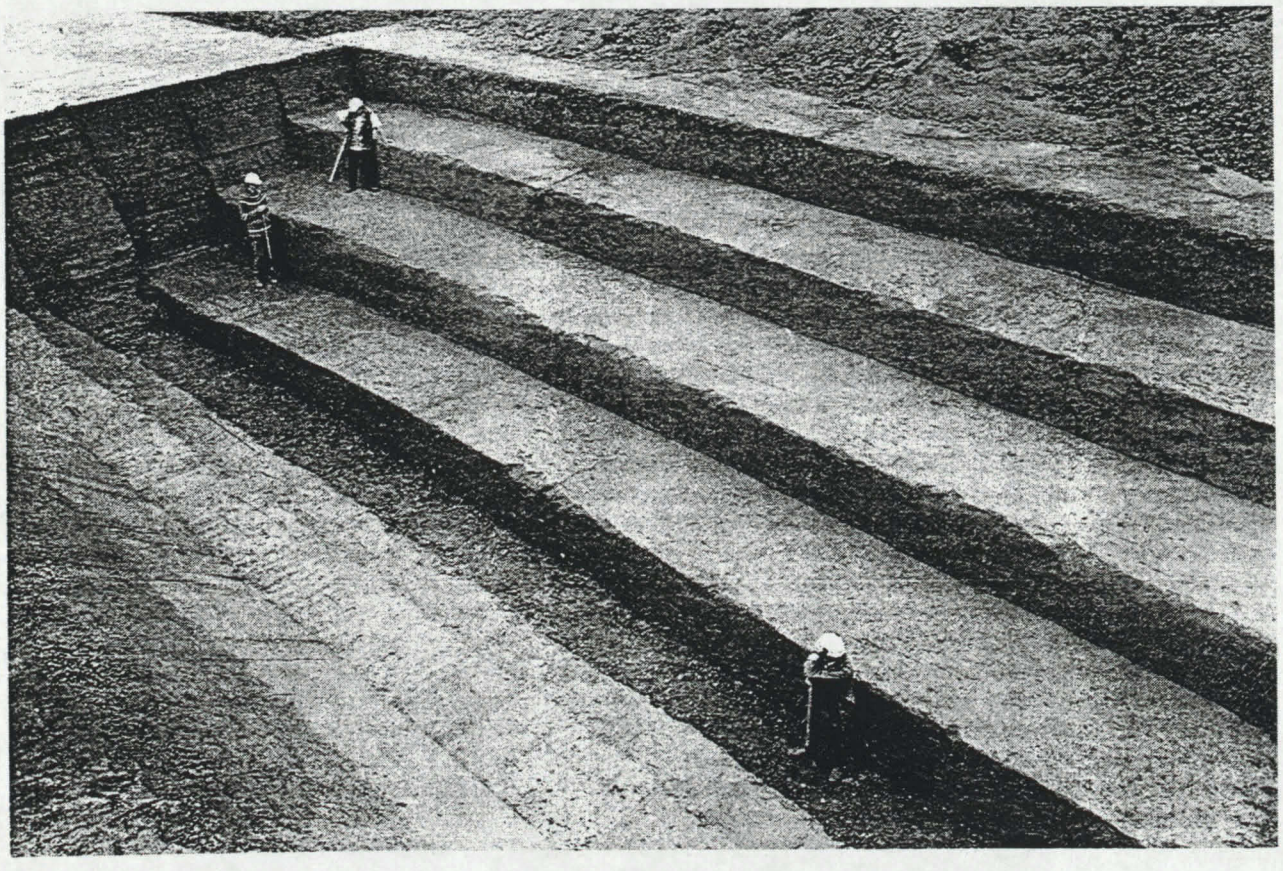

Plate 10 *Stepped section through the brickearth down to the underlying gravel*

Together, the laminated structures, microstructures and size range suggest that this deposit has been formed of interlaminated water- or wind-deposited sheets of sand and silt. The 'snowball' structures suggest rolling on a 'sticky' surface, picking-up films of London Clay, while the sand-size laminae suggest laminar sheet flow. It is suggested that this unit was formed of sediment derived by sheet erosion and wind deflation from adjacent surfaces of the Thames Terraces and London Clay, and that sheet flow produced the sand laminae, while wind action formed thin laminae of predominantly silt size material. Both layers indicate a vegetation-free surface or at least patches of bare ground, and the $CaCO_3$ grains indicate surface drying and calcium carbonate precipitation followed by fracturing of the carbonate crusts. It is possible that the laminae reflect a seasonal variation in processes with the silts accumulating on dry surfaces during winter and the sands forming during sheet flow over an active layer during spring and early summer.

Sedimentary Unit iii: 25.4–27.7 m OD (present land surface)

Between 25.4 and 25.8 m OD the sediment becomes a coarser, lighter, yellowish–brown colour (10YR 5/8). Above this level it changes to yellow–brown (10YR 4/6), and then above 26.6 m to brown (7.5YR 4/4) which persists to the top of the section. Apart from prismatic joints associated with the present soil at the top of the section. and bands of calcrete nodules, this part of the sediment is homogeneous with a size distribution dominated by silt (57.1–72.5%; Table 13). The sand component is greatly diminished from that below, with only 32.5% at *c.* 26.5 m OD, falling to *c.* 8.5% in the uppermost 1.5 m. The reduction in frequency of sand is offset by the increase in silt and clay, so that a typical clay content of *c.* 10% around 26.5 m OD increases to *c.* 20% in the uppermost part of the section. Throughout this unit modal size values are in the coarse silt fraction (32–64 μm) with values between 33.5 and 42.2%.

Micromorphology of the sediment confirms the particle size analysis showing the importance of sand at the lower part, and the dominance of silt and clay in the upper part of the unit. Thin sections clearly demonstrate that much of this clay is of pedological origin, as described below. The thin sections also clearly show the presence of terrestrial mollusca within the lower part of the unit, a feature that is typical of all the undecalcified part of the sediment. They also show the almost universal presence of skins of London Clay around mineral grains and 'pebbles' of London Clay.

In all respects the sedimentary part of this unit (excluding the pedological components) is typical of, but very slightly coarser than western European loess (Catt *et al.* 1974; Gibbard *et al.* 1987) (Table 13), and very similar to the aeolian silts currently being formed in west Greenland (Dijkmans and Törnqvist 1991). In particular, the high silt component with a very coarse silt mode reflects wind sorting and transport and the London Clay skins around the sand grains that particles have been rolled over a 'sticky' surface collecting a clay veneer.

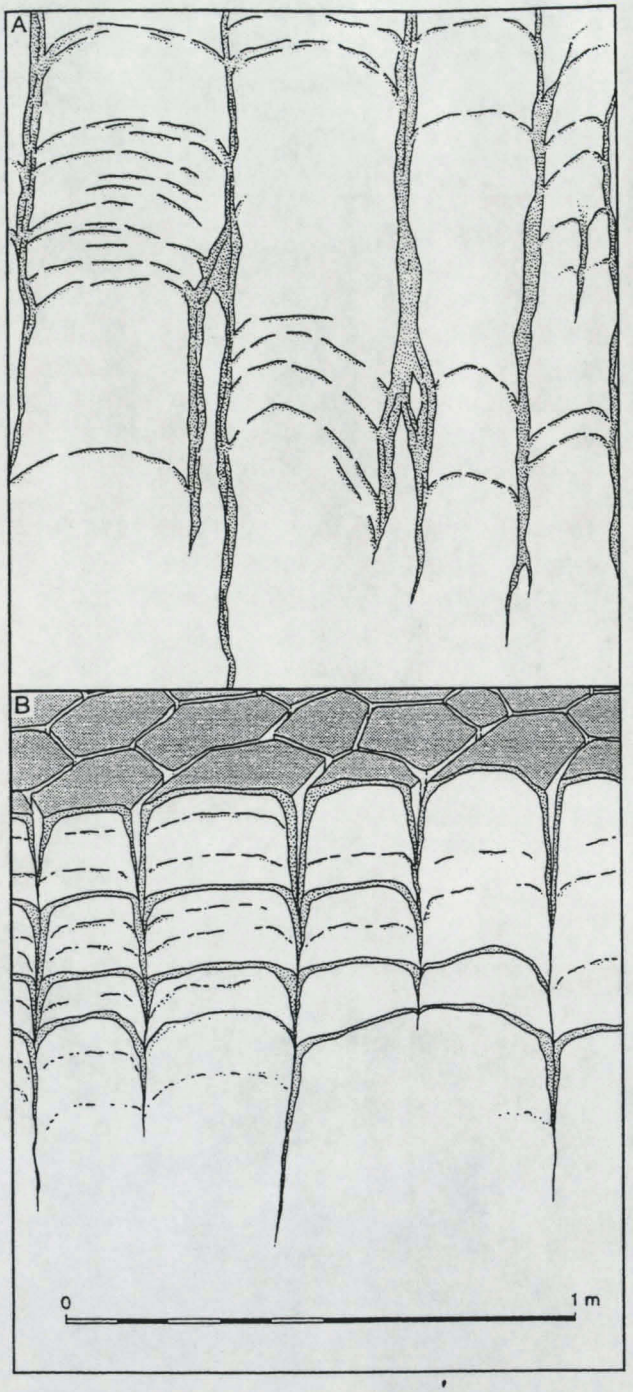

Figure 30 A. Schematic representation of the vertical, acute angle, and up-domed structures in Units i and ii of the Langley Silts at Prospect Park; B. schematic representation of how the fissures in the Langley Silts developed, based on descriptions of polygonal fissures currently forming in Spitsbergen (van Vliet-Lanoë 1988). The fissures are shown open representing their form at the beginning of winter freeze-back before they become filled with snow or ice. The horizontal and sub-horizontal lines on both diagrams represent sand laminae that are deposited by sheet flow during the summer months. Stipples in the vertical fissures represent sand that is washed into them at the beginning of the melt season

Summary
The sediments that constitute the Langley Silts form three units. The lowermost is a wind deposited sandy silt that has been mixed, probably by periglacial cryoturbation, with underlying soil so that it includes a higher proportion of gravel than any other parts of the sediment and a significant component of pedological clay fragments. The middle unit is distinguished by silt and sand laminations which were formed, respectively, by wind transport and deposition during winter freeze-back, and fluvial sheet flow during spring and early summer. The uppermost unit is the thickest and is characterised by a structural and textural uniformity and a dominance of silt. This unit is characteristic of western European loess formed by wind transport and deposition (Table 13). All units reflect deposition in a periglacial environment with minimal vegetation cover, a dominance of wind transport and sedimentation, and for part of the period of deposition, seasonal sheet flow. A similar change in depositional processes recorded between units ii and iii, from a fluvial/aeoloian to aeolian origin, has been recorded through Thames brickearth at Acton, further east along the Thames valley (Bazeley *et al.* 1994).

Macroscale structures: description and interpretation

Below *c.* 25.8 m OD the sediments are characterised by vertical and diagonal structures up to 1.6 m deep, 1–5 cm wide with a recurrence of 2.39 cm and represent infilled fissures in the Langley Silt Complex. (Figs 28 and 30). These fissures are especially developed in Unit ii Langley Silts. The lower part of each fissure tapers downwards and dies out near the base of the silty sediment. Upwards the structures taper and gradually disappear at around 25.8 m OD. The acutely angled structures are particularly well developed in the zone between *c.* 24.3 m and 24.7 m and can be traced into rounded horizontal caps which together form a dome-shaped unit about 20–25 cm in diameter. A schematic representation of these features is given in Figure 30B.

The internal composition of the structures is described by the particle size distributions of bulk particle size samples PP3 and PP5 (Table 13) with 40–49% sand, 41–49% silt, and 10–11% clay. In the lower silty part of the succession, the fissure-fill is much coarser than the host material with 15% more sand 12% less medium and fine silt, an attribute that is visible in the field; the clay content is roughly the same as the host material (compare samples PP2 and PP3). However, in the upper sandy part of the section the size distribution of all the sediment in the structure is virtually identical with that in the host material (compare samples PP4 and PP5; Table 13). This suggests that the material in these structures has a similar source to that of the upper sandy unit. Both the vertical and acute angled structures are very clearly visible on photomicrographs and emphasise especially the coarser fractions and better sorting of the fissure infill.

Examination of the photographs of the structures in plan form shows a remarkable polygonal pattern, although in detail individual structures vary in style from polygonal, to rectangular, and from equant to elongate, although those at greater depth appear more regular.

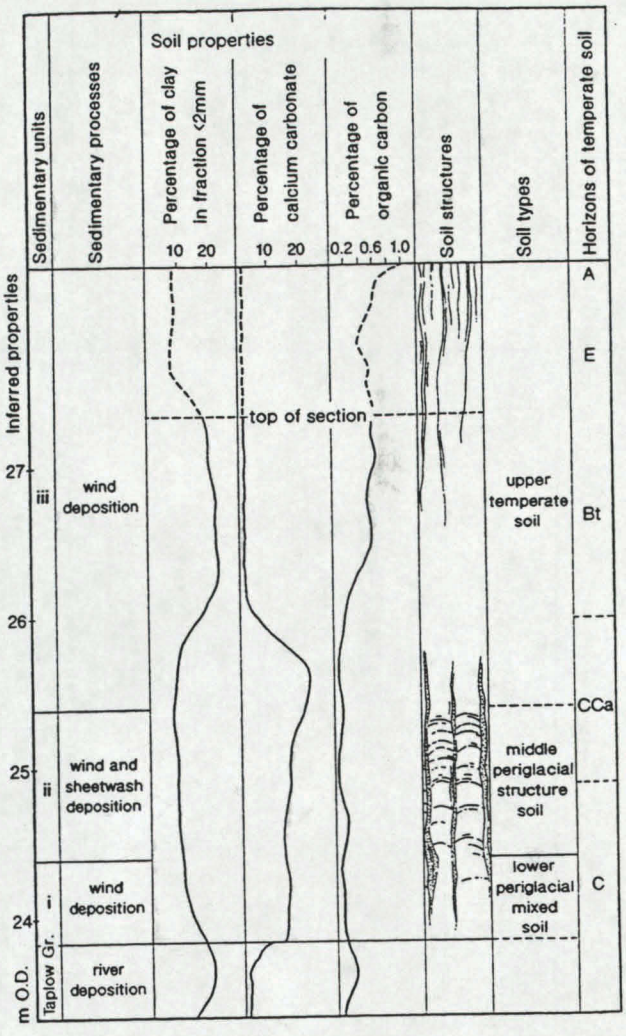

Figure 31 Schematic representation of the pedological properties of the soils developed in the Prospect Park 'brickearth' and their relationship to the sedimentary units. The values, structures, and horizon types above the 'top of section' are all inferred, as is the given thickness of this layer

Those near the top of the structures have a mean diameter of *c.* 17±3 cm, and those 0.90 m lower have a mean diameter of 37±8 cm.

These features are very similar in form and diameter to patterns and structures described by van Vliet-Lanoë (1988) that are forming in Spitsbergen at the present time (Fig. 30B). The processes responsible for their formation consist of desiccation in poorly drained, low relief areas in association with the growth of ground ice. Evidence for ground ice development in this unit at Prospect Park is recorded by the microfabric (see below). It is considered, therefore, that these structures are the product of periglacial, but not necessarily permafrost, soil development in very moist, low relief, frost susceptible sediments.

The fact the these features exist in multiple, stacked one upon the other, and gradually die-out within the section, rather than being associated with a recognisable hiatus/ land-surface, indicates that they were formed while the silty sands were being deposited (Unit ii), and

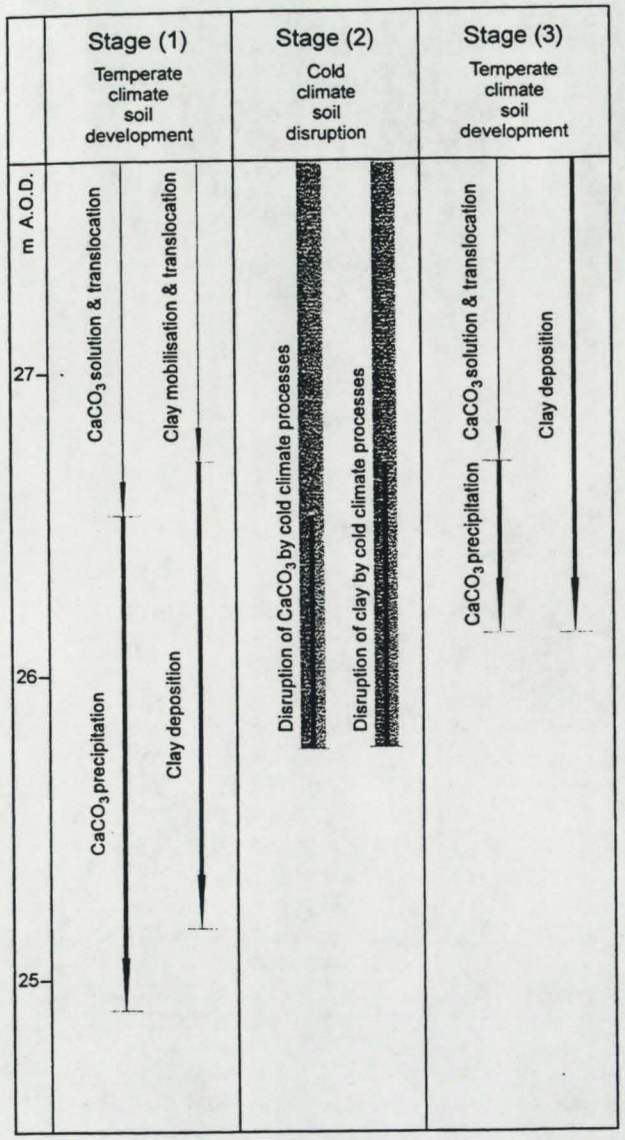

Figure 32 Schematic representation of the processes of formation of the upper temperate soil developed in the Prospect Park 'brickearth'

that the conditions suitable for their formation disappeared as sedimentation of the next silty unit (Unit iii) of the Langley Silt Complex was deposited. This is confirmed by the inclusion of local fluvially transported sand within the fissures, which also indicates that the fissures were open in the early melt season, but were filled with ground ice during the winter when the silty fraction was blown across the region. The coincidence between the gradual disappearance of the structures and the increase in silt fraction may reflect a change of climate.

Soil description and interpretation

Three distinct phases of soil development can be recognised in the 'brickearth' at Prospect Park, including that associated with the periglacial macroscale structures (Fig. 31). These consist of a lower periglacial soil roughly equivalent to sedimentary Unit i; a middle periglacial accretionary soil that coincides directly with sedimentary Unit ii but is also superimposed on Unit i and merges into sedimentary Unit iii; and an upper temperate soil which is developed on Units ii and iii which act as parent material.

Lower periglacial mixed soil

In sedimentary Unit i, at the base of the 'brickearth' between 23.7 m and 24.4 m OD, the micromorphology shows that the sandy silts (sandy silt loam; Hodgson 1974) are mixed with the underlying gravels and soil material and have a clay component derived from the underlying sediment. These properties are taken as evidence of active layer mixing or cryoturbation (French 1976) and indicate that the lower part of the 'brickearth' was modified by periglacial soil process. There is no horizonation, and it is not possible to allocate this soil to any specific arctic soil type (Drew and Tedrow 1962).

Middle periglacial structure soil

Sedimentary Unit ii occurs between 24.4 m and 25.4 m OD and is characterised by periglacial soil structures that formed as non-sorted patterned ground poorly drained, frost susceptible material (van Vliet-Lanoë 1988). Soil structures are dominated by the polygonal patterns indicating desiccation and possibly thermal contraction. However, duplex textured lamellae features (Kemp 1985a) or banded microfabric (Dumanski *et al.* 1973) indicate the development of small segregated ice lenses within the sediment. These structures are of a much smaller scale than the sedimentary structures in which they are developed. Silt skins, typical of frost disturbed soils, have also been observed in this unit. The sedimentary and macroscale soil structures indicate that soil formation accompanied deposition and that this arctic structure soil has features typical of an accretionary meadow tundra soil (Drew and Tedrow 1962). Structures from this soil extend into the lower unit indicating that desiccation, thermal contraction and ice lens growth occurred after the mixing processes, characterising the lower unit, had ceased.

The arctic structures continued to be formed, in a progressively diminishing fashion through into the uppermost sedimentary Unit (iii), after dust (silt) sedimentation had become the dominant process. At this time there is no visible evidence of soil development

Upper temperate soil

This soil includes a full range of physical, chemical, and structural properties and extends from the present soil surface through sedimentary Units iii and ii down to *c.* 24.85 m OD, with well developed horizonation. The lower part (sedimentary Unit ii) of this soil is a sandy loam, changing upwards into a sandy silt loam and a silty clay loam in sedimentary Unit iii. The vertical differentiation in the physical and chemical properties, and associated horizonation is summarised in Figures 29 and 32. Horizonation is most clearly developed by clay, calcium carbonate and organic content, with a significant increase in clay and organic content and decrease in $CaCO_3$ at about 26.46 m OD. These properties can be seen most effectively in thin sections and are described below, along with the detailed processes responsible for their development.

The lowest evidence for this phase of soil development is $CaCO_3$ accumulation in the lower part of sedimentary Unit ii at about 24.9 m OD. At this level $CaCO_3$ has been precipitated as skins in and around voids becoming more abundant further up the profile where it forms discrete masses in the soil and can be recognised as calcrete nodules (Fig. 28). Calcium carbonate values are typically in the order of 22% at this level as opposed 12% elsewhere. A peak of carbonate, with values in the order of 17% is developed between 26.0 and 26.3 m OD. Above 26.5 m, values fall to about 1–2% and the only traces of the mineral recognisable are in the micromorphology as void fillings at about 26.65 m OD. This pattern of calcium carbonate distribution through the soil profile indicates solution of the calcareous mineral grains, probably derived from the loess (Catt 1978), transportation of alkaline ground water down the soil profile, and precipitation of the $CaCO_3$ at lower levels of the soil profile where the pH retains an alkaline condition.

In terms of the bulk particle size distribution, clay is twice as abundant in the uppermost 1.2 m as in the rest of the brickearth, but in terms of the silt and clay fraction only, the uppermost 1.3 m has, typically, only 6% more than the lower part of the section. With respect to fine clay only (<0.49 μm, +11Ø) there is no significant variation throughout the whole section with locally relatively high values (1–2%) adjacent to much lower values (0.3–0.5%). However, in thin section the explanation for these patterns becomes very clear and the variations in fine clay clearly represent local concentrations of alluvial clay in voids or mixed within the matrix. The increase in clay in the upper part of the profile is therefore a combination of finer sediment probably blown to the site with the silt, and redeposited pedological clay formed by the weathering of easily weathered minerals and transported down the soil profile.

Fine clay skins first appear as thin undisrupted void coating (cutans) at 25.2 m OD and develop into well formed coatings above 25.55 m. Above 26.0 m OD the clay is both disrupted and undisrupted and mixed with the soil plasma or with disrupted calcium carbonate.

The relationship between the calcium carbonate and clay coatings and their condition as either disrupted or undisrupted, forms a pattern up the soil profile providing evidence of phases of soil stability and soil disturbance:

1. Between 25.2 m and 25.75 m OD undisrupted pedological clay is developed around undisrupted calcium carbonate.
2. Between 25.75 m and 26.15 m OD both the pedological clay and the calcium carbonate are disrupted and mixed together.
3. Between 26.15 m and 26.7 m OD the disrupted clay and carbonate is surrounded by undisrupted calcium carbonate.
4. Between 26.15 m and the top of the section undisrupted clay skins are formed around undisrupted carbonate disrupted pedological clay (to 26.65 m OD which is the upper limit of $CaCO_3$) and around the disrupted pedological clay alone.

Additional detail can be added to this already complex developmental history in that at 26.00 m OD fine sand particles have been transported into a set of voids and are then coated with undisrupted clay skins. Disruption must have been extreme in order to mobilise the fine sand. This disruption event is in the same stratigraphic position as the disruption event (2) described above and the undisturbed clay skins are continuous with the stratigraphic event (4) described above but extend this event down to a lower level.

This microstratigraphy provides a detailed history of soil formation involving stable phases with the production and translocation of pedological clays and calcium carbonate, and unstable phases with the physical disruption and mixing of soil material, and the translocation of relative coarse grains along channels. These processes of soil development are considered to have climatic significance (Kemp 1985b; Rose *et al.* 1985; Kemp *et al.* 1993), with the stable phases and chemical alteration associated with a temperate soil climate, and the physical disruption associated with cold climate soil formation involving the growth and melt of ground ice.

Upper temperate soil: interpretation and discussion

On the basis of the principles described above, the following pattern of soil development can be proposed. The phases coincide with the numbers describing the micromorphological relationships, except that (3) and (4) are combined as Stage (3), and are summarised in Figure 32.

Stage 1: Temperate climate soil formation leads to the mobilisation and translocation of calcium carbonate and clay. They process extends down from the level of the present land surface at least 2 metres.

Stage 2: Cold climate soil processes lead to the physical disturbance of the soil down to a depth of about 1.5 m below the land surface. The leads to the disruption and mixing of the clay and calcium carbonate skins and probably reflects active layer cryoturbation associated with a periglacial, but not necessarily permafrost, climate. It was at the end of this phase that fine sand material would have been washed down the channels.

Stage 3: Temperate climate soil formation resulting in renewed mobilisation and translocation of clay and calcium carbonate down to a depth of at least 1.2 m below the land surface. The calcium carbonate deposited in this phase is restricted to the zone of 0.5 m between 26.15 m and 26.65 m OD. This process appears to have continued to the present day as these skins are not disrupted.

The manganese and iron concentrations that locally stain the section are also visible in thin section. Manganese has also been transported along voids and can be seen around undisturbed clay coatings indicating that this is a recent and probably contemporaneous process. Also visible in the field above a level of about 27.0 m OD are well formed vertical joints (Fig. 30)

Table 14. Summary of sedimentary units and soil types in the 'brickearth' at Prospect Park, with environment, processes, and age of formation

Sedimentary Unit	*Lithological properties*	*Environment and process*	*TL age*	*Age of deposition*	*Soil type*	*Soil classification*	*Environment and process*	*Stage*	*Age (BP)*
Unit iii	clayey silt (loess)	Aeolian		Late Devensian (OIS 2)	**Upper Temperate Soil**	Argillic and	Cool temperate	Holocene (OIS 1)	Younger than 10,000
			17.8±1.5–			Paleo-argillic Brown Soil	Periglacial	Younger Dryas	11,000–10,000
			14.3±1.2 ka	(Dimlington Stadial)			Temperate	Windermere Interstadial (Late OIS 2)	*c.* 14,000–11,000
Unit ii	Silty sand	Aeolian and sheet wash		?Middle Devensian (OIS 3)	**Middle Periglacial Structure (accretionary) Soil**		Periglacial	?Middle Devensian (OIS 3)	50,000–26,000
Unit i	Sandy silt	Aeolian		?Early Devensian (OIS 5d–4)	**Lower Periglacial Mixed Soil**		Periglacial cryoturbation	?Early Devensian (OIS 5d–4)	122,000–50,000
Taplow Gravels					**Temperate Soil**	Paleo-argillic Soil	Warm Temperate	Ipswichian (OIS 5e)	132,000–122,000
	Sand and gravel	Periglacial river		OIS 6					186,000–132,000

From Gibbard 1985; Gibbard *et al.* 1987

emphasised by a organic infill with a light grey carapace, almost certainly due to local reduction around the organic infill. These vertical structures are prismatic joints formed by desiccation of clay-rich materials and are characteristic of temperate climate loessic soils. The darker colour of the upper part of the profile almost certainly reflects organic carbon content, and plasma orientation related to the development of channels such as worm burrows can also be seen.

Finally, one unusual and hitherto unique micromorphological feature has been discovered. This consists of fine silt concentrates in channel voids and has been discovered above 26.65 m OD. The silt in these voids is entirely mineral, very well sorted and unaffected by any pedological process. In the absence of any other obvious explanation it is suggested that this is an anthropogenic feature and is mineral dust possibly associated with some construction activity in the region, or even derived from Heathrow Airport.

The evidence for soil forming processes described above constitutes an internally consistent set of attributes, except that the top of the soil profile is missing, removed during the excavation of the section. The temperate soil described is classified as an argillic brown earth and paleoargillic brown earth, by the Soil Survey of England and Wales (Avery 1980), although the classification as paleoargillic brown earth creates certain problems of definition mentioned below.

The temperate soil indicates a period of stable soil formation following the deposition of the upper sedimentary unit (Unit iii) which was formed as loess in a periglacial polar desert. This first stage of soil development was associated with leaching of the calcium carbonate, down the profile to be deposited in an alkaline horizon at a depth of between 1 and 3 m below the present top of the section. During the same period, but at a slightly slower rate, weatherable minerals were broken down to clays and washed down the profile to fill voids and, in places, coat the calcium carbonate. This process was interrupted by physical disruption caused by the formation of segregated ice lenses in the soil, typical of a periglacial climate and the accumulations of $CaCO_3$ and clay were broken up and mixed together or with the sediment matrix to form a disrupted soil plasma. This phase was again replaced by a period of relatively stable soil conditions in which chemical alteration resulted in the decalcification of the upper part of the soil profile, and the further breakdown of weatherable minerals and transport of pedological clay through the upper part of the soil to form coatings around earlier disrupted materials and recently deposited calcium carbonate. This process is probably continuing at the present day along with mobilisation of iron and manganese and the formation of iron and manganese concentrations in voids and within the soil matrix.

Assuming this set of climatic interpretations to be valid, and the parent material to have formed in the Dimlington Stadial of the Late Devensian (TL ages from Gibbard 1985; Gibbard *et al.* 1987) then it can be assumed that the first phase of temperate soil formation occured during the Devensian Lateglacial (Windermere) Interstadial when summer temperatures in southern Britain are known to have been higher than now (Coope and Lemdahl 1995). Following the same line of reasoning the phase of soil disruption must have taken place during Younger Dryas times when the climate deteriorated and periglacial processes, and possibly permafrost, existed in southern Britain (Rose 1993). Finally, temperate climate processes became dominant again during the Holocene, with features typical of other Brown Earth soils formed at this time (Catt *et al.* 1987; Payton 1993).

This sequence of events is in accord with that recognised in Belgium and France (van Vliet and Langohr 1983; van Vliet-Lanoë 1990), but has not hitherto been recognised in Britain (Payton 1993), although there is evidence in Britain for mobilisation of calcium carbonate during the Windermere Interstadial (Payton 1988). Van Vliet and Langohr (1983) and van Vliet-Lanoë (1990) recognise active layer disturbance during the Younger Dryas in Belgium, down to a depth of *c.* 1 m, which compares with a depth of *c.* 2 m at Prospect Park. This does not create problems as the depth of active layer disturbance varies greatly with variations in soil thermal conductivity controlled by vegetation type and sediment cover.

Recognition of this sequence of events does provide problems for the classification of paleoargillic soils according to the definitions established by the Soil Survey of England and Wales which requires that a soil must have formed during or before the Last Interglacial (Ipswichian) in order to be defined as 'paleo'. This requirement is due to the assumption that the temperate soil structures only developed during 'full' interglacial stages. If the interpretation of the soil micromorphology given above, and the age of the loess, is correct then this is clearly not the case and 'interglacial' type soil properties formed in about 2000–3000 years of the Late Devensian Windermere Interstadial.

Conclusions and Summary

The composition, process of formation and age of the sedimentary units, and the soil classification, environment and processes of formation and age of the soil types is given in Table 14. In many respects the sedimentary units and soils coincide, but it is essential to recognise that there is no soil recognised that formed at the same time as the main sedimentary unit (Unit iii, loess), and there is no sedimentary unit associated with the formation of the Holocene temperate soil. It is assumed that polar desert existed during the formation of the loess and no soil signal survives, and the only sedimentation at the site that can be attributed to the Holocene is the 'anthropogenic' fine silt trapped in the voids near the top of the soil profile.

The Taplow Gravels at Prospect Park were deposited in a fan of the River Colne at the confluence zone of the rivers Thames and Colne during the periglacial climate of OIS 6 (*c.* 186,000–*c.* 132,000 BP). An Argillic Soil developed on the surface of these fan gravels during the warm temperate climate of OIS 5e (Ipswichian; *c.* 132,000–*c.* 122,000 BP) producing a clay-rich horizon at the upper part of the Taplow Terrace.

Sedimentary Unit i of the 'brickearth' is a sandy silt that was formed by aeolian deposition and mixed with the underlying Argillic soil to form the Lower Periglacial Mixed Soil. The formation of this unit is attributed to the Early Devensian (*c.* 122,000–*c.* 50,000 BP) solely on

the basis of its position above the OIS 5e soil. Sedimentary Unit ii is a laminated silty sand formed by aeolian and sheetwash deposition, possibly reflecting wind deposition during the winter and sand deposition during the summer. The Middle Periglacial Structure Soil is developed in this unit and represents an accretionary soil composed of small (20–30 cm diameter) polygonal fissures formed by desiccation and ice lens development. The process is typical of poorly drained, frost sensitive sites in periglacial areas. This sedimentary unit and soil has been attributed to OIS 3 (Middle Devensian; *c.* 50,000–*c.* 26,000 BP), partly on the basis of the stratigraphic position, and also on the evidence for relatively more important fluvial activity during the Middle Weichselian in adjacent parts of continental Europe (Vandenberge 1993).

Sedimentary Unit iii is a clayey silt (loess) formed by wind action in a polar desert climate during the Last Glacial Maximum (OIS 2, Dimlington Stadial at *c.* 15,500–*c.* 14,000 BP). The Upper Temperate Soil which is developed within it, formed after loess sedimentation had ceased and provides a record of three separate, climatically controlled, soil forming episodes:

1. temperate soil development during the Devensian Lateglacial interstadial (Windermere Interstadial; *c.* 14,000–*c.* 11,000 BP), represented by a phase of calcium carbonate and clay mobilisation and deposition;
2. periglacial soil development during the Younger Dryas (*c.* 11,000–*c.* 10,000 BP) climatic deterioration, indicated by physical disruption of the soil plasma and sediment matrix; and
3. temperate soil development throughout the Holocene (since *c.*10,000 BP) up to the present day. This is again represented by calcium carbonate and clay mobilisation and deposition, along with transported iron and manganese minerals.

Discussion

The watching brief undertaken at Prospect Park in 1995 has provided a successful end to the programme of archaeological work carried out on the site since 1993. It has provided further information on several aspects of the site without necessitating any substantial changes to the conclusions drawn from the earlier evaluation and excavation work (Andrews 1996a). It has also enabled comparisons to be drawn from the evaluation, excavation and watching brief stages of work, and thereby allows a consideration of the overall archaeological strategy adopted and its validity on this type of site.

The results from the 1995 watching brief are discussed below by period along with the results from the earlier work, and their significance in terms of the surrounding area are considered.

The 'Brickearth' at Prospect Park

The original project brief set out to evaluate the likelihood of evidence for Palaeolithic activity being found at the base of and within the brickearth. The results of the analysis place the soil at the interface of the brickearth and Taplow Gravels to OIS 5e, the Ipswichian Interglacial (*c.* 132,000–*c.* 122,000 BP). This period has consistently provided no evidence for human occupation of the British Isles after the previous glaciation, and recently published data (Currant and Jacobi 1997) has argued that reoccupation did not occur until OIS 3, the Middle Devensian (*c.* 50,000–*c.* 26,000 BP), which equates broadly with the soil of sedimentary Unit ii at Prospect Park. Although direct evidence of human occupation is likely to be sporadic this horizon probably represents the greatest potential for the earliest, Palaeolithic activity at the site.

Mesolithic and Neolithic

The relatively small quantity of worked flint of probable Late Mesolithic date makes the finds from Prospect Park the largest Mesolithic assemblage from the Colne valley excepting that from Three Ways Wharf, Uxbridge, the latter a probable animal butchery site of Upper Palaeolithic/Early Mesolithic date (Lewis 1991). Probable Early Mesolithic worked flint was also recovered from a shallow pit at Manor Court, Harmondsworth, some 200 m to the south-west of Prospect Park, investigated in 1989 (Mills 1990). The worked flint at Prospect Park was concentrated in the north-east part of the site, but comes entirely from later or disturbed contexts and little more can be deduced from the assemblage.

The 1995 work has added no further Late Neolithic features to those found in the earlier excavations. These comprised a shallow, sub-circular hollow (1494) and adjacent slot (319) and several possibly associated postholes which together contained sherds of pottery from at least four Grooved Ware vessels. These features lay close together in the central–southern part of the site, with a further pit (380) containing worked flint (including five scrapers) and a small quantity of pottery some 60 m to the south-west. The interpretation of these features and finds remains uncertain, however, and it is conceivable that they do not simply represent domestic occupation in view of the presence of the Stanwell Cursus in the area (see below); a ceremonial function has been suggested for the deposits of Grooved Ware in pits at Holloway Lane, Harmondsworth (Merriman 1990, 24) and also at Horton (Ford in prep.). Nearer to Prospect Park, several pits containing animal bones and pottery of Neolithic date were excavated in 1989 at Manor Court, Harmondsworth (Mills 1990), which lay only 200 m to the south-west of the site.

In the earlier report (Andrews 1996a, 48) the possibility was advanced that a substantial ditch-like feature (719), up to 7 m wide and 1 m deep, may have represented part of the side ditch on the west side of a long barrow, the remainder of which lay outside the area excavated in 1994. However, the 1995 watching brief failed to find a parallel ditch to the east and this interpretation can now be discounted. Nevertheless, this ditch-like feature remains enigmatic, and the stratigraphic evidence indicates that it was of Late Bronze Age or earlier date. A terminal to the south was found,

albeit with some difficulty, in 1995, giving it a length of just over 50 m, but whether it was a natural or man-made feature remains uncertain. The only finds comprise a few pieces of burnt flint recovered from the small quantity of undifferentiated fill excavated in 1995, and a single piece of worked flint and some burnt flint from the 1994 excavation. On balance a natural origin might be preferred.

There is increasing evidence for the utilisation of this part of the Thames Valley from the Early Neolithic period onwards in an area where a large number of Neolithic sites is now known. No long barrows have been identified, but Neolithic causewayed enclosures have been excavated at Yeovney Lodge, Staines (Robertson-Mackay 1987) and Eton Wick (Ford 1986), and another may exist at Dorney Reach. Smaller, Neolithic interrupted ditch enclosures which probably served a funerary function, have also been found at Heathrow, Shepperton, and Mayfield Farm (Merriman 1990, 23–4), and more recently at Manor Farm, Horton (Ford in prep.). Recent excavations at Imperial College Sports Ground, Harlington, have revealed a large rectilinear enclosure of Late Neolithic–Middle Bronze Age date; the function of this remains unclear but it may have been a monument associated with ritual activity (Crockett 1996). The Stanwell Cursus, which probably terminated near Bigley Ditch, a short distance to the south-west of Prospect Park, is another major monument in the area, located on the edge of the terrace where it drops down to the River Colne to the west (O'Connell 1990). Although not all of these monuments were contemporary in their construction and use, they nevertheless constitute a remarkable complex.

Evidence for possible settlement is widely scattered but appears to favour riverine locations (though this might reflect where the majority of excavations have taken place) where various resources could be utilised. River confluences, such as those between the River Thames and the Colne, would have been particularly favoured because they allowed access to 'inland' areas and were in a position to control river traffic.

Neolithic structures have generally proved elusive, with Runnymede Bridge being the most notable exception (Needham and Trott 1987). This is the only site in this area where Neolithic houses have certainly been identified, although recent excavations at Cranford Lane, Hillingdon, to the west of Prospect Park, have uncovered an arrangement of Middle Neolithic post-holes interpreted by the excavator as a house, and some associated pits (Mark Birley, pers. comm.).

Most sites interpreted as settlements remain ill-defined and comprise isolated features containing small quantities of struck flint and pottery (eg, sites at Harmondsworth and at Sipson (Cotton *et al.* 1986)). This is true of Neolithic sites elsewhere in Britain, and it is unclear at present of what they consisted and what form they took.

The presence of these various monuments and sites suggests that extensive woodland clearance had begun to take place in the area during the Neolithic period and this is supported by concentrations of broken and fragmented stone axes which have been found in the River Thames near Kingston (Adkins and Jackson 1978; see also Field and Cotton 1987, fig. 4.7), and in the Sipson/Harmondsworth area (Cotton *et al.* 1986). The pollen sequence obtained from Eden Walk, Kingston, also indicates open areas, possibly man-made, at this time (Penn *et al.* 1984, 18–19). As noted above, riverside sites may have been were favoured for settlement and the evidence from Kingston (Penn *et al.* 1984, 11; Serjeantson *et al.* 1992), and in particular Runnymede Bridge (Needham 1992), demonstrates this. All lay within, or adjacent to, a system of braided river channels which were subject to various patterns of shifting, silting, and overbank alluviation and, at Kingston and Runnymede Bridge, varying quantities of domestic debris had been disposed of in the channels.

Early–Middle Bronze Age

A small assemblage of six Early Bronze Age sherds was recovered from a single pit (3335) in 1995, which also produced Late Bronze Age pottery, and one other sherd came from a Late Bronze Age ditch. No Early Bronze Age features or finds came from the earlier excavations. Little can be deduced from these few sherds, and whether they derived from settlement or burial contexts is unknown. Excavated evidence for Early Bronze Age settlement has everywhere proved elusive and the few sherds of pottery found at Prospect Park is in keeping with what has been found elsewhere in this area. A few pits, some containing loomweights, have been excavated nearby at Sipson (Merriman 1990, 24–5), but no structures have been identified here or elsewhere.

There is more evidence in the area for Early Bronze Age funerary activity in the form of ring-ditches which probably mark burials, most impressively at Stanwell where a line of nine ring-ditches is recorded (Longley 1976, 33, fig. 12), and it is possible that the concentration of Neolithic monuments in this landscape may have provided a focus for subsequent Early and Middle Bronze Age funerary activity. At Prospect Park, the possible existence of a small barrow is indicated by a truncated ring-ditch, but this is of unknown form and is probably, though not certainly, of Bronze Age date.

Three Middle Bronze Age bucket urns, associated with cremated human remains, were found at Prospect Park, two of which lay quite close to and may have been associated the ring-ditch.

In north-west Surrey Needham (1987, 108) has noted the apparent non-overlap in geographic areas between users of Deverel-Rimbury pottery and earlier, collared and biconical funerary urn styles which probably continued in use into the Middle Bronze Age. This is particularly apparent on the Heathrow Terraces, on which Prospect Park lies, where there is extensive evidence of Neolithic activity and several Deverel-Rimbury sites but comparatively little indication of any Early Bronze Age presence. Most of the Deverel-Rimbury sites, like that at Prospect Park, are cemeteries (eg, Barrett 1973; Gardner 1924, 23–6) but limited settlement evidence has been excavated in the area at Staines (Needham 1987, 133) and Petters Sportsfield, Egham (O'Connell 1987, 8–9), and more substantial remains at Muckhatch Farm, Thorpe (Johnson 1975, 19–23) and Bray (Barnes *et al.* 1995, 1–51). In the latter report, attention has been drawn to the fact that Middle

Bronze Age settlement remains in this area might, like those of any Early Bronze Age settlements, be relatively insubstantial and therefore difficult to recognise; the apparent absence is not likely to be a real absence given the common occurrence of metalwork and cremation vessels (Cleal 1995, 49). Recent, large-scale excavations at Imperial College Sports Ground, Harlington have revealed a small, Middle Bronze Age cremation cemetery comprising a minimum of five urned cremations burials and a possibly contemporary Middle–Late Bronze Age agricultural settlement represented by a variety of features including at least two subrectangular enclosures defined by shallow, discontinuous ditches, but no structures were identified (Crockett 1996). However, extensive evidence for Middle Bronze Age field systems, incorporating part of the earlier Stanwell cursus, and associated settlement has been found during recent work at Perry Oaks Sludge Works (Barrett *et al.* forthcoming).

Late Bronze Age

The 1995 work at Prospect Park has added substantially to the Late Bronze Age remains recorded in the earlier excavations but has not changed their overall interpretation (Andrews 1996a, 48).

The pattern of shallow ditches, sometimes surviving as little more than stains in the brickearth, can be seen to represent part of what are likely to have been boundaries of large fields broadly aligned north-south–east-west along the eastern edge of the Colne Valley above *c.* 26 m OD. A large part of at least one field measuring at least 150 m by 150m was exposed, bounded by a series of apparently discontinuous stretches of ditch. This discontinuity was most clearly demonstrated along the west side where at least three lengths of ditch were recorded, perhaps representing the work of different teams or separate episodes of ditch digging. At the north-west corner was what appeared to have been an entrance of some form, almost 20 m wide. The postulated boundary to the south is less clear, possibly having been entirely removed by ploughing. There was no certain evidence of a boundary on the east side and this may have lain outside the excavated area, if not truncated by ploughing, as ditch 709 continued beyond the limit of excavation. Ditch 236 in the north-east corner of the site appears to have belonged to a separate field or enclosure system; a terminus was found at the south end which coincided with the line of ditch 346/3414 along the north side of the field, with a gap between the two possibly representing an entrance. Ditch 3096 continuing the line of 3076 to the south of 3381 may have marked the western boundary of another field to the south.

The 1995 work detected very few features within the field covering the centre of the site. This may, in part, be due to the prevailing dry conditions at the time of excavation which made the detection of features in the brickearth difficult. However, it may represent a real absence given that very few Late Bronze Age features were found in the part of the 1994 excavation covering this area.

One four-post structure, 3115, lay towards the south-west corner of the field and another, 455, 200 m to the north-east near the southern terminal of ditch 236. Groups of small pits and post-holes were identified in several areas surrounding the field: to the north of ditch 3414, to the west of ditch 3089, and also in the vicinity of ditch 236 to the north-east. An apparently more dispersed pattern of similar features lay to the south of ditch 3381 in the vicinity of circular structure 750, excavated in 1994 and interpreted as a possible round-house. Several more isolated pits included 3399 and 3412 which lay up to 25 m to the west of ditch 3076/3089 in an area otherwise devoid of features on the gentle slope down towards the river valley. In addition to the possible round-house and four-post structures, three possible two-post structures were identified on the 1994 excavations: one to the west of round-house 750 with another to the north-east, and one to the east of ditch 236.

The distribution of pottery in the various features suggests that occupation was concentrated to the north-east of the site where the greatest quantities of material were recovered, much of it as large and relatively unabraded sherds, particularly in ditch 236. Most of the pits were relatively insubstantial features and contained small quantities of finds. Only pit 3343, a relatively shallow feature, is noteworthy in this respect for it contained 168 sherds of pottery weighing slightly more than 2.25 kg. Most of the sherds are likely to be derived from coarseware jars, but an unusual handled jar and a fineware bowl were present. The fill of this feature also contained a very small quantity of cremated human bone and may represent a cremation-related deposit, perhaps associated with the dispersed group of Late Bronze Age features in the vicinity of possible round-house 750. However, some of the pottery from pit 3343 suggests that it may have been a slightly later feature. None of the pits appears to have been dug for storage and for most their function remains unknown. One exception is pit 387, apparently dug as part of ditch 104, which was probably a well or 'sump' to collect water.

The Late Bronze Age features at Prospect Park probably spanning the 10th–9th centuries BC (but possibly later, see above, pp 33–4) indicate an extensive, open settlement probably based on arable and pastoral farming. The field boundaries marked by ditches provide the principal evidence for this, possibly holding fences demarcating stock enclosures, with the lower lying, damper valley bottom to the west providing pasture for grazing. The well or 'sump' might either have acted as a watering hole or at least have provided a source of water for animals. The four-post structures, often interpreted as granaries, may have been used for storing grain or hay, and the two-post structures, sometimes interpreted as racks, provide further evidence for agricultural use of the area.

Unfortunately, the poor survival of animal bone and the small quantities of charred plant remains add comparatively little to our knowledge of the agricultural economy. Bread wheat was present in the post-holes associated with one of the four-post structures (455), and there is also slender evidence, in the form of chaff fragments, for the glumed wheats (emmer or spelt) and

six-row barley, which are generally the most commonly represented grains recovered from British Bronze Age sites (Greig 1991). Adjacent woodland or scrub is attested by hazel. At Runnymede, the identified Late Bronze Age cereals do not include bread wheat (*ibid.*). This might be explained by the presence of lighter soils on the sands and gravels at Runnymede which would have been appropriate for barley, oats and rye, and probably for emmer and spelt, but less suitable for bread wheats which thrive on medium to heavy loamy soils, perhaps present on the brickearth at Prospect Park.

More of probably the same Late Bronze Age settlement excavated at Prospect Park has been exposed immediately to the north-east during widening of the M4, as well as on larger-scale excavations at Holloway Lane, and perhaps also at Cranford Lane further to the east, where three phases of field systems and circular huts have been identified spanning some 750 years, from *c.* 1250 to *c.* 500 BC (Mark Birley, pers comm). It seems likely therefore that the features at Prospect Park can be linked to the middle phases at Cranford Lane. The layout, including a droveway at Holloway Lane defined by two substantial ditches, tends to confirm the interpretation of this having been an agricultural settlement. At Prospect Park there was no evidence for any other activities; there was no metalwork, no spindle-whorls or loomweights, and only a single perforated clay 'tablet'. However, this and the absence of querns, for example, may reflect the peripheral location of the excavation on the western edge of what was a low density, dispersed settlement.

The Late Bronze Age is likely to have witnessed greater agricultural production (and perhaps the exhaustion of some land), increased population, and denser settlement which probably concentrated in the river valleys and adjacent terraces. The appearance of field and enclosure ditches at Prospect Park are likely to have been a result of this increased pressure on available land and may have been established to define 'properties'.

Recently excavated evidence for similar settlements to that at Prospect Park/Holloway Lane/Cranford Lane has come from several other sites in the vicinity. At Stanwell (O'Connell 1990, 35–54) an extensive field system established *c.* 1000 BC went out of use and was followed by a period of dispersed occupation towards the end of the Late Bronze Age in the 7th or 6th century BC. More limited excavations at Petters Sportsfield, Egham revealed the terminal to a substantial Late Bronze Age ditch and a scatter of later post-holes interpreted as defining huts of Late Bronze Age/Early Iron Age date (O'Connell 1987).

These sites can be placed into a hierarchy of settlements in the area which lie on or close to the Thames and its tributaries. The largest, such as those at Carshalton (Adkins and Needham 1985) and the recently reinterpreted site at Mayfield Farm near Heathrow (Cotton 1991, 153), were large, circular, defended or enclosed settlements. These may have been regional centres which supported metalworking and other craft activities and provided places to meet and barter. A now largely destroyed site at Kingston Hill may have been a similar but smaller version of these sites. It to might have been enclosed by an earthwork and there is considerable evidence that bronze-working was carried out there (Field and Needham 1986).

Smaller, strategically located and perhaps stockaded waterside sites, such as at Runnymede (Needham 1992), would have been important in controlling local and long distance trade. The smallest settlements, like that at Hurst Park, Surrey (Andrews 1996b), were probably small farmsteads comprising a cluster of circular huts with associated field systems.

Romano-British

The work in 1995 uncovered a group of five cremation and two inhumation burials which lay along the south-west edge of the site and which can be broadly dated to the later Romano-British period (3rd–4th centuries AD). These add to the one cremation burial and adjacent small pit excavated in 1994 some 100 m to the north-east. A shallow, undated, L-shaped gully, 3397, also in the south-west of the site, may have been part of the Late Bronze Age field system but it is perhaps more likely that it was a Romano-British feature, possibly dug to hold a fence which enclosed or at least partly surrounded the group of burials in that area.

The five cremations burials excavated in 1995, three of which were placed in or associated with pottery vessels, and the two unaccompanied north–south aligned inhumation burials may represent the northern edge of a more extensive cemetery which extends into the unexcavated area to the south. The single cremation burial excavated in 1993 might have been an outlier to this group.

On the basis of the available evidence it is considered most likely that these burials were associated with a Romano-British settlement represented by pits, post-holes, and finds of 3rd–4th century AD date recorded some 400 m to the south at Harmondsworth (Mills 1990). Several other sites, 2 km or more to the east, have revealed pits, wells, and ovens set within small ditched enclosures (Cotton *et al.* 1986), all perhaps indicative of a dispersed pattern of Romano-British settlement, probably represented by farmsteads. Recent, large-scale excavations at Imperial College Sports Ground, Harlington, have provided more substantial evidence for rural settlement, focussed alongside a possible road leading out of London to the north-west (the projected line of which passes just to the north of Field 4 at Prospect Park); a range of features has been dated to the 1st–2nd or 3rd–4th centuries, and includes enclosures, track- or droveways, pits, quarries, wells, post-holes, a midden, and burials (Crockett 1996).

Early Saxon

The discovery of early Saxon settlement has greatly increased our knowledge of the area, where sites of this period are comparatively scarce, and the stripping of an extensive area in 1995 has added considerably to the number of early Saxon features and finds recovered in 1994. In particular, the number of sunken-featured buildings (SFBs) has been increased from four to eleven examples. However, the more recent discoveries have

not substantially changed the published interpretations based on the earlier evidence (Andrews 1996a, 109–11).

The pottery dating suggests that the settlement at Prospect Park belongs to the earlier part of the early Saxon period, in the 5th and 6th centuries, and may have been part of an extensive, dispersed settlement strung out over a distance of at least 500 m along the edge of the river terrace, around the 30 m contour. Earlier work to the north during widening of the M4 exposed one SFB, and possibly another was found to the south during excavations at Manor Farm (Mills 1990). It is conceivable that the various SFBs all belonged to a small settlement which shifted over time, along the edge of the terrace, rather than a single, large settlement which was occupied for only a comparatively short period. Some support for this suggestion comes from examination of the ceramic assemblages from individual SFBs which hints at an earlier group comprising SFBs 103, 127 3030, 3063, and 3337 lying almost in a line along the very edge of the terrace, and a possibly later group comprising SFBs 439, 605, 3166, 3178, and 3370 showing a slightly more dispersed distribution. Settlement shift, as may have occurred at Prospect Park, has been recorded elsewhere, most notably at Mucking (Hamerow 1991). There, extensive rescue excavations on the gravel terrace on the north side of the Thames estuary have recorded up to 203 SFBs and 53 post-hole buildings which provide a clear picture of gradually shifting settlement (Hamerow 1993, 314). The finds suggest that this settlement spanned the 5th to early 8th centuries, varied in density, and was strung out over an area at least 750 m long and 250 m wide.

The SFBs at Prospect Park were all aligned broadly east–west and were of the two-post type; that is with two principal load-bearing posts set midway along the east and west sides of the pit respectively, either just within or just outside the edge of the pit. Five of the SFBs excavated in 1995 and three of those in 1994 had pits less than 0.2 m deep, and it is certain that they were originally deeper but have been truncated by later ploughing which has perhaps removed up to 0.3 m or so of their original depth. Three SFBs were more than 0.2 m deep and one, 3178 excavated in 1995, was substantially deeper at 0.6 m with no obvious reason why this should have suffered less truncation than any of the other examples.

Several of the SFBs contained additional internal post-holes which presumably served some structural function, perhaps in some cases providing further roof support. These included two substantial post-holes in SFB 3337, a single example in SFB 3178 – possibly a replacement of or an addition to one of the principal load-bearing posts – and two smaller post-holes in SFB 103. SFB 3337 also had a large post-hole or pit in the north-west corner which appears to have been contemporary with the use of this structure; parallels for this arrangement are known from Mucking, Essex. The only feature other than post-holes was a narrow, shallow slot along the bottom edge of the pit in SFB 3178 which may have held some form of revetment to keep the sides of the pit in place in this particularly deep example; similar slots have been occasionally recorded in SFBs elsewhere, for example Thetford (eg, Andrews 1995, figs 12 and 14). No trampled or deliberately laid floor surfaces were apparent within the SFBs, and it is not certain whether any had revetted sides and raised floors as has been suggested for some examples elsewhere, as at West Stow, Suffolk (West 1985, 116–21). However, the majority of the finds from them are likely to represent later rubbish deposition in abandoned and perhaps dismantled structures. Only the group of 31 loomweights in SFB 3030 seem likely to represent an *in situ* deposit.

Although most of the structures comprised sunken-featured buildings, two post-built timber halls of probable early Saxon date were excavated in 1994, in each case appearing to be associated with a nearby SFB. However, no halls were found in 1995, though it is possible that some small features such as post-holes may have escaped detection in the dry summer conditions. SFB 439 may have been associated with hall 749 which lay less than 15 m to the east, and SFB 605 with hall 721, 10 m to the south. Both putative halls were aligned east–west, of post-hole construction, 5 m wide and perhaps twice as long. Any internal features such as hearths and floor surfaces are likely to have been removed by ploughing. A small quantity of Late Bronze Age pottery was the only finds recovered from post-holes assigned to hall 721, but the size and regularity in layout of this structure more closely resembles that of Anglo-Saxon post-hole/hall buildings at sites such as Mucking, Essex (Hamerow 1993) and West Stow, Suffolk (West 1985), rather than the somewhat less regular, Late Bronze Age structures at, for example, Lofts Farm, Essex (Brown 1988). The semi-circular arrangement of post-holes in hall 721 remains somewhat puzzling but their size and layout suggests that they may have held angled posts forming a semi-circular arrangement that formed an integral part of the original structure, rather than some form of lean-to or later addition. No parallels are known for this structure, although square-ended annexes were to become characteristic of large 7th century timber halls (Blair 1994, 20).

If the SFBs were sometimes associated with halls at Prospect Park, then the latter may have provided the principal living accommodation, with the SFBs being used for workshops or for storage. The group of loomweights in SFB might provide some support for this suggestion, but it is possible that the hall buildings may have been constructed to provide a communal function within the settlement. At Mucking, Essex, the apparent absence of post-hole buildings in the earliest, 5th century phase of the site (Hamerow 1993, 314) suggests that at many of the SFBs were lived in rather than simply being ancillary buildings, and this is considered likely for many of the SFBs at Prospect Park, as well as on other sites, particularly those where post-hole buildings were absent or present in small numbers in relation to the number of SFBs.

The significance, if any, of the presence or absence of timber halls on early Saxon sites is not clear. Some sites such as the small, nucleated settlement recently excavated at Hurst Park in Surrey seem to have comprised only SFBs with no evidence for hall buildings (Andrews 1996b, 103). The relative proximity of Hurst Park and Prospect Park suggests that geography was not a factor, and although the settlement at Hurst Park is considered

to have been slightly later (6th–7th century, as opposed to 5th–6th century at Prospect Park) the sequence identified at West Stow in Suffolk (West 1995) indicates that it was not necessarily a matter of chronology as timber halls were present in both the earlier (5th–6th century) and later (6th–7th century) phases of the settlement. In contrast, the earliest phase at Mucking, Essex, dated to the 5th century, comprised approximately 77 SFBs but apparently no post-hole buildings (Hamerow 1993, 314); the latter did not appear on the site until the 6th century. Dixon (1993, 145) has recently suggested that the absence of halls in the earliest phase at Mucking reflects the Saxon settlers initial inability to build up sufficient resources to construct these buildings which required more time, skill and materials than an SFB. Perhaps a combination of factors, which might also include the size, status and function of the settlements, determined whether or not timber halls were built.

With the possible exception of two, small, linear features (517 and 530) excavated in 1994, there was no evidence for any boundaries delineated by ditches. However, such boundaries seem only to appear in early Saxon settlements of the late 6th and 7th century, not before (West 1985, 151) and this might provide a further indication, along with the pottery, of an early (5th–6th century) date for the settlement at Prospect Park.

Only three pits were found in 1995 in addition to the 15 examples recorded in 1994. Pits were generally shallow and lay within 25 m or so of the structures. Most, whatever their original purpose, were ultimately used for rubbish disposal. This rubbish is likely to have included quantities of food waste but, because of the acidic soil conditions, only very small quantities of fragmentary animal bone have survived. With two exceptions, 689 and 711 excavated in 1994, there is no evidence for any of the pits having been dug for a specialised function. Hollow 689, perhaps associated with SFB 605 and hall 721, may have been a 'working hollow', but if so, for what reason is unknown. Pit 711 was almost certainly a well; its depth, profile and lower, grey clay fill in particular suggest this. Pit 483 was the only one which contained well-preserved environmental remains, in this case providing some evidence for crop processing. Excavations at Mucking, Essex, like those at Prospect Park, produced no major Anglo-Saxon pit assemblages from the relatively small number of pits present and wells were restricted to a single complex of three examples (Hamerow 1993, 314).

The very few metal objects from Saxon features include a small lead spearhead, possibly of Roman date, and a pierced Roman copper alloy coin. However, a single lump of smithing slag may provide evidence for contemporary iron-working on the site and fragments of three whetstones were also recovered. Two spindle-whorls and a group of loomweights indicate that some spinning and weaving took place. Four beads are the only other finds certainly of Saxon date except for pottery.

The ceramic assemblage is noteworthy for it contained sherds from several non-local vessels (based on petrological analysis), which may be as early as 5th century. One possible source in the Midlands has been suggested, but given the early dating proposed, a continental (ie, North German) origin cannot be ruled out. Several other sites in the area, at Kingston-upon-Thames, Ham, and Hammersmith, are all considered to be early (Bob Cowie, pers comm), and that at Hammersmith also produced an unusual group of non-local pottery similar to that from Prospect Park. The presence of this non-local pottery might suggest an involvement in early trade for some settlements in the lower Thames Valley, all of which lay close to the River Thames or its tributaries, with Prospect Park being the furthest west of this group yet discovered. The suggested early dating and possible continental origin of some of the pottery might also reflect early migration into the lower Thames Valley from the continent in the 5th century, and clearly further work is required on this and similar early, non-local ceramic assemblages in the London area before the full implications of its presence there can be properly considered.

At Prospect Park, the presence of non-local pottery and timber halls, including the unique example 721 with the semi-circular arrangement of post-holes at its west end, might be indicative of a higher status settlement, although there is nothing else which would support this suggestion. Alternatively, their presence may be a function of chronology, and reflect the suggested early date of the settlement and its possible involvement in trade and/or links with the continent.

No Anglo-Saxon burial sites have been found in the immediate vicinity of Prospect Park but a burial complex, including cremation and inhumation burials in flat graves and beneath barrows, along with an apparently associated settlement site, is known at Shepperton Green a little over 10 km to the south; this site has been dated to between the 6th and 12th centuries AD (Canham 1979; Poulton 1987b). Another cemetery, about a kilometre away, known as Upper West Field, Shepperton, was found in the 19th century and has been dated to the late 5th or early 6th century (Longley and Poulton 1982). Much of this latter cemetery was destroyed during the 19th century but the two sites at Shepperton serve to indicate the presence of one or more settlements in the vicinity during the early Saxon period and again emphasises the concentration of activity in the river valleys.

No evidence for any occupation on the site at Prospect Park after the 6th century was found, and it appears that settlement later became nucleated around the area to the south that is now the triangular village green in Harmondsworth (see Fig. 1). Excavations at Manor Farm (Mills 1989) and Manor Court (Mills 1990) revealed possible structural remains, pits and ditches of 11th–12th century date, and it was in this area that the Norman Abbey of Holy Trinity Rouen acquired a site in 1069 and subsequently founded a non-conventual priory in the late 11th–early 12th century (VCH 1909, vol. 1, 200–202).

Appendix 1: Pottery fabric series

Late Neolithic/Early Bronze Age fabrics

F1 Moderately fine, slightly micaceous fabric; sparse, poorly-sorted sub-angular flint <5 mm; unoxidised, some oxidisation on surfaces.

G1 Soft, fine, soapy fabric; moderate sub-rounded grog <2 mm; sparse sub-rounded quartz grains <0.25 mm; rare very fine mica; unoxidised with oxidised exterior.

G2 Slightly soapy fabric; moderate, sub-angular grog <2 mm; unoxidised, oxidised interior.

G3 Soft, fine fabric; sparse, sub-rounded grog <2 mm; very rare rounded quartz <1 mm; very rare fine mica; unoxidised.

Middle Bronze Age fabrics

F2 Soft fabric; moderate, well-sorted, sub-angular flint <2 mm; sparse rounded quartz grains <0.25 mm; rare iron oxides <0.5 mm; irregularly fired, generally oxidised surfaces.

F3 Hard fabric; common, poorly-sorted, sub-angular flint <3 mm; sparse rounded quartz grains <0.25 mm; sparse very fine mica; rare iron oxides <0.5 mm; irregularly fired, generally oxidised surfaces.

F4 Hard fabric; common, poorly-sorted sub-angular flint <4 mm; moderate rounded quartz grains <0.25 mm; sparse very fine mica; irregularly fired, unoxidised core and oxidised surfaces.

F11 Fine, hard fabric; common, well-sorted, sub-angular flint <2 mm; sparse very fine mica; irregularly fired generally unoxidised, some oxidisation on exterior surface.

Late Bronze Age fabrics

Calcareous fabric

C1 Soft, moderately fine fabric; common, fairly well sorted crushed shell <1 mm; sparse iron <0.5 mm; oxidised, unoxidised core.

Flint-tempered fabrics

F5 Fine, hard fabric; moderate, well-sorted, sub-angular flint <2 mm; moderate rounded quartz grains <0.5 mm; sparse very fine mica; sparse iron ore <0.5 mm; unoxidised, generally with oxidised exterior surface.

F6 Fine, hard fabric; moderate, moderately well-sorted, sub-angular flint <4 mm; moder ate rounded quartz grains <0.5 mm; sparse very fine mica; sparse iron ore <1 mm; irregularly fired, generally oxidised.

F7 Fine, hard fabric; common poorly-sorted, sub-angular flint <4 mm; moderate rounded quartz grains <0.25 mm; sparse very fine mica; irregularly fired, unoxidised, some oxidisation on exterior surface.

F8 Fine, hard fabric; sparse, moderately well-sorted, sub-angular flint <3 mm; moderate rounded quartz grains <0.25 mm; sparse iron ore <0.25 mm; sparse very fine mica; unoxidised, oxidised exterior surface.

F10 Fine, hard fabric; abundant well-sorted, rounded quartz grains <0.5 mm; moderate well-sorted flint <2 mm; moderate iron ore <1 mm; unoxidised, oxidised exterior surface.

F12 Fine, hard fabric; moderate, well-sorted, sub-angular flint <1 mm; sparse sub-rounded quartz <1 mm; rare fine mica; oxidised with unoxidised core.

Flint-gritted fabric

F9 Fine, hard fabric; sparse, well-sorted, sub-angular flint <2 mm; moderate rounded quartz grains <0.25 mm; sparse very fine mica; sparse iron ore <1 mm; generally unoxidised, oxidised exterior surface and outer margin.

Sandy fabrics

Q1 Fine, hard fabric; sparse, well-sorted, sub-angular flint <2 mm; moderate rounded quartz grains <1 mm; sparse very fine mica; sparse iron ore <1 mm; generally unoxidised, oxidised surfaces; some with oxidised outer margin.

Q2 Fine, hard fabric; rare, sub-angular flint <1 mm; moderate rounded quartz grains <0.25 mm; sparse very fine mica; irregularly fired, generally unoxidised.

Q3 Fine, soft fabric with a slightly soapy feel; rare sub-rounded quartz <0.25 mm; rare sub-angular flint <0.25 mm; rare iron oxides and fine mica; unoxidised with oxidised exterior margin.

Late Iron Age fabrics

F20 Unoxidised well finished fabric with well-sorted flint temper, sparse quartz <0.25mm and sparse iron ore.

G21 Sparse grog in a fine hard fabric, unoxidised with oxidised external surface.

Romano-British fabrics

Q100 Catch-all fabric generally with common, moderately-sorted, rounded quartz <0.5mm, in a hard coarse moderately çoarse fabric; unoxidised.

Q101 Catch-all fabric generally with moderate, well-sorted, rounded quartz <0.5mm, in a moderately fine fabric; oxidised, sometimes with unoxidised surfaces.

E170 Oxfordshire colour-coated ware; for description see Young (1977, 123).

Early Saxon fabrics

Flint-tempered fabric

F400 Hard, moderately coarse fabric; moderate, well-sorted, sub-angular flint <1 mm; sparse rounded quartz grains <0.5 mm; sparse iron ore <1 mm; rare fine mica; unoxidised.

Fabrics containing quartz or quartzite as dominant inclusion type

Q401 Hard, fine fabric; common, well-sorted, rounded quartz grains <1 mm; moderate sub-rounded iron ore <1 mm; rare fine mica; rare very coarse organic temper <4 mm; irregularly fired, generally unoxidised core, slightly oxidised surfaces.

Q402 Hard, moderately coarse fabric; moderate, fairly well-sorted, sub-angular quartz grains <0.5 mm; sparse fine mica; rare, irregular rock fragments <2 mm; rare sub-angular patinated flint <2 mm; rare organic material <10 mm; unoxidised.

Q403 Hard, moderately coarse fabric; moderate, well-sorted, sub-angular quartz grains <0.5 mm; sparse, fine mica; sparse carbonaceous material <3 mm; unoxidised, oxidised margins.

Q404 Hard, moderately coarse fabric; sparse, poorly-sorted, sub-angular quartz grains <1 mm; rare fine mica; rare sub-angular, patinated flint <4 mm; rare, irregular rock fragments <2 mm; sparse very coarse organic temper; rare iron particles <1 mm; unoxidised, generally oxidised exterior surface.

Q405 Hard, moderately coarse fabric; common, well-sorted, rounded/sub-angular quartz/quartzite <0.25 mm; rare fine mica; unoxidised, or oxidised, unoxidised exterior.

Q406 Soft, moderately coarse fabric; moderate, sub-rounded quartz, fairly well-sorted, <0.5 mm; sparse iron particles <1 mm; rare fine mica; oxidised.

Q407 Hard, moderately coarse fabric; moderate, fairly well-sorted, sub-angular quartz/quartzite grains <1 mm; rare iron particles <1 mm; sparse organic material <4 mm; rare fine mica; unoxidised, oxidised exterior surface.

Q408 Hard, moderately coarse fabric; moderate, fairly well-sorted, rounded quartz grains <1 mm; rare fine mica; moderate organic temper <10 mm; rare sub-angular/sub-rounded, patinated flint <7 mm; sparse iron particles <2 mm; unoxidised.

Fabrics containing rock fragments as dominant inclusion type

R400 Fine, hard fabric; moderate, well-sorted, rounded quartz grains <1 mm; sparse mica <2 mm; sparse sub-angular ?felspar <2 mm; rare organic material <2 mm; unoxidised, oxidised external surface.

R401 Fine, soft fabric; sparse, poorly-sorted, irregular rock fragments <4 mm; rare fine mica; sparse organic temper <5 mm; rare sub-rounded flint pebbles <5 mm; rare iron particles <1 mm; unoxidised, some oxidisation on exterior surface.

Appendix 2: Vessel form type series

Late Bronze Age vessel forms

(Fig. 21)

Class types are as defined by Barrett (1980, 302–3). Note that figure references in the previous report (Laidlaw and Mepham 1996, fig. 24, are incorrect).

Type 1 Medium sized, shouldered jar (Class I), upright or slightly everted rim (Laidlaw and Mepham 1996, fig. 24, 1).

Type 2 Straight-sided or slightly convex jar (Class I), plain rim (*ibid*, 2; Fig. 22, 2, 3).

Type 3 Jar (Class II) of unknown form, everted rim, often finger-impressed (*ibid*, 3, 4, 5, 6, 7; Fig. 22, 4).

Type 4 Medium-sized jar (Class I) of unknown form, internally-thickened rim (*ibid*, 8, 9).

Type 5 Medium sized jar (Class I/II) of unknown form, internally bevelled rim (*ibid*, 10).

Type 6 Carinated bowl (Class IV), plain inturned rim (*ibid*, 11).

Type 7 Shouldered bowl (Class IV) everted rim (*ibid*, 12).

Type 8 Necked bowl (Class IV), everted rim (*ibid*, 13).

Type 9 Convex bowl (Class IV), plain rim (*ibid*, 14).

Type 10 Handled jar (Fig. 22, 1)

Type 11 Fineware bowl (Class IV), well finished rim (Fig. 22, 8)

Saxon vessel forms

(Fig. 24)

The type series previously published (Laidlaw and Mepham 1996, 36, types 1–8) is incorporated here, and augmented by new types 9–15.

Type 1 Small to medium *rounded* vessel with everted rim (Laidlaw and Mepham 1996, fig. 25, 1–3; Fig. 26, 20).

Type 2 Medium to large, *rounded* vessel with plain, sometimes thickened, inturned rim (*ibid*, 4–7; Fig. 25, 3).

Type 3 Small to medium, sharply *biconical*, necked vessel with slightly everted rim (*ibid*, 8–9; Fig. 26, 21).

Type 4 Medium-sized, *rounded* vessel with short upright, thickened rim (*ibid*, 10–11; Fig. 25, 5, 6–9).

Type 5 Necked vessel, *possibly biconical*, as Type 3 (*ibid*, 12).

Type 6 Small to medium, *convex* vessel with upright or slightly everted rim (*ibid*, 13–15; Fig. 25, 10, 11, 13).

Type 7 Small *convex* beaker with rounded base and everted rim (*ibid*, 18).

Type 8 Large *convex* vessel with beaded or thickened, upright rim (*ibid*, 16–17).

Type 9 Large *biconical* vessel with everted rim (Fig. 25, 1).

Type 10 Smaller biconical vessel with everted rim, often decorated (Figs 25 and 26, 4, 19, 22).

Type 11 Medium to large, *convex* bowl with plain, inturned rim (Fig. 25, 2).

Type 12 Medium, *convex* vessel with everted rim; a larger version of Type 7 (Fig. 25, 12).

Type 13 Medium, shouldered, *convex* bowl (Fig. 26, 14).

Type 14 *Straight-sided* bowl with plain rim and flat or rounded base (Fig. 26, 15, 16).

Type 15 Small, *straight-sided* beaker with plain rim (Fig. 26, 17).

Appendix 3: A note on the petrology of some early Saxon pottery from Prospect Park, Harmondsworth, Middlesex, by D.F. Williams

Eight sherds of early Saxon pottery, most of which all appear to have unusual fabrics for the area, were thin sectioned and studied under the petrological microscope. Initially, all sherds were examined under a binocular microscope (x 20). Munsell colour charts are referred to together with free descriptive terms.

1. Context 105, SF6023, fabric type R400
Fairly thin-walled, reasonably hard, roughish sandy fabric containing distinctive large plates of golden, or sometimes silver, mica and small fragments of granite. Very dark grey (5YR 3/1) outer surface and core, reddish-brown (between 5YR 6/4 and 5/4) inner surface. Thin sectioning shows that scattered throughout the clay matrix are large, discrete grains of potash and plagioclase felspar, grains of quartz, some of them polycrystalline, and small fragments of a granite, or perhaps a grano-diorite rock.

This sherd is obviously not a local product. Similar granitic-tempered pottery has previously been noted by the writer from a number of early-middle Saxon sites situated mainly in the Midlands and eastern part of the country (see, for example, Williams 1993a; 1994; together with unpublished material). The actual source for this distinctively-tempered pottery has yet to be conclusively tied down, but an origin is very probably to be found near the acid-intermediate igneous intrusions of the Charnwood Forest area to the south-west of Leicester (including the Mount Sorrel grano-diorite). A similar source may be possible for the Prospect Park sherd but, given its potentially early date, a continental origin (ie, North Germany) should not be ruled out at this stage.

2. Context 105, fabric type R401
Thick, fairly hard, rough, sandy fabric with a few large scattered inclusions of quarzite and flint, darkish grey (between 10YR 5/1 and 4/1) outer surface, darker grey inner surface and core. Thin sectioning shows frequent subangular quartz grains ranging up to 0.5 mm across but mostly well below this in size, together with pieces of quartzite, a little flint, fine-grained sandstone, flecks of mica, some elongated voids indicating organic material was present at some stage and iron oxides.

This sherd is unlike the local prehistoric range of fabrics from the nearby site of Caesar's Camp at Heathrow (Williams 1993b) and so it is possible that once again it may be an import to the site. Quartzite, for example, is present in the Charnwood Forest area, and occurs as pebbles in the surrounding Triassic formations and Boulder Clays (Worssam and Old 1988). However, the range of inclusions present in this sherd are not especially uncommon and at this stage other, more local sources cannot as yet be ruled out.

3. Context 105, fabric type Q401
Fairly hard, thick, sandy fabric, dark reddish-brown throughout (2.5YR 4/4). Frequent, fairly well rounded grains of clear, milky and coloured quartz are scattered through the fabric. Also visible are small inclusions of reddish-brown argillaceous material and sparse pieces of flint. Thin sectioning shows a fairly clean matrix containing moderately frequent, reasonably well sorted grains of quartz, average size 0.30-0.60mm. Also present are shreds of mica, fairly well rounded ?clay pellets, sparse flint and some opaque iron oxide.

This sample contains a range of common inclusions which appear to be in keeping with a local source.

4. Context 105, fabric type Q402
Fairly hard, thickish, rough sandy fabric, dark grey throughout (5Y 4/1). Small grains of quartz, small pieces of flint and small white fragments of phytoliths (plant remains) are scattered throughout the fabric. Thin sectioning shows a groundmass of silt-sized grains with a scatter of larger grains up to 0.5 mm in size. Dotted around are small irregular-shaped phytoliths, shreds of mica and some opaque iron oxide.

The presence of phytoliths, while a useful aid to characterisation, are nevertheless difficult to tie down to a particular geological/geographical area.

5. Context 105 , fabric type Q403
Fairly hard, thin, smooth, somewhat sandy fabric, dark grey surfaces (2.5Y N4/), dark reddish-grey core (5YR 4/2). Thin sectioning shows a groundmass of silt-sized grains with a scatter of larger ill-sorted grains up to 1.3 mm in size. Also present are flecks of mica, a few small pieces of sandstone and some clay pellets.

6. Context 719, fabric type Q404
Fairly hard, thick, rough sandy fabric, red (2.5YR 5/8) outer surface, very dark grey inner surface and core (7.5YR N3/). Frequent clear glassy grains of quartz are scattered throughout the fabric. Also visible are several fragments of a poorly cemented quartz-sandstone and small pieces of flint. Thin sectioning shows frequent well sorted grains of quartz generally falling below 0.4 mm in size, pieces of flint and several fragments of a fine-grained quartz-sandstone. Also present are shreds of mica and some opaque iron oxide.

Fine-grained sandstone inclusions are also present in No. 2, above, for which a non-local origin is postulated.

7. Context 105, SF6025, fabric type Q407
Medium thick, hard, rough, very sandy fabric, light brownish-grey (2.5YR 6/2) outer surface, dark grey inner surface and core. Thin sectioning shows a fairly fine textured clay matrix containing moderately sparse, silt-sized quartz grains and shreds of mica. Scattered throughout the fabric are ill-sorted subangular quartz grains ranging in size from about 0.2 mm to 1 mm across. Also present are a few pieces of sandstone, quartzite, a number of discrete grains of felspar and what appear to be weathered fragments of ?igneous rock.

The presence of discrete felspar grains and the possible identification of weathered igneous material raises the possibility that this sherd may also come from the general region of No. 1 above, although not necessarily from the same source.

8. Context 105, fabric type Q408
Soft, fairly thick, sandy fabric, very dark grey surfaces (7.5YR N3/) and dark reddish-grey core (5YR 4/2). A number of organic-shaped voids can be seen on the surfaces and in fresh fracture, together with large silver plates of mica. Thin sectioning shows moderately frequent grains of quartz, generally below 0.6 mm in size, flecks of mica, including a few large plates, a few large grains of plagioclase felspar, some flint, and a number of elongate vegetable-shaped voids. The relative frequency of the latter suggested chopped grass or chaff deliberately added to the clay rather than naturally occurring roots already present in the clay.

The presence of large grains of felspar may point to this sherd belonging to the same general fabric group as No. 1, above, although pottery associated with this source (Charnwood Forest) is not usually organic-tempered as well, as seems to be the case here (Williams and Vince 1997).

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EBA = Early Bronze Age; MBA = Middle Bronze Age; LBA = Late Bronze Age

Three phases of archaeological work were carried out at Prospect Park, near Harmondsworth, London Borough of Hillingdon in 1993–5. The site, subsequently developed by British Airways for a new business centre, lies on the east side of the River Colne on 'brickearth', a drift deposit of aeolian origin c. 4 m thick at Prospect Park.

A section was investigated through the 'brickearth' in an attempt both to discover the potential for Palaeolithic remains within the deposit and to investigate the nature and origins of the 'brickearth' itself. No archaeological remains were encountered but the recording, sampling, and subsequent analytical programme revealed an important sequence of periglacial features and provided much data pertinent to the depositional history of the 'brickearth', including climatic conditions, depositional regimes, and the sequence of soil development within the deposit. It has also identified the horizon in which Palaeolithic material might be expected to occur.

A small collection of Mesolithic flint comprised the earliest finds from the site and there were four features containing Late Neolithic Grooved Ware. Middle Bronze Age activity was indicated by the presence of a ring-ditch, cremation burials and a bucket urn. An extensive Late Bronze Age agricultural settlement of the 10th–9th centuries BC was associated with a field system. A few late Romano-British burials indicated nearby settlement but the most substantial remains were of an Early Saxon settlement of the 5th–6th centuries AD represented by sunken-featured buildings, timber halls, a well and various pits. Of particular interest was a significant group of non-local pottery vessels, some possibly of continental origin.

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